(CRITICAL) SUCCESS FACTORS OF STARTUP CONSTRUCTION COMPANIES IN ETHIOPIA

A thesis submitted to the Graduate Program of the Department of Management and the College of Business and Economics, of Addis Ababa University

In partial fulfillment of the requirements for the Degree
Masters of Business Administration
In Management

By
Eleni Gebrewahd (GSE/2314/10)

Addis Ababa University

Addis Ababa
Date: June, 2020

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By: Eleni Gebrewahd

Approved By: _____

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Advisor Signature Date

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Internal Examiner Signature Date

_____

External Examiner Signature Date

LETTER OF CERTIFICATION

This is to certify that Eleni Gebrewahd has carried out this research on the topic "(Critical) Success Factor of Startup Construction Companies in Ethiopia" under my supervision. This work is original in the nature and suitablefor submission in partial fulfillment of the requirement for the award of Masters of Business Administration and the student has my permission to present it for assessment.

Advisor: Tilahun Teklu(Ph.D)

Here:

Signature: _____

Date: _____

DECLARATION

I, the undersigned, do hereby declare that the work on which this thesis is based is original work, except where acknowledgements indicate otherwise. Neither the full dissertation nor any part of it has been, is being, or is to be submitted for another degree at this or any other University.

Candidate GSE/2314/10

Name: Eleni Gebrewahd Zenawi

Signature: _____

Date: _____

This thesis has been submitted for examination in the Department of Business Administration, College of Business and Economics of Addis Ababa University, with my approval as the University Advisor.

Advisor: Dr. TilahunTeklu

Signature: _____

Date: _____

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ABSTRACT

This research examines the critical success determinants of startup companies in the construction industry. The purpose of the study is to determine to what extent the different Critical Success Factors affect the success of startup construction companies in Ethiopia. The study reviews different literatures related with startups and different categories of critical success factors. The goal is to determine which critical factors highly affect success of startups established after the year 2006 E.C, registered in Addis Ababa and in the category General Contractors 5 and above. Questionnaires and interview were used for the purpose of data collection. High level statistical analysis i.e. inferential statistics and hypothesis testing were used for the analysis of the data collected. The result of the analysis suggested that the critical success factors related with success of startups are indeed the deciding factors over success or failure. Finally the paper recommendswhat company owners/ general managers of startups in the construction industry need to do regarding the success of their company.

Key Words: Startups, Success, Critical Success Factors and Project Success

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CHAPTER I

1. INTRODUCTION

1.1. Background of the Study

The Construction industry is one of the main sectors of the economy; it consists of the entire process from project visualization to demolition of buildings and infrastructure. Construction industries in many developing countries worldwide are comprised of many construction stakeholders, procurement systems, management philosophies, techniques and tools that play significant roles in the development of infrastructure, such as roads, schools and hospitals.

The construction industry in Ethiopia is a sector that opens the door for the growth of many additional industries. All in all, the construction industry is a sector that can entertain big micro companies, that is widely labor based. All these being taken into consideration, the industry policy of the Federal Democratic Republic of Ethiopia has sought to pay special attention to the construction industry of the country.

It may not be easy to come up with a universal definition in trying to define the construction industry. This is because of the fact that the definitions bestowed to the phrase in different societies tend to contain different aspects pertinent to that society. Of the definitions given, the definition given to the phrase by Australian Bureau of Statistics to its construction industry survey seems appropriate and widely applicable. So this particular definition is used in this paper to understand what the construction industry means. Accordingly, the construction industry is described as follows:

"all units mainly engaged in constructing buildings (including the on-site assembly and erection of prefabricated buildings), roads, railroads, aerodromes, irrigation projects, harbor or river works, gas, sewerage or storm water drains or mains, electricity or other transmission lines or towers, pipelines, oil refineries or other specified civil engineering projects. In general, units mainly engaged in the repair of buildings or other structures are also included.... as are those engaged in the alteration or renovation of buildings, preparation of mine sites, demolition or excavation.''

Coming to our country, the growth and increasing demand for the construction industry has followed a similar pattern as observed in the trend of the world. Currently, construction is one of the sectors leading the way towards modernization and industrialization in Ethiopia. The construction sector in Ethiopia, generally in the world, contributes to the realization of about fifty percent of the total capital. Being the second largest employer in the country, it's also an engine for technology, innovation and overall development.

It is a remarkable time for the construction industry. Growth in the country has been strapping the past several years. This growth leads to construction of different infrastructures. The growth in the construction industry calls for new companies to enter the business. As a result, there are a lot of startup construction companies coming up right now. With globalization (i.e. improvements in transport and communications) construction companies now are able to operate beyond borders at an international level. In Ethiopia there were more than 8000 companies registered since 2006 E.C till 2011 E.C (Construction). This number tells us how much the construction industry is attracting new and upcoming companies.Those startups joining the industry are the main focus.

A company that joins an industry and is at its early stage of operation is called a Startup Company. Startup "a newly established business" (Dictionaries, 2014). Cambridge Dictionary defines startups as "the act or process of starting or making something start." but the accurate meaning is "business that has been started" (Cambridge Dictionaries Online, 2014). A startup is a company or project initiated by an entrepreneur to seek, effectively develop, and validate a scalable business model. Startupsalso refer to the new businesses that intend to grow beyond the solo founder, have employees, and intend to grow large.

Startups face high uncertainty and do have high rates of failure, but the minority that go on to be successful companies have the potential to become large and influential. As the construction industry is the main leading example of project based industries, success is best explained at the project level rather than the organizational level. Whenever there is a talk of success, there is also the part about failure. Failures in construction companies are common.In the construction industry, failure is best explained at the project level rather than the overall company level. The talk of failure is important especially for startup construction companies to understand ways a company can fail and avoid those signs in advance.

It safe to say that there are two types of startups; “Subsistence” startups are those that are not planning to be a big company. Their goal is to have a level of financial independence while enjoying what they do. The other one is “Transformational” startups that significantly affect the economy. These startups have the most impact on a nation’s economy, aiming to become nationwide or international. Startups may be small companies but they can play a significant role in economic growth. They create more jobs which mean more employment, and more employment means an improved economy. Not only that, startups can also contribute to economic dynamism by spurring innovation and injecting competition. New entrepreneurs can bring new ideas to the table, much needed to stir innovation and generate competition. Startups have a direct-impact on the cities that they make their homes. We can take for example the following companies; Alibaba impacted Hangzhou, Infosys has changed Bangalore, Microsoft changed Redmond and Google transformed Mountain View, California. All these companies started small, but as they grew, they transformed the cities where they operated. They improved employment patterns providing job opportunities to both experienced and young professionals.

The success of startups depend on different factors affecting their existence. Those factors could be external or internal within the companies. There a number of different factors that have the potential to affect the success of startups. Out of those critical success factors are the focus of this paper. As CSFs are the expected causal variables of a particular desired result the understanding of those different factors from external challenges to the competence and proper management of the projects teams, the different contractual aspects, the characteristics and organization of projects and the experience and knowledge of clients are important. CSFs are considered to be a means to improve the effectiveness of a project which in turn improve the performance of the overall organization since the construction industry is project based industry.

1.2. Problem Statement

It has been established that startups are very important for the economy of a country. Which means the success of startups is as equally important. Success doesn’t have a single definition. There are different factors that contribute to success; successful management & achievement of projects, market share in the industry and many other factors. In the construction industry success is better understood at the project level rather than the overall organization. Critical success factors for construction companies varies in different countries in regard to different environments and contexts. The question lies on how those CSFs work in our construction

industry especially startup companies. The study assesses the extent to which CSFs affect the success of startup construction companies in Ethiopia. There are different categories of CSFs and the impact of each item is assessed and measured. As per the preliminary interview made with the owners/ general managers of the firm's the relation between project success and the success of the overall organization is established. Also what success means for those companies.

Therefore detail assessment on the success of startup construction companies in relation to CSFs was done,gaps were identified and recommendations were made accordingly.

1.3. Research Questions

The main question of this research is:

I. What are the critical success determinants of startup construction companies in Ethiopia?

The sub questions also include:

i. Does External Challenges affect the success of Startup construction companies in Ethiopia?
ii. Does Top Management Support affect the success of Startup construction companies in Ethiopia?
iii. Does Project Team Competence affect the success of Startup construction companies in Ethiopia?
iv. Does Project Manager Competence affect the success of Startup construction companies in Ethiopia?
v. DoesProject Characteristics affect the success of Startup construction companies in Ethiopia?
vi. Does Project Organization affect the success of Startup construction companies in Ethiopia?
vii. Does Client Knowledge & Experience affect the success of Startup construction companies in Ethiopia?
viii. Does Contractual Aspect affect the success of Startup construction companies in Ethiopia?

1.4. Objective of the study

1.4.1. General Objective

The main objective of this study is to determine the critical success determinants of startup construction companies and to what extent. This answers the question why some firms are more successful while other firms appearing to follow the same paths are not successful.

1.4.2. Specific Objectives

The specific objectives include the following:

- Determining the extent External challenges affects the success of startup construction companies.
- Determining the extent Top Management Support affects the success of startup construction companies.
- Determining the extent Project Team Competence affects the success of startup construction companies.
- Determining the extent Project Manager Competence affects the success of startup construction companies.
- Determining the extent Project Characteristics affects the success of construction companies.
- Determining the extent Project Organization affects the success of startup construction companies.
- Determining the extent Client Knowledge & Experience affects the success of startup construction companies.
- Determining the extent Contractual Aspect affects the success of startup construction companies.

1.5. Limitations

There was a problem of gathering information from the participants of this study. There is no stock market in Ethiopia so there were difficulties of knowing where the companies actually stand in the industry. Also the knowledge gap on the concept of critical success factors and the proper applications of them was another limitation to get detailed and conceptualized information from participants. Data collection from general managers/owners of the companies was time taking as they are mostly tied with meetingsand site visits.

1.6. Scope of the Study

Among the different participants of the construction industry, this study focuses on construction companies who launched within the last five years i.e. startup construction companies. Furthermore amongst the different factors used to determine and assess the success of organizations, critical success factors in particular are used. There are a number of critical success factors in determining the successful completion of projects and success of organizations as a whole. Among them eight CSFs covering the external environments, the top management, the project teams and managers, the organization and characteristics of projects, the clients and contractual aspects are chosen for this study.

1.7. Significance of the Study

An economy needs more and more startups to flourish into larger corporations to fuel its growth. When more entrepreneurial firms join the fray, growth of entrepreneurship, employment and economy follow. Different Governments in the world that are struggling with high unemployment rate see early-stage companies sector as an important platform to make significant progress in creating new jobs and solving unemployment problems. This tells us startups are important. So what are the factors affecting the success of startups and the critical success determinants. Those factors will assist the concerned bodies to understand and manage startups better.

The findings of this study will help in identifying the major factors that highly influence the success of startup construction companies. Not only will it help the current startups in the industry but other businesses thinking about joining the construction industry. Overall this study will try to find out the major critical factors that affect the success of startup construction companies.

CHAPTER II

2.REVIEW OF RELATED LITERATURE

2.1. Introduction

The construction industry is linked to many other industries and it makes a precious contribution to the economy. The industry is the main source of job creation since the jobs are created at the early stages prior to the start of physical construction. It also supports a great deal to the fight against poverty mitigation**(Dykstra, 2011)**.

The construction industry is known for its complex and tough competitive environment. This makes it hard for most emerging new firms to survive and make an outstanding growth in their size and quality. These sums up to make the industry also known for its highest failure rate **(Lasker, 2010)**. Life cycle is part of any organizations existence. Accordingly the organizational life cycle consists of four phases namely Start up, Emerging growth, Maturity and Revival **(I.M Jawahar, 2001)**. The focus of this paper is the startup cycle of an organization especially startup construction companies.

A company at the early stages of its operation is called a startup(B.Gurel, 2015). Startups can enter an existing market or in other times unbolt new market with new and innovative products or service(S.Stubner, 2007). Startups are vital to the economy of one's nation (P.Basu, 2015)including Ethiopia and the construction industry is one of the most promising startup businesses in Ethiopia. It is rational to assume in evolutionary terms the history of small businesses and organizations (Simon, 1993)and the history also supports the evolution of organizations. This history lacks enough attention on the very early stages of a company which is the startup phase (Salamzadeh A. , Innovation Accelerators: Emergence of Startup, 2015 a). Yes existing literatures didn't study the early phase enough but there are many studies that examine controversial issues in this particular domain(Salamzadeh A. , ew Venture Creation: Controversial Perspectives Theories. Economic Analysis, 2015 b). The work of different scholars in management, organization and entrepreneurship and other related fields who choose to pursue this field will shape the profoundly the application of theories to make a clear picture of these entities (Salamzadeh A. , Innovation Accelerators: Emergence of Startup, 2015 a). It is stressed that studies of startups are very important due to the following related reasons;

i. Most startups fail in the early stages of and others turn themselves in to companies – "high rate of failure" (Vesper, 1990),

ii. Failure occurs due to lack of finance, problems of team management, lack of business knowledge, technology gap and etc.-"startup problems"(Núñez, 2007),

iii. Those that turn into companies will play a significant role in the economy- "success stories"(Martinsons, 2002),

iv. The black box called "valley of death"(Hudson, 2013).

This mentioned black box is more of a metaphor than a well-defined stage like the others but it is even if this so called black box is well studied, the startup itself is ignored as the level of analysis- "startup stage(Van de Ven, 1984)''.

2.2. Startups; Lifecycle and Characteristics

The early-stage companies sectors are viewed as an important platform to make considerable progress for the creation of new jobs especially by government that are struggling with high unemployment rate. They are also viewed as a key catalyst for change for some groups in the society seeking change. The Obama Administration motivated its Startup America Partnership as follows: "Companies less than five years old account for all of the net growth in our country between 1980 and 2005". Before examining the critical factors that determine the success or failure of startups, it is essential to understand the life cycle of startups first. Startups are diversified and complex in nature, but they have their own lifecycle as any other organization. The sequence of activities and stages might vary among different startups; but here in this paper a holistic perspective is presented to offer a better understanding of the lifecycle of startups (Salamzadeh A. F., 2015). The stages explain what startups go through in their life time. The stages are as described in the figure below.

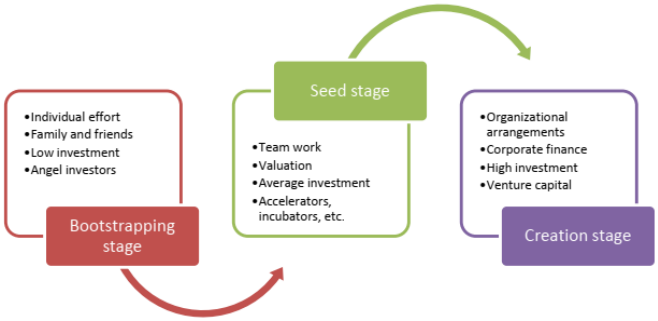

Figure 1: Life cycle of Startups

New technology based companies also known as startups are born each year since there is a growing trend of towards new innovative businesses all over the world(Hormiga et al., 2010). The study by (Krejcie)indicated that a Startup is a new and temporary company that has a business model based on innovation and technology. Also, these types of companies have a budding for rapid growth and scalability. Startups are also known for their contribution to economic stability, growth, and job creation as governments around the world verify.The concept of startups is more related to companies that are beginning or in their earliest stages of development (Sulayman al, 2014) and (Spiegel al., 2015).

