

**CHALLENGES OF INFRASTRUCTURE  
DEVELOPMENT IN ETHIOPIA; FOCUS ON  
CONSTRUCTION FIRMS' ORGANIZATIONAL  
EFFECTIVENESS**

**A THESIS SUBMITTED TO THE GRADUATE  
SCHOOL OF APPLIED SCIENCES  
OF  
NEAR EAST UNIVERSITY**

**By  
WENDMAGEGN ADDIS SEMA**

**In partial fulfillment of the requirements for  
the degree of Master of Science  
in  
Civil Engineering**

**NICOSIA, 2019**

**WENDMAGEGN  
ADDIS SEMA**

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ORGANIZATIONAL EFFECTIVENESS**

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I hereby declare that all information in this research work titled “challenges of infrastructure development in Ethiopia; focus on construction firms’ organizational effectiveness” has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

Name, Last name:

Signature:

Date:

**To my family...**

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## **ABSTRACT**

Challenges of infrastructure development are various and may include planning problems, procurement constraints, financial problems, operational inefficiency and impact on the environment among other things. The main objective of this research was to show how Ethiopian construction companies are currently organized or structured and identify the associated root problems. A questionnaire adopted based on the defined framework was used to collect data from 106 contractors in Ethiopia and the data was analyzed with SPSS frequency analysis, chi square and independent sample t - tests. Accordingly the result showed that 65.64% of the firms have failed to document adequate mechanisms for accomplishing tasks across departments and 80.19% of the companies do not have an in house education designed for employees. Moreover 55.6% of the companies are focused on short term profitability rather than long term existence. The study also revealed that it is only in 20.8% of the firms that the employees are aware of the strategies, objectives, mission and vision of their company and only 42.5 % of the companies have a clear strategy. Moreover the decision making approach is top down and individual direction in 69.81% of the companies and 75.47% of them have never undertaken organizational restructuring to adapt with industry trends. Based on the findings it is concluded that the level of organizational effectiveness in Ethiopian construction companies is unsatisfactory and it is the major reason for the poor performance of the firms in the country's infrastructure development projects.

**Keywords:** Infrastructure; organization; effectiveness; strategy; structure



## ÖZET

Altyapı geliřtirmenin zorlukları çeřitlidir ve planlama problemlerini, tedarik kısıtlamalarını, finansal problemleri, operasyonel verimsizlięi ve çevre üzerinde dięer Őeylerin üzerindeki etkilerini içerebilir. Bu arařtırmanın temel amacı, Etiyopya inřaat Őirketlerinin Őu anda nasıl örgütlendiklerini veya yapılandırıldığını ve iliřkili kök sorunlarını tanımlamaktır. Tanımlanan çerçeveye dayalı olarak kabul edilen bir anket Etiyopya'da 106 yükleniciden veri toplamak için kullanılmıř ve veriler SPSS frekans analizi, ki-kare ve baęımsız örneklem t - testleri ile analiz edilmiřtir. Buna göre, sonuçlara göre firmaların% 65.64'ü bölümler arası görevleri yerine getirmek için yeterli mekanizmaları belgelemediklerini ve Őirketlerin% 80,19'unun çalıřanlar için tasarlanmıř bir evde eęitim almadığını gösterdi. Ayrıca, Őirketlerin% 55,6'sı uzun vadeli varoluřtan ziyade kısa vadeli kârlılıęa odaklanmaktadır. Çalıřma aynı zamanda, çalıřanların Őirketlerinin stratejilerinin, amaçlarının, misyonunun ve vizyonunun farkında olduęunun firmaların sadece% 20,8'inde olduęunu ve Őirketlerin sadece% 42,5'inin net bir stratejiye sahip olduęunu ortaya koydu. Dahası, karar verme yaklařımı yukarıdan ařaęıya doęru hareket ediyor ve Őirketlerin% 69,81'inde bireysel yönlendirme ve% 75,47'si sanayi eęilimlerine uyum saęlamak için hiçbir zaman örgütsel bir yeniden yapılanma gerçekteřtirmedir. Bulgulara dayanarak, Etiyopya inřaat Őirketlerinde örgütsel etkinlik seviyesinin yetersiz olduęu ve firmaların ülkenin altyapı geliřtirme projelerinde düşük performans göstermesinin temel nedeni olduęu sonucuna varılmıřtır.

**Anahtar Kelimeler:** altyapı; organizasyon; etkinlik; strateji; yapı

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## **LIST OF ABBREVIATIONS**

<b>BC:</b>	Building Contractor
<b>CEO:</b>	Chief Executive Officer
<b>CMU:</b>	Company Management Unit
<b>GC:</b>	General Contractor
<b>GDP:</b>	Gross Domestic Product
<b>HQ:</b>	Head Quarters
<b>RC:</b>	Road Contractor
<b>UCBP:</b>	University Capacity Building Programs

# CHAPTER 1

## INTRODUCTION

### 1.1. Background of the Study

Third world countries like Ethiopia are struggling to attain economic growth due to their poor social and economic infrastructure. Infrastructure development plays an important role in helping for high level productivity and economic growth and should be incorporated in to the countries' public policies and be able to meet the demands of people. (Byoungki Kim, 2006)

Ethiopia is running one of the world's fastest growing economies and is striving towards meeting the Millennium Development Goals manifested by huge infrastructure projects on board including the great renaissance dam soon to be the largest hydroelectric dam in Africa with a power generating capacity of 6000 Mw which was achieved through an economic strategy focusing on public infrastructure development. (Masimba Tafirenyika, 2015)

Besides other infrastructure projects are being implemented in the country including University capacity building Programs (UCBP) targeting to improve the provision of higher level education and developing the capacity of domestic construction companies, housing development program targeting to deliver 450,000 housing units in 5 years in Addis Ababa, a 13 year road sector development program, railway development, sanitation and water supply projects, Geo-Thermal and Information Communication Technology Projects which are incorporated in the 2<sup>nd</sup> growth and transformation plan of the country. (Tadesse et.al, 2016)

Zewdu & Aregaw (2015) stated that starting from the new millennium Ethiopian construction industry is experiencing tremendous growth with a 5.6% contribution to the country's gross domestic product (GDP) and is placed 6<sup>th</sup> in infrastructure stock contribution in Africa. Extensive delays (61-80%), quality problems, low safety records, lost Productivity, acceleration, increased costs (21-40%) and contract termination are the characteristics of Ethiopian construction industry.

Other studies suggest that Infrastructure development and construction firms' performance is interrelated. Vivien Foster and Elvira Morella (2010) stated that 50% of productivity losses in construction firms are attributed to infrastructure constraints whereas Tadesse et.al (2016) reported that the performance of Ethiopian construction firms in projects is unsatisfactory and need improvement in a variety of management perspectives.

Besides the above instances there were numerous infrastructure development projects initially contracted to domestic contractors and shifted to foreign companies due to the extensive delays, cost overruns, quality and safety problems which are directly related with technical and managerial capabilities of the firms or their organizational effectiveness in general.

Therefore it is of paramount importance to study the strategy, structure and associated root problems of domestic firms and to rate their level of organizational effectiveness, with this respect this study focuses on effectiveness of construction firms as an organization and the impact of their performance on infrastructure development.

The general aim of this study was to assess and show how Ethiopian construction industry is currently organized and structured, how infrastructure development is being affected by construction firms performance and providing clues, ideas, suggestions, and models as to how construction firms organize and structure themselves to successfully grow and develop their companies based on attributes of organizational effectiveness identified from literature.

The methodology adopted for this research will comprise a literature review to determine the research focus (local and international studies conducted on challenges of infrastructure development in general and organizational effectiveness in particular) and a questionnaire survey on grade 1 & 2 contractors. The study will contribute to the success of future infrastructure development projects by pointing out the root problems of the firms and providing recommendations and corrective measures for future endeavors.

## **1.2. Statement of the Problem**

As a developing country Ethiopia is striving towards economic development with infrastructure development the key for attaining the desired goal. Nevertheless according to



ethiopian economic association report in 2013 the majority of Ethiopian infrastructure development projects are contracted to foreign construction companies due to lack of capable domestic construction companies. Besides the limited projects contracted to domestic firms including the multibillion projects are experiencing extensive delays, cost overrun and considerable quality and safety problems which questions the effectiveness of the firms as an organization or their organizational effectiveness. Therefore it is necessary to examine and show how Ethiopian construction firms are currently organized and structured, identify the associated root problems and rate their level of effectiveness.

### **1.3. Objectives of the Research**

#### **1.3.1. General Objective**

In general the purpose of this research was to show how Ethiopian construction firms are currently organized or structured and identify the associated root problems.

#### **1.3.2. Specific Objectives**

- Identify the role of organizational effectiveness of construction firms for effective infrastructure development
- Understand Ethiopian construction firms' organization and structure and identify the associated root problems.
- Identify the key success factors for construction firm's success in infrastructure development projects and attributes of organization effectiveness
- Identify the means for achieving greater organization effectiveness
- Put forward a set of key factors essential for the success of construction firms in future infrastructure development projects and Corrective measures and recommendations to improve their level organizational effectiveness.

### **1.4. Significance and Impact of the Research**

In countries like Ethiopia contribution of infrastructure development is vital for sustainable economic growth, nevertheless extreme delays, cost overruns and quality problems in these infrastructure development projects are hampering the intended outputs. With this respect the

study will contribute to the success of future infrastructure development projects by pointing out the root problems of the construction firms and providing recommendations and corrective measures for the success of the companies in future endeavors. The general impacts of the research are summarized below.

- *Scientific(Publications)* - There is a huge gap in the national literature regarding the topic therefore the study will have a significant benefit in contributing to fill this gap.
- *Economical/Social/Commercial* - The outputs of the research will be used as input for future restructuring of construction firms and taking corrective actions on current organization structure by soliciting the root problems.
- *Development of new research and researchers* - will contribute to field of construction management by filling the gap in the literature and will be an input for further researches

### **1.5. Research Questions**

The following are the research questions to be answered by the research.

1. How does effectiveness of construction firms affect infrastructure development?
2. What are the attributes that lead to an effective organization in Ethiopian construction industry?
3. What are the root problems associated with Ethiopian construction firms' organization and structure?
4. What are the key success factors for construction firm's success?

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1. Introduction**

Infrastructure development projects can be regarded as foundations on which a country's security and economy is built and can be classified as social (schools, housing, water and health care projects) and economic (roads, railways, airports, sanitation, communication and energy/power projects). (John Spacey, 2017)

Defining infrastructure may be a hard task, therefore it is preferable to describe it by determinant factors associated with it; these factors includes but not limited to availability of facilities to the wider public, ability to provide services for different organizations and societal groups, aiding in attainment of social, political and economic goals and provision or acting as a base on which society and the related activities take place. (Gianpiero Torrisi, 2009)

Byoungki Kim(2006) stated that Expenditures on infrastructure development projects have tremendous return in developing countries manifested on the nation's economic growth and enhanced productivity, therefore infrastructure development should be incorporated and be an integral part of developing nations' public policies.

Mobolaji Olaseni (2011) cited Adeyemo (1989) who elaborates the positive impact of infrastructure development on socio economic development of a country; the study asserted that achieving the desired development will be hard without the provision of facilities and services and label convenient access to health care, education, transportation, power and potable water supply as determinants of development.

There is a direct relation between growth in productivity and infrastructure development which should be dispersed throughout the country to meet the demands of infrastructure; besides infrastructure development aids in achieving fair distribution of outcomes, increasing investment in infrastructure development yields growth enhancement and fair distribution of income. (Calderon and Serven, 2004)

## 2.2. Types of Infrastructure

Under the general categories of social and economic infrastructure there are different types of infrastructures which include water, power, health care, security, information, safety, education and transportation. Broadly speaking infrastructure development projects include variety of bridges, transportation facilities, airports, potable water provision, adequate waste water removal and treatment, electric energy (both generating and transmitting), buildings, railways and ports. (Buhr, 2003)

## 2.3. Major Challenges of Infrastructure Development

The major challenges of infrastructure development projects found in the literature are:-

- *Planning and design problems* – many infrastructure development projects failed to live up the announced timeline, cost and quality solely due to inadequate planning and design; these problems are attributed to lack of cooperation between stakeholders, inadequate feasibility studies, choice of inappropriate location, failure to meet environmental standards and problems with the structure of the project. (Gianpiero Torrisi, 2009)
- *Procurement problems* - Procurement administration should be considerable attention in infrastructure development projects, on contrary projects in developing countries like Ethiopia are characterized by inadequate procurement management which is another major factor in effective implementation of projects; some instances are purchasing delay and poor supervision of materials, corruption in bidding and contracting, problems in administering and enforcing contracts. (Laura Pekuri, 2014)
- *Inefficiency of operations* – the quality of the final product shows the capability of the executing entity and is an indicator of the level of performance; with this respect many of infrastructure development projects fall short of adequate quality, reasonable cost and duration attributed to technical and managerial problems. (Tadesse et.al, 2016)
- *Inadequate maintenance* – on time maintenance of the already in place infrastructure projects is the other challenge developing countries are facing. Some of the instances

of these problems are deterioration of roads, leaking of irrigation canals, failure of backup generators, breakage of underground phone lines, water pumps becoming idle. If these infrastructures are not maintained on time the problem will widen and demand considerable investment. (Mobolaji Olaseni, 2011)

- *Financial problems* – the finance for infrastructure development projects is provided by other countries and funding agencies based on the quality of infrastructure policy devised; poor policies fail to absorb funds and struggle in implementation, besides banks are cautious for participating in infrastructure development. (UN, 2015)
- *Impacts on environment* – some infrastructure development projects have a negative impact on environment if not properly managed like resettlement problems in the upstream of dams and roads, Wastage in using water, pollution from energy and vehicle fuels, poor construction of sanitary and storm water.(Glewwe, 1987)

#### **2.4. Organizational Effectiveness**

Studies suggest that Infrastructure development and construction firms' performance is interrelated. Vivien Foster and Elvira Morella (2010) stated that 50% of productivity losses in construction firms are attributed to infrastructure constraints whereas Tadesse et.al (2016) reported that the performance of Ethiopian construction firms in projects is unsatisfactory and need improvement in a variety of management perspectives.

For an infrastructure development project to be successful the stakeholders' effective performance is mandatory especially the project executing entity or contractors should have the capability as well as the experience to undertake such types of projects. Nevertheless Ethiopian construction firms do not have these credentials and fail to live up the demand and expectation of policy owners and the general public. (J. Gochhayat Giri and D. Suar, 2017)

According to a report by Ethiopian economic association (2014) due to the lack of capable domestic contractors the majority of infrastructure development projects are handled by foreign companies which will also affect the country's economy because of the additional foreign currency needed ( the domestic firms could not cope up with the challenge even the projects prioritized indigenous contractors by pre-qualifying). The report reported the

transportation sector as a manifestation of this domination by foreign firms in which 81.2% of the total asphalt road constructed between 2004 -2013 is contracted to foreign companies which leaves the domestic firms with 10.7% share only. In addition the financial payment effected to foreign supervisors in these projects takes 72.5 percent of the total effected payment. The report pointed out that the domestic firms have failed in subcontracting part of the work to specialized subcontractors which will improve the quality and volume of construction works.