As a new model of social and economic growth in the most dynamic markets of the world, the figure of startup has acquired key significance and startups are important for the development of any country's economy in particular for developing countries. As more startups thrive into large companies they fuel the economy. The development of entrepreneurship, employment and economy follows as a result of more entrepreneurial firms joining the scuffle. There are numerous challenges in converting startups into larger firms. Since there is a high rate of failure in the construction industry only few entrepreneurs can go against the tide and achieve success. So it is safe to say the survival rate of startups established by entrepreneurs is low leaving many startups exposed to the hardship of failure (Pena, 2002). As it is observed in the context of the US, about 90% of startups fail in the first 5 years (Forbes, 2017)and this phenomena holds true for the Indian context too (Line, 2017). The situation may not be widely different in other economies. This research tries to find out if the data in the countries mentioned above is also true for our country case. It may be a bit tricky to explain the characteristics of startups in one sentence or paragraph. The characteristics of startup is hard to be explained in one dimension so different dimensions are used. Based on startup characteristics on literatures(R.E Quinn, 1983), (D. Miller, 1984), (D.L Lester, 2008), (M. Scott, 1987), and (Lippi, 2013)characteristics are classified into four different dimensions: Organization (the character of the startup organization), Ownership (characteristics of owner, decision making, and supervision), Strategy and Innovation, and Financial. These list are built up from the previous literature, the similar characteristics that fall under those four are grouped as one. In the table below the characteristics of startup companies in different dimensions are summarized.

Dimension	Characteristics
Organization	Small scale organization
	Young age
	Homogeny environment
	Informal structure
	Few differentiation
Ownership	Centralized
	Owner-manager
	Intuitive decision making
	Direct supervision
Strategy & Innovation	Niche marketing strategy
	Prefer risky decision than the secure one
	Fast innovation
	First mover or second Mover
	Lack of product research
Financial	Funding from personal savings or from relative

Table 1: Characteristics of Startup Companies

Most of startup organizations are organic organization that are very flexible and are able to adapt well to changeswith high centralization (E.A Gurianova, 2014), thus provide flexibility in decision making and are quiet adaptive. Most startup has simple organization structure (D.L Lester, 2008)that has many characteristics, such as low departmentalization, wide span of control, centralized authority and low formalization (S.P Robbins, 2013). Most startups owner are also the manager of the company that make decisions. Reference (McMahon, 2007)startups are classified into four class of owner manager. In decision making startup is characterized by intuitive decision making. Startups sometimes has established competitor thus they prefer specialist or niche marketing(C.L Escalante, 2006). Startups have high rate of innovation and as a result prefer first mover strategy (D.L Lester, 2008). Startups are also mostly funded by personal savings or from relative(M. Scott, 1987). The other option is using bootstrap financing, a method of funding with modest personal funds(A.M Hormozi, 2002).

Why some firms are successful while other firms appearing to follow the same paths not successful? What is success in startups and what factors determine success of startups? Those are the questions this paper tries to address. But first let's understand what success means according to different related literatures.

2.3. Definition of Success

The term success has different meaning to different people. The way an entrepreneur defines it differs from that of an investor or a client. An entrepreneur could define success as whether the business generates greater revenue. While an investor defines it as if the company where he or she invested in allows them to earn more money. Others can define it as the fulfillment of their personal goals. The following definitions by different authors found in different studies can help us understand the term success from different perspectives. There is no single definition of success but for the purpose of this paper combination of the following definitions mentioned in the table below are used.

Success is defined by the number of jobs the company has generated	March-Chorda, 2004
It is given by its share in the market and the size of the customers	Van Gelderen et al., 2005
It is the growth of sales and profitability, which has to be similar or higher than the industry average	Wing-Ki et al., 2005; Hormiga et al., 2010
Success in the entrepreneurial ecosystem is that they buy or get you to go public	Colombo & Grilli, 2010; Krejci et al., 2015; Hyder & Lussier, 2016
It is having a business that allows you to live the way you want. Some employers want to avoid working for someone else	Chirjevskis & Dvortsova, 2012
It is the achievement of the goals and objectives of the company and also as a measure of good management	Anh et al., 2012; Thanh, 2015
Success is in creating something that truly contributes to improving the lives of others	(Sulayman al, 2014)
It is the good financial performance of the company	(Spiegel al., 2015)

Table 2: Definition of Success According to Different Authors

Success is defined differently from different fields and industries and accordingly there are different factors affecting and determining it.A study by (Beckman, March, 1996)suggests that an experience in business is a major factor of success for small firms. Another study by (Costa, 1994)indicates for a long-running success of businesses strategic planning plays a great role. Quality, customer focus, innovate marketing practices, flexibility and employee empowerment are also other factors of success(Zetlin, 1994). (Filley, 1991)defined several tools for the success of small firms; good management techniques such as appropriate operating strategies, leadership and time management, good financial management and pricing strategies, motivational strategies

for employees, and ensuring the hire of employees with ability. There have been other several studies conducted that have looked at suitable management and financial planning and skill development of managers.

(Dyke, 1992)found that Successful business performance in small businesses environments are mainly achieved by the significant influence of management experience. Knowledge, management, manpower, materials, plant, equipment and finance can also be the factors that determine the success of a company. Success in turn is influenced by diverse factors. According to different authors there are diverse factors that influence the success of startups.

Construction companies often use the successful management and completion of their projects as a measurement of success. The construction industry is one of the most used examples of project based industries (Ahadzie, 2008). Accordingly the success of a project can be used as an indicator of the success of a company including a startup construction company.

The determination of whether a project is a success or a failure is complex since the concept of project success is an abstract (Chan APC., 2002a). There is a consensus about the importance of this concept but there is no integrated treatment and definitions of it. In this respect,(Prabhakar, 2008) generalizes that the only agreement in this front is the disagreement on the issue "what is project success". (Baker B. M., 1983)noted that the really vital part is whether project stakeholders are fully satisfied by its results.

One commonly agreed hypothesis is if a project is completed on time, within the placed budget and agreed quality, then the project is considered successful. But the existing evidence suggests that this is far from the truth. Since the late, project management researchers have tried to discover what factors lead to project success (Baker B. M., 1988);(Pinto J. K., 1988).

2.4. Critical Success Factors (CSFs)

When properly sustained, maintained, or managed, the conditions and characteristics of Critical Success Factors, can have a significant impact on the success of a firm competing in particular industry (Bruno, 1984).

Critical is anything that could per definition single-handedly decide over life or death. Critical, in aspect of Success Factors, is a determinant that could alone, without altering the other determinants, decide over Success or Failure of a company. For example, most companies without any kind of marketing is certain to fail, no matter how ingenious its products are. On the

other hand, a company can survive without smaller aspects of marketing, such as advertisement or marketing research.

CSFs can have a positive outcome on a project if they are carefully considered and identified. (Barrar, 1992)States “the performance of an enterprise is the culmination of intricate interactions of a large number of factors”. Therefore, removal of individual Critical Factors would highly impair the performance and cause failure.

(Rockart, 1982)Mentioned that to guarantee future success, a company and its respective industry should identify its CSFs. Thus CSFs are, for any business, the limited number of areas in which result, if they are satisfactory, will ensure competitive performance of the organization. New participants and also established companies in the construction industry can use these factors to simply help themselves in better project delivery for future projects (Bullen, A primer on critical success factors. Sloan School of Management, 1981).(Kerzner, 1998)defined the critical success factors as those components that are required to establish an environment where projects are “managed consistently with excellence”.

Three distinct groups of CSFs were found: factors concerning the organizational level, the characteristics of the entrepreneur and the character of the innovation. In an organizational level there are important influencers include the process of interaction with the environment and the degree of customer pro-activeness(Sandberg, 2008);(Abetti, 2000);(Trauffler, 2007), the process of setting up the radical innovation (Brink, 2005);(Trauffler, 2007),free communication(Abetti, 2000), market information acquiring methods (Trauffler, 2007), market technology developments acquiring methods(Trauffler, 2007) , business structure and plan (Brink, 2005); (Salomo, 2007), execution of process & methods(Abetti, 2000);(Trauffler, 2007) and being an expert(Abetti, 2000);(Brink, 2005). The important influencers on an entrepreneurial level include having technological skills, market insight and being entrepreneurial (Brink, 2005). The important influence on innovation level is the degree in which the radical innovation offers a unique advantage compared to the existing possibilities (Abetti, 2000).

The term ‘’critical success factors’’ in the context of projects and its management was first used by (Rockart, 1982) and is defined as those factors foretelling success in projects (Sanvido V, 1992). CSF are those few things that must go well to ensure for a manager or an organization, and, therefore they represent those managerial or enterprise areas that must be given special and continual attention to bring about high performance. The first classification of critical success factors in the area of project management systematically is provided by (Schultz, 1987). These

authors identifytwo groups of factors namely strategic and tactical – which influence project performance atvarious stages of project life cycle. For instance, the "strategic" group consists offactors such as project mission, top management support, and project scheduling. The"tactical" group on the other hand includes factors as client consulting, human resource selection and personnel training. Additionally, (Pinto J. K., 1988)considered the specific and various stages of project life-cycle and augmented the range of success factors. Research has shown that impact of success factors can vary at different phases of the project life-cycle and in relation to the measures of success chosen by analysts.

A review of the literature identified the critical success factors and their corresponding categories as shown in the table below (Tsiga Z. E., 2016). The categories mentioned in the table below helps to identify which factors are affecting the success of a company.

Although the situation in different countries and areas of business differ and it could be difficult to generalize, the different categories and factors under them can be used as a bench mark and the case for our country can be investigated accordingly.

Category	Critical Success Factors
External Challenge	Economic environment
	Social environment
	Political environment
	Physical environment
	Regulatory/legal environment
Client knowledge and Experience	Nature of finance
	Experience
	Organization size
	Emphasis on cots quality and time
	Ability to brief
	Decision making
	Roles and contribution
	Expectations and commitment
	Involvement and influence
Top Management Support	Support given to project head
	Support to critical activities
	Understanding of project difficulty
	Stakeholder influence
Institutional Factors	Standards and permits

Project Characteristics	Project type
	Size
	Nature
	Complexity
	Design
	Resources allocation time
	Level of technology
Project Manager Competence	Experience
	Coordinating and motivating skills
	Leading skills
	Communication and feedback
	Management skills
	Conflict resolution skills
	Organizing skill
Project Organization	Planning and control effort
	Team structure and integration
	Safety and quality program
	Schedule and work definition
	Budgeting
	Control of subcontractors
Contractual Aspects	Contract type
	Tendering (procedures or steps for the selection of that service)
	Procurement (company selection to provide services) process
Project Team Competence	Team experience
	Technical skills
	Planning and organizing skills
	Commitment and involvement
	Teams adaptability to changing requirements
	Working relationships
	Educational level
	Training availability
	Decision making effectiveness
Project Risk Management	The factors under project risk management are sub divided into two which are firstly hard aspects with: • Initiation • Identification • Assessment • Response planning • Response implementation

	secondly soft aspects of risk which are: • Risk communication and attitude • Risk monitoring and review
Requirements Management	Elicitation technique
	Identification
	Analysis and negotiation
	Modeling
	Validation and scope management

Table 3: Critical Success Factors and Categories According to Different Authors

There are many other authors who have also looked at the concepts of CSFs. The table below similarly explains the concept of critical success factors according to various authors:

Author	Critical Success Factors (CSFs) identified
(Pinto J. K., 1988)	Mission, top management support, schedule, client consultation, personnel, technical, client acceptance, communication, feedback, and trouble shooting
(Chua, 1999)	Project characteristics, contractual arrangements, project participants and interactive processes
(Chan, 2004)	Project team commitment, contractor's competences, risk and liability assessment, client's competences, user's needs and constraints by users
Yu *et al* (2005b)	Project related factors, human related factors, process related factors, input-related factors and output related factors
(Saqib, 2008)&(Babu, 2015)	Project management factors, procurement related factors, client related factors, design team related factors, contractor related factors, project management related factors and business & work related factors
(Gunasekera, 2009)	Time related factors, cost related factors, and quality related factors
(Garbharran, 2012)	Comfort factors, competence factors, communication factors and commitment factors
(Banaitis, 2012))	Unclear or unattainable objectives, poor scoping, poor estimation, budget based on incomplete data, contractual problems, delays, quality concerns and insufficient time for testing
(Sugumaran, 2014)	Decision making effectiveness, project manager's experience, contractor's cash flow, contractor experience, timely decision by owner or owner's representative, site management, supervision, planning effort, prior project management experience, and client's ability to make decision
(Amade, 2015)	Efficient and effective procurement process/method, effective communication management, adequate planning, leadership skills of the project management, weather conditions, and effective coordination of project activities

(Tsiga Z. E., 2016)	Project organization, project manager competence, project risk management, project team competence,Project emission, top management support, project schedule plans, client's consultations, project personnel, technical task, client's acceptance, monitoring &feedback, communication and troubleshooting,Project management action, project procedures, human factors, external issues and project related factors and requirements management
(Silva, 2016)	Adequate communication among all participants, effective quality assurance program, top management support & commitment to the project, availability of advanced/new technologies/construction equipment, detailed project planning, estimations & scheduling.

Table 4: Definition of CSFs According to Different Authors

2.5. Conclusion

Startup construction companies are companies at the early stage of their operation. Like other organizations startups also have their own lifecycle that determines their journey. The critical factors that determine the success or failure of startups can be better understood from understanding the life cycle of startups first. The most general perspective to understanding life cycle of startups defines the stages as Bootstrapping, Seed and Creation Stage. As many authors agree startup construction companies in developing countries are critical for the development of the construction industry and the economy of the country as a whole. The case in our country is no different. Startups are characterized by their small scale organization, young age, homogeneity environment, informal structure, centralized and intuitive decision making, flat organizational structure, niche marketing strategy, first movers and fast innovation.

Success means different things to different people and different industries. The way success is defined in the technology industry may not apply for the case of the construction industry. Success can be defined as the achievement of the goals and objectives set by a company, the growth of sales & profitability, the successful completion and management of projects and the good financial performance of a company. It is observed that there is no sole definition for success in literatures. But one thing that makes all of them common is the growth of the company and the number of jobs generated. With respect to growth, it is a validation that the product and/or service offered by startup has the ability to attract users/customers. On the other hand, the creation of jobs is directly influenced by the growth of the company and the growth of the entrepreneurial ecosystem. Generally, a successful startup is considered a new company that

offers products and/or services capable of being well received in the market, looking for a repeatable, profitable and scalable business model, generating jobs or manage to transform the way people do things.

Among many industries, the construction industry is one of the project based industries. The successful completion and proper management of projects is mostly used as the measure of success for construction companies. A number of aspects which include both internal and external factors can be used to determine the success of a company. What is project success is a question that is abstract and complex for most people. Good schedules and correctly utilized budgets will not matter if the final project outcomes do not meet the expectations and goals. The best tools used to determine what factors lead to project success are Critical Success Factors.

Critical Success Factors are characteristics, conditions or variables that have a significant impact on the success of a company competing in particular industry when properly sustained, maintained, or managed. The two most commonly stated variables that seem to make the difference in companies are capital and management experience. The critical factors that highly influence the success of projects and companies as a whole identified by different authors are External Challenges, Client knowledge and Experience, Top Management Support, Institutional Factors, Project Characteristics, Project Manager Competence, Project Organization, Contractual Aspects, Project Team Competence, Project Risk Management and Requirements Management. When these factors are properly managed in a company then they can positively determine the success of a project which then leads to the success of the overall organization. If one of the factors is removed then they have the power to highly influence the performance of projects and the overall company. CSFs are also classified in three distinct groups' namely organizational level, characteristics of entrepreneurs and characteristics of innovation.

Each group has different characteristics under them describing the factors that highly influence the success or failure of companies. This paper then tries to find out the extent to which CSFs highly affect the success of a startup construction company in Ethiopia.

2.6. Research hypothesis and Conceptual Framework

2.6.1. Research Hypothesis

This research carried out tests on the following hypothesis: The dependent variable is Success of Startup Construction Companies in Ethiopia. Whereas, the following are independent variables.

Among the different critical success factors; eight were chosen for this study. The reason is that the researcher wanted to grasp the effect of;

- Changes ofdifferent environments outside of the company's control have on the success of the organization.
- The organization and characteristics of projects within the company has on the success of startups.
- The competence of the project teams and managers have on success of startups.
- clients of a company has on the success of startups and
- The procurement and tendering process has on the success of startups.

Accordingly the null hypothesis for each independent variable was constructed as follows;

***H_0*.1:** External Challenge doesn't significantly affect the success of startup construction companies.

***H_0*.2:**Top Management Support doesn't significantly affect the success of startup construction companies.

***H_0*.3:**Project Team Competence doesn't significantly affect the success of startup construction companies.

***H_0*.4:**Project Manager Competence doesn't significantly affect the success of startup construction companies.

***H_0*.5:** Project Characteristics doesn't significantly affect the success of startup construction companies.

***H_0*.6:** Project Organization doesn't significantly affect the success of startup construction companies.

***H_0*.7:** Client Knowledge and Experience doesn't significantly affect the success of startup construction companies.

***H_0*.8:** Contractual Aspect doesn't significantly affect the success of startup construction companies.

2.6.2. Conceptual Framework/Models

Various research outcomes produced a number of models aimed at understanding critical success factors and how those factors have the power to influence the success of organizations. A company and its respective industry should identify its CSFs to guarantee future

success(Rockart, 1982). The different CSFs in the construction industry has been identified by different researchers and those suitable for this study has been adopted accordingly. Thus CSFs are, for any business, the limited number of areas in which result, if they are satisfactory, will ensure competitive performance of the organization. New participants as well as established companies in the construction industry can use these factors to simply help themselves in better project delivery for future projects (Bullen, A primer on critical success factors. Sloan School of Management, 1981). This study tried to understand how the selected CSFs are affecting startups and how they are being exercised in the companies currently.

The general form of the model is presented below. The independent and dependent variables are described in mathematical equations:

$$(SOS) = \alpha + (EC)X1 + (TMS)X2 + (PTC)X3 + (PMC)X4 + (PO)X5 + (PC)X6 + (CKE)X7 + (CA)X8 + e$$

Where, SOS = Success of Startups,

EC = External Challenge

TMS= Top Management Support

PTC = Project Team Competence

PMC = Project Manager Competence

PO = Project Organization

PC = Project Characteristics

CKE = Client Knowledge & Experience

CA = Contractual Aspect

α is constant and EC, TMS, PTC, PMC, PO, PC, CKE and CA are critical success factors to estimate the success of startups and e is the error term. The dependent and independent variables that are going to be used in this study are shown as a study frame work in the figure below.

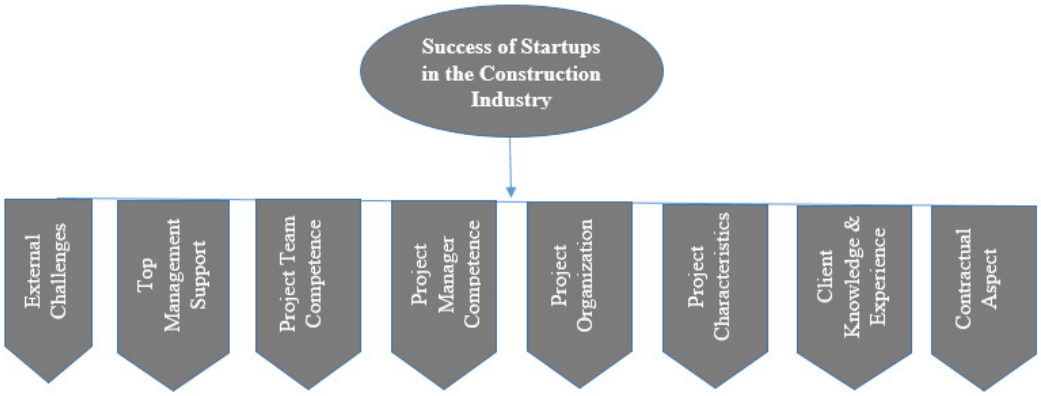

Figure 2: Conceptual Model for Success of Startups in the Construction Industry

CHAPTER III

3. RESEARCH METHODOLOGY

3.1. Introduction

This chapter is dedicated to familiarize the methodology used to realize the objective of this study and to answer the research questions brought in this study. This chapter includes the research design method used, the data collection methods, measurement and research variables, population and sampling techniques, ethical issues related with this study and the analysis methods used to interpret the results into sensible conclusions.

3.2. Research Design

The tool used to achieve the relationship between the critical success factors and success of startups in this study is by developing a conceptual framework. Critical success factors are variables that can have a significant impact that delivers measurable improvements to the company's success i.e. the success of projects. Organizations/companies look to foretelling tools to help them speed their progress toward performance improvement, and to guide them around pitfalls that might otherwise slow or even end their initiatives of the company's performance. Therefore, in order to improve the company's performance, it is essential to determine the critical success factors in the current company's practices. In order to achieve this, the variables for startups success and the effect are essentially important to be identified and established towards achieving the objective of this study.

Among the different design methods used in previous researches, this study used a mixed design method i.e. qualitative and quantitative research design which includes descriptive research design method and inferential statistical analysis research design method. Saunders et al. and Miller say that descriptive research portrays an accurate profile of persons, events, or situations. This design offers to the researchers a profile of described relevant aspects of the phenomena of interest from an individual, organizational, and industry-oriented perspective. Descriptive studies are aimed at finding out"what is".

Therefore, this research design was chosen because this study aims at finding out effect of critical success factors on the success of startup construction companies. And this design enabled the researcher to gather data from a wide range of respondents on the effect of CSFs. And also to make inferences from our data to more general conditions. It helps in reaching conclusions that extend beyond the immediate data alone.

3.3. Data Collection, Measurement & Research Variables

There are different types of data. Primary data and secondary data. Primary data is collected by a researcher from first-hand sources, using methods like surveys, unstructured and structured interviews, focus groups or experiments.Secondary data refers to data that is collected by someone other than the user. Common sources of secondary data for social science include censuses, information collected by government departments, organizational records and data that was originally collected for other research purposes. Taking into consideration both the final objective of this study and the main research question, both sources of data were used.

The research variables are success, critical success factors and project success. The variables measured the success of startup construction companies in Ethiopia. And the variables also determined to what extent the critical success factors affect the success of startups and how the success of projects are related with the overall success of the organizations.

The questionnaire was developed on the basis of the items in the critical success factors column. The interview questions were adopted and tailored in a way that fits the organization under the study. Interviews were conducted to get meticulous and supporting information in addition to the questionnaire responses. Survey method was used and the questionnaires and interviews were distributed to 162 General Managers/Company Owners of startup construction companies.

3.4. StudyPopulation, Sampling Techniques, Sampling Size and Frame

3.4.1. Study Population

A population is a well-defined collection of individuals or objects who share a common characteristic, such as age, sex, health condition or others in which a statistical sample can be drawn from.

The population interest of this study is startup construction companies. Among those, General Contractors grade 5 and above registered in Addis Ababa from the year 2006 to 2010 E.C are the interest target population. According to the information from the Ministry Of Urban Development and Construction, Construction Industry Development & Regulatory Bureau there are a total of7,943 registeredContractors in Ethiopia from the year 2006 E.C till now. And among them 273 of them are GC 5 and above companies. As per the selection criteria of the target population mentioned early, the number of the target population is 162. These are considered as study population and are subjected to the sampling procedures.

3.4.2. Sampling Techniques and Sampling Frame

A sampling frame is a list of individuals or events, source material or device from which a sample is drawn. It comprises a list of all those within a population that are chosen to be sampled. This may include individuals, businesses, organizations or institutions(Saunders, M., Lewis, P., & Thornhill, A., 2012). The sampling frame for this study was comprised of Grade 5 and above General Contractors.

In this research the total population was GC 5 and above startup construction companies in Ethiopia established after the year 2006 E.C to 2010 E.C with a place of registration in Addis Ababa which is 162 as mentioned above. Due to the large number of contractors established in the country and for the feasibility and management of data collection those contractors that are registered in Addis Ababa were selected for the collection of data. Mostly owners of startup companies are the managers and the decision makers. Therefore the respondents for this study were company owners.Interview questions were conducted to find out if the companies under investigation relate the success of projects to the success of the overall organization.

3.4.3. Sampling Size Determination

Sample size is defined as the number of observations used for calculating estimates of a given population. To determine the desired sample size for this particular study, the followingformula was used as suggested: http://prudencexd.weebly.com. Thus, the (Solvin's formula) was adopted:

Slovin's Formula:

$$\boldsymbol{n = \frac{N}{1 + N(e)2}}$$

Where:

N=Number of target population

n = Sample size to be determined

e = level of confidence = 0.05

Accordingly, $= \frac{273}{1+273(0.05)2} = 162.295$

Therefore, the sample size for this study was determined to be 162 that represents GC 5 and above start up construction companies registered in Addis Ababa, given confidence level of 95% and precision rate of ±5 percent.

3.5. Methods of Data Analysis

The data is analyzed by inferential statistics and hypothesis testing. The data collected from the questionnaires is measured by ordinal scale and analyzed quantitatively and is illustrated using tables. Data obtained from interviews and open ended questions is analyzed qualitatively and is used to support the quantitative data and to get more insight about the data from the questionnaire.

Applying this method was helpful to find out the extent to which critical success factors affect the success of startup construction companies and how the success of projects is related to with the overall success of the organizations.

3.6. Validity and Reliability

The degree to which the data collection tools or analysis procedures yield consistent findings is refereed as Reliability **(Saunders M. & Thornhill, 2009)**. The Reliability analysis measures the following; the internal consistency on group of items which are used in a questionnaire and the homogeneity or cohesion of the items that comprise each scale.The most frequently used index of reliability is Cronbach's. Cronbach's alpha Coefficient is the most common way to assess reliability. According to **(Saunders M. & Thornhill, 2009)**a Cronbach's alpha coefficient above 0.70 is regarded as satisfactory.

Questionnaire and interview questions were prepared in a way that closely relates to the research questions. An appropriate and careful data collection technique was used. The Likert questionnaire was developed following the research questions and the interview questions were adopted and modified to fit the purpose of the study. The Cronbach's alpha coefficient for this

study was calculated by distributing questionnaires and a Cronbach's coefficient which is greater than 0.7was considered acceptable.

3.7. Ethical Issues

In this study, the process of collection, analysis and interpretation of data were done by the strict follow up of all the ethical paths and requirements. The researcher accept the general agreements of the scientific community on what was acceptable and what was not in the process of conducting scientific research. Accordingly the following the ethical issues in research were practical:

- ✓ The purpose of the study was clearly communicated to respondents prior to the distribution of questionnaires and conducting interviews.
- ✓ Questionnaires were distributed and interviews were conducted following the absolute willingness of the respondents.
- ✓ Respondents were treated with respect.
- ✓ There was no risk or any other related problem faced by the participants.
- ✓ Copyrights and patents, together with other forms of intellectual property of respondents were properly acknowledged for the contribution of this research.
- ✓ Anything that has been provided in confidence was respected and proper precautions were taken to protect sensitive information.
- ✓ Bias in any aspect of this research, including design, data analysis, interpretation, and peer review was avoided.

CHAPTER IV

4. DATA ANALYSIS AND INTERPRETATION

4.1. Introduction

The objective of this paper is to assess the factors affecting the success of startup construction companies in Ethiopia established after the year 2006 E.C. This chapter dealt withthe presentation, analysis, and interpretation the data collected from participants for this particular study. It has two main parts: the first part is the background information of the respondents and the second part consists of data collected from respondents through questionnaire and an interview. The data collected from respondents were analyzed and interpreted using both quantitative and qualitative analysis which involves analysis of the information of respondents regards to the relation of project success and overall organizational success and the descriptive analysis to analyze the collected data in line with the overall objective of the research undertaking, statistical procedures were carried out using SPSS version 26. Out of 162 distributed questionnaires, 162 were collected. According to **(Mugenda, 2003)**a response rate of more than 70% can be considered as excellent response rate that is sufficient enough for analysis and reporting. Therefore, the response rate obtained, which 100% was stood obvious to be highly satisfactory to support the analysis of this study.

4.2. Demography of Respondents

The descriptive analysis was done to understand the year of experience the respondents have in the construction industry. The demographic compositions of the respondents are summarized below.

I. Your year of experience in the construction Industry

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2-5 years	2	0.7	1.2	1.2
	5-10 years	78	25.6	48.1	49.4
	>10 years	82	26.9	50.6	100.0
	Total	162	53.1	100.0	

Table 5: Years of Experience in the Industry

As it can be seen in the above table, 1.2 % of the respondents have an experience of between 2 and 5 years, 48.1% of the respondents have 5 to 10 years of experience, 50.6% of them have an experience of more than 10 Yearsin the construction industry. This tells us most of the respondents have an experience more than 10 years in the construction industry. The histogram diagram also shows more than half of the respondents have

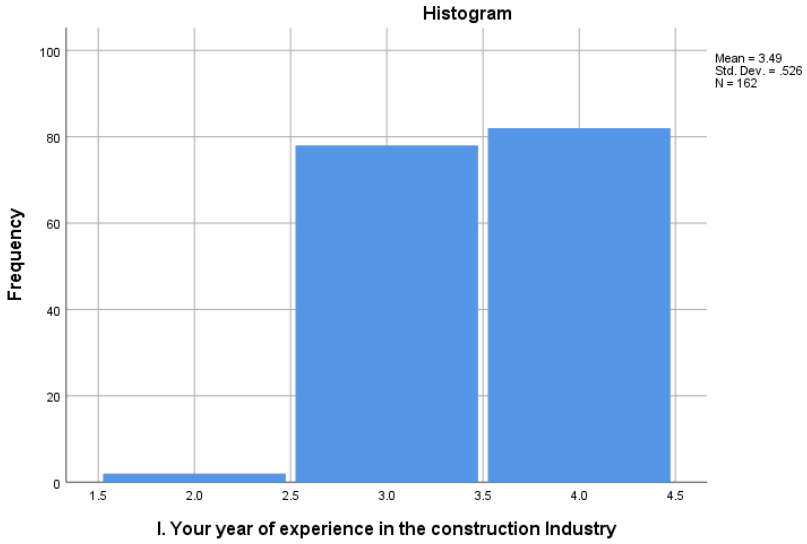

Figure 3: Years of Experience in the Industry

4.3. Descriptive Analysis

This sectiondiscuses two parts. The first one, the measuresofthe responses for the variables respondents gave. The responses are measured on five Likert Scale with: 5= Strongly Affect, 4= Affect, 3 = Medium, 2= Low Affect and 1= Not Affect. The second one, descriptive analysis in the form of mean and standard deviation**.** While making interpretation of the results of mean the scales were reassigned using the formula adapted from(Viche, 2005). The 5 point scales, the interval for breaking the range in measuring each variable is calculated by 5−1/5= 0.8. It means items with scores that fall between the ranges of: 4.21–5.00 - Strongly Affect, 3.4 – 4.20- Affect, 2.61–3.4-Medium, 1.81–2.6- Low Affect and 1.00–1.8-Not Affect. The descriptive statistics which are in the form of the frequency and percentage of the responses were presented first and those in the form of mean and standard deviation second.