**Table 2.1** - Total roads construction by contractors, in million Birr (ERA, 2014)

Year	Asphalt road				Gravel road		
	Force account	Domestic contractors	Foreign contractors	total	Domestic contractors	Foreign contractors	total
2004 - 2013	1,083.4	1,453.6	10,988.5	13,525.4	2,579.2	1,135.0	3,714.3
Share (in %)	8.0	10.7	81.2	100	69.4	30.6	100

Based on reports of Ethiopian investment commission and World Bank, In addition to road projects other significant large scale projects are contracted to foreign companies the following are some examples

- The great renaissance dam (6000 Mw generating capacity) is contracted to the Italian Salini construction.
- Industrial park development projects across the country are handled by china
- The Addis Ababa city light rail project and other Major six railway routes are contracted to the Chinese CRBC with \$475 million contract price
- African Union headquarters in Addis Ababa is built by china among a variety of private and government building construction projects

- Africa's first waste to energy plant, Repi land-fill power project (185 Mw power generating capacity and a cost of \$100) is built by the British Cambridge Industries and Chinese CNAEC
- Addis Ababa Bole international airport which accommodates Africa's largest airline Ethiopian airlines is constructed by china.
- Due to the poor performance of the Defence contractor METEC the sugar factory projects are now given to the Chinese Company Complant.

Besides the above instances there were numerous infrastructure development projects initially contracted to domestic contractors and shifted to foreign companies due to the extensive delays, cost overruns, quality and safety problems which are directly related with technical and managerial capabilities of the firms or their organizational effectiveness in general. Therefore it is of paramount importance to study the strategy, structure and associated root problems of domestic firms and rate their level of organizational effectiveness. Some of the previous studies on Ethiopian construction industry are discussed below.

The construction industry is one of the highest rated industries that have a special role in any country's quest for development. It plays a fundamental role in building economic infrastructure and in expanding factories. Ethiopian construction industry is playing the same role in the country's economy by delivering a wide range of infrastructure development projects on which other economic endeavors are built on it. (Tigist Ayele, 2018)

The construction industry by its nature involves a wide range of diversified activities which makes it difficult for the technical manager to manage it effectively since the integration of these activities is mandatory for achieving the desired goals. It is the role of project management team to prepare adequate plan how the different resources i.e. labor, machineries, materials and money are coordinated for aspired objectives. (Derebe Worku, 2018)

Nevertheless, it is acknowledged that most of Ethiopian construction projects failed in keeping their contractual budget and time. Current infrastructure development and other construction projects show significant cost variation which will result in low profit margins from utilizing

the deliverables, time lag in the effective usage of the projects and frustration for the end users or the general public which will induce other ramifications. (Zinabu and Getachew, 2015)

The causes of delay, cost overrun and various other problems in the industry continue to cost the country economically. therefore it is vital to addresses the causes of these shortcomings and the reasons that hinder the acceptableness of the projects based on the intended performances, if not outstanding performance of the local construction industry in average as it relates to the performance of consultants. (Nuhamin Getachew, 2018)

These issues are major warning signs and beg the question: what fundamental responsibilities are the major stakeholders of the industry overlooking or neglecting, if any. Engineering at its core is a profession that serves society by solving pressing problems but it doesn't seem to be fully living up to its reputation in the local construction sector. (Gizachew Tadele, 2017)

This is not to imply there aren't exemplary construction parties and projects but they are few and outnumbered. The questionable quality, livability, safety and planning of some condominium housing facilities can serve as an example of lack of regard to and negligence of professional ethics. Moreover, according to a wide range of studies in Ethiopian construction industry, clients including the government are opting for foreign consultants and contractors for mega-projects. (Azeb Getahun, 2018)

It is also reported that poor performance of domestic contractors in Ethiopian construction projects is significantly affecting projects timely completion with pre determined cost. Design errors and repetitive changes, economical problems, management expertise, poor contract management, variation order and poor project planning, scheduling and management are the causes for poor performance. (Rahel Kassaye, 2016)

The other significant problem identified through research is the hugely fragmented and disintegrated relationship between stakeholders because the majority of the projects are utilizing design bid build delivery system which involves at least two distinct steps of bidding for design and construction stage. (Gebrehana Tadesse, 2018)



Considering the fierce competition in a business environment the firms should re evaluate their internal process and activities to make priorities and adapt to industry trends head to organization effectiveness; supply chain management is an effective tool to coordinate tasks and resources and accomplish the desired objectives. (Natnael Gebreyesus, 2016)

Stake holders in the construction industry do not have the expertise and experience on supply chain management (the chain in the project delivery starting from tendering to procurement, planning and design and implementation are not integrated) which is costing the projects more than the anticipated in planning. (Gelana Assefa, 2016)

Michael Birhanu (2018) has extended the poor performance of the contractors up to the commissioning phase of the projects; the study revealed that the constraints emanating from the construction or implementation of the projects is hindering effective commissioning in which client interference, delay, variations and inadequate supervision mentioned as causes.

Organizational effectiveness is a difficult concept to define and measure for many organizations, in other words there is no well defined parameters to measure a certain organization's effectiveness. But Organizational effectiveness can be defined as how effective is an organization in achieving the desired goals is set out before undergoing a project.

The organizations are using proxy measures (like total people served, the population segment sizes and types which are served and what the segments demand for organization supplies) rather than measuring their effectiveness as an organization directly. (Dikmen et.al, 2003)

A variety of goals and constraints should be included in organizational effectiveness assessment. It is only after relevant restrictions have been satisfied and the targets for different goals have been met or exceeded the plan based on the performance evaluation that one can say an organization is effective in other words the organization the rate the organization is close to achieving the targets or exceed them, the greater is the organizational effectiveness of the organization. (Liu, 1999, Pennings, 1977)

Organizational effectiveness assessment can be seen as an exercise of corporate value judgment which deals with the goals the organization should pursue and the judgment process

employed which in turn can provide the organization with different methods of organizational effectiveness assessment. (Campbell, 1977)

Different Variably independent but dimensions can make an organization effective or ineffective therefore the organization should give operational definition to sort out interrelated variables. There are different approaches to conduct organization effectiveness studies but among these approaches the goal derived and the systems approach are widely used which are based on the desired goals of the firm (ends) and the means or the system the organization used to achieve the goals respectively. (Anita M.M. Liu et.al, 2006)

To achieve organizational objectives in an organization, different levels of management engaged in many unique tasks within the organization are involved with different degrees and depth of power, accountability and responsibility which depends on a clear definition of management level. (Zahra Rezvani, 2017)

## **2.5. Levels of Management**

Levels of management can be understood as a hierarchical arrangement of positions or border lines between various administrative posts in an organization in which the available levels of management, among other things, depends on the size of the organization and command relationships, the amount of decision making power that a manager has in a given position is dependent on the management level. (Bantie Workie, 2004)

### **2.5.1. Top Level Management:**

They are also known as senior management or executives which include names such as: Chief Executive Officer (CEO), finance managers, communication administrators, President and Vice presidents, Board Chairperson, Corporate head. Top-level managers make decisions that will have an impact on the entire firm like establishing broad objectives, designing major strategies, providing overall leadership and direction, making overall control of the organization. (Tamiru Lemma, 2018)

### **2.5.2. Middle Level Management**

Middle level managers includes heads of different functional areas and their assistants: divisional heads, department managers, section heads, plant managers, branch managements, etc. and acts intermediary between top and operating level management, developing specific targets in their areas of responsibility, develop specific schedules and coordinating inputs, productivity and outputs of operating level management. (Stefanie Roth, 2016)

### **2.5.3. First Level (Operating Level) Management**

It consists of non management workers that are typically titled as section chief, office manager, foreman, supervisor, etc. First level managers are focused on directing and controlling of organization works, assigning employees for different works, tasks and day to day activities, controlling quality as well as quantity of production on site, solving employees' problems, giving opinions and recommendations to the next level. , solving grievances of the workers, arranging the logistics for accomplishing tasks, preparing updated reports on employees' performance, ensuring discipline and work ethics in the organization and motivating employees for good performance. (Management study guide, bantie workie,2004)

## **2.6. Managerial Skills**

A manager requires a range of skill to perform the duties and activities associated with the job regardless of the level of management he or she is. Skill can be defined as ability to do something expertly and well. In other words it is an ability related to performance that is not solely in born but which can be developed/ acquired through time. all managers must make decisions, and the quality of these decisions, digital, interpersonal, planning , teamwork, strategic action, global awareness and self-management skill. (Minas Ermias, 2016)

## **2.7. Basic Management Functions**

### **2.7.1. Planning**

Planning includes devising corporate goals, attainable objectives and strategy and designing plans of the organization based on a priority level to be able coordinate and manage effectively. It is concerned with what the organization should execute (ends) with the convenient way to do it (the means). An organization can succeed in effective utilization of its

resource when its management decides in advance its objectives, and methods of achieving them. (bantie workie, 2004).

Selecting missions and objectives with necessary action for their achievement and choosing future courses of actions from the available options for the sake of achieving organizational goals is required in the planning process. (Samson D. and Daft R.L, 2012)

### **2.7.2. Organizing**

It is a process of determining what work activities have to be done to accomplish organizational objectives. Organizing results in an organization structure that can be thought of as a framework that holds the various functions together according to the pattern determined by management. (bantie workie, 2004).

### **2.7.3. Staffing**

Organizational effectiveness can be achieved by proper application of staffing function which enables an organization to attract, maintain, and utilize efficient and effective workforce. Staffing is with assigning staffs to positions in the organization with the appropriate human resource which is performed by identifying total work-force requirements, inventorying the labor available, career planning, recruiting, screening, assigning, promoting ,appraising, enhancing existing staff or new recruits and training, so that they will accomplish the tasks assigned effectively and efficiently.” (Satyendra , 2015)

### **2.7.4. Directing/Leading**

Directing is the process of integrating the people with the organization so as to obtain their willing and enthusiastic cooperation for the achievement of its goals. Directing requires integration of organizational goals with individual goals as well as group goals. Generally it is all about influencing employees so that they will have a positive contribution to organization and group goals. (Satyendra , 2015)

### **2.7.5. Controlling**

Controlling is a way of conforming activities in the organization are executed based on the plan with the allotted company resources, it basically focuses on getting planned results from

subordinates, It measures performance against goals and plans, sort out negative deviations and take corrective measures to guaranty accomplishment of plans.( Stoner, A.F. James,1998)

## **2.8. Vision Statement**

Companies with a clear vision have a powerful opportunity for development that makes them to change and be familiar without hampering their values. They have achieved long term development due to the well defined direction set out in the statement. (Porras, Collins, 1994)

The vision statement of a company can be regarded us a description of what the company want to become and the way to reach there. The vision statement should be a short description of the company's desired future destination which is devised by many managers as much as possible. (Fred R. David, 2011)

## **2.9. Mission Statement**

The mission statement of an organization should clearly state the main purpose for the company to exist, what kind of service it can provide to the society and its operational boundaries; it can be regarded as an explanation for the vision statement. (Bratianu, 2005)

This statement which is also called statement of creed, purpose statement, philosophy statement, belief statement and principles of business statement answers the what primary business of the company is and explains the mechanism or ways the vision of the organization can be changed in reality. (Fred R. David, 2011)

The Characteristics can be summarized as incorporating the company's values, being broad enough to include differences between stakeholders, precise, understandable and achievable, clearly stating goals of the firm, create a comfortable arena to incorporate alternative strategies. (Jianu et.al, 2007; Bratianu, 2008)

A mission statement should explain the organization's current form and the desired future, state the firm's unique behaviors that differentiates it from other companies, should be stated in a way that employees and other parties can understand it easily, should include what the customers anticipate. (Fred R. David, 2011)

A Mission Statement should also specify who the customers are, the services provided and the products delivered, the market segment in which the company participates, the technological aspect of the organization, its focus on sustainability, development and profitability, what the firm's philosophical background look like, beliefs and organizational values, what kind of unique advantage the firm has over competitors, its participation in social and environmental endeavors and its management of employees. (Jianu et.al, 2007)

The major benefits of devising a mission and vision statement for an organization includes ensuring unified purpose of the organization, to provide a standard for efficient utilization or proper allocation of company resources, to establish a general organizational atmosphere, serving as a focal point for identifying purpose and directions of the firm(ensures all employees are striving to achieve a common organizational goal which in turn upgrades the organization's efficiency and performance), facilitating the change of objectives to work structure, the mission statement serve as a "North Star", in which organizational direction is provided whereas the vision statement shows future destination of the organization, the vision and missions are also important tools for devising company strategy that will acts the company's game plan for achieving goals. (Norja Vanderelst, 2017)

The role of Mission and vision statements can be summarized in to three which are; communicating the company's purpose and objectives to different internal and external stakeholders, being as an input or aiding the organization to develop business strategy and helping for developing measurable and well defined goals and attainable objectives by which the wheel of the organization successful strategy achievement is standing. The roles vision and mission statements to a certain organization are in the following figure. (Bart & Baetz, 1998)

## **2.10. Corporate Values**

The intellectual pool an Organization comprises individual wisdom, excellence and values which are integrated in to overall employee contribution to the organization. Values can be expressed as beliefs or perceptions individuals come across through the learning process from schools, their family or relatives and the surrounding environment or the society in which these values are transferred to the individual. (Bratianu, 2008)

These values which will be strengthened or weakened based on the personal experience in life are essential in guiding/leading decision making process in the organization because they will be incorporated in organizational ideology or philosophy to form the core or shared corporate value of the organization that will help the company in its activities for dealing with future uncertainties by being incorporated in to the mission statement. (Schein, 2004)

Shared values are the characteristics of the organization that makes it unique or distinguishes from other competitors and create an identity sense for employees in the organization and make them feel needed and special. Besides if these senses are distributed throughout the company in addition to higher officials then it will guaranty the effectiveness of shared values in the organization. (Deal and Kennedy, 1988)

Carl L. Harshman, (2006) stated some of possible core values in an organization as Integrity among individuals, respect to each other and to the organization, being loyal, being innovative, being honest, being trustful and trusting others, cooperation, and securing quality of service.

A company who believe in it is the best organization, details of execution of work is important, people are important as individuals, delivering surpassed quality of service, making most of the members of the organization innovators, developing communication via informality, importance of profits and economic growth can be regarded as a successful company. (Peters and Waterman, 1995 and Leap-Han Loo, 2018)

Generally according to researchers in this field mission, vision and core values statements are of significant importance to make a company a successful one. (Brătianu, 2008)

## **2.11. Strategy**

Strategic management primary focus points are management integration, marketing, financial management, operation management, R&D and information management so that the organization can be successful, it refers to strategy devising, executing, and monitoring or assessment. (Fred R. David, 2011)

### **2.11.1. Corporate Strategy**

Corporate strategy is the highest strategic plan in the hierarchy of the organization, which explains the goals and the mechanisms to achieve them, it is the description of the scope of the organization in addition general direction for the organization and the way in which the variety of business operations can be executed in a harmonized manner to accomplish the corporate goals. (Gagné, M, 2018)

Corporate strategy can be divided in to seven strategic fields, namely financial strategy, business strategy, operational strategy, human resource strategy, technology strategy, marketing strategy and information technology strategy.

### **2.11.2. Business Strategy**

Business strategy is the type of strategy a company adopts to guaranty the successful execution of separate business parts, in the contrary organization strategy focuses on the success of the entire organization. Business strategy is normally regarded as primary concern for an organization since it focuses on the firm's plan on currently delivered, possible and future products and services and competitive advantage development. (Michael Garvin, 2004)

### **2.11.3. Financial Strategy**

Finance is the back bone of any business activity one can say that there is no business without the consideration of financial activities investment decisions and financing decisions being the two aspects. Investment decisions deals with the allocation of financial resources and capital budgeting using a variety of techniques for analysis and evaluation of projects so that the manager will be able to give better decisions with a balanced return and risk whereas financing decisions deals with merits and demerits of different dept and equity technique to raise capital. In the construction industry financial strategy widely utilizes advance payment, performance and bid bonds and insurance policies whereas risk management policy is linked with insurance to transfer risks. (Asquith et al, 1994 and Gagné, M, 2018)

### **2.11.4. Operational Strategy**

Operational strategy focuses on the operational process in which organizations execute and implement the processes to deliver final services and products from the inputs which include



variety of logistics, functions of procurement management, and different processes for production of physical products which includes precast components and the procedures for providing services. In the case of product delivering organizations like contractors these activities are integrated with actual construction stage, procurement and management of materials, human resource and equipment management whereas organizations like consultants who give services uses their experience, knowledge and expertise for designing and construction engineering activities for assisting clients or employers to achieve their predetermined goals. (Cheah and Garvin, 2004)

#### **2.11.5. Technology Strategy**

There are three outstanding issues to be considered for technology based strategies in the construction industry to decide on technology development choice and means for the company. The first part is the decision being pioneer/beginning or follower that is the decision of being first mover or user in technology which considers uncertainty of environmental, technical, political and economic factors. (Tatum, 1988)

The second part is focused on integration which can be horizontal or vertical integration so that firms can achieve economies of scale and build operational advantage by integrating different functions in the chain and leading with technological innovation to gain distinctive competitive advantages while the third part is utilization of the two forms of researches which are basic and applied so that resources are allocated accordingly. (Cheah, 2002)

#### **2.11.6. Information Technology Strategy**

The main difference between information technology strategy and technology strategy is that IT strategy deals with utilization of technology to use information company advantage. The primary aim of this strategy is bringing a positive impact on the corporate strategy through information technology by connecting the operational process of the company with its corporate strategy. (Ross and Rockart, 1999)

#### **2.11.7. Human Resource Strategy**

Human resource strategy is an entirely different activity from operational aspects like

manpower providing and allocation of resources which are part of operational strategy, this strategy is focused on proper management of firm's human resource or asset to create an effective and efficient system for hiring, giving training, mobilize and manage firm's human resources which may necessitates internal and external issues to be considered. These issues include but not limited to personnel administration, relations with the industry, compensation and added incentives policy, organizational restructuring. (Michael J. Garvin, 2004)

#### **2.11.8. Marketing Strategy**

Marketing strategy can be defined as one part of a company's business plan that shows the plan for sorting out possible clients and customers, it mainly focuses on what the company wishes to accomplish for its business. (Randy Duermyer, 2018)

Even though the construction industry is mainly focused on giving services the concept of product differentiation can be applied to the industry so that a well developed marketing strategy can be applied to the company that rely on the distinctive properties of the product delivered, each category of the product like building, roads, railways needs a separate marketing strategy. (Mahmood Mokhtariani et.al, 2017)

In general corporate strategy goes side by side with the organization's internal mechanisms which are also mandatory and hugely fundamental parts or components of it. (Robbins, 1998) According to the model prepared by Charles Y.J. Cheah and Michael J. Garvin (2004) these components are corporate (organization) culture and organizational (firm) structure.

#### **2.12. Firm Structure**

The structure of a company is all about the mechanisms in which the various components or departments are organized in a way that the human resources into different tasks with coordinating them. (Mintzberg, 1979)

In other ways organizational structure can be regarded as formally established system in which corporate tasks and reporting relationships in the management are coordinated in a way which motivates members of the firm to work in harmony to achieve goals. (Jones et al., 1998)

There are different characteristics to define type of firm structure, these Characteristics are the way responsibilities, tasks and functions are grouped; the employed decision making method whether it is centralized or decentralized; communication method employed; whether the firm has flat or tall structure based on the management level number; whether the span of control is wide or narrow; how rigid is the command chain or is the chain of command centralized or not. (Chimay J. Anumba, 2002)

In any organizational structure there will be gaps that cannot be covered solely using formal authority therefore it is mandatory to fill these gaps with social and informal flow of communication. Generally an organization can be structured based on function, geography, product and matrix dimensions. (Galbraith, 2000)

#### **2.12.1. Product Structure**

In a product organizational structure the organization classify its service based on the line of products and services, this type of organization is preferred when a firm has different product lines which demand a unique expertise in administrating them. The other admirable feature of product organizational structure is consideration of market condition and the needs of clients in addition to the performance management of loss and profit. (Daniel Karell, 2018)

#### **2.12.2. Functional Structure**

Separate groups departments with their own roles or assigned tasks make the heart of a functional structure. There is a manager assigned to each department which will report to another level manager in the organization hierarchy. The main advantage of functional structure is there are separate groups formed based on skill and function, which will allow each group to focus on accomplishing their goals and execute their departmental roles. On the contrary the structure causes an obstacle for communication between departments since each department making their own decision in the managerial level. (Daniel Karell, 2018)

#### **2.12.3. Divisional Structure**

This type of structure is utilized in larger companies which covers a variety of horizontal objectives to create harmony among departments in the organization. This organizational

structure can also be devised based on geography in which each separate division is allowed to operate like a separate company only one or two delegates reporting to the mother company higher officials. The advantage of this structure if there is drastic change in the market it will be easy to dispose and integrate geographical divisions into one. (Michael J. Garvin, 2004)

#### **2.12.4. Matrix Organization Structure**

Matrix organizational structure is a mixed form of structure which simultaneously incorporate functional structure with another structure which is based on projects in which managers will be forced to be accountable to two or more higher level managers at the same time. For the sake of making this structure successful responsibility, accountabilities and authorities of employees should be clearly assigned because it will be hard reporting to different managers simultaneously and knowing the content of the report, but this structure is advantageous in which employees can upgrade their knowledge due to the exposure to more than one functional division. (Daniel Karell, 2018)

#### **2.13. Corporate Culture**

It is only when the organization assures the effective management of individual's responsibilities in way they are being carried out with no or minimum resistance we can say a firm has well established culture. A genuine corporate culture leads the way activities should be executed with creating a shared group expectation in the organization. (O'Reilly, 1989)

In addition national and industry cultures hugely impact organization culture, taking in account that construction industry a fragmented industry with a variety of stake holders and number of stages incorporated it leads to specialized companies to have a diversity in culture which should be resolved prior to starting a project. (Hofstede, 1991, Naoum, 2001)

Organization effectiveness is at least partially related to organizational culture; it is because individual's values and expectations are not expressed in detail and most employees do not think possessing an opposite idea or preferences is vital for the organization and helps as an alternative in organizing. (Anita M.M. Liu et.al, 2006)

## **2.14. Business Style**

*Client First policy* - In a client first policy the demands of customers are given priority ahead of everything in the organization it is a means to create good relationship with the client. It is a type of policy in which clients are recognized for their business with the firm. The effectiveness of the organization is measured based on the level of customer satisfaction that makes it a customer oriented policy. In some companies across the world client first policy is becoming a culture rather than a strategy because if the organizations fail to accommodate the diverse and changing needs of customers they will not be able to retain their customers and end up in losing the battle to their competitors in the industry . (Kinley McFadden, 2013)

*Long term credible relationships* - Long term credible relationships are founded on the basis of an organizations action towards keeping promises and performing to the desired/agreed level in any endeavor. It is related with the passage of time or may vary time to time. It is the type of relationship in which organizations predict the future solely based on past performances. Credibility is usually related with reputation i.e. good performances for a long time builds the company's reputation which in turn makes the organization a credible one, therefore if the firm is working to build reputation and credible one can say the business style of the organization is based on long term credible relationships. (Herbig and Milewicz, 1995)

*Short-Term competitive relationships* - Short-Term competitive relationships are based on creating short term advantages over competitors solely focusing on acquiring better rate of return on the business than that of competitors. (Grant, 1991)

In short term planning only the current status, activities and characteristics are considered and a strategy is devised or developed to enhance them. In this form of relationship the organization does not consider the client needs or the future credibility. (Bert Markgraf, 2018)

## **2.15. Decision Making**

Decision making is a mental phenomenon performed that an organization can select the best possible course of action from a variety of alternatives by assessing the associated risk or

consequences in which the final alternative chosen is the output of the process which can take an action or suggestion on choice. (Tsiduk Aregay, 2018)

The decision making process involves five distinguished stages which starts by defining what the problem is, giving thought, followed by accurate judgment, then making the decision, taking action being the last stage. (Parkin, 1996)

Basically there are two conflicts exhibited in a decision making process the first one being the conflict taking place between the need of the manager making an accurate decision and the need of minimization of decision making effort, the second conflict occurs between the need of making accurate decision versus a making unambiguous decision. (Ralf Miller et.al, 2009)

The type of decision making the organization employed affects the performance significantly; this was supported by a research on sales managers which were conducted to assess decision making style influence on performance. In the case of construction industry studies have revealed that problem solving skill of managers as a key factor for achieving organizational effectiveness. (Russ et al, 1995)

#### **2.15.1. Top Down and Individual Direction**

Top down decision making can be defined as a decision making process in which commands are transferred from top level managers to immediate successors, it is preferable on scenarios concerning firm wide strategies and policy devising which cannot be done by middle level managers who lacks experience and expertise to consider the future outcomes of their decisions. It does not consider the fact that the immediate managers have a better understanding to the reality on the ground than top managers. (Wubishet Fikadu, 2018)

#### **2.15.2. Bottom Up and Mutual Agreement**

Bottom up decision making is the type of decision making in which middle and lower level managers have a say on the decisions taken, it considers the fact that the immediate managers have a better understanding to the reality on the ground than top managers. This type of decision making is necessary for construction companies taking in account the complexity and fragmented nature. (Kalkidan Solomon, 2018)

### **2.15.3. Discussion Between Subordinates and Superiors**

Discussion between subordinates and superiors which is also called Participative decision making the type of decision making which incorporates Abraham Maslow's idea of employees should feel belongingness to the company and allows lower employees to participate in decision making process of the organization. (Probst, 2005)

Discussion between subordinates helps organizations to profit from higher performance of employees due to the motivational influence they have in being part of the organization's decisions. Besides employees will upgrade their level of understanding towards the company's activities and create harmonious condition with their co workers and superiors and due to the shared perspectives the team effectiveness will also improve. (Probst, 2005).

The basic benefits of participative decision making includes satisfaction in career, commitment to the company, a sense of supporting the company, enhancement in organizational behavior, enhanced labor management, enhancement in job performance and overall company performance, increase in productivity and profits. (Steinheider et.al, 2006)

### **2.16. Reward and Punishment**

Individual and collective behaviors are the main reasons behind the motive of an organization rewarding or punishing its employees. Rewarding outstanding behavior and giving punishment to those bad or unwanted behaviors are becoming the primary ways of motivating employees. Especially rewarding can payoff the company in motivating employees to repeat performance enhance the positive behavior whereas the motivation of punishment towards compliance may become temporary and lead a decrease in the moral of employees. (Przewozna-Krzeminska, A, 2016)

#### **2.16.1. Rewards**

An organization rewards its employees in the event of the employee accomplishing a specific task in a good manner or in a way the manager or the organization needed which in turn will have considerable benefits on employee motivation which may take effect in short or long term, besides rewards can encourage employees to perform well and improve overall work

performance. The rewards could be provided in a form of currency, valuable thing or a medal or with verbal appreciation and should be regular. (Thomas, 2009 and Tamiru Lemma, 2018)

### **2.16.2. Punishment**

The primary objective of punishing employees is to eradicate unfavorable behaviors from an organization. The punishments can be a form of tangible and intangible, the tangible punishments include verbal and written warnings pay cuts, temporary suspensions whereas intangible punishments could be nagging to complete task on time and making threats to employees. Punishments can be regarded as a motivation by fear technique that means the employee will perform well and provide what is expected from him due to the fear of a punishment if he doesn't do so. (Neil Kokemuller, 2012)

### **2.17. Framework to Understand Organizational Effectiveness**

The concept of organizational effectiveness (OE) has been researched for so many years and its importance for high performance and long run survival is mentioned by many researchers (Steers 1975, Sinha and McKim 2000).

Even though the project-based nature of construction industry necessitates an organizational effectiveness framework that takes into account of the complexity of the construction value chain, where activities of a high number of parties and various environmental factors are affecting its performance, there is lack of strong framework for defining OE and providing a consistent and universal set of criteria for assessment of OE in construction. Even though they do not cover all perspectives valid for the construction industry there are different schools of thoughts and corresponding models proposed for organizational effectiveness from different starting points in the literature. Before defining a conceptual framework for the construction industry in particular it is necessary to study the proposed models in general which are presented below.

### **2.18. Approaches to Organizational Effectiveness**

There are many theories which provide frameworks in many sectors but fail in their application in the construction industry. Therefore it was highly necessary to analyze and



investigate these schools of thoughts and combine all together (these thoughts are systems, goals, competing values, strategic constituencies and contradiction) so that it will be possible to build comprehensive framework applicable to construction companies. (Semiha Kiziltas et.al, 2003)

According to goals school organizational effectiveness is measured in terms accomplished goals without considering the effects of the means or internal systems, internal and external influential groups and macro environmental factors. In order an organization is said to be effective it should attain the planned objectives which makes the approach incomplete since it only focuses on the end results rather than the means an influencing factors. (Semiha Kiziltas et.al, 2003)

The approach focuses on the organization's outputs that are, on the degree of goal attainment achieved by the organization. Since there are often conflicts b/n financial and participant goals there is need for trade off among the various goals of the organization in order to achieve balanced performance. (Manvi Sharma, 2016)

The other drawback of this approach is even though the goals of an organization tend to change as people, organizational politics and environmental factors change, the approach is deduced by assuming that the goals of an organization are measurable, attainable, realistic and static which hinders applicability of the thought. (Semiha Kiziltas et.al, 2003)

Systems school measures effectiveness based on the "means" (people communication channels, resources, investments in research and development, processes and firm infrastructure) which are necessary to reach the "ends". This school proposes that it is only if the means are healthy and appropriate for long-term survival of the organizations that an organization is labeled as an effective one.

The school also elucidates that internal consistency in terms of organizational infrastructure, motivation and productivity of labor, resource allocation and advancement in technology of organization processes is required to increase overall effectiveness of Organization. (Semiha Kiziltas, 2003)

Strategic constituency involves all the people that are somehow connected to the organization (strategic constituencies) in which they are beneficial for the company service or they have an effect on actions and decisions of the organization. The approach defines effectiveness as the satisfaction of all stakeholders in the organization which could be customers, investors, employees or managers in which they strive to fulfill their individual needs irrespective of other parties' desire. (Merlyn Michael D'souza, 2017).

Competing values school approach asserts that it is not possible to set a specific criterion that reflects organizational effectiveness best, therefore different preferences are combined in a single model. It gives an acknowledgement that organizations perform many activities and have many outputs or deliverables and that there are collisions and differences in attitudes towards what an effectiveness constitute: which targets should be followed and evaluate, and the techniques to do so. (B.E.A. Oghojafor, 2012).

Contradiction school approach is utilized for bridging the gap between other models and it concludes that organizational effectiveness can be achieved if the organizational constraints, namely; goals, constituencies, systems, government, regularity bodies and promised time frames (durations) are examined thoroughly, placed in priority according to their values to the organization and general acceptance without contradicting to other groups in the firm. (S. Kiziltas et.al, 2003)

Besides the above presented models there are also other models which are not so widely known on organizational effectiveness. These are fault-driven model, which describes an effective organization as one existing with no faults or faulty traits; legitimacy model which explains the effectiveness as engagement in legitimate activities and lastly, high-performing systems model which defines the effectiveness as being judged as excellent relative to comparable competitors (Kim S. Cameron, 1986).

The overall work performed in a specified time period (average level of performance) with the three pillars of project management which are the duration, total project cost and the quality of the delivered project are used to measure an organization's effectiveness in the construction industry. (Vir Handa, Adnan Adas, 1995)

In order to classify a firm as an effective or not there should be criteria's to do so. accordingly, the most important determinants of OE that have been found by (Kiziltas, 2003) are ability to benefit from market opportunities, experience, frequency of joint venturing, Strength of culture, level of organizational learning, technical capability, financial capability, adaptability/flexibility to cope with environmental changes and effectiveness of information flow.