4.3.1. External Challenge

External challenges considered as a variable agreement levels were considered on the following aspects such as external environment, social environment, political environment, physical environment and legal environment, are described in detail in the Tablebelow.

Effect of External Challenge	Count	Not Affect	Low Affect	Medium	Affect	Strongly Affect
1.1. The effect of External Environment on the success of a construction company	Frequency	0	18	19	43	82
	Percent (%)	0	11.1	11.7	26.5	50.6
1.2. The effect of Social Environment on the success of a construction company	Frequency	0	0	24	79	59
	Percent (%)	0	0	14.8	48.8	36.4
1.3. The effect of Political Environment on the success of a construction company	Frequency	0	18	19	43	82
	Percent (%)	0	11.1	11.7	26.5	50.6
1.4. The effect of Physical Environment on the success of a construction company	Frequency	0	4	40	51	67
	Percent (%)	0	2.5	24.7	31.5	41.4
1.5. The effect of Legal Environment on the success of a construction company	Frequency	0	0	52	56	54
	Percent (%)	0	0	32.1	34.6	33.3

Table 6: Effect of External Challenge

Firstly, the response towards external environment 82 (50.6%) of the respondents said strongly affect and 43(26.5%) of respondents said affect. On the other hand, only 19 (11.7%) of respondents said medium affect, while 18(11.1%) respondents agreed on its low affect.

Secondly, the response towards social environment 59 (36.4%) of the respondents said strongly affect and 79 (48.8%) of respondents said affect. On the other hand, only 24 (14.8%) of respondents said medium affect.

Thirdly, the response towards political environment 82 (50.6%) of the respondents said strongly affect and 43(26.5%) of respondents said affect. On the other hand, only 19 (11.7%) of respondents said medium affect, while 18 (11.1%) of respondents agreed on its low affect.

Fourthly, the response towards physical environment 67 (41.4%) of the respondents said strongly affect and 51(31.5%) of respondents said affect. On the other hand, only 40 (24.7%) of respondents said medium affect, while 4 (2.5%) of respondents agreed on its low affect.

Fifth, the response towards legal environment 54 (33.3%) of the respondents said strongly affect and 56 (34.6%) of respondents said affect. On the other hand, only 52 (32.1%) of respondents said medium affect.

The second part is the result in the form of mean and standard deviation. Regarding external challenges, the table below presents all items fall in the strongly affect and affect agreement range. This result implies that the respondents in the study area have an agreement that external, social, political, physical and legal environment of the construction industry highly affect the success of startup construction companies.

Descriptive Statistics				
	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
1.1. The effect of External Environment on the success of a construction company	162	4.17	0.080	1.023
1.2. The effect of Social Environment on the success of a construction company	162	4.22	0.054	0.685
1.3. The effect of Political Environment on the success of a construction company	162	4.17	0.080	1.023
1.4. The effect of Physical Environment on the success of a construction company	162	4.12	0.068	0.866
1.5. The effect of Legal Environment on the success of a construction company	162	4.01	0.064	0.811

Table 7: Descriptive Statistics- External Challenge

4.3.2. Top Management Support

Top Management Support considered as a variable agreement levels were considered on the following aspects such as support given to project head, support given to critical aspects, understanding of project difficulty, and stakeholder influence are described in detail in the Table 8 below. So, regarding Top Management Support the following descriptive results were obtained.

Effect of Top Management Support	Count	Not Affect	Low Affect	Medium	Affect	Strongly Affect
2.1. The effect of Support Given to Project Head on the success of a construction company	Frequency	0	18	9	92	43
	Percent (%)	0	11.1	5.6	56.8	26.5
2.2. The effect of Support Given to Critical Activities on the success of a construction company	Frequency	0	18	18	27	102
	Percent (%)	0	11.4	9.3	16.7	63.0
2.3. The effect of Understanding of Project Difficulty on the success of a construction company	Frequency	0	0	24	79	59
	Percent (%)	0	0.0	14.8	48.8	36.4
2.4. The effect of Stakeholder Influence on the success of a construction company	Frequency	0	0	24	69	69
	Percent (%)	0	0.0	14.8	42.6	42.6

Table 8: Effect of Top Management Support

Firstly, the response towards support given project head to43 (26.5%) of the respondents said strongly affect and 92(56.8%) of respondents said affect. On the other hand, only 9 (5.6%) of respondents said medium affect, while 18 (11.1%) respondents agreed on its low affect.

Secondly, the response towards support given to critical activities 102(63.0%) of respondents said strongly affect and 92(56.8%) of respondents said affect. On the other hand, only 9(5.6%) of respondents said medium affect, while 18(11.1%) of respondents agreed on its low affect.
Thirdly, the response towards understanding of project difficulty 59(36.4%) of respondents said strongly affect and 79(48.8%) of respondents said affect. On the other hand, only 24(514.8%) of respondents said medium affect.

Fourthly, the response towards stakeholder influence 69(42.6%) of respondents said strongly affect and 69(42.6%) of respondents said affect. On the other hand, only 24(514.8%) of respondents said medium affect.

The second part is the result in the form of mean and standard deviation. Regarding top management support, the table below presents all items fall in the strongly affect and affect agreement range. This result implies that the respondents in the study area have an agreement that support given to project head and critical activities, understanding of project difficulty and the stakeholders influence in a company highly affects the success of startup construction companies.

Descriptive Statistics				
	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
2.1. The effect of Support Given to Project Head on the success of a construction company	162	3.99	0.069	0.878
2.2. The effect of Support Given to Critical Activities on the success of a construction company	162	4.31	0.081	1.036
2.3. The effect of Understanding of Project Difficulty on the success of a construction company	162	4.22	0.054	0.685
2.4. The effect of Stakeholder Influence on the success of a construction company	162	4.28	0.056	0.707

Table 9: Descriptive Statistics- Top Management Support

4.3.3. Project Team Competence

Project Team Competence considered as a variable agreement levels were considered on the following aspects such as project team experience, technical skill, commitment and involvement, planning and organizing skill, adaptability to changes, working relationships, educational level, training availability and decision making effectiveness are described in detail in the Table 9 below. So, regarding Project Team Competence the following descriptive results were obtained.

Effect of Project Team Competence	Count	Not Affect	Low Affect	Medium	Affect	Strongly Affect
3.1. The effect of Project Team Experience on the success of a construction company	Frequency	0	0	49	59	54
	Percent (%)	0	0	30.2	36.4	33.3
3.2. The effect of Project Team Technical Skills on the success of a construction company	Frequency	0	0	53	55	54
	Percent (%)	0	0	32.7	34.0	33.3
3.3. The effect of Project Team Planning and Organizing skills on the success of a construction company	Frequency	0	36	65	58	3
	Percent (%)	0	22.2	40.1	35.8	1.9
3.4. The effect of Project Team Commitment and Involvement on the success of a construction company	Frequency	0	17	27	71	47
	Percent (%)	0	10.5	16.7	43.8	29.0
3.5. The effect of Project Team Adaptability To Changing Requirements and the effect of Support Given to Project Head on the success of a construction company	Frequency	0	36	65	58	3
	Percent (%)	0	22.2	40.1	35.8	1.9
3.6. The effect of Project Team Working Relationships on the success of a construction company	Frequency	0	17	16	28	101
	Percent (%)	0	10.5	9.9	17.3	62.3
3.7. The effect of Project Team Educational Level on the success of a construction company	Frequency	0	0	24	80	58
	Percent (%)	0	0	14.8	49.4	35.8
3.8.The effect of Project Team Training Availability on the success of a construction company	Frequency	0	0	25	68	69
	Percent (%)	0	0	15.4	42.0	42.6
3.9. The effect of Project team Decision Making Effectiveness on the success of a construction company	Frequency	0	36	65	59	3
	Percent (%)	0	22.1	39.9	36.2	1.8

Table 10: Effect of Project Team Competence

Firstly, the response towards project team experience 54(33.3%) of the respondents said strongly affect and 59(36.4%) of respondents said affect. On the other hand, only 49 (30.2%) of respondents said medium affect.

Secondly, the response towards project team technical skill 54 (36.4%) of the respondents said strongly affect and 55 (34.0%) of respondents said affect. On the other hand, only 53 (32.7%) of respondents said medium affect.

Thirdly, the response towards project team planning & organizing skill only 3 (1.9%) of the respondents said strongly affect and 58 (35.8%) of respondents said affect. On the other hand, only 65 (40.1%) of respondents said medium affect, while 36(22.2%) of respondents agreed on its low affect.

Fourthly, the response towards project team commitment and involvement47 (29.0%) of the respondents said strongly affect and 71(43.8%) of respondents said affect. On the other hand,

only 27 (16.7%) of respondents said medium affect, while 17(10.5%) of respondents agreed on its low affect.

Fifth, the response towards Project Team Adaptability to Changing Requirementsonly 3 (1.9%) of the respondents said strongly affect and 58(35.8%) of respondents said affect. On the other hand, 65 (40.1%) of respondents said medium affect, while 36(22.2%) of respondents agreed on its low affect.

Sixth, the response towards Project Team working relationships101 (62.3%) of the respondents said strongly affect and 28 (17.3%) of respondents said affect. On the other hand, 16 (9.9%) of respondents said medium affect, while 17(10.5%) of respondents agreed on its low affect.

Seventh, the response towards Project Team educational level58 (35.8%) of the respondents said strongly affect and 80 (49.4%) of respondents said affect. On the other hand, 24 (14.8%) of respondents said medium affect.

Eighth, the response towards Project Team training availability69 (42.6%) of the respondents said strongly affect and 68(42.0%) of respondents said affect. On the other hand, 25 (15.4%) of respondents said medium affect.

Ninth, the response towards Project Team decision making effectivenessonly3 (1.8%) of the respondents said strongly affect and 59(36.2%) of respondents said affect. On the other hand, 65(39.9%) of respondents said medium affect, while 36(22.1%) of respondents agreed on its low affect.

The second part is the result in the form of mean and standard deviation. Regarding project team competence, the table below presents items fall in the strongly affect, affect and medium agreement range. This result implies that the respondents in the study area have an agreement that the working relationship, educational level and training availability of projects team strongly affect the success of startup construction companies, while project team experience, technical skill, planning and organizing skill and commitment & involvement affects companies' success. On the other hand,adaptability to change and decision making effectiveness of project team have a medium effect on the success of startup construction companies.

Descriptive Statistics				
	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
3.1. The effect of Project Team Experience on the success of a construction company	162	4.03	0.063	0.799
3.2. The effect of Project Team Technical Skills on the success of a construction company	162	4.01	0.064	0.815
3.3. The effect of Project Team Planning and Organizing skills on the success of a construction company	162	3.17	0.062	0.793
3.4. The effect of Project Team Commitment and Involvement on the success of a construction company	162	3.91	0.073	0.935
3.5. The effect of Team Adaptability To Changing Requirements and the effect of Support Given to Project Head on the success of a construction company	162	3.17	0.062	0.793
3.6. The effect of Project Team Working Relationships on the success of a construction company	162	4.31	0.080	1.024
3.7. The effect of Project Team Educational Level on the success of a construction company	162	4.21	0.054	0.682
3.8.The effect of Project Team Training Availability on the success of a construction company	162	4.27	0.056	0.714
3.9. The effect of Project team Decision Making Effectiveness on the success of a construction company	163	3.18	0.062	0.793

Table 11: Descriptive Statistics- Project Team Competence

4.3.4. Project Characteristics

Project characteristics considered as a variable agreement levels were considered on the following aspects such as project type, size, nature, complexity, design, and resource allocation time are described in detail in the Table 10 below. So, regarding Project Characteristics the following descriptive results were obtained.

Effect of Project Characteristics	Count	Not Affect	Low Affect	Medium	Affect	Strongly Affect
4.1. The effect of Project Type on the success of a construction company	Frequency	0	0	52	56	54
	Percent (%)	0	0	32.1	34.6	33.3
4.2. The effect of Project Size on the success of a construction company	Frequency	0	18	9	92	43
	Percent (%)	0	11.1	5.6	56.8	26.5
4.3. The effect of Project Nature on the success of a construction company	Frequency	0	18	25	72	47
	Percent (%)	0	11.1	15.4	44.4	29.0
4.4. The effect of Project Complexity on the success of a construction company	Frequency	0	17	81	21	60
	Percent (%)	0	10.5	50.0	13.0	37.0
4.5. The effect of Project Design on the success of a construction company	Frequency	0	0	46	33	83
	Percent (%)	0	0.0	28.4	20.4	51.2
4.6. The effect of Project Resource Allocation Time on the success of a construction company	Frequency	0	0	31	82	49
	Percent (%)	0	0.0	19.1	50.6	30.2

Table 12: Effect of Project Characteristics

Firstly, the response towards project type 54(33.3%) of the respondents said strongly affect and 56(32.1%) of respondents said affect. On the other hand, only 52 (32.1%) of respondents said medium affect.

Secondly, the response towards project size 43 (26.5%) of the respondents said strongly affect and 92 (56.8%) of respondents said affect. On the other hand, only 25 (5.6%) of respondents said medium affect, while18 (11.1%) of respondents agreed on its low effect.

Thirdly, the response towards project nature 47 (29.0%) of the respondents said strongly affect and 72 (44.4%) of respondents said affect. On the other hand, only 25 (15.4%) of respondents said medium affect, while 18(11.1%) of respondents agreed on its low affect.

Fourthly, the response towards project complexity 60 (37.0%) of the respondents said strongly affect and 21(13.0%) of respondents said affect. On the other hand, only 81 (50.0%) of respondents said medium affect, while 17 (10.5%) of respondents agreed on its low affect.

Fifth, the response towards Project design83 (51.2%) of the respondents said strongly affect and 33 (20.4%) of respondents said affect. On the other hand, 46 (28.4%) of respondents said medium affect.

Sixth, the response towards Project resource allocation time49 (30.2%) of the respondents said strongly affect and 82 (50.6%) of respondents said affect. On the other hand, 31 (19.1%) of respondents said medium affect.

The second part is the result in the form of mean and standard deviation. Regarding project characteristics, the table below presents all items fall in the affect agreement range. This result implies that the respondents in the study area have an agreement that the project type, size, nature, complexity, design, resource allocation time and level of technology have an effect on the success of startup construction companies and need to be given equal attention.

Descriptive Statistics

	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
4.1. The effect of Project Type on the success of a construction company	162	4.01	0.064	0.811
4.2. The effect of Project Size on the success of a construction company	162	3.99	0.069	0.878
4.3. The effect of Project Nature on the success of a construction company	162	3.91	0.074	0.942
4.4. The effect of Project Complexity on the success of a construction company	162	3.87	0.073	0.927
4.5. The effect of Project Design on the success of a construction company	162	3.94	0.101	1.287

4.6. The effect of Project Resource Allocation Time on the success of a construction company	162	4.11	0.055	0.696
4.7. The effect of Project Level of Technology on the success of a construction company	162	3.36	0.059	0.754

Table 13: Descriptive Statistics- Project Characteristics

4.3.5. Project Manager Competence

Project manager competence considered as a variable agreement levels were considered on the following aspects such as project manager experience, coordinating & motivating skill, leading skill, communication and feedback skill, management skill, conflict resolution skill and organization skill are described in detail in the Table 11 below. So, regarding Project Tea Competence the following descriptive results were obtained.