There are a variety of procurement types in construction, which makes the organizing part fundamental issue for organizational effectiveness. Therefore resource allocation and different interest judgments should be given considerable attention. There are different thoughts regarding organization effectiveness which are utilized to construct an assessment framework for organizational effectiveness. (Knox, 1992)

The systems approach is based on the idea of preserving scarce resources is key to organization permanent existence in the industry, whereas the goal approach measures the effectiveness based on the accomplished objectives or end results. While the systems approach takes parts of the firm as complimentary to each other whereas the goal approach asserts that each part of the organization should attain certain goal. (Kast and Rosenzweig, 1972)

Since a variety of groups with different interests participate in an organization it is preferable to consider the idea of both system and goals approaches and incorporate them in a system which includes horizontal units like departments and vertical units like owners and employees which have different or even opposite expectations. (Pennings and Goodman, 1977)

The other considerable approach the competing values model was developed by Quinn (1988) for dealing with organizational effectiveness and culture which asserts to give due attention for the two forms of cultures which are the internal (culture of hierarchy) and the external or culture of the market.

These focus points i.e. has led Quinn, (1988) to develop an assessment frame work which was used to assess china's construction companies by Cameron and Quinn (1999). The framework developed includes four parts which can also be regarded as indicators of organizational effectiveness; which are human relations, open, internal process and rational goal system in

which each factor have its own impact on organizational effectiveness measurement criteria.

The first quadrant is the rational goal model which focuses on organization profit; it gives concentration on rational action, besides it assumes for surpassed efficiency and productivity setting attainable goals and effective planning with a clarified tasks and responsibility, actions taken based on objectives are necessary.

The second quadrant is open systems model which deals with innovation and creativity and assumes adapting to environment, being ready, development and gathering resources are the key for creativity and innovation. The other part of the frame work is internal process model which focus on management of information, measuring and proper documentation to acquire control and stability to the organization. The last quadrant being the human relations model focuses on human resource and asserts peoples should be considered as members of a system not as isolated individuals. (Liu et.al, 2006)

If the firm's goal is continuous performance and capacity improvement then it should perform the strategic planning efficiently. Through the strategies mission and visions, objectives, responsibilities and the structure will be clear to all involved and lead to enhanced performance. The organizational effectiveness depends based on each unit's understanding of roles and responsibilities and the benefits of working in coordination. (APHSA, 2012)

On a research conducted in 2009 the right management group identified proper implementation of strategy as a vital component of enhanced financial performance, the study asserted that there is a huge link between effective strategy execution and employee engagement, the higher the firm engages its employees the higher will be sustainable business outputs.

If the desire is to build a competitive strength and create an effective organization then it will requires aligning their labor force with its system of management (drive the right manners), the organizational structure (fit for purpose in which people know their responsibilities and accountabilities), expertise and corporate culture (work environment) to the strategy. To be able to have a sustainable and effective organization the firm should integrate all of the above systems which may not work separately. (Right management, 2009)

Before devising a framework to evaluate Ethiopian construction firms organizational effectiveness it is necessary to review other frameworks and related works towards organizational effectiveness. Accordingly the dominant framework is the model developed by Kiziltas et.al (2003) to model organization effectiveness in construction companies.

The framework has three components; the first component the organization and the subsystems which recognizes the organization's internal aspects as one of the main pillars of organizational effectiveness. These aspects include corporate strategies, organizational structure, corporate culture and expertise which are the determinants of organizational effectiveness.

The second component is groups who have a telling effect on the business of the firm and this component demands an effective relation with other involved parties like subcontractors, clients, suppliers and partners to reduce competitive forces' impact on the organization.

The last component is related to the political, legal and economical forces which are the external forces acting on the organization by the macro environment. Therefore the framework asserts that for building an effective organization companies should integrate the above three components and act accordingly.

The other framework is the one developed by Anita M.M et.al (2006) to assessing organizational culture of Chinese construction companies; the frame work points out that a high quality construction projects or deliverables, punctuality on executing projects, enhanced productivity and profit and satisfaction of human resource as indicators of organizational effectiveness.

Luqman Oyewobi et.al (2017) has studied Determinants of construction organizational performance and had proposed using single or a combination of two or more strategies can be a tool for overcoming the effect of business environment on the organization; these strategies could be cost leadership, market development, and differentiation and focus strategy. In addition to this the study revealed that choosing and applying effective decision making and management style with the integration of all company resources with capabilities will lead to an effective organization.

The other significant study was by Chau Ngoc Dang et.al (2018) that studied Impact of knowledge enabling factors on OE in construction firms in Vietnam and elucidates that organizational effectiveness is positively affected by adaptation to change, trust in partners, working to achieve goals, enhancing the employees' knowledge and qualification.

Alex Opoku, et.al (2015) asserted that leaders should select the best fitted leadership style for their organization among the alternatives in a flexible manner since the choice of a particular style would have its own consequences on the firm and the choice of the style is situational therefore the leaders should select considering the situations.

For making adequate decision in an organization previous decisions might be reapproved in order to evaluate corporate strategy and objectives because managers need full information for making decision and measuring performance. (Tatum et al., 2003, David, 2011)

Linda Susan Holbeche et.al (2018) stated that human resource involvement or contribution for organizational effectiveness should be reassessed since educating employees continuously and making changes regularly is an ingredient for creating an ever agile work force in a company. The study elucidated that appropriate reward system, restructuring and change in management system, providing different opportunities for employees to grow, performance coaching should be given appropriate consideration because it help to keep capable employees in the company.

Ane Yeandle et.al (2015) reports that strategy, organizational structure, values, human resource, skills, systems and leadership styles are sections of an effective leadership and appropriate consideration should be given to all sections in devising leadership plan.

Within the context of this paper, companies that have a clearly stated and well communicated strategy, objective, mission and vision statements, a culture in utilizing the right employment, salary, decision making, reward and punishment systems, well devised organization structure, appropriate in house education, clearly assigned individual and department responsibilities and accountabilities, firm and cooperative relationship among individuals as well as departments and mechanisms for executing tasks across departments are labeled as effective organizations.

## CHAPTER 3

### RESEARCH METHODOLOGY

The methods for this research have comprised a literature review to determine the research focus (local and international studies conducted on related works in general and organizational effectiveness in particular), the literature review was used for designing a criteria for labeling an organization effective or not and a questionnaire survey was adopted to gather information from the construction firms regarding prior experiences and current condition concerning strategy of the company, general organizational characteristics and structure.

#### 3.1. Study Area

The study area for the research was in Addis Ababa, Ethiopia where the head offices of the construction firms are located.



**Figure 3.1:** Study Area

#### 3.2. Data Collection Method and Procedures

The data about the structure, culture and management of Ethiopian construction firms was collected using structured questionnaire in Addis Ababa, Ethiopia from grade 1 and 2 contractors. The data was collected from all volunteer contractors from a total of 131

contractors (98 grade 1 and 33 grade 2) located in Addis Ababa, Ethiopia. The participant information sheet and Informed Consent Form were provided to participant companies' top level or middle level managers to their offices attached with the questionnaires.

### **3.3. Method of Data Analysis**

1. First based on models proposed by different school of thoughts about organizational effectiveness (see section 2.18), a framework was defined to measure organizational effectiveness of construction firms.
2. Then the data collected using questionnaires from the firms were analyzed using SPSS statistics (frequency analysis, independent sample t – test, cross tabulation, chi square test and linear regression analysis) based on the defined frame work to assess the level of organizational effectiveness (the questionnaires were prepared according to previous studies)\*

### **3.4. Ethical Considerations**

- ✓ The information supplied in the completed questionnaire will be used for broad research purposes only (for academic purpose) and may be presented at national/international academic meetings and/or publications.
- ✓ All specific company and participant information will be kept confidential at all times i.e. only generalized analysis of the information contained within the completed questionnaire was utilized in the research process.
- ✓ Participants' involvement in the research is completely voluntary and their identity will not be revealed in any case to third parties and pseudonyms will be used in all of the survey data.

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\* (Tadesse et.al, 2016), (Luqman Oyewobi et.al ,2017), (Jianu et.al, 2007; Bratianu, 2008), (Fred R. David, 2011) (Nuhamin Getachew, 2018), (Tadesse et.al, 2016), (Aschalew Yohannes, 2017), (Rahel Kassaye, 2016), (Azeb Getahun, 2018), (Gizachew Tadele, 2017) , (Daniel Karell, 2018) (Derebe Worku, 2018), (Tigist Ayele, 2018), (Jones et al., 1998) (Zinabu and Getachew, 2015), (GebrehanaTadesse, 2018), (Gelana Assefa, 2016), (Michael Birhanu , 2018) (Campbell, 1977), (Anita M.M. Liu et.al, 2006), (Zahra Rezvani, 2017), (Kiziltas et.al 2003), (Pennings and Goodman, 1977), (Knox, 1992), (Herbig and Milewicz, 1995), (Chimay J. Anumba, 2002)



### **3.5. Limitation and Delimitations**

The scope of this research is limited to grade 1 and 2 contractors located in Addis Ababa, Ethiopia because the higher grade contractors are undertaking the major works in the country and are more organized and structured than the lower grades contractors. Even though the challenges of infrastructure development are diverse and many the study will focus on the challenges associated with contractors' effective performance.

## CHAPTER FOUR

### FINDINGS AND DISCUSSION

As discussed in the methodology part of this research paper in addition to extensive literature review the second approach adopted to assess the organizational effectiveness of construction firms was the use of questionnaires. The questionnaires were designed to collect data regarding the construction firms' strategy, structure, culture and overall management behaviors; The analysis was made using SPSS frequency tables and bar charts as it is applied to the various issues raised in the questionnaire and developed in the previous chapters. Accordingly the results are interpreted and presented in the subsequent sections.

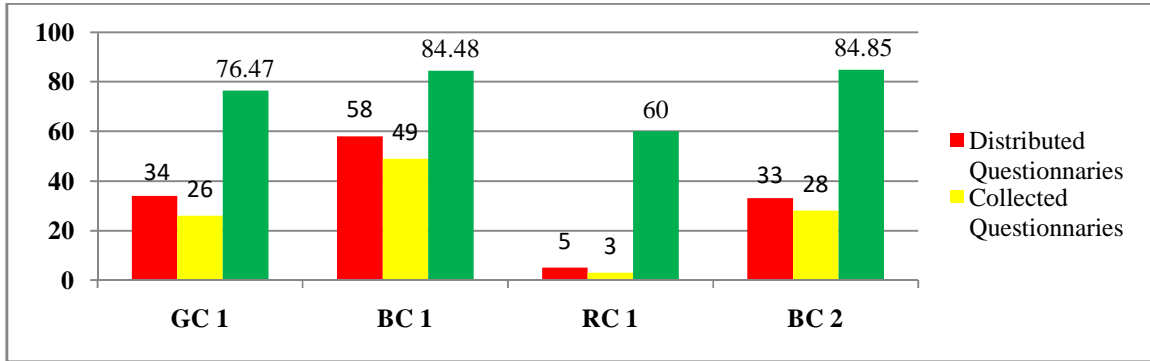
#### 4.1. Response Rate

From the total distributed 130 questionnaires 81.54 % or 106 questionnaires are returned as shown in the table. On the personal profile the participants include Human resource department managers, technical managers, project managers, construction operation head managers, administration and finance heads, contract administration heads and procurement managers and chief executive officers.

**Table 4.1:** Return rate of questionnaires

Sample	Distributed questionnaires	Collected questionnaires	Rate of return (%)
GC 1	34	26	76.47
BC 1	58	49	84.48
RC 1	5	3	60.00
BC 2	33	28	84.85
<b>Total</b>	130	106	81.54

Where - BC: Building contractor  
 GC: General contractor  
 RC: road contractor



**Figure 4.1:** graphical representation of response rate

#### 4.2. Purpose/Strategy of the Company

The second section in the survey is focused on the construction firms' purpose and strategy and examined the availability of business plan, mission and vision, objectives, strategies and organizational cultures including employees' awareness. The response from the companies is tabulated below

**Table 4.2:** Construction firms' purpose/ strategy

No	Focus	Answer								Availability in percent			
		Available				Not Available				GC 1	RC1	BC 1	BC 2
		GC 1	RC1	BC 1	BC 2	GC 1	RC1	BC 1	BC 2				
2.1	Business Plan	21	1	30	9	5	2	19	19	80.77	33.3	61.22	32.14
2.2	Vision	16	2	21	7	10	1	28	21	61.54	66.7	42.86	25
2.3	Mission	16	2	21	7	10	1	28	22	61.54	66.7	42.86	25
2.4	objectives	16	2	21	6	10	1	28	22	61.54	66.7	42.86	21.43
2.5	strategies	22	1	16	4	4	2	33	24	84.62	33.3	32.65	14.29
2.6	culture/values	15	1	23	8	11	2	26	20	57.69	33.3	46.94	28.57
2.7	employees awareness	7	0	10	4	19	3	39	24	26.92	100	20.41	14.29

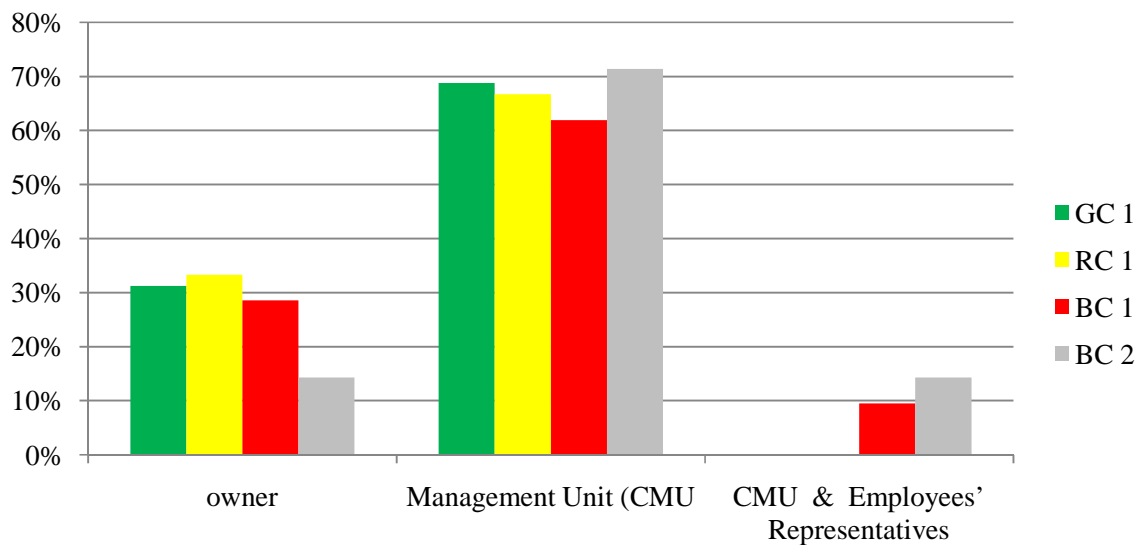
Based on the responses of the participants regarding company business plan 80.77 percent of GC 1 companies have a good practice in devising a business plan whereas availability of business plan in RC1, BC 1 and BC 2 companies is 33.3%, 61.22% and 32.14% respectively, which make up 59.4% of the total participants.

Regarding a clearly stated Mission and Vision statements the availability is 61.54%, 66.7%, 42.86% and 25% for GC1, RC1, BC 1 and BC 2 companies respectively. I.e. 44.3% of the respondents have clearly stated Mission and Vision statements.

61.54% of GC1 companies have clearly stated objectives and 84.62% of them have a clear strategy to pursue whereas the availability of organizational culture/values in these companies is 57.69. While 66.7% of RC1 companies have clearly stated objectives, strategies and organizational culture/values, the availability of objective, strategy and culture is 42.86%, 32.65%, 46.94% for BC 1 and 21.43%, 14.29% ,28.57 for BC 2 companies.