Effect of Project Manager Competence	Count	Not Affect	Low Affect	Medium	Affect	Strongly Affect
5.1. The effect of Project Manager Experience on the success of a construction company	Frequency	0	15	22	76	49
	Percent (%)	0	9.3	13.6	46.9	30.2
5.2. The effect of Project Manager Coordinating and Motivating Skill on the success of a construction company	Frequency	0	15	22	76	49
	Percent (%)	0	9.3	13.6	46.9	30.2
5.3. The effect of Project Manager Leading Skill on the success of a construction company	Frequency	0	15	22	76	49
	Percent (%)	0	9.3	13.6	46.9	30.2
5.4. The effect of Project Manager Communication and Feedback Skill on the success of a construction company	Frequency	0	0	49	54	59
	Percent (%)	0	0	30.2	33.3	36.4
5.5. The effect of Project Manager Management Skill on the success of a construction company	Frequency	0	0	44	59	59
	Percent (%)	0	0	27.2	36.4	36.4
5.6. The effect of Project Manager Conflict Resolution Skill on the success of a construction company	Frequency	0	15	12	81	54
	Percent (%)	0	9.3	7.4	50.0	33.3
5.7. The effect of Project Manager Organization Skill on the success of a construction company	Frequency	0	15	22	76	49
	Percent (%)	0	9.3	13.6	46.9	30.2

Table 14: Effect of Project Manager Competence

Firstly, the response towards project manager experience 49(30.2%) of the respondents said strongly affect and 76(46.9%) of respondents said affect. On the other hand, only 22 (13.6%) of respondents said medium affect, while 15(9.3%) of respondents agreed on its low affect

Secondly, the response towards project manager coordinating and motivating skill 49 (30.2%) of the respondents said strongly affect and 76 (46.9%) of respondents said affect. On the other hand, only 22 (13.6%) of respondents said medium affect, while 15(9.3%) of respondents agreed on its low effect.

Thirdly, the response towards project manager leading skill 49 (30.2%) of the respondents said strongly affect and 76 (46.9%) of respondents said affect. On the other hand, only 22 (13.6%) of respondents said medium affect, while 15 (9.3%) of respondents agreed on its low affect.

Fourthly, the response towards project manager communication and feedback skill 59 (36.4%) of the respondents said strongly affect and 54(33.3%) of respondents said affect. On the other hand, only 49 (30.2%) of respondents said medium affect.

Fifth, the response towards project manager management skill 59 (36.4%) of the respondents said strongly affect and 54(33.3%) of respondents said affect. On the other hand, only 49 (30.2%) of respondents said medium affect.

Sixth, the response towards Project manager conflict resolution54 (33.3%) of the respondents said strongly affect and 81 (50%) of respondents said affect. On the other hand, 12 (7.4%) of respondents said medium affect, while 15(9.3%) of respondents agreed on its low affect.

Seventh, the response towards Project manager organization skill49 (30.2%) of the respondents said strongly affect and 76 (46.9%) of respondents said affect. On the other hand, 22 (13.6%) of respondents said medium affect, while 15(9.3%) of respondents agreed on its low affect.

The second part is the result in the form of mean and standard deviation. Regarding project characteristics, the table below presents all items fall in the affect agreement range. This result implies that the respondents in the study area have an agreement that the project manager experience, coordinating& motivating skill, leading skill, communication& feedback skill, management skill, conflict resolution skill and organizing skill have an effect on the success of startup construction companies and need to be given equal attention.

Descriptive Statistics				
	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
5.1. The effect of Project Manager Experience on the success of a construction company	162	3.98	0.071	0.902
5.2. The effect of Project Manager Coordinating and Motivating Skill on the success of a construction company	162	3.98	0.071	0.902
5.3. The effect of Project Manager Leading Skill on the success of a construction company	162	3.98	0.071	0.902
5.4. The effect of Project Manager Communication and Feedback Skill on the success of a construction company	162	4.06	0.064	0.817
5.5. The effect of Project Manager Management Skill on the	162	4.09	0.062	0.794

success of a construction company				
5.6. The effect of Project Manager Conflict Resolution Skill on the success of a construction company	162	4.07	0.069	0.882
5.7. The effect of Project Manager Organization Skill on the success of a construction company	162	3.98	0.071	0.902

Table 15: Descriptive Statistics- Project Manager Competence

4.3.6. Project Organization

Project Organization considered as a variable agreement levels were considered on the following aspects such as project organization planning and control effort, team, team structure & integration, safety and quality program, schedule and work definition, management skill, budgeting and control of subcontractors are described in detail in the Table 12 below. So, regarding Project Organization the following descriptive results were obtained.

Effect of Project Organization	Count	Not Affect	Low Affect	Medium	Affect	Strongly Affect
6.1. The effect of Project Organization Planning and Control Effort on the success of a construction company	Frequency	0	18	20	59	65
	Percent (%)	0	11.1	12.3	36.4	40.1
6.2. The effect of Project Organization Team Structure and Integration on the success of a construction company	Frequency	0	0	24	79	59
	Percent (%)	0	0	14.8	48.8	36.4
6.3. The effect of Project Organization Safety and Quality Program on the success of a construction company	Frequency	0	18	20	59	65
	Percent (%)	0	11.1	12.3	36.4	40.1
6.4. The effect of Project Organization Schedule and Work Definition on the success of a construction company	Frequency	0	6	35	56	65
	Percent (%)	0	3.7	21.6	34.6	40.1
6.5. The effect of Project Organization Budgeting on the success of a construction company	Frequency	0	6	37	51	68
	Percent (%)	0	3.7	22.8	31.5	42.0
6.6. The effect of Project Organization Control of Subcontractors on the success of a construction company	Frequency	0	18	20	59	65
	Percent (%)	0	11.1	12.3	36.4	40.1

Table 16: Effect of Project Organization

Firstly, the response towards project organization planning & control effort 65(40.1%) of the respondents said strongly affect and 59(36.4%) of respondents said affect. On the other hand, only 20 (12.3%) of respondents said medium affect, while 18(11.1%) of respondents agreed on its low affect.

Secondly, the response towards project organization team structure & integration 59 (36.4%) of the respondents said strongly affect and 79 (48.8%) of respondents said affect. On the other hand, only 24 (14.8%) of respondents said medium affect.

Thirdly, the response towards project organization safety & quality program 65 (40.1%) of the respondents said strongly affect and 59 (36.4%) of respondents said affect. On the other hand, only 20 (12.3%) of respondents said medium affect, while 18 (11.1%) of respondents agreed on its low affect.

Fourthly, the response towards project organization schedule & work definition 65 (40.1%) of the respondents said strongly affect and 56 (34.6%) of respondents said affect. On the other hand, only 35(21.6%) of respondents said medium affect, while 6 (3.7%) of respondents agreed on its low affect.

Fifth, the response towards project organization budgeting 68 (42.0%) of the respondents said strongly affect and 51(31.5%) of respondents said affect. On the other hand, only 37(22.8%) of respondents said medium affect, while 6 (3.7%) of respondents agreed on its low affect.

Sixth, the response towards Project organization control of subcontractors65 (40.1%) of the respondents said strongly affect and 56 (34.6%) of respondents said affect. On the other hand, only 35(21.6%) of respondents said medium affect, while 6 (3.7%) of respondents agreed on its low affect.

The second part is the result in the form of mean and standard deviation. Regarding project characteristics, the table below presents all items fall in the strongly affect and affect agreement range. This result implies that the respondents in the study area have an agreement that the project organization planning and control effort strongly affect the success of startup construction companies, while project organization team structure & integration, safety & quality program, schedule & work definition, budgeting and control of subcontractors have an effect on the success of startup construction companies.

Descriptive Statistics				
	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
6.1. The effect of Project Organization Planning and Control Effort on the success of a construction company	162	4.06	0.077	0.986
6.2. The effect of Project Organization Team Structure and Integration on the success of a construction company	162	4.22	0.054	0.685
6.3. The effect of Project Organization Safety and Quality Program on the success of a construction company	162	4.06	0.077	0.986
6.4. The effect of Project Organization Schedule and Work Definition on the success of a construction company	162	4.11	0.068	0.870
6.5. The effect of Project Organization Budgeting on the success of a construction company	162	4.12	0.070	0.887
6.6. The effect of Project Organization Control of Subcontractors on the success of a construction company	162	4.06	0.077	0.986

Table 17: Descriptive Statistics- Project Organization

4.3.7. Client Knowledge and Experience

Client Knowledge and Experience considered as a variable agreement levels were considered on the following aspects such as client's nature of finance, experience, organization size, decision making, roles and contribution, expectation and involvement influence are described in detail in the Table 13 below. So, regarding Client Knowledge and Experience the following descriptive results were obtained.

Effect of Client Knowledge & Experience	Count	Not Affect	Low Affect	Medium	Affect	Strongly Affect
7.1. The effect of Client's Nature of Finance on the success of a construction company	Frequency	0	18	15	76	53
	Percent (%)	0	11.1	9.3	46.9	32.7
7.2. The effect of Client's Experience on the success of a construction company	Frequency	0	18	15	76	53
	Percent (%)	0	11.1	9.3	46.9	32.7
7.3. The effect of Client's Organization Size on the success of a construction company	Frequency	0	0	24	69	69
	Percent (%)	0	0.0	14.8	42.6	42.6
7.4. The effect of Client's Decision Making on the success of a construction company	Frequency	0	15	21	77	49
	Percent (%)	0	9.3	13.0	47.5	30.2
7.5. The effect of Client's Roles and Contribution on the success of a construction company	Frequency	0	18	15	76	53
	Percent (%)	0	11.1	9.3	46.9	32.7
7.6. The effect of Client's Expectation and Commitment on the success of a construction company	Frequency	0	18	9	92	43
	Percent (%)	0	11.1	5.6	56.8	26.5
7.7. The effect of Client's Involvement Influence on the success of a construction company	Frequency	0	18	25	72	47
	Percent (%)	0	11.1	15.4	44.4	29.0

Table 18: Effect of Client Knowledge and Experience

Firstly, the response towards client's nature of finance 53(32.7%) of the respondents said strongly affect and 76(46.9%) of respondents said affect. On the other hand, only 15 (9.3%) of respondents said medium affect, while 18(11.1%) of respondents agreed on its low affect.

Secondly, the response towards client's experience53 (32.7%) of the respondents said strongly affect and 76(46.9%) of respondents said affect. On the other hand, only 15 (9.3%) of respondents said medium affect, while 18(11.1%) of respondents agreed on its low affect.

Thirdly, the response towards client's organization size 69 (42.6%) of the respondents said strongly affect and 69 (42.6%) of respondents said affect. On the other hand, only 24 (14.8%) of respondents said medium affect.

Fourthly, the response towards client's decision making 49 (30.2%) of the respondents said strongly affect and 77 (47.5%) of respondents said affect. On the other hand, only 21(13.0%) of respondents said medium affect, while 15 (9.3%) of respondents agreed on its low affect.

Fifth, the response towards client's roles and contributions 53 (32.7%) of the respondents said strongly affect and 76(46.9%) of respondents said affect. On the other hand, only 15(9.3%) of respondents said medium affect, while 18 (11.1%) of respondents agreed on its low affect.

Sixth, the response towards client's expectation and commitment43 (26.5%) of the respondents said strongly affect and 92 (56.8%) of respondents said affect. On the other hand, only 9(5.6%) of respondents said medium affect, while 18 (11.1%) of respondents agreed on its low affect.

Seventh, the response towards client's involvement influence47 (29.0%) of the respondents said strongly affect and 72 (44.4%) of respondents said affect. On the other hand, only25(15.4%) of respondents said medium affect, while 18 (11.1%) of respondents agreed on its low affect.

The second part is the result in the form of mean and standard deviation. Regarding client's knowledge and experience, the table below presents all items fall in the strongly affect and affect agreement range. This result implies that the respondents in the study area have an agreement that theClient's Organization Size strongly affect the success of startup construction companies, while Client's Nature of Finance, Experience, Decision Making, Roles and Contribution, Expectation and Commitment and Involvement Influence have an effect on the success of startup construction companies and need to be given equal attention.

Descriptive Statistics				
	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
7.1. The effect of Client's Nature of Finance on the success of a construction company	162	4.01	0.073	0.932
7.2. The effect of Client's Experience on the success of a construction company	162	4.01	0.073	0.932
7.3. The effect of Client's Organization Size on the success of a construction company	162	4.28	0.056	0.707
7.4. The effect of Client's Decision Making on the success of a construction company	162	3.99	0.071	0.898
7.5. The effect of Client's Roles and Contribution on the success of a construction company	162	4.01	0.073	0.932
7.6. The effect of Client's Expectation and Commitment on the success of a construction company	162	3.99	0.069	0.878
7.7. The effect of Client's Involvement Influence on the success of a construction company	162	3.91	0.074	0.942

Table 19: Descriptive Statistics -Client Knowledge and Experience

4.3.8. Contractual Aspect

Contractual aspect considered as a variable agreement levels were considered on the following aspects such as contract type, tendering, procurement process, capital of the project and company and management experience of the company are described in detail in the Table 14 below. So, regarding Contractual Aspect the following descriptive results were obtained.

Effect of Client Knowledge & Experience	Count	Not Affect	Low Affect	Medium	Affect	Strongly Affect
8.1. The effect of Contract Type on the success of a construction company	Frequency	0	18	28	72	44
	Percent (%)	0	11.1	17.3	44.4	27.2
8.2. The effect of Tendering on the success of a construction company	Frequency	0	12	28	73	49
	Percent (%)	0	17.4	17.3	45.1	30.2
8.3. The effect of Procurement Process on the success of a construction company	Frequency	0	18	15	76	53
	Percent (%)	0	11.1	9.3	46.9	32.7
8.4. The effect of Capital of the Project and Company on the success of a construction company	Frequency	0	18	28	72	44
	Percent (%)	0	11.1	17.3	44.4	27.2
8.5. The effect of Management Experience of the Company on the success of a construction company	Frequency	0	5	49	59	49
	Percent (%)	0	3.1	30.2	36.4	30.2

Table 20: Effect of Contractual Aspect

Firstly, the response towards contract type 44(27.2%) of the respondents said strongly affect and 72(44.4%) of respondents said affect. On the other hand, only 28(17.3%) of respondents said medium affect, while 18(11.1%) of respondents agreed on its low affect.

Secondly, the response towards tendering49 (30.2%) of the respondents said strongly affect and 73(45.1%) of respondents said affect. On the other hand, only 28(17.3%) of respondents said medium affect, while 12(17.4%) of respondents agreed on its low affect.

Thirdly, the response towards procurement process 53 (32.7%) of the respondents said strongly affect and 76 (42.6%) of respondents said affect. On the other hand, only 15 (9.3%) of respondents said medium affect, while 18(11.1%) of respondents agreed on its low affect.

Fourthly, the response towards capital of the project and company 44 (27.2%) of the respondents said strongly affect and 72 (44.4%) of respondents said affect. On the other hand, only 28(17.3%) of respondents said medium affect, while 18 (11.1%) of respondents agreed on its low affect.

Fifth, the response towards management experience of the company 49 (30.2%) of the respondents said strongly affect and 59(36.4%) of respondents said affect. On the other hand, only 49 (30.2%) of respondents said medium affect, while 5 (3.1%) of respondents agreed on its low affect.

The second part is the result in the form of mean and standard deviation. Regarding contractual aspect, the table below presents all items fall in the affect agreement range. This result implies that the respondents in the study area have an agreement that thecontract type, tendering process, procurement process and on other related area the capital of the project & company and the management experience of the company have an effect on the success of startup construction companies and need to be given equal attention.