**Table 4.3:** Responsible body to establish vision and Mission statements

<b>Who has established company's Vision and Mission Statements?</b>						
<b>Category</b>	<b>owner</b>		<b>Management Unit (CMU)</b>		<b>CMU &amp; Employees' Representatives</b>	
GC 1	5	31.25 %	11	68.75 %		0.00
RC 1	1	50 %	1	50 %		0.00
BC 1	6	28.57 %	13	61.90 %	2	9.52 %
BC 2	1	14.29 %	5	71.43 %	1	14.29 %
Average		27.66 %		65.96 %		6.38 %



**Figure 4.2:** Responsible body to establish vision and Mission statement

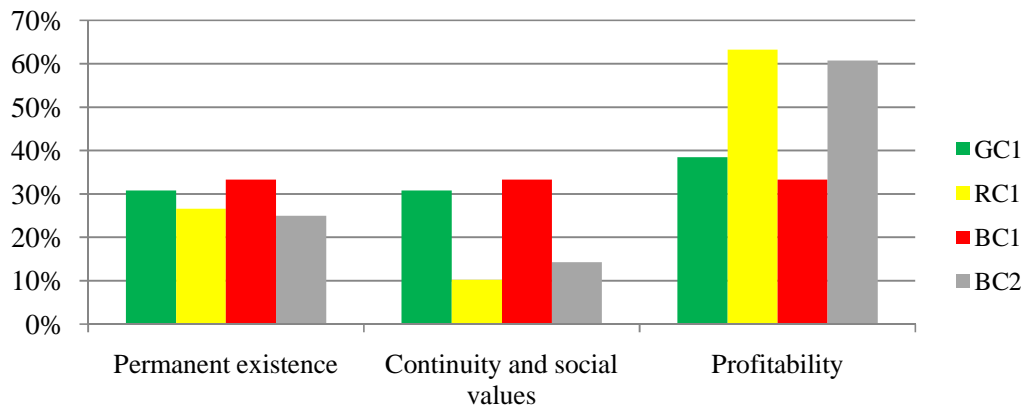
As it can be noticed from the above table and graphical representation most of the companies (65.96 %) has responded that Company's management unit CMU is responsible for establishing the company vision and mission statements which takes 68.75 %, 50 %, 61.9% and 71.43 % of GC 1, RC 1, BC 1 and BC 2 companies. besides 27.66 % of the firms' mission and vision statements are established by the owners which leaves the remaining 6.38 % (9.52 % of BC 1 companies and 14.29 % of BC 2 companies ) for company management unit in collaboration with employee representatives to establish the firms' vision and mission statements.

### 4.3 Company's Organizational Characteristics

The third section of the questionnaire focuses on the firms' organizational characteristics i.e. type of objective and business plan, employment attitude, base of Wage/Salary System, decision making process, working environment, in house education for employees and salary difference between employees, accordingly the results are tabulated below.

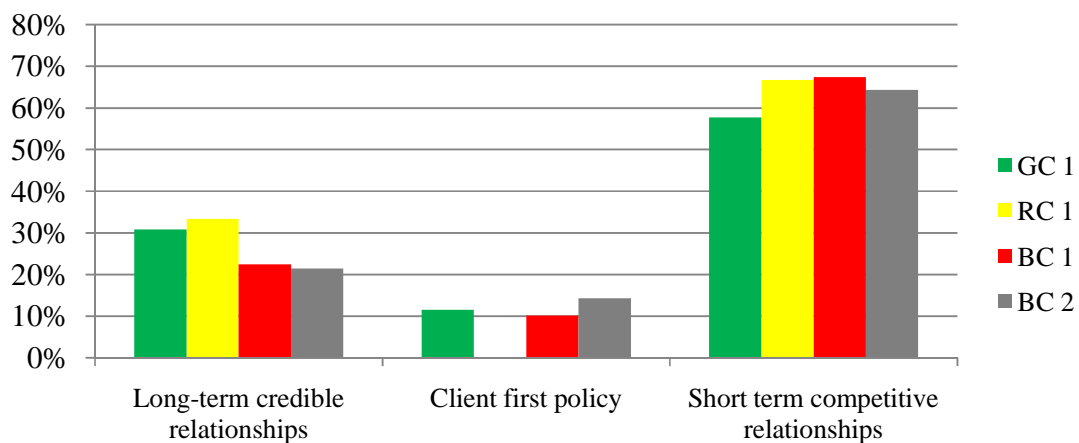
**Table 4.4:** Construction firms’ organizational characteristics

No.	Focus	Response	COMPANIES				Percentage			
			GC1	BC1	RC1	BC2	GC1	BC1	RC1	BC2
3.1	Objectives	Permanent existence	8	13	1	7	30.77	26.53	33.33	25
		Continuity and social values	8	5	1	4	30.77	10.2	33.33	14.29
		Profitability	10	31	1	17	38.46	63.27	33.33	60.71
3.2	type of business plan	Long-term credible relationships	8	11	1	6	30.77	22.45	33.33	21.43
		Client first policy	3	5	0	4	11.54	10.2	0	14.29
		Short term competitive relationships	15	33	2	18	57.69	67.35	66.67	64.29
3.3	Employment attitude	Employing persons	10	22	1	7	38.46	44.9	33.33	25
		Employing the functions of persons	18	27	2	21	69.23	55.1	66.67	75
		Seniority & achievement	8	9	1	8	30.77	18.4	33.33	28.57
3.4	Wage/Salary System	Ability, achievement, and rank	11	20	2	14	42.31	40.8	66.67	50
		Ability & achievement	7	20	0	6	26.92	40.8	0	21.43
		Bottom-up and mutual – agreement	2	4	0	1	7.692	8.163	0	3.571
3.5	Decision Making Process	Discussions between superiors and subordinates	5	14	0	3	19.23	28.57	0	10.71
		Top-down and individual direction	19	31	3	24	73.08	63.27	100	85.71
3.6	Working Environment	Large –individual	1	7	0	0	3.846	14.29	0	0
		Shared offices	11	26	0	23	42.31	53.06	0	82.14
		Booths	14	16	3	5	53.85	32.65	100	17.86
3.7	In-house Education	Systematic, seriously taken and Permanent	3	4	0	2	11.54	8.163	0	7.143
		Considered little self-enlightenment	21	37	3	24	80.77	75.51	100	85.71
3.8	Salary Difference	Small	2	8	0	2	7.692	16.33	0	7.143
		Medium	4	7	1	3	15.4	14.29	33.33	10.71
		Big	18	38	2	23	69.2	77.55	66.67	82.14
		Big	4	4	0	2	15.4	8.163	0	7.143



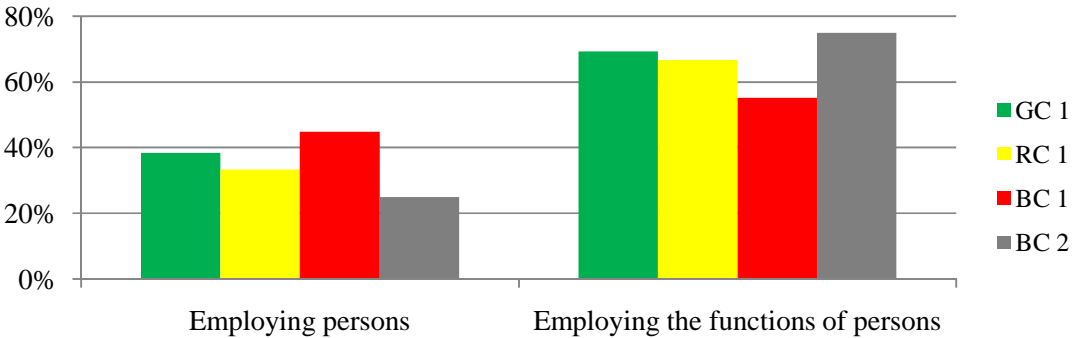
**Figure 4.3:** company objectives

According to the responses gathered here most of the firms' objectives are short term profit based; 38.46% GC1, 63.27% BC1, 33.33% RC1 and 60.71% BC2 or in total 55.66% of the companies responded as profitability is their objective whereas only 30.77% GC1, 26.53% BC1, 33.33% RC1 and 25% BC2 or 27.36% of the participant companies have chosen permanent existence as an objective.



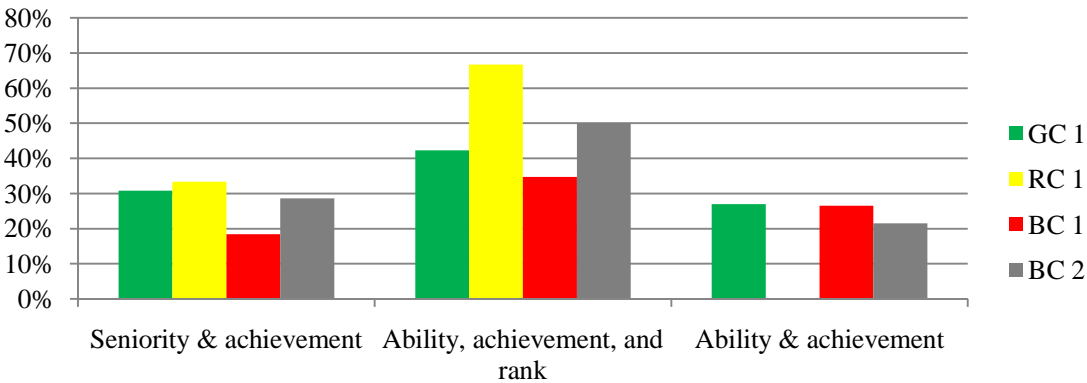
**Figure 4.4:** Type of business plan

Based on the responses from participants 64.15% of the companies have a business plan based on short term competitive relationships whereas 11.32% firms have a client first policy the rest 24.53% of the companies are focused on long term credible relationships.



**Figure 4.5:** employment attitude

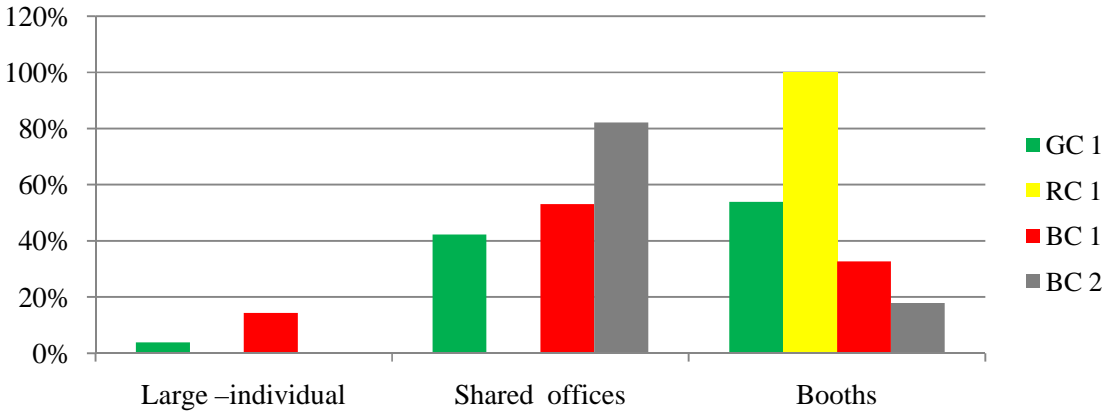
According to the responses gathered 64.15% of companies (69.23GC1, 55.1% BC1, 66.67% RC1 and 75% BC2) are following employing the functions of person approach whereas 35.85% of the companies (38.46 GC1, 44.9 BC1, 33.33 RC1 and 25% BC2) are using employing persons approach.



**Figure 4.6:** Wage/salary system

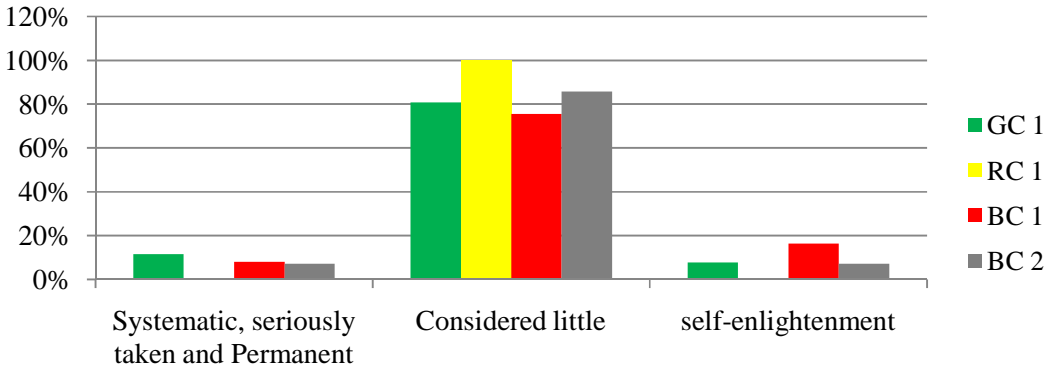


As shown in the above figure 41.51% of the companies are using Ability, achievement, and rank as a basis for salary whereas 24.53% are using Seniority & achievement and the remaining 24.53% firms are using Ability & achievement.



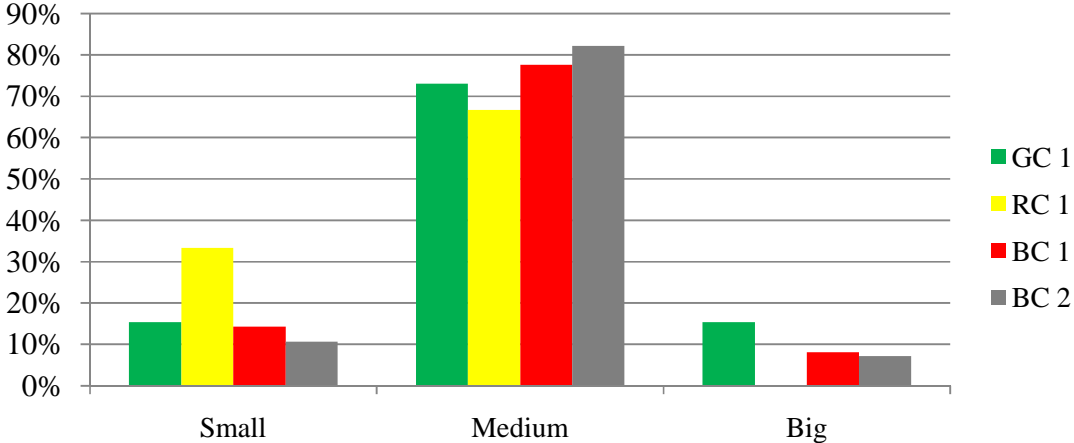
**Figure 4.7:** Working environment

As it is shown in the graph above 53.85% GC1, 32.66%BC1, 100%RC 1 and 17.86% BC2 companies (total of 35.85%) are using Booths whereas 56.60% of the companies (42.31% GC1, 53.06% BC1, 82.14% BC2) are using shared offices which leaves 7.55 % of the firms with large individual offices.



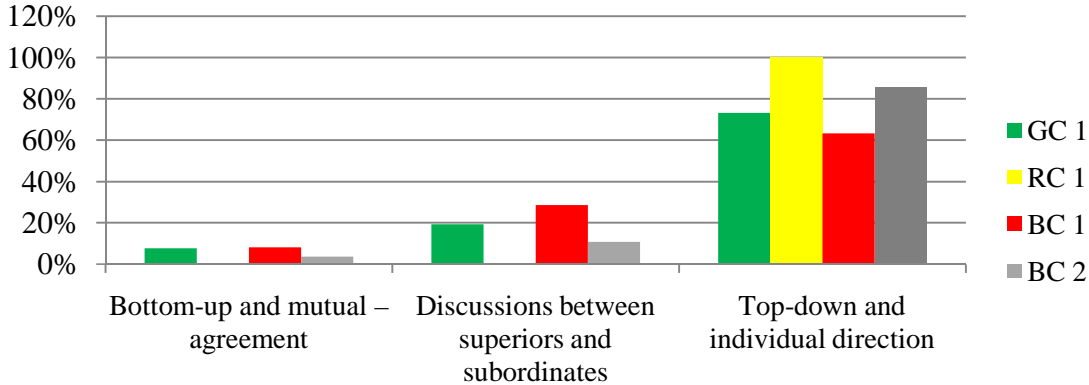
**Figure 4.8:** In house education for employees

Based on the data collected from participant contractors in 80.19% of the firms in house education is considered little or it is virtually nonexistent and it is systematic and seriously taken in only 8.49% of the firms (11.54% GC 1, 8.163 BC 1 and 7.15% BC 2) whereas self enlightenment is adopted in 11.32% of the companies.



**Figure 4.9:** Salary difference

There is medium salary difference between employees in 77.36% of the firms whereas the salary difference between employees is small and big in 14.15% and 9.43% of the companies.



**Figure 4.10:** Decision making process

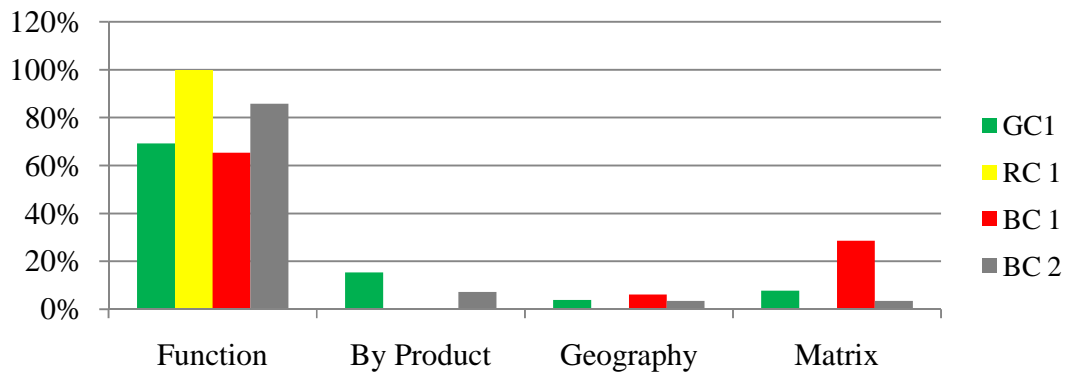
As it can be noticed from the above graph 73.08 % GC 1, 63.27% BC1, 100% RC1 and 85.71 % BC2 contractors or 69.81 % of the total companies adopted top down decision making approach. 20.75% and 6.60 % of the companies uses discussion between superiors and subordinates and bottom up and mutual agreement decision making techniques respectively.

#### 4.4. Structure

The fourth section of the questionnaire focuses on the firms' organizational structure i.e. type of structure, restructuring, assignment of clear responsibilities, authorities and accountabilities to employees; accordingly the results are tabulated below.

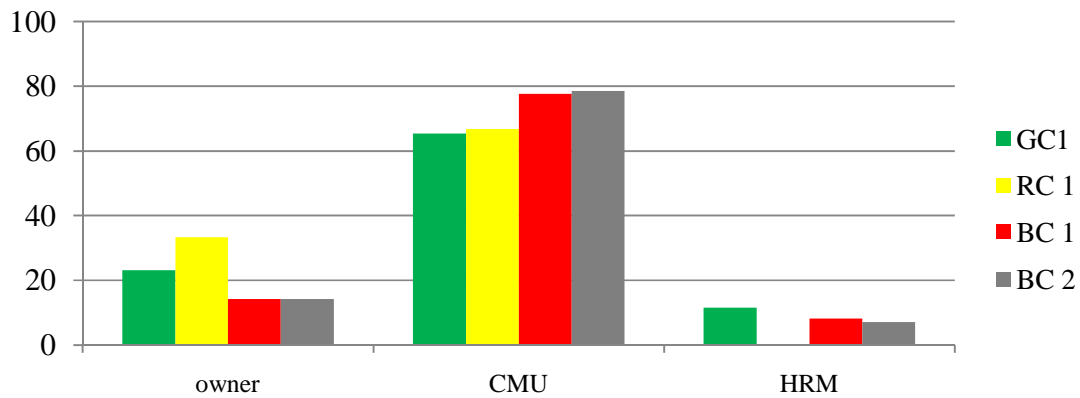
**Table 4.5:** organizational structure

Item No.	Question	Response	COMPANIES				Percentage (%)			
			GC1	RC1	BC1	BC2	GC1	RC1	BC 1	BC 2
4.1	How is the organization's work divided up?	Function	18	3	32	24	69.2	100	65.31	85.71
		By Product	4	0	0	2	15.4	0	0	7.143
		Geography	2	0	3	1	7.7	0	6.122	3.571
		Matrix	2	0	14	1	7.7	0	28.57	3.571
4.2	Who has prepared the organizational structure of the company at Head and Project Offices?	owner	6	1	7	4	23.08	33.33	14.29	14.29
		CMU	17	2	38	22	65.38	66.67	77.55	78.57
		HRM	3	0	4	2	11.54	0	8.163	7.143
4.3	When was the organizational redesign/restructuring undertaken?	2018	0	0	0	0	0	0	0	0
		2017	1	0	3	0	3.846	0	6.122	0
		Before 2-3 years	7	1	8	6	26.92	33.33	16.33	21.43
		never	18	2	38	22	69.23	66.67	77.55	78.57
4.3.1	What were the driving forces to undertake those changes?	Change in Level	0	0	1	2	0	0	2.041	7.143
		Need for Revision of departments	3	1	3	1	11.54	33.33	6.122	3.571
		Growth of volume of construction	5	0	7	3	19.23	0	14.29	10.71
4.4	Assignment of responsibilities and accountabilities?	YES	18	3	34	15	69.23	100	69.39	53.57
		NO	8	0	15	13	30.77	0	30.61	46.43



**Figure 4.11:** Division of organizational work

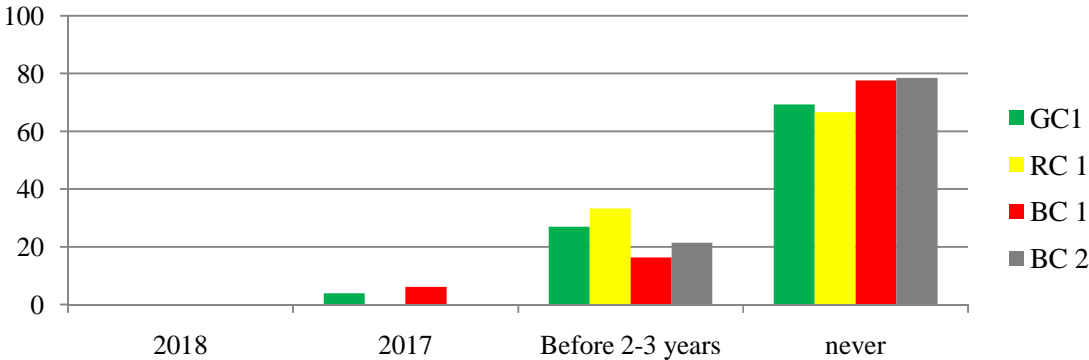
Based on the respondents 72.64 % of firms' organizational work is divided by function, whereas 5.66% is divided by product, 5.66% by geography and the remaining 16.04% of companies work is divided by matrix.



**Figure 4.12:** Responsible body to design organizational structure

As shown in the above graph owners are responsible in designing company structure in 23.08% of GC1, 33.33% of RC1, 14.29% of BC1 and 14.29% of BC2 companies (16.98% total) and in 65.38% of GC1, 66.67% of RC1, 77.55% of BC1 and 78.57% of BC2 companies

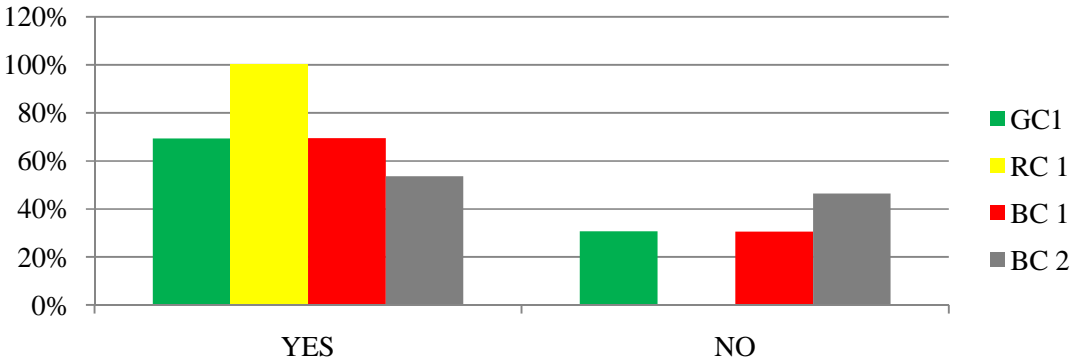
(74.53% total) firm structure was designed by company management unit, whereas in 8.49% of companies the organizational structure was designed by human resource Department.



**Figure 4.13:** Organizational restructuring

75.47% of the companies have never undertaken organizational restructuring, while 20.75% of the companies undertake restructuring before 3 years, 3.77% of the firms have undertaken restructuring in 2017.

Of these 24.53% of companies which have been restructured, Growth in volume of construction was the cause for 57.69% of the companies, whereas 30.77% restructured due to the need for revision and in 11.54% of the companies it was due to Change in level.

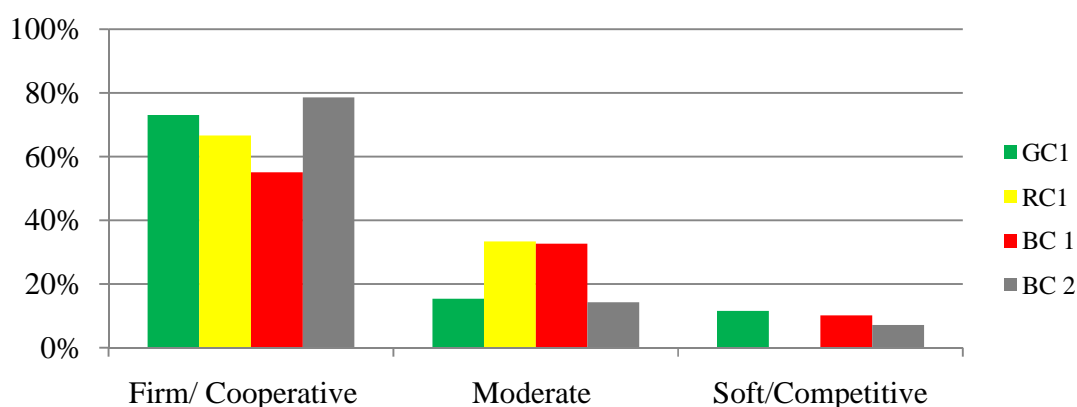


**Figure 4.14:** Assignment of responsibilities, authorities and accountabilities

According to the participants' response in 66.04% of the companies i.e. (69.23% of GC1, 100% of RC1, 69.39 BC1 and 53.57% of BC2) there is clear assignment of responsibilities, authorities and accountabilities which is not the case in 33.96% of the firms.

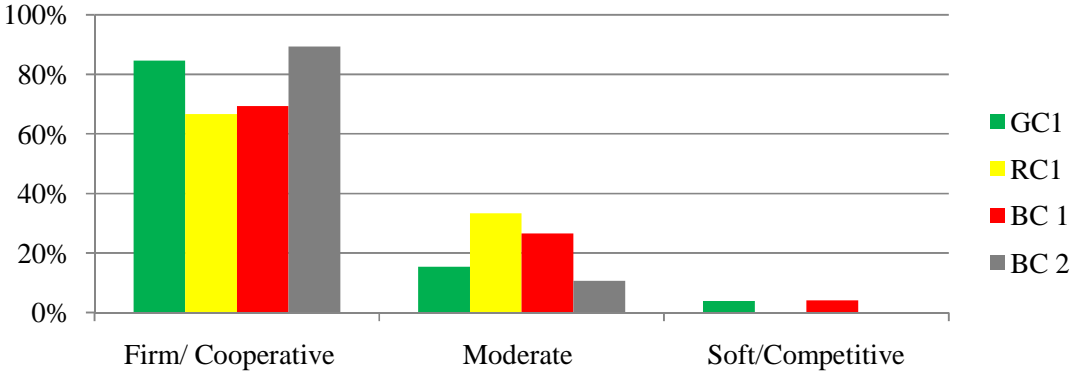
**Table 4.6:** Levels of relationships in the company

No	Focus	Response	COMPANIES				Percentage			
			GC1	RC1	BC1	BC2	GC1	RC1	BC1	BC2
1	level of relationships Between/among individuals	Firm/ Cooperative	19	2	28	22	73.08	66.67	57.1	78.57
		Moderate	4	1	16	4	15.38	33.33	32.7	14.28
		Soft/Competitive	3	0	5	2	11.54	0	10.2	7.14
2	level of relationships between/among units or departments	Firm/Cooperative	22	2	34	25	84.62	66.67	69.39	89.28
		Moderate	4	1	13	3	15.38	33.33	26.53	10.71
		Soft/ Competitive	0	0	2	0	3.85	0	4.08	0
3	level of relationships between the people and requirements of their jobs	Firm/ Cooperative	15	2	34	17	57.69	66.67	69.39	60.71
		Moderate	7	1	12	9	26.92	33.33	24.49	32.14
		Soft/ Competitive	4	0	3	2	15.38	0	6.12	7.14



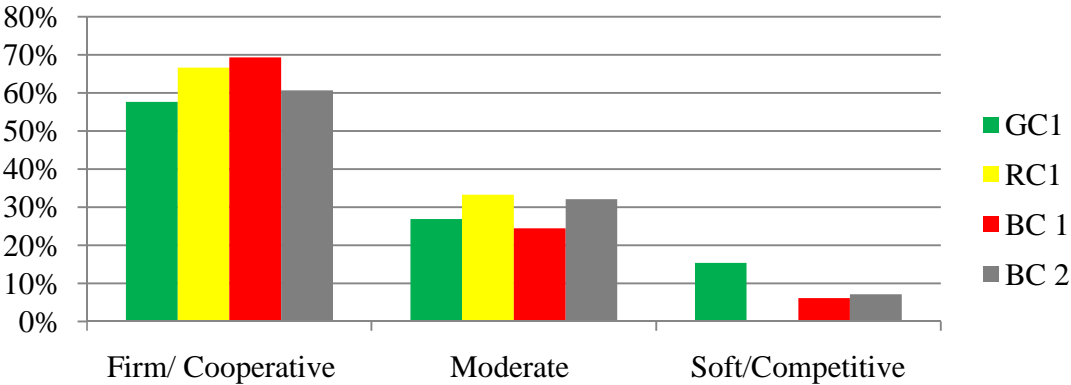
**Figure 4.15:** Level of relationships Between/among individuals

There is a firm/cooperative relationship between individuals in 66.04% of the companies (73.08% GC1, 66.67% RC1, 57.1% BC1 and 78.57% BC2) whereas in 24.53% and 9.43% of the companies there is moderate and soft/competitive relationship between individuals respectively.



**Figure 4.16:** Level of relationships between/among units or departments

The level of relationships between departments is firm/cooperative in 78.30% of the companies and there is a moderate relationship in 18.87% of the firms while there is a soft/competitive relationship in 2.83% of the companies.