Descriptive Statistics				
	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
8.1. The effect of Contract Type on the success of a construction company	162	3.88	0.074	0.938
8.2. The effect of Tendering on the success of a construction company	162	3.98	0.069	0.881
8.3. The effect of Procurement Process on the success of a construction company	162	4.01	0.073	0.932
8.4. The effect of Capital of the Project and Company on the success of a construction company	162	3.88	0.074	0.938
8.5. The effect of Management Experience of the Company on the success of a construction company	162	3.94	0.067	0.854

Table 21: Descriptive Statistics- Contractual Aspect

4.3.9. Success Determinate

Success determinant being the dependent variable, agreement levels were considered on the following aspects such as how well are external challenges managed, how much support is given to project and critical activities from top management, to what extent is project team competence exercised/ evaluated, to what extent is project manager competence exercised/ evaluated, how are project characteristics defined and managed, how well are projects organized and managed, how are the knowledge and experience of your clients used to your companies advantage and How well are the contractual aspects handled.

Effect of Project Team Competence	Count	Very Low	Low	Medium	Well	Very Well
9.1. How well are the external challenges managed in your company?	Frequency	0	1	31	71	59
	Percent (%)	0	0.6	19.1	43.8	36.4
9.2. How much support is given to projects and critical activities from the top management in your company?	Frequency	0	0	24	77	61
	Percent (%)	0	0	14.8	47.5	37.7
9.3. To what extent is project team competence exercised/evaluated?	Frequency	0	0	47	88	27
	Percent (%)	0	0.0	29.0	54.3	16.7
9.4. To what extent is project manager competence exercised/evaluated?	Frequency	0	0	51	76	35
	Percent (%)	0	0.0	31.5	46.9	21.6
9.5. How are the project characteristics defined and managed in your company?	Frequency	0	15	17	76	54
	Percent (%)	0	9.3	10.5	46.9	33.3
9.6. How well are projects organized and managed?	Frequency	0	1	29	73	59
	Percent (%)	0	0.6	17.9	45.1	36.4
9.7. How are the knowledge and experience of your clients used to your companies advantage?	Frequency	0	9	17	107	29
	Percent (%)	0	5.6	10.5	66.0	17.9
9.8. How well are the contractual aspects handled in your company?	Frequency	0	7	28	92	35
	Percent (%)	0	4.3	17.3	56.8	21.6

Table 22: Success Determinant

The above table shows that 59(36.4 %), 71(43.8%) and 31(19.1%) as very well, well and medium respectively to the question how well are external challenges managed in your company. The level of agreement given by respondents for the question that how much support is given to projects and critical activities from the top management in your company showed a response of 61(37.7 %), 77(47.5%) and 24(14.8%) as very well, well and medium respectively. Similarly for the question to what extent is project team competence exercised/evaluated, 27(16.7%),

88(54.3%) and 47(29.0%) as very well, well and medium respectively. The magnitude of response for the question to what extent is project manager competence exercised/evaluated, 51(31.5%), 76(46.9%) and 35(21.6%) as very well, well and medium respectively. To the question how are the project characteristics defined and managed in your company, 15(9.3%), 17(10.5%), 76(46.9%) and 54(33.3%) as very well, well, medium and very low respectively. Also for the question how well projects are organized and managed, respondents are gave the response of 59(36.4%), 73(45.1%), 29(17.9%) and 1(0.6%) as very well, well, medium and very low respectively. For the question how are the knowledge and experience of your clients used to your companies advantage, a response of 29(17.9%), 107(66%), 17(10.5)and 9(5.6%) as very well, well, medium and very low respectively were given. Finally, for the question how well are the contractual aspects handled in your company, the following responds were given; 35(21.6%), 92(56.8%), 28(17.3%) and 7(4.3%) as very well, well, medium and very low respectively

The second part is the result in the form of mean and standard deviation. Regarding the dependent variable success determinant, the table below presents all items fall in the very well and well agreement range. This result implies that the respondents in the study area have an agreement that a very well support if given form the top management for project heads and critical activities. Well attention and management is undertaken to external challenges, project team and manager competence, project characteristics, organization and management of projects, to the knowledge and experience of clients and the contractual aspects in the company.

Descriptive Statistics				
	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
9.1. How well are the external challenges managed in your company?	162	4.16	0.059	0.747
9.2. How much support is given to projects and critical activities from the top management in your company?	162	4.23	0.054	0.690
9.3. To what extent is project team competence exercised/evaluated?	162	3.88	0.052	0.667
9.4. To what extent is project manager competence exercised/evaluated?	162	3.90	0.057	0.724
9.5. How are the project characteristics defined and managed in your company?	162	4.04	0.071	0.901
9.6. How well are projects organized and managed?	162	4.17	0.058	0.736
9.7. How are the knowledge and experience of your clients used to your companies advantage?	162	3.96	0.056	0.713
9.8. How well are the contractual aspects handled in your company?	162	3.96	0.059	0.751

Table 23: Descriptive Statistics- Success Determinant

4.4. Inferential Statistics Analysis Results

4.4.1. Correlation Analysis

Correlation analysis which is a statistical technique shows whether variables are related and how strongly(Cohen, Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences , 2002). Since Correlation is only appropriate for correlation works for quantifiable data in which numbers are meaningful, usually quantities of some sort, it cannot be used for purely categorical data, such as gender, or position in the organization. In this study, Pearson correlation analysis was conducted to indicate the relationship between the dependent variable i.e. Success Determinant and the independent variables which are External Challenge, Top Management Support, Project Team Competence, Project Characteristics, Project Manager Competence, Project Organization, Client Knowledge and Experience and Contractual Aspects. For the table below the variables are represented as follows, A- External Challenge, B- Top Management Support, C- Project team Competence, D- Project characteristics, E- Project Manager, F- Project Organization-, G Client Knowledge and Experience, H- Contractual Aspect and I- Success Determinant.

Correlations

		A	B	C	D	E	F	G	H	I
A	Pearson Correlation	1	.905**	.664**	.282**	-0.093	.808**	.700**	.710**	.761**
	Sig. (2-tailed)		0	0	0	0.237	0	0	0	0
	N	162	162	162	162	162	162	162	162	162
B	Pearson Correlation	.905**	1	.697**	.344**	-0.076	.791**	.712**	.643**	.793**
	Sig. (2-tailed)	0		0	0	0.337	0	0	0	0
	N	162	162	162	162	162	162	162	162	162
C	Pearson Correlation	.664**	.697**	1	.464**	-.177*	.538**	.513**	.498**	.611**
	Sig. (2-tailed)	0	0		0	0.024	0	0	0	0
	N	162	162	162	162	162	162	162	162	162
D	Pearson Correlation	.282**	.344**	.464**	1	-.374**	.230**	.197*	.186*	.385**
	Sig. (2-tailed)	0	0	0		0	0.003	0.012	0.018	0
	N	162	162	162	162	162	162	162	162	162
E	Pearson Correlation	-0.093	-0.076	-.177*	-.374**	1	-0.039	.167*	-0.043	0.131

	Sig. (2-tailed)	0.237	0.337	0.024	0		0.618	0.034	0.586	0.097
	N	162	162	162	162	162	162	162	162	162
F	Pearson Correlation	.808**	.791**	.538**	.230**	-0.039	1	.687**	.643**	.743**
	Sig. (2-tailed)	0	0	0	0.003	0.618		0	0	0
	N	162	162	162	162	162	162	162	162	162
G	Pearson Correlation	.700**	.712**	.513**	.197*	.167*	.687**	1	.752**	.783**
	Sig. (2-tailed)	0	0	0	0.012	0.034	0		0	0
	N	162	162	162	162	162	162	162	162	162
H	Pearson Correlation	.710**	.643**	.498**	.186*	-0.043	.643**	.752**	1	.657**
	Sig. (2-tailed)	0	0	0	0.018	0.586	0	0		0
	N	162	162	162	162	162	162	162	162	162
I	Pearson Correlation	.761**	.793**	.611**	.385**	0.131	.743**	.783**	.657**	1
	Sig. (2-tailed)	0	0	0	0	0.097	0	0	0	
	N	162	162	162	162	162	162	162	162	162

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

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

Table24: Pearson Correlation Results

The table above describes the relationship between the variables of the study. From the findings of Table 6, there is a positive and strong correlation between the dependent variable External Challenge, Top management support, Project Team Competence, Project Characteristics, Project Organization, Client Knowledge and Experience and Contractual Aspects and Success Determinant at significant level of 0.761 (r= 0.000), 0.793 (r= 0.000), 0.611 (r= 0.000), 0.385 (r= 0.000), 0.743 (r= 0.000), 0.783 (r= 0.000) and 0.657 (r= 0.000) respectively. The analysis also found a correlation between Project Manager Competence and Success Determinate at significant 4.4. Level of 0.131(r= 0.097) which is not significant as the P-value is greater than 0.05.The correlation of success Determinant with the above variables is positive which implies that as those factors are managed and there effect is handled the Success of a company increases.

4.4.2. Regression Analysis

Linear regression is the next step up after correlation. It is used when we want to predict the value of a variable based on the value of another variable. It is performed to know by how much the independent variables explain the dependent variable.

4.4.2.1. Assumption Tests

Different tests were conducted in order to check the effectiveness of the data. According to (Hair, 1995), the tests are essential to confirm that the attained data are the true representation of the sample and they are the best results. In this study three assumption namely multicollinearity, linearity and Normality are used and they are discussed individually.

I. Multicollinearity Test

The first assumption undertaken to meet multiple linear regression model is the assumption of multicollinearity. It indicates a linear relationship between the independent variables.

As it is seen in the table below, the coefficients outputs of collinearity statistics i.e. Tolerance and Variance Inflation Factors (VIF) values displayed that the obtained values are between 1 and 10. And it can be concluded that there is no 1 to 10, it can be concluded that there is no multicollinearity signs between the independent variables.

Coefficients[a]			
Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	External Challenge	0.137	7.301
	Top Management Support	0.142	7.048
	Project Team Competence	0.443	2.259
	Project Characterstics	0.676	1.48
	Project Manager Competence	0.725	1.379
	Project Organization	0.305	3.283
	Client Knowledge and Experience	0.285	3.509
	Contractual Aspect	0.345	2.898
a. Dependent Variable: Success Determinant			

Table 25: Multicollinearity Test

II. Linearity Test

The other assumption undertaken is the linearity test. It represents the degree to which the change in the dependent variable is associated with the change in the independent variables. The scatter plots of standardized residuals versus the fitted values for the regression models show that the dots at the P-Plot are closer to the diagonal line. This indicates the assumption of linearity is met.

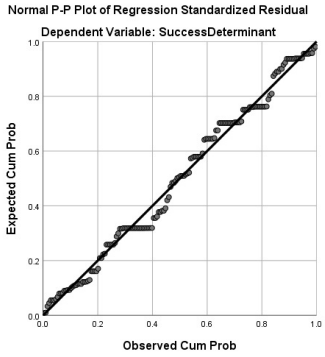

Figure 4: Linearity Test

III. Homoscedasticity Test

It has been discussed that multiple regression assumes there is a linear relationship between the dependent and independent variable. Homoscedasticity hypothesis tells us there is a uniform range of variance of the dependent variable for all the values of the independent variables.

As it is shown on the figure below, there is no obvious pattern but the points seems to be distributed fairly above and below the X axis and to the left and right of zero on the Y axis. This shows us the data is homoscedastic.

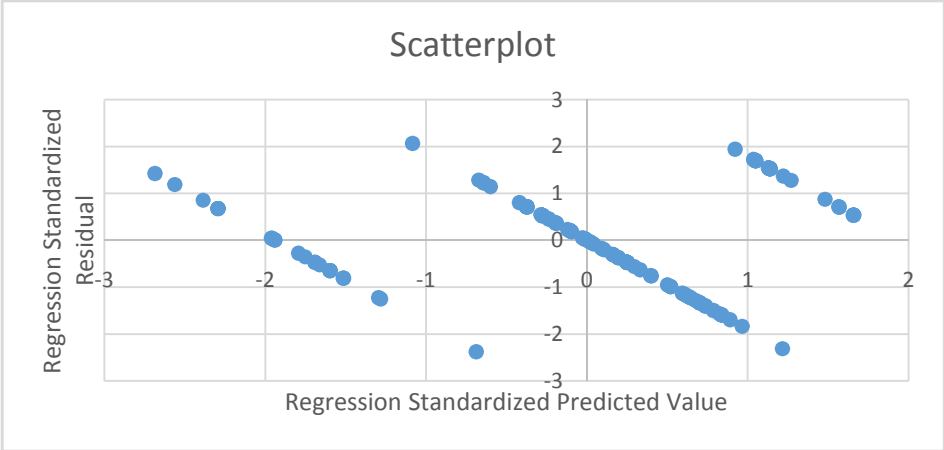

Figure 5: Homoscedasticity Test

IV. The Assumption of Normality

Visual examination of the normality plots of the residuals shows the normality of the error term. The P-P plots were approximately a straight line instead of a curve so it suggest that the residuals have a reasonably normal distribution. The result showed in the figure below shows that the assumption of normality has been met.

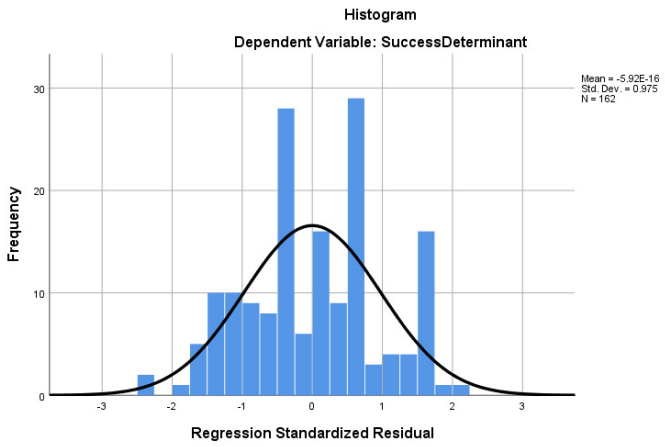

Figure 6: Normality Test

V. Independence of Residuals Test

In Multiple linear regression model the residuals are assumed to be independent of one another. The Durbin-Watson statistic is used to test the presence of serial correlation among the residuals. According to literatures, the value of the Durbin-Watson statistic ranges from 0 to 4. But As a general rule, the residuals are not correlated if the Durbin-Watson statistic ranges between 1 and 3. In this study the Durbin-Watson statistics is 2.182 which suggests there is no correlation between the residuals and they are independent.

Model Summary [b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.890[a]	.793	.782	.27043	2.182

a. Predictors: (Constant), Contractual Aspect, Project Manager Competence, Project Characteristics, Project Team Competence, Project Organization, Client Knowledge and Experience, Top Management Support, External Challenge

b. Dependent Variable: Success Determinant

Table 26: Residual Independence Test

VI. Reliability Test

The internal consistency of items used in the questionnaire is measured by Reliability analysis. It examines thesolidity of the items that comprise each scale. Cronbach's alpha coefficient is the most frequently used index of reliability. According to (Saunders M. L. P., 2012)a value of Cronbach's alpha coefficient above 0.70 is regarded as acceptable. The reliability analysis of each variable in the questionnaire is presented as follows.

a. External Challenges

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.840	0.849	5

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
1.1. The effect of External Environment on the success of a construction company	16.51	6.997	.751	.	.776
1.2. The effect of Social Environment on the success of a construction company	16.46	8.238	.866	.	.767
1.3. The effect of Political Environment on the success of a construction company	16.51	6.997	.751	.	.776
1.4. The effect of Physical Environment on the success of a construction company	16.56	9.353	.378	.	.874
1.5. The effect of Legal Environment on the success of a construction company	16.67	8.708	.572	.	.826

Table 27: Reliability Test; External Challenge

The Cronbach's alpha is 0.84 which is greater than 0.7. This indicates there is a high level of internal consistency between the items under the variable External Challenge.

b. Top Management Support

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.897	0.910	4

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
2.1. The effect of Support Given to Project Head on the success of a construction company	12.81	4.876	.758	.598	.872
2.2. The effect of Support Given to Critical Activities on the success of a construction company	12.48	4.202	.779	.640	.879

2.3. The effect of Understanding of Project Difficulty on the success of a construction company	12.58	5.313	.888	.800	.838
2.4. The effect of Stakeholder Influence on the success of a construction company	12.52	5.593	.745	.640	.880

Table 28: Reliability Test; Top Management Support

The Cronbach's alpha is 0.897 which is greater than 0.7. This indicates there is a high level of internal consistency between the items under the variable Top Management Support.

c. Project Team Competence

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.855	.863	9

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
3.1. The effect of Project Team Experience on the success of a construction company	30.23	20.355	.604	.	.837
3.2. The effect of Project Team Technical Skills on the success of a construction company	30.26	19.522	.717	.	.825
3.3. The effect of Project Team Planning and Organizing skills on the success of a construction company	31.09	21.153	.490	.	.848
3.4. The effect of Project Team Commitment and Involvement on the success of a construction company	30.35	19.273	.634	.	.834
3.5. The effect of Team Adaptability To Changing Requirements and the effect of Support Given to Project Head on the success of a construction company	31.09	21.153	.490	.	.848
3.6. The effect of Project Team Working Relationships on the success of a construction company	29.95	20.507	.409	.	.862
3.7. The effect of Project Team Educational Level on the success of a construction company	30.06	20.326	.742	.	.827
3.8.The effect of Project Team Training Availability on the success of a construction company	29.99	20.106	.740	.	.826
3.9. The effect of Project team Decision Making Effectiveness on the success of a construction company	31.09	21.153	.490	.	.848

Table 29: Reliability Test; Project Team Competence

The Cronbach's alpha is 0.855 which is greater than 0.7. This indicates there is a high level of internal consistency between the items under the variable Project Team Competence.

d. Project Characteristics

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.741	.765	7

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
4.1. The effect of Project Type on the success of a construction company	23.19	13.336	.358	.587	.730
4.2. The effect of Project Size on the success of a construction company	23.22	12.170	.518	.689	.696
4.3. The effect of Project Nature on the success of a construction company	23.29	11.760	.537	.652	.690
4.4. The effect of Project Complexity on the success of a construction company	23.33	11.379	.620	.691	.670
4.5. The effect of Project Design on the success of a construction company	23.26	12.044	.270	.605	.779
4.6. The effect of Project Resource Allocation Time on the success of a construction company	23.09	12.805	.567	.674	.694
4.7. The effect of Project Level of Technology on the success of a construction company	23.84	12.955	.477	.635	.708

Table 30: Reliability Test; Project Characteristics

The Cronbach's alpha is 0.741 which is greater than 0.7. This indicates there is a high level of internal consistency between the items under the variable Project Characteristics.

e. Project Manager Competence

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.950	.948	7

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted

5.1. The effect of Project Manager Experience on the success of a construction company	24.17	20.268	.932	.	.933
5.2. The effect of Project Manager Coordinating and Motivating Skill on the success of a construction company	24.17	20.268	.932	.	.933
5.3. The effect of Project Manager Leading Skill on the success of a construction company	24.17	20.268	.932	.	.933
5.4. The effect of Project Manager Communication and Feedback Skill on the success of a construction company	24.09	23.786	.527	.	.965
5.5. The effect of Project Manager Management Skill on the success of a construction company	24.06	22.058	.799	.	.944
5.6. The effect of Project Manager Conflict Resolution Skill on the success of a construction company	24.08	21.677	.755	.	.948
5.7. The effect of Project Manager Organization Skill on the success of a construction company	24.17	20.268	.932	.	.933

Table 31: Reliability Test; Project Manager Competence

The Cronbach's alpha is 0.95 which is greater than 0.7. This indicates there is a high level of internal consistency between the items under the variable Project Manager Competence.

f. Project Organization

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.852	.851	6

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
6.1. The effect of Project Organization Planning and Control Effort on the success of a construction company	20.56	10.596	.846	.	.783
6.2. The effect of Project Organization Team Structure and Integration on the success of a construction company	20.40	12.849	.750	.	.816
6.3. The effect of Project Organization Safety and Quality Program on the success of a construction company	20.56	10.596	.846	.	.783
6.4. The effect of Project Organization Schedule and Work Definition on the success of a construction company	20.50	14.748	.223	.	.896
6.5. The effect of Project Organization Budgeting on the success of a construction company	20.49	13.531	.410	.	.867
6.6. The effect of Project Organization Control of Subcontractors on the success of a construction company	20.56	10.596	.846	.	.783

Table 32: Reliability Test; Project Organization

The Cronbach's alpha is 0.852which is greater than 0.7. This indicates there is a high level of internal consistency between the items under the variable Project Organization.

g. Client Knowledge & Experience

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.857	.858	7

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
7.1. The effect of Client's Nature of Finance on the success of a construction company	24.19	13.945	.884	.	.795
7.2. The effect of Client's Experience on the success of a construction company	24.19	13.945	.884	.	.795
7.3. The effect of Client's Organization Size on the success of a construction company	23.93	16.467	.698	.	.830
7.4. The effect of Client's Decision Making on the success of a construction company	24.22	20.978	-.099	.	.927
7.5. The effect of Client's Roles and Contribution on the success of a construction company	24.19	13.945	.884	.	.795
7.6. The effect of Client's Expectation and Commitment on the success of a construction company	24.22	15.450	.689	.	.827
7.7. The effect of Client's Involvement Influence on the success of a construction company	24.29	15.698	.588	.	.842

Table 33: Reliability Test; Project Client's Knowledge and Experience

The Cronbach's alpha is 0.857which is greater than 0.7. This indicates there is a high level of internal consistency between the items under the variable Client Knowledge & Experience.

h. Contractual Aspect

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.781	.772	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
8.1. The effect of Contract Type on the success of a construction company	15.81	6.243	.833	.	.638
8.2. The effect of Tendering on the success of a construction company	15.70	9.415	.154	.	.858
8.3. The effect of Procurement Process on the success of a construction company	15.67	6.321	.818	.	.645
8.4. The effect of Capital of the Project and Company on the success of a construction company	15.81	6.243	.833	.	.638
8.5. The effect of Management Experience of the Company on the success of a construction company	15.75	8.985	.256	.	.828

Table 34: Reliability Test; Contractual Aspect

The Cronbach's alpha is 0.781which is greater than 0.7. This indicates there is a high level of internal consistency between the items under the variable Contractual Aspect.

i. Success Determinant

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.825	.845	8

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
9.1. How well are the external challenges managed in your company?	28.14	11.178	.841	.863	.763
9.2. How much support is given to projects and critical activities from the top management in your company?	28.07	11.473	.854	.858	.765
9.3. To what extent is project team competence exercised/evaluated?	28.43	12.445	.649	.557	.793
9.4. To what extent is project manager competence exercised/evaluated?	28.40	14.155	.231	.324	.845
9.5. How are the project characteristics defined and managed in your company?	28.26	15.945	-.114	.275	.902
9.6. How well are projects organized and managed?	28.13	11.555	.768	.695	.774
9.7. How are the knowledge and experience of your clients used to your companies advantage?	28.34	11.555	.800	.715	.771
9.8. How well are the contractual aspects handled in your company?	28.35	11.756	.703	.655	.783

Table 35: Reliability Test; Success Determinant

The Cronbach's alpha is 0.825which is greater than 0.7. This indicates there is a high level of internal consistency between the items under the variable Success Determinant. The analysis results of each variables above shows there is a high level of consistency between items under the different independent variables and the dependent variable as well.

Therefore, as explained above, all the assumptions were not violated. The next step is the examination of the data collected by the questionnaires using multiple regression model as follows.

4.4.2.2. RegressionResults

A linear regression with independent variables predicting dependent Variable is conducted and the results are represented as follows.

I. Model Summary

Model Summary [b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.890[a]	.793	.782	.27043	2.182

a. Predictors: (Constant), Contractual Aspect, Project Manager Competence, Project Characteristics, Project Team Competence, Project Organization, Client Knowledge and Experience, Top Management Support, External Challenge

b. Dependent Variable: Success Determinant

Table 36: Model Summary

The degree of linear relationship between the dependent variable and the independent variables jointly is measured by R (Coefficient of Correlation). Now for this particular case, the value of R and R Squared which is 0.890 and 0.793 respectively shows that the independent variables i.e. the critical success factors impact the dependent variable i.e. Success of Construction Companies by 89.9%. And the Durbin-Watson is 2.182 which lies between 1 and 3.

II. ANOVA

ANOVA [a]						
Model		Sum of Squares	DF	Mean Square	F	Sig.
1	Regression	42.811	8	5.351	73.176	.000b
	Residual	11.189	153	0.073		
	Total	54	161			

a. Dependent Variable: Success Determinant

b. Predictors: (Constant), Contractual Aspect, Project Manager Competence, Project Characteristics, Project Team Competence, Project Organization, Client Knowledge and Experience, Top Management Support, External Challenge

Table 37: ANOVA

As it can be observed in the above ANOVA table the F-statistic value of 73.176 at 8 and 153 degrees of freedom is statistically significant at 99% confidence level; which implies the success of startup construction companies which is explained by the independent variables R square is statistically significant. A P-value of 0.000 is produced by the test which is below the alpha level, i.e., 0.05 that implies the independent variables have a significant relationship with the dependent variable, i.e., Success Determinant.

III. Coefficients

According to the coefficients outputs of collinearity statistics, obtained Tolerance and Variance Inflation Factors (VIF) values showed that the obtained values for tolerance and VIF = 1.421 are between 1 and 10. Therefore we can conclude that there is no multicollinearity symptoms. There is an additional information found from this table which is checking which independent variable contributes the most to the outcome by checking the standardized Coefficients Beta. From the tablebelow we can see that most of the independent variables affect the dependent variable.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	-0.244	0.220		-1.110	0.269					
	External Challenge	0.053	0.077	0.068	0.685	0.495	0.761	0.055	0.025	0.137	7.301
	TopManagementSupport	0.205	0.082	0.245	2.503	0.013	0.793	0.198	0.092	0.142	7.048
	ProjectTeamCompetence	0.046	0.048	0.053	0.957	0.340	0.611	0.077	0.035	0.443	2.259
	ProjectCharacterstics	0.182	0.036	0.228	5.083	0.000	0.385	0.380	0.187	0.676	1.480
	ProjectManagerCompetence	0.139	0.028	0.216	4.990	0.000	0.131	0.374	0.184	0.725	1.379
	ProjectOrganization	0.155	0.052	0.196	2.945	0.004	0.743	0.232	0.108	0.305	3.283
	ClientKnowledgeandExperience	0.220	0.056	0.271	3.927	0.000	0.783	0.303	0.145	0.285	3.509
	ContractualAspect	0.048	0.048	0.062	0.994	0.322	0.657	0.080	0.037	0.345	2.898

a. Dependent Variable: SuccessDeterminant

Table 38: Coefficients

4.4.2.3. Hypothesis Testing

The hypothesis of this study is tested using simple regression. In simple regression, we have only two variables, one variable defined as independent and another defined as dependent variable. Multiple regression analysis was employed to examine the effect of independent variables on the dependent variables.

Hypothesis I: External Challenge significantly affects the Success of Startup Construction Companies

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.761[a]	0.579	0.576	0.3769
a. Predictors: (Constant), External Challenge				

ANOVA [a]						
Model		Sum of Squares	DF	Mean Square	F	Sig.
1	Regression	31.271	1	31.271	220.1	.000b
	Residual	22.729	160	0.142		
	Total	54	161			
a. Dependent Variable: Success Determinant						
b. Predictors: (Constant), External Challenge						

Table 39: Regression Result External Challenge and Success Determinant

From above regression result R square and adjusted R square value of the simple linear regression is given by 0.761 and 0.579 respectively. This is interpreted as 57.9% of variance in Success of a startup construction company is explained by External Challenges, while the remaining of variation in Success can be attributed to other variables which are not considered in this study.

The F-statistic value of 220.134 at 1 and 160 degrees of freedom is statistically significant at 99% confidence level; which implies the variation in Success that is explained by External Challenges expressed by R square is statistically significant.

This suggests that the hypothesis which states External Challenge significantly affects Success of Startup Construction Company is accepted.

Hypothesis II: Top Management Support significantly affects the Success of Startup Construction Companies

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.793a	0.629	0.627	0.35375
a. Predictors: (Constant), Top Management Support				

ANOVA [a]

Model		Sum of Squares	DF	Mean Square	F	Sig.
1	Regression	33.978	1	33.978	271.5	.000b
	Residual	20.022	160	0.125		
	Total	54	161			

a. Dependent Variable: Success Determinant
b. Predictors: (Constant), Top Management Support

Table 40: Regression result Top Management Support and Success Determinant

Similar with the variable of Top Management Support with R square and adjusted R square value of the simple linear regression is given by 0.793 and 0.629 respectively. This is interpreted as 62.9% of variance in Success of Startup Construction Company is explained by Top Management Support, while the remaining of variation in Success can be accredited to other variables which are not considered in this study.

In addition to R and R square F-statistic value of 271.527 at 1 and 160 degrees of freedom is statistically significant at 99% confidence level. This implies the variation in Success that is explained by Top Management Support expressed by R square is statistically significant.

Accordingly this suggests that the hypothesis which states Top Management Support significantly affects Success of Startup Construction Company is accepted.

Hypothesis III: Project Team Competence significantly affects the Success of Startup Construction Companies

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.611a	0.374	0.37	0.45971

a. Predictors: (Constant), Project Team Competence

ANOVA [a]						
Model		Sum of Squares	DF	Mean Square	F	Sig.
1	Regression	20.187	1	20.187	95.52	.000[b]
	Residual	33.813	160	0.211		
	Total	54	161			

a. Dependent Variable: Success Determinant
b. Predictors: (Constant), Project Team Competence

Table 41: Regression Results Project Team Competence and Success Determinant

R square and adjusted R square value of the simple linear regression for Project Team Competence is given by 0.611 and 0.374 respectively. This is interpreted as only 37.4% of

variance in Success of Startup Construction Company is explained by Project Team Competence, while the remaining of variation in Success can be described by other variables which are not considered in this study. Also, the F-statistic value of 95.524 at 1 and 160 degrees of freedom is statistically significant at 99% confidence level. It was better if the R Squared value was greater than 0.5. But there is enough evidence to suggest that the hypothesis which states External Challenge significantly affects Success of Startup Construction Company is accepted.

Hypothesis IV: Project Characteristics significantly affects the Success of Startup Construction Companies

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.385a	0.148	0.143	0.53615
a. Predictors: (Constant), Project Characteristics				

ANOVA [a]						
Model		Sum of Squares	DF	Mean Square	F	Sig.
1	Regression	8.008	1	8.008	27.86	.000b
	Residual	45.992	160	0.287		
	Total	54	161			
a. Dependent Variable: Success Determinant b. Predictors: (Constant), Project Characteristics						

Table 42: Regression result Project Characteristics and Success Determinant

Project Characteristics having R square and adjusted R square value of the simple linear regression is given by 0.385 and 0.148 respectively. This is interpreted as only 14.8% of variance in Success Of Startup Construction Company is explained by Project Characteristics, whereas the remaining of variation in Success of Startup Construction Company can be attributed to other variables which are not included in this study. The F-statistic value of 27.857 at 1 and 160 degrees of freedom is statistically significant at 99% confidence level, the variation in Success of Startup Construction Company.

Thus this suggests that the hypothesis which states Project Characters tics significantly affects Success of Startup Construction Company is accepted.