**Figure 4.17:** Level of relationships between the people and requirements of their jobs

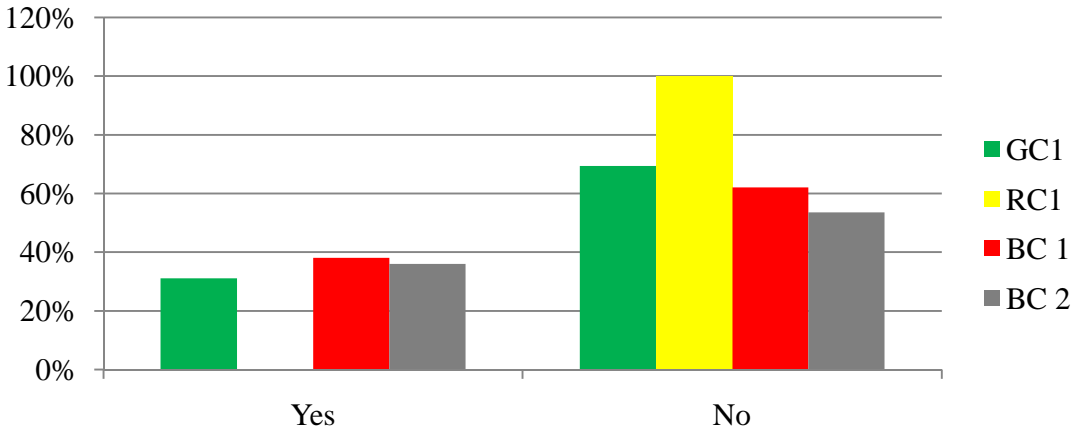
As shown in the graph above in 57.69% of GC1, 66.67% of RC1, 69.39% of BC1 and 60.71% of BC2 companies (64.15% in total) there is a firm relationship between people and requirements of their jobs and there is a moderate relationship in 26.92% of GC1, 33.33% of RC1, 24.49% of BC1 and 32.14% of BC2 companies (27.36% total) whereas in 15.38% GC1, 6.12% BC1 and 7.14% BC2 (8.49% total) companies there is a soft relationship between people and requirements of their jobs.

**4.5. Reward and Punishment System**

From the responses the companies via the questionnaires I have noted that only 35% of the contractors have a reward and punishment system applicable to all employees.

The major causes for these companies to reward their employees were efficiency on assigned job (output), effectiveness on assigned job(with least cost, time and quality), cost minimization for the company, good communication and obedience, excellent achievement in any department, appreciation on job well done and on safety and experience.

Whereas the Major causes for these companies to punish their employees were fraud, theft, absence and delay, cheating, disciplinary problems, misconduct, under achievement, lack of motivation on work, improper use of materials, bias of power(authority), damage to company assets and disobey to managers and leaders.



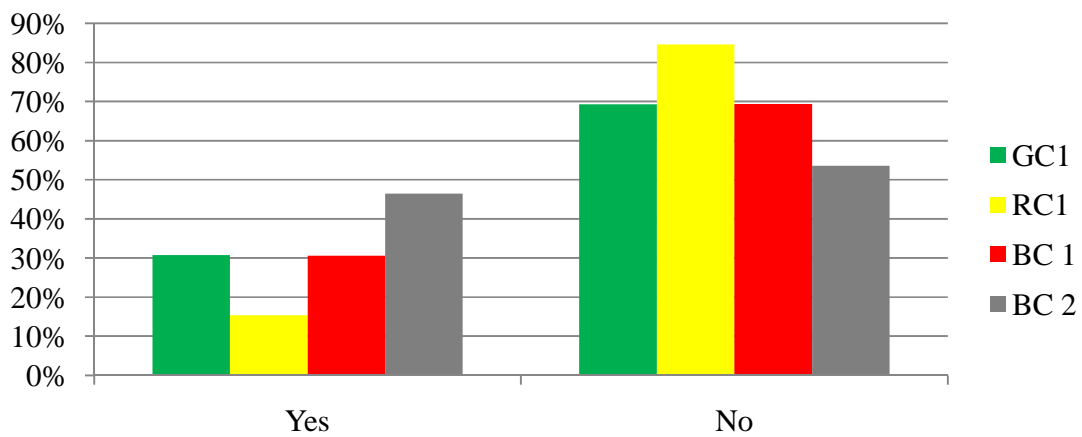
**Figure 4.18:** Availability of reward and punishment system



#### 4.6. Helpful Mechanisms

For the sake of accomplishing work on a given cost, time and quality there must be mechanisms (means, methods, system, procedures, instruments/apparatus and devices) that facilitate execution of work and help members of the organization to accomplish their tasks.

Nevertheless according to the responses from the participants only 34.36 % of the companies i.e. (30.77% of GC1, 15.4% of RC1, 30.61% of BC1 and 46.43% of BC2) have devised and implemented these mechanisms the other companies are operating in traditional way.



**Figure 4.19:** Availability of helpful mechanisms

#### 4.7. Summary of Findings

The research revealed that 59.4% of the firms have a clearly stated business plan, 44.3 % of the companies have clearly stated vision and mission statements and 43.4% of the companies have clearly stated objectives. While 42.5 % of the companies have a clear strategy the availability of organizational culture/values is 46.2%, but it is only in 20.8% of the firms that the employees are aware of the strategies, objectives, mission and vision of their company.

55.6% of firms focus on short term profitability rather than long term existence and 64.15% of them opt short term competitive relationship, while 41.51 % of firms use ability, achievement

and rank as a basis for salary, 56.60% of firms use shared offices and there is no in house education in 80.19% of the companies, there is a medium salary difference in 77.36% of firms.

The decision making approach is top down and individual direction in 69.81% of the firms, in 72.64% of the firms organizational work is divided by function, while the structure is designed by company management unit in 74.53% of the companies, 75.47% of them have never undertaken organizational restructuring.

In 66.04% of the companies there is clear assignment of roles, responsibilities and accountabilities and there is firm/cooperative relationship between individuals in 66.04% of firms, while the relationship between departments is firm/cooperative in 78.30% of the firms, the relationship between people and the requirements of their jobs firm/cooperative in 64.15% of firms, 65.64% of the firms have no documented mechanisms for accomplishing tasks across departments.

According to independent sample t – test performed on the variables significant difference is only noted on business plan and organizational structure for BC1 and BC2 contractors and only on strategy for BC1 and GC1 contractors whereas differences are noted on business plan, vision and mission statements, strategy, culture/values and working environment for GC1 and BC2 contractors. (See appendix 2.2.24 to 2.2.26)

Based on cross tabulation analysis 35.85% of the companies failed to document both adequate business plan and a strategy to pursue, whereas 26.41% of the companies are operating without a business plan and clear mission and vision statements, in addition 41.51% of the companies do not have both strategy and business plan.

The other significant relation noted with cross tabulation analysis is that 59.43% of the companies are using top down decision making approach and do not have in-house education for employees aligned. (See appendix 2.2.28 to 2.2.30)

According to Chi square test performed on the variables while business plan and strategy are dependent, no association was found between vision and mission statements with business plan and strategy. (See appendix 2.2.28 to 2.2.30)

## **CHAPTER FIVE**

### **CONCLUSSION AND RECOMMENDATION**

#### **5.1. Conclusion**

The purpose of this research was to examine and show how Ethiopian construction firms are currently organized and structured, how construction firms' organizational effectiveness is affecting the country's infrastructure development and identify the associated root problems and the key success factors for construction firm's success in future infrastructure development projects.

The participants have responded for the causes of rewarding employees as - efficiency on assigned job (output), effectiveness on assigned job(with least cost, time and quality), cost minimization for the company, good communication and obedience, excellent achievement in any department, appreciation on job well done and on safety and experience.

whereas they responded for causes of punishment as fraud, theft, absence and delay, cheating, disciplinary problems, misconduct, under achievement, lack of motivation on work, improper use of materials, bias of power(authority), damage to company assets and disobey to managers and leaders.

The other response was for available mechanisms in which the participants responded as evaluation report, test report, letters/decision and minutes of meetings for information management, reports and formats for equipment administration and test of materials before delivery, for material management

The participants responded that the driving forces for restructuring was change in level of contractor, increase in volume of construction and need to revise departments.

They have also responded for the responsible body to design the organization structure of their respective companies as human resource department and company management unit.

Accordingly the research revealed that the level of organizational effectiveness in Ethiopian construction firms is very low and the poor performance of the firms in the country's infrastructure development projects emanates from the problems in their management and structure. The following are the associated root problems of the firms.

- The practice of stating clear vision and mission statements, a strategy to pursue, short and long term objectives is very low.
- Exercising organizational culture/values for guiding company operations is also low.
- In the companies with documented strategy, vision and mission, the employees are not aware of them and are working in the dark.
- The firms are focused on short term profitability and competitive relationship rather than long term existence and credible relationship respectively.
- Even though the lower level managers have a better understanding of the facts in the ground their contribution in decision making process is very low
- The firms' practice in continuously adapting with changes in the industry and restructuring or redesigning their organizational structure to address the industry and customer needs is virtually zero.
- The firms have failed to document mechanisms for accomplishing tasks across departments.

## **5.2. Recommendation**

Based on the findings of the research the following recommendations are forwarded to construction companies and regulatory agencies/government.

### **5.2.1. Recommendations to Construction Firms**

The role, purpose and strategic direction that summarize the work of the organization and/or divisions have to be clear and appropriate which will guide the firm to success. Employees need to be aware of customer needs and companies 'strategy, mission, vision and objectives

and align their day to day activities to achieve high levels of customer satisfaction / loyalty and organizational success.

Besides firms should continuously update their organizational structure based on the trend in the industry and devise and document adequate mechanisms to guide different tasks across departments, the possible mechanisms may include the following for each respective activity.

- Working manuals, procedures, reports, meetings, training and computer application for human resource management and development
- Schedules, report, minutes, meeting, formats, construction management software for construction planning.
- Approval of materials before purchase, test reports, evaluation reports, manuals, codes, technical specification, Standard conditions, meeting for quality control (production and compliance control)
- Cash indemnity, internal and external auditing, working manuals, meetings, reports, government procedures and manuals for financial control and management.
- Requests, invoices , evaluation report, test report, letters/decision, minutes of meetings, information technology, contacting stakeholders for information management
- Assigning separate team, requests, vouchers, reports and formats for equipment administration
- Periodical calibration and test of materials before delivery, classification technique, vouchers and reports for material management

### **5.2.2. Recommendations to Regulatory Agencies and Government**

- Capacity building programs should be devised to enhance capability of domestic firms.
- Encourage domestic firms to form joint venture with foreign firms in the mega infrastructure development projects for obtaining experience and technology transfer.

- Quality control guidelines and regulations enforceability should be analyzed
- Adequate trainings should be provided for professionals in the industry on the huge responsibility they have.
- Licensing and registration criteria should be revised and include documented strategy, business plan, vision, mission and objective and professionals should assess the firms capability issues prior to issuance of the license.
- Mechanisms should be devised for professionals in the industry to be accountable for their faults and professional indemnity insurance should be incorporated in issuing individual professional license.
- For enhanced performance in the projects government and other clients should hire a separate project manager i.e. designers should not be responsible for supervision work.
- Adequate policies should be devised to encourage construction industry growth considering the role of the industry in the country's economy.
- The government should devise mechanisms for enhancing the capability and expertise of all stakeholders involved.

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## **APPENDICES**





YAKIN DOĐU ÜNİVERSİTESİ

BİLİMSEL ARAŐTIRMALAR ETİK KURULU

11.12.2018

Dear Wendmagegn A. Sena

Your application titled “**Challenges of infrastructure development in Ethiopia; focus on construction firms’ organizational effectiveness**” with the application number YDÜ/FB/2018/40 has been evaluated by the Scientific Research Ethics Committee and granted approval. You can start your research on the condition that you will abide by the information provided in your application form

Assoc. Prof. Dr. Direnç Kanol

Rapporteur of the Scientific Research Ethics Committee

**Note:**If you need to provide an official letter to an institution with the signature of the Head of NEU Scientific Research Ethics Committee, please apply to the secretariat of the ethics committee by showing this document

Dear Sir/Madam,

The aim of this questionnaire is to obtain data for the research titled “*challenges of infrastructure development in Ethiopia; focus on construction firms’ organizational effectiveness*” conducted as a partial fulfillment of Master Degree in civil Engineering from Near East University; Nicosia, Turkish republic of northern Cyprus. The data collected using this questionnaire will be used to describe how Ethiopian construction firms are currently organized and structured, to assess their level of organizational effectiveness and provide clues, ideas, suggestions and models as to how construction firms should organize and structure themselves to successfully grow and develop their companies.

The data collected with this questionnaire will be analyzed using SPSS and based on the results conclusions will be provided.

The information supplied in this completed questionnaire will be used for broad research purposes only (for academic purpose) and may be presented at national/international academic meetings and/or publications. All specific company and participant information will be kept confidential at all times i.e. only generalized analysis of the information contained within this completed questionnaire will be utilized in the research process.

Please note that your participation in the research is voluntary and your identity will not be revealed in any case to third parties and pseudonyms will be used in all of the survey data. You may quit participating in this study at any time by contacting me with the address below. If you opt out of the study, your data will be completely deleted and will not be included in any further steps of the study.

Best Regards,

**Wendmagegn Addis**

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**SECTION 1: COMPANY AND RESPONDENT PROFILE**

**1.1 Major Construction activity and Grade of the Company**

GC	BC	RC
<span>1 <input style="width: 20px;" type="text"/></span> <span>2 <input style="width: 20px;" type="text"/></span> <span>3 <input style="width: 20px;" type="text"/></span> <span>4 <input style="width: 20px;" type="text"/></span>	<span>1 <input style="width: 20px;" type="text"/></span> <span>2 <input style="width: 20px;" type="text"/></span> <span>3 <input style="width: 20px;" type="text"/></span> <span>4 <input style="width: 20px;" type="text"/></span>	<span>1 <input style="width: 20px;" type="text"/></span> <span>2 <input style="width: 20px;" type="text"/></span> <span>3 <input style="width: 20px;" type="text"/></span>

**1.2** Year of Commencement of operation (EC): \_\_\_\_\_

**1.3** Average value of the annual turnover of construction work (Million ETB) during the last 3 years:  
 \_\_\_\_\_ (Million ETB)

**1.4** Type of ownership

Individual Proprietor  Partnership  Share company  Private limited company  Other (specify).....

**1.5** In your company, which position in the organizational level you are?

Top management \_\_\_\_\_ Middle management \_\_\_\_\_ First-line Management \_\_\_\_\_ Operative \_\_\_\_\_

**1.6** Current Job title \_\_\_\_\_

**1.7** Experience

Years	Positions	Years	Positions
_____	_____	_____	_____

**SECTION 2: PURPOSE/STRATEGY OF THE COMPANY**

		<u>Yes</u>	<u>No</u>
<b>2.1</b>	Does the company have a Business Plan?		
<b>2.2</b>	Does the company have a clearly stated Vision Statement?		
<b>2.3</b>	Does the company have a clearly stated Mission Statement?		
<b>2.4</b>	Does the company have clearly stated objectives?		
<b>2.5</b>	Does the company have clearly stated strategies?		
<b>2.6</b>	Does the company have a set of organizational culture/values?		
<b>2.7</b>	Are employees aware of the above stated company's strategy?		

**2.8** If your answer/s to questions 2.1 and/or 2.2 is/are YES, who has established the company Vision and Mission Statements?

Company's Owner/s  Company's Management Unit (CMU)  CMU & Employees' Representatives  Other (specify).....

### SECTION 3: COMPANY'S ORGANIZATIONAL CHARACTERISTICS

#### 3.1 Objectives of the company

Permanent existence  Continuity and social values  Profitability

#### 3.2 Business Style

Long-term credible Relationships  Client first policy  Short-term competitive relationships

#### 3.3 Employment attitude

Employing persons  Employing the functions of persons

#### 3.4 Wage/Salary System

Seniority & achievement  Ability, achievement, and rank  Ability & achievement

#### 3.5 Decision Making Process

Bottom-up and mutual – Agreement  Discussions between superiors and subordinates  Top-down and individual direction

#### 3.6 Working Environment

Large –individual  Shared offices  Booths

#### 3.7 In-house Education

Systematic, seriously taken and Permanent  Considered little  self-enlightenment

#### 3.8 Salary Difference

Small  Medium  Big

### SECTION 4: STRUCTURE

#### 4.1 How is the organization's work divided up?

By Function  By Product  By Geography  Matrix

4.2 Who has prepared the organizational structure of the company at Head and Project Offices?

4.3 When was the last time you have undertaken organizational redesign/restructuring? \_\_\_\_\_ . What were the driving forces to undertake those changes?