Hypothesis V: Project Manager Competence significantly affects the Success of Startup Construction Companies

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.131a	0.017	0.011	0.57595
a. Predictors: (Constant), Project Manager Competence				

ANOVA [a]						
Model		Sum of Squares	DF	Mean Square	F	Sig.
1	Regression	.926	1	.926	2.791	.097[b]
	Residual	53.074	160	.332		
	Total	54.000	161			
a. Dependent Variable: Success Determinant						
b. Predictors: (Constant), Project Manager Competence						

Table 43: Regression Results Project Manager Competence and Success Determinant

Project Manager Competence having R square and adjusted R square value of the simple linear regression is given by 0.131 and 0.017 respectively. This is interpreted as only 1.7% of variance in Success Of Startup Construction Company is explained by Project Manager, whereas the remaining of variation in tax compliance behavior can be attributed to other variables which are not included in this study. Since the value of R Squared is less than 0.5 and the significance level is greater than 0.05, there is no enough evidence to suggest the hypothesis which states Project Manager Competence significantly affects Success of Startup Construction Company.

This suggests that the hypothesis which states Project Manager Competence significantly affects Success of Startup Construction Company is not accepted.

Hypothesis VI: Project Organization significantly affects the Success of Startup Construction Companies

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.743a	0.553	0.55	0.38858
a. Predictors: (Constant), Project Organization				

ANOVA [a]						
Model		Sum of Squares	DF	Mean Square	F	Sig.

1	Regression	29.842	1	29.842	197.6	.000b
	Residual	24.158	160	0.151		
	Total	54	161			

a. Dependent Variable: Success Determinant
b. Predictors: (Constant), Project Organization

Table 44: Regression Results Project Organization and Success Determinant

Similar with the variable of Project Organization with R square and adjusted R square value of the simple linear regression is given by 0.743 and 0.553 respectively. This is interpreted as 55.3% of variance in Success of Startup Construction Company is explained by Project Organization, while the remaining of variation in Success can be accredited to other variables which are not considered in this study.

In addition to R and R square F-statistic value of 197.638 at 1 and 160 degrees of freedom is statistically significant at 99% confidence level. This implies the variation in Success that is explained by Project Organization expressed by R square is statistically significant.

Accordingly this suggests that the hypothesis which states Project Organization significantly affects Success of Startup Construction Company is accepted.

Hypothesis VII: Client Knowledge & Experience significantly affects the Success of Startup Construction Companies

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.783[a]	0.612	0.61	0.36172

a. Predictors: (Constant), Client Knowledge and Experience

ANOVA [a]

Model		Sum of Squares	DF	Mean Square	F	Sig.
1	Regression	33.065	1	33.065	252.71	.000[b]
	Residual	20.935	160	0.131		
	Total	54	161			

a. Dependent Variable: Success Determinant
b. Predictors: (Constant), Client Knowledge and Experience

Table 45: Regression Results Client Knowledge & Experience and Success Determinant

Similar with the variable of Client Knowledge & Experience with R square and adjusted R square value of the simple linear regression is given by 0.783 and 0.612 respectively. This is

interpreted as 55.3% of variance in Success of Startup Construction Company is explained by Client Knowledge & Experience, while the remaining of variation in Success can be accredited to other variables which are not considered in this study.

In addition to R and R square F-statistic value of 252.710 at 1 and 160 degrees of freedom is statistically significant at 99% confidence level. This implies the variation in Success that is explained by Client Knowledge & Experience expressed by R square is statistically significant.

Accordingly this suggests that the hypothesis which states Client Knowledge and Experience significantly affects Success of Startup Construction Company is accepted.

Hypothesis VIII: Contractual Aspect significantly affects the Success of Startup Construction Companies

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.657a	0.432	0.428	0.43782
a. Predictors: (Constant), Contractual Aspect				

ANOVA [a]						
Model		Sum of Squares	DF	Mean Square	F	Sig.
1	Regression	23.330	1	23.330	121.711	.000[b]
	Residual	30.670	160	.192		
	Total	54.000	161			
a. Dependent Variable: Success Determinant b. Predictors: (Constant), Contractual Aspect						

Table 46: Regression Results Contractual Aspect and Success Determinant

Similar with the variable of Client Knowledge & Experience with R square and adjusted R square value of the simple linear regression is given by 0.657 and 0.432 respectively. This is interpreted as 43.2% of variance in Success of Startup Construction Company is explained by Contractual Aspect, while the remaining of variation in Success can be accredited to other variables which are not considered in this study.

In addition to R and R square, F-statistic value of 121.711 at 1 and 160 degrees of freedom is statistically significant at 99% confidence level. This implies the variation in Success that is explained by Contractual Aspect expressed by R square is statistically significant.

Accordingly this suggests that the hypothesis which states Contractual Aspect significantly affects Success of Startup Construction Company is accepted.

The study by (Tsiga Z. E., 2016)identified different critical success factors and their corresponding categories.The different CSFs, eight of them were selected for this study. Eight hypothesis were drawn to be tested what has been proven by different and previous literatures.

The detailed results are discussed above and the summary of the results are described in the table below.

Summary of Hypothesis Testing and Results

No	Hypothesis	Test Result
1	External Challenges significantly affect the Success of Startup Construction Company	Fail to Reject
2	Top Management Support significantly affect the Success of Startup Construction Company	Fail to Reject
3	Project Team Competence significantly affect the Success of Startup Construction Company	Fail to Reject
4	Project Characteristics significantly affect the Success of Startup Construction Company	Fail to Reject
5	Project Manager Competence significantly affect the Success of Startup Construction Company	Reject
6	Project Organization significantly affect the Success of Startup Construction Company	Fail to Reject
7	Client Knowledge & Experience significantly affect the Success of Startup Construction Company	Fail to reject

8	Contractual Aspect significantly affect the Success of Startup Construction Company	Fail to reject

Table 47: Summary of Hypothesis Testing

Based on the regression analysis results of the study, all the above hypotheses were accepted to be statically significant except for Project Manager Competence. According to the collected data and the analysis conducted project manager competence isnot foundto be statically significant as it was proven to be in previous researches.

The results imply that the proper management of ups and downs from external environments and making changes accordingly, the proper support from top management to projects and the teams under it, the Competence and qualification of the project teams, the proper definition and understanding of project characteristics, the proper organization and management of projects, the use of clients Knowledge & Experience and dealing with the contractual aspect properly have been found to highly affect the success of startups in the construction industry.

4.5. Interview Results

The purpose of the interview was to find out the relationship between the success of projects and the success of the overall organization. From the interview it was establishedthat projects are emphasized with all sectors of a company's business and they are the core entities in the company, therefore the cumulative success of projects are reflected as the success of the organization.

The interview also tried to understand what success means to the participants in regards to volume of work delivered, market share, achievement of goals and history of failed projects. It is believed by the participants of the study that the timely and within budget delivery of works, having a market share and being recognized for the works performed by the company, successful completion of projects and the achievement of goals set by the company are considered as success.From previous researches it was understood that the definition of success and the factors affecting it are different and there is no general definition and the interview also confirmed that the understanding of success by the participants is different. But they all believed that project successes are important.

CHAPTER V

5. SUMMARY, CONCLUSION AND RECOMMENDATION

This chapter concludes the study. It summarizes the findings of the study, its objectives and conclusions. It also makes recommendations for further research.

5.1. Summary of Results

The purpose of the study was to identify to what extent the critical factors; external challenges, top management support, project team and manger competence, project characteristics, project organization, client's knowledge and experience and contractual aspect influence the success of startup construction companies.

As the study was conducted using the structured questionnaire, it helped the research get an insight how the CSFs affect the success of startup construction companies. Based on the analysis of data and discussion of results, the following are the summaries of major findings in the study.

The R (Coefficient of Correlation) is a measure of the degree of linear association between the dependent variable, success of startup construction companies and the independent variables; CSFs jointly. As discussed by Gujarati, 2004, it only measures degree of association or co - variation between the two variables. In this study the value of R which is 0.793 shows that there is a very strong relationship between the independent variables (CSFs) and Success of Startup Construction Companies.

The adjusted R square (Coefficient of Determination) is defined as the proportion of the total variation or dispersion in the dependent variable (Success of Startup Construction Company) that is explained by the variation in the independent variables in the regression. Accordingly adjusted R Square in this study with the value 0.782 shows the percentage variation in Success of Startup Construction Companies is explained by the linear relationship with all the independent variables; CSFs.

The ANOVA produced a P-value of 0.000 which is below the alpha level, i.e. 0.05. That means the independent variables have an overall statistically significant relationship with that of the dependent variable, i.e. Success of Startup construction Companies.

So, as it can be witnessed in the regression analysis, the independent variables significantly predict the dependent variable.

5.2. Conclusion

Based on the finding of the study the following conclusions are drawn:

- ✓ This study has found that external challenges including legal, economic, social, political and physical environmentshas strong influence on the success of startups in the

construction industry. The changes in the different environments out of the company's control in the construction industry highly affects startups and startups need to respond accordingly, attentionmust be given and the environments need to be addressed well.

- ✓ This study also found evidence supporting the notion that support given to the head of projects and the critical activities within the company from the top management has a highly affects the success of startups.
- ✓ Concerning projects; competence of project teams, characteristics of the projects, the organization and management of projects were found to be highly prominent on the success of startups.
- ✓ The knowledge and experience of clients and the contractual aspects also significantly affect the success of startups in the construction industry.
- ✓ The correlation result also showed that all the independent variables namely; external challenges, top management support, project team and manager competence, project characteristics, project organization, client's knowledge and experience and contractual aspect, are positively and significantly related with the dependent variable (Success of startup construction companies) at P-value <0.001.
- ✓ The regression analysis also revealed that external challenges, top management support, project team competence, project characteristics, project organization, client's knowledge &experience and contractual aspect have been found to influence the success of construction companies.

5.3. Recommendation

Based on the findings and conclusions of the study discussed above, the researcher forwards the following recommendations.

- ✓ Startup construction companies should work towards the success of their projects as the cumulative success of projects is directly associated with the success of the overall company. The success of projects are related not limited to the competence of the project team, the proper organization and management of projects and the appropriate definition of the different characteristics of projects.
- ✓ The CSFs discussed must be given enough attention and managed properly so they can have a positive influence on the success startups in the construction industry.

- ✓ Since this study have found a strong connection between external challenges, top management support, project team and manger competence, project characteristics, project organization, client's knowledge and experience and contractual aspect and the success of startup construction companies, startups should work towards creating positive outcomes regarding the CSFs.
- ✓ It may be hard to measure the CSFs at the company level since some of the factors are out of the company's control. But this study is aimed at giving an insight on what CSFs are how they affect the success of startups. So it is suggested that startups should identify the CSFs that works for them and work towards managing and sustaining them.
- ✓ This study is only limited to startups under category GC5 and above.It is known that the construction industry is a very wide and vast industry. Therefore it is recommended that a broad study be done to cover startups in the entire construction industry.

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APPENDICES

ADDIS ABABAUNIVERSITY

MASTERS OF BUSINESS ADMINSTRATION

APPENDIX I

Invitation to Participate in a Questionnaire Survey

Dear Respondents

I am a student at Addis Ababa University faculty of Business and Economics doing my masters on Business Administration.

I am currently doing my thesis titled, (Critical) Success Factors of Startup Construction Companies in Ethiopia. The purpose of the research is to determine the critical factors that highly affect the success of startup construction companies.

I kindly request you to fill out this questionnaire attached with this letter that would take approximately 30 minutes of your time. Please know that your responses will be completely anonymous and the data collected will be used for academic purpose only. Your name and the name of your company will not be mentioned anywhere in this research paper.

I thank you in advance for your cooperation. If you have any questions feel free to contact me through my email lenigebrewahd@gmail.com or phone number +251-900-30-53-25.

Sincerely Yours

Eleni Gebrewahd

I. Critical Success Factor Questions

Rate to which extent the following factors under different categories affect the success of a construction company.

The ratings are as follows: 5-Strongly Affect, 4-Affect, 3-Medium, 2-Low Affect and 1-Not Affect

No	Critical Factors	1	2	3	4	5
I	**External Challenges**					
1	Economic Environment					
2	Social Environment					
3	Political Environment					
4	Physical Environment					
5	Legal Environment					
II	**Top Management Support**					
6	Support Given To Project Head					
7	Support Given To Critical Activities					
8	Understanding Of Project Difficulty					
9	Stakeholder Influence					
III	**Project Team Competence**					
10	Experience					
11	Technical Skills					
12	Planning And Organizing Skills					
13	Commitment And Involvement					
14	Team Adaptability To Changing Requirements					
15	Working Relationships					
16	Educational Level					
17	Training Availability					
18	Decision Making Effectiveness					
IV	**Project Characteristics**					
19	Project Type					
20	Project Size					
21	Project Nature					
22	Project Complexity					
23	Design					
24	Resources Allocation Time					
25	Level Of Technology					

V	**Project Manager Competence**					
26	Experience					
27	Coordinating And Motivating Skill					
28	Leading Skills					
29	Communication And Feedback					
30	Management Skills					
31	Conflict Resolution Skills					
32	Organization Skill					
VI	**Project Organization**					
33	Planning And Control Effort					
34	Team Structure And Integration					
35	Safety And Quality Program					
36	Schedule And Work Definition					
37	Budgeting					
38	Control Of Subcontractors					
VII	**Clients Knowledge And Experience**					
39	Nature Of Finance					
40	Experience					
41	Organization Size					
42	Decision Making					
43	Roles And Contribution					
44	Expectation And Commitment					
45	Involvement Influence					
VIII	**Contractual Aspects**					
46	Contract Type					
47	Tendering (Procedures Or Steps For The Selection Of That Service)					
48	Procurement (Company Selection To Provide Services) Process					
49	Capital Of The Project And Company					
50	Management Experience Of The Company					

Determine how successful your company is regarding the following success determining factors						
The ratings are as follows: 5-Very Well, 4-Well, 3-Medium, 2- Low and 1-Very Low						
No	**Success Determinants**	**1**	**2**	**3**	**4**	**5**
1	How well are the external challenges managed in your company?					
2	How much support is given to projects and critical activities from the top management in your company?					
3	To what extent is project team competence exercised/evaluated?					
4	To what extent is project manager competence exercised/evaluated?					
5	How are the project characteristics defined and managed in your company?					
6	How well are projects organized and managed?					
7	How well are the knowledge and experience of your clients used to your companies advantage?					
8	How well are the contractual aspects handled in your company?					

II. General Questions

Please give answers to the following questions accordingly.

1. Name of your firm/company? (Optional)

   _____

2. Year of establishment?

3. Type of business carried out by the company?

   □ Building □Road □Water Works

4. What is the grade of the company?

5. What is your position in the company?

6. Your year of experience in the construction industry?

End of Questionnaire

Thank you for your time and cooperation

APPENDIX II

Preliminary Interview Questions

1. The number of professional manpower in your company?
2. Number of machinery owned?
3. Would you say owning your own company allowed you to live the way you want?
4. Is there a company policy in place regarding: (it is Yes or No question)

- Quality control: _____
- Customer focus: _____
- Innovative marketing practices & flexibility: _____
- Employee empowerment and motivation_____
- Good management technique_____
- Leadership and time management _____
- Pricing strategy and financial management_____

5. Would you say you have accomplished the goals and objectives set by your company?
6. What is the competitive advantage you own that gives you benefit in the industry you are competing in?
7. How is success measured in your organization? In terms of
    - Volume of Work delivered since establishment
    - Market share in the industry
8. Are there any failed projects in your history? (if only you are willing to give the information) If there is what was the cause?
9. How does the success of your projects would you say influence your overall organizational success?