\_\_\_\_\_

\_\_\_\_\_

4.4 Are there clear assignment of responsibilities, authorities and accountabilities? Yes \_\_, No \_\_

4.5 If Yes to question 4.4, how do you define the responsibilities, authorities and accountabilities of employees at the:

4.5.1 Head office: \_\_\_\_\_

4.5.2 Project Offices: \_\_\_\_\_

4.6 If Yes to question 4.4, who defines the responsibilities, authorities and accountabilities of employees at the:

4.6.1 Head office: \_\_\_\_\_

4.6.2 Project Offices: \_\_\_\_\_

**SECTION 5: RELATIONSHIP**

		<u>Firm/ Cooperative</u>	<u>Moderate</u>	<u>Soft/ Competitive</u>
5.1	How do you assess the level of relationships between/among individuals?			
5.2	How do you assess the level of relationships between/among units or departments that perform different tasks?			
5.3	How do you assess the level of relationships between the people and requirements of their jobs?			

**SECTION 6: REWARDS**

6.1 Please state the causes for which the company has so far formally rewarded any of its members.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_

**6.2** Please state the causes for which the company has so far formally punished any of its members.

- |          |          |
|----------|----------|
| 1. _____ | 4. _____ |
| 2. _____ | 5. _____ |
| 3. _____ | 6. _____ |

**SECTION 7: HELPFUL MECHANISM**

Are there any helpful mechanisms (means, methods, systems, procedures, instruments/apparatus, devices, etc) that the company owns/have to help its organizational members accomplish their tasks listed below.

NO	Particular tasks	Yes	NO	If yes what are they?
7.1	Human Resource Management & Development			
7.2	Construction planning			
7.3	Quality control (production and compliance control)			
7.4	Financial control and management			
7.5	Information collection, organizing, processing, interpreting and Decision making			
7.6	Equipment administration			
7.7	Material management			
7.8	Equipment Administration & Maintenance			
7.9	Procurement Management			
7.10	Design review and survey works			
7.11	Contract Administration			
7.12	Safety and Hygiene management			
7.13	Environmental management			

## Appendix 2 - Frequencies

### 2.1.Statistics

Grade of contractor		Business Plan	Vision and mission objectives	culture/value strategies	employees aware	Responsible body	Objectives of the company	business Style	Employment attitude	Salary System	Decision Making	Working Environment	In-house Education	Salary Difference structure	Responsible body restructuring	driving forces	assignment of responsibilities, individuals relationships	units relationships	jobs relationships				
GC 1 N	Valid	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	
	Missing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
RC 1 N	Valid	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	1	3	3	3
	Missing	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0
BC 1 N	Valid	49	49	49	49	49	49	49	21	49	49	49	49	49	49	49	49	49	49	11	49	49	49
	Missing	0	0	0	0	0	0	0	28	0	0	0	0	0	0	0	0	0	0	38	0	0	0
BC 2 N	Valid	28	28	28	28	28	28	28	7	28	28	28	28	28	28	28	28	28	28	6	28	28	28
	Missing	0	0	0	0	0	0	0	21	0	0	0	0	0	0	0	0	0	0	22	0	0	0

## 2.2. Frequency Tables

### 2.2.1. Does the company have a Business Plan?

Type and Grade of contractor		Frequency	Percent	Valid Percent	Cumulative Percent
GC 1	Valid	Yes	21	80.8	80.8
		No	5	19.2	100.0
		Total	26	100.0	100.0
RC 1	Valid	Yes	1	33.3	33.3
		No	2	66.7	100.0
		Total	3	100.0	100.0
BC 1	Valid	Yes	30	61.2	61.2
		No	19	38.8	100.0
		Total	49	100.0	100.0
BC 2	Valid	Yes	9	32.1	32.1
		No	19	67.9	100.0
		Total	28	100.0	100.0

### 2.2.2. Does the company have a clearly stated Vision and mission Statement?

Type and Grade of contractor		Frequency	Percent	Valid Percent	Cumulative Percent
GC 1	Valid	Yes	16	61.5	61.5
		No	10	38.5	100.0
		Total	26	100.0	100.0
RC 1	Valid	Yes	2	66.7	66.7
		No	1	33.3	100.0
		Total	3	100.0	100.0
BC 1	Valid	Yes	21	42.9	42.9
		No	28	57.1	100.0
		Total	49	100.0	100.0
BC 2	Valid	Yes	7	25.0	25.0
		No	21	75.0	100.0
		Total	28	100.0	100.0



### 2.2.3. Does the company have clearly stated objectives

Type and Grade of contractor		Frequency	Percent	Valid Percent	Cumulative Percent
GC 1	Valid	Yes	13	50.0	50.0
		No	13	50.0	100.0
		Total	26	100.0	100.0
RC 1	Valid	Yes	2	66.7	66.7
		No	1	33.3	100.0
		Total	3	100.0	100.0
BC 1	Valid	Yes	21	42.9	42.9
		No	28	57.1	100.0
		Total	49	100.0	100.0
BC 2	Valid	Yes	7	25.0	25.0
		No	21	75.0	100.0
		Total	28	100.0	100.0

### 2.2.4. Does the company have a set of organizational culture/values?

Type and Grade of contractor		Frequency	Percent	Valid Percent	Cumulative Percent
GC 1	Valid	Yes	15	57.7	57.7
		No	11	42.3	100.0
		Total	26	100.0	100.0
RC 1	Valid	Yes	1	33.3	33.3
		No	2	66.7	100.0
		Total	3	100.0	100.0
BC 1	Valid	Yes	23	46.9	46.9
		No	26	53.1	100.0
		Total	49	100.0	100.0
BC 2	Valid	Yes	8	28.6	28.6
		No	20	71.4	100.0
		Total	28	100.0	100.0

**2.2.5. Does the company have clearly stated strategies?**

Type and Grade of contractor		Frequency	Percent	Valid Percent	Cumulative Percent
GC 1	Valid	Yes	22	84.6	84.6
		No	4	15.4	100.0
		Total	26	100.0	100.0
RC 1	Valid	Yes	1	33.3	33.3
		No	2	66.7	100.0
		Total	3	100.0	100.0
BC 1	Valid	Yes	16	32.7	32.7
		No	33	67.3	100.0
		Total	49	100.0	100.0
BC 2	Valid	Yes	4	14.3	14.3
		No	24	85.7	100.0
		Total	28	100.0	100.0

**2.2.6. Are employees aware of the above stated company's strategy?**

Type and Grade of contractor		Frequency	Percent	Valid Percent	Cumulative Percent
GC 1	Valid	Yes	5	19.2	19.2
		No	21	80.8	100.0
		Total	26	100.0	100.0
RC 1	Valid	No	3	100.0	100.0
BC 1	Valid	Yes	10	20.4	20.4
		No	39	79.6	100.0
		Total	49	100.0	100.0
BC 2	Valid	Yes	4	14.3	14.3
		No	24	85.7	100.0
		Total	28	100.0	100.0

### 2.2.7. Who has established the company Vision and Mission Statements?

Type and Grade of contractor		Frequency	Percent	Valid Percent	Cumulative Percent
GC 1	Valid	Company's owner	5	19.2	31.3
		Company's Management unit (CMU)	11	42.3	68.8
		Total	16	61.5	100.0
	Missing	999	10	38.5	
	Total		26	100.0	
RC 1	Valid	Company's owner	1	33.3	50.0
		Company's Management unit (CMU)	1	33.3	50.0
		Total	2	66.7	100.0
	Missing	999	1	33.3	
	Total		3	100.0	
BC 1	Valid	Company's owner	6	12.2	28.6
		Company's Management unit (CMU)	13	26.5	61.9
		CMU & Employees' Representatives	2	4.1	9.5
		Total	21	42.9	100.0
	Missing	999	28	57.1	
Total		49	100.0		
BC 2	Valid	Company's owner	1	3.6	14.3
		Company's Management unit (CMU)	5	17.9	71.4
		CMU & Employees' Representatives	1	3.6	14.3
		Total	7	25.0	100.0
	Missing	999	21	75.0	
Total		28	100.0		

### 2.2.8. Objectives of the company

Type and Grade of contractor		Frequency	Percent	Valid Percent	Cumulative Percent	
GC 1	Valid	Permanent existence	8	30.8	30.8	
		Continuity and social values	8	30.8	30.8	61.5
		Profitability	10	38.5	38.5	100.0
		Total	26	100.0	100.0	
RC 1	Valid	Permanent existence	1	33.3	33.3	33.3
		Continuity and social values	1	33.3	33.3	66.7
		Profitability	1	33.3	33.3	100.0
		Total	3	100.0	100.0	
BC 1	Valid	Permanent existence	13	26.5	26.5	26.5
		Continuity and social values	5	10.2	10.2	36.7
		Profitability	31	63.3	63.3	100.0
		Total	49	100.0	100.0	
BC 2	Valid	Permanent existence	7	25.0	25.0	25.0
		Continuity and social values	4	14.3	14.3	39.3
		Profitability	17	60.7	60.7	100.0
		Total	28	100.0	100.0	

### 2.2.9. Type of business Style

Type and Grade of contractor		Frequency	Percent	Valid Percent	Cumulative Percent	
GC 1	Valid	Long-term credible relationships	8	30.8	30.8	30.8
		client first policy	3	11.5	11.5	42.3
		Short-term competitive Relationships	15	57.7	57.7	100.0
		Total	26	100.0	100.0	
RC 1	Valid	Long-term credible relationships	1	33.3	33.3	33.3
		Short-term competitive Relationships	2	66.7	66.7	100.0
		Total	3	100.0	100.0	

BC 1	Valid	Long-term credible relationships	11	22.4	22.4	22.4
		client first policy	5	10.2	10.2	32.7
		Short-term competitive Relationships	33	67.3	67.3	100.0
		Total	49	100.0	100.0	
BC 2	Valid	Long-term credible relationships	6	21.4	21.4	21.4
		client first policy	4	14.3	14.3	35.7
		Short-term competitive Relationships	18	64.3	64.3	100.0
		Total	28	100.0	100.0	

### 2.2.10. Employment attitude

Type and Grade of contractor		Frequency	Percent	Valid Percent	Cumulative Percent
GC 1	Valid	Employing persons	10	38.5	38.5
		Employing the functions of persons	16	61.5	61.5
		Total	26	100.0	100.0
RC 1	Valid	Employing persons	1	33.3	33.3
		Employing the functions of persons	2	66.7	66.7
		Total	3	100.0	100.0
BC 1	Valid	Employing persons	22	44.9	44.9
		Employing the functions of persons	27	55.1	55.1
		Total	49	100.0	100.0
BC 2	Valid	Employing persons	7	25.0	25.0
		Employing the functions of persons	21	75.0	75.0
		Total	28	100.0	100.0

### 2.2.11. Wage/Salary System

Type and Grade of contractor		Frequency	Percent	Valid Percent	Cumulative Percent
GC 1	Valid	Seniority & achievement	8	30.8	30.8
		Ability, achievement, and rank	11	42.3	42.3
		Ability & achievement	7	26.9	26.9
		Total	26	100.0	100.0
RC 1	Valid	Seniority & achievement	1	33.3	33.3
		Ability, achievement, and rank	2	66.7	66.7
		Total	3	100.0	100.0
BC 1	Valid	Seniority & achievement	9	18.4	18.4
		Ability, achievement, and rank	20	40.8	40.8
		Ability & achievement	20	40.8	40.8
		Total	49	100.0	100.0
BC 2	Valid	Seniority & achievement	8	28.6	28.6
		Ability, achievement, and rank	14	50.0	50.0
		Ability & achievement	6	21.4	21.4
		Total	28	100.0	100.0

### 2.2.12. Decision Making Process

Type and Grade of contractor		Frequency	Percent	Valid Percent	Cumulative Percent
GC 1	Valid	Bottom-up and mutual – agreement	2	7.7	7.7
		Discussions between superiors and subordinates	5	19.2	19.2
		Top-down and individual direction	19	73.1	73.1
		Total	26	100.0	100.0
RC 1	Valid	Top-down and individual direction	3	100.0	100.0
BC 1	Valid	Bottom-up and mutual – agreement	4	8.2	8.2

### 2.2.13. In-house Education for employees

Type and Grade of contractor		Frequency	Percent	Valid Percent	Cumulative Percent	
GC 1	Valid	Systematic, seriously taken and Permanent	3	11.5	11.5	11.5
		Considered little self-enlightenment	21	80.8	80.8	92.3
			2	7.7	7.7	100.0
		Total	26	100.0	100.0	
RC 1	Valid	Considered little	3	100.0	100.0	100.0
BC 1	Valid	Systematic, seriously taken and Permanent	4	8.2	8.2	8.2
		Considered little self-enlightenment	37	75.5	75.5	83.7
			8	16.3	16.3	100.0
		Total	49	100.0	100.0	
BC 2	Valid	Systematic, seriously taken and Permanent	2	7.1	7.1	7.1
		Considered little self-enlightenment	24	85.7	85.7	92.9
			2	7.1	7.1	100.0
		Total	28	100.0	100.0	

### 2.2.14. Salary Difference

Type and Grade of contractor		Frequency	Percent	Valid Percent	Cumulative Percent	
GC 1	Valid	Small	4	15.4	15.4	15.4
		Medium	18	69.2	69.2	84.6
		Big	4	15.4	15.4	100.0
		Total	26	100.0	100.0	
RC 1	Valid	Small	1	33.3	33.3	33.3
		Medium	2	66.7	66.7	100.0
		Total	3	100.0	100.0	
BC 1	Valid	Small	7	14.3	14.3	14.3
		Medium	38	77.6	77.6	91.8
		Big	4	8.2	8.2	100.0
		Total	49	100.0	100.0	
BC 2	Valid	Small	3	10.7	10.7	10.7
		Medium	23	82.1	82.1	92.9
		Big	2	7.1	7.1	100.0
		Total	28	100.0	100.0	

**2.2.15. How is the organization's work divided up**

Type and Grade of contractor		Frequency	Percent	Valid Percent	Cumulative Percent
GC 1	Valid	By Function	18	69.2	69.2
		By Product	4	15.4	15.4
		By Geography	2	7.7	7.7
		Matrix	2	7.7	7.7
		Total	26	100.0	100.0
RC 1	Valid	By Function	3	100.0	100.0
BC 1	Valid	By Function	32	65.3	65.3
		By Geography	3	6.1	6.1
		Matrix	14	28.6	28.6
		Total	49	100.0	100.0
BC 2	Valid	By Function	24	85.7	85.7
		By Product	2	7.1	7.1
		By Geography	1	3.6	3.6
		Matrix	1	3.6	3.6
		Total	28	100.0	100.0

**2.2.16. Who has prepared the organizational structure of the company**

Type and Grade of contractor		Frequency	Percent	Valid Percent	Cumulative Percent
GC 1	Valid	owner	6	23.1	23.1
		CMU	17	65.4	65.4
		HRM	3	11.5	11.5
		Total	26	100.0	100.0
RC 1	Valid	owner	1	33.3	33.3
		CMU	2	66.7	66.7
		Total	3	100.0	100.0
BC 1	Valid	owner	7	14.3	14.3
		CMU	38	77.6	77.6
		HRM	4	8.2	8.2
		Total	49	100.0	100.0
BC 2	Valid	owner	4	14.3	14.3
		CMU	22	78.6	78.6
		HRM	2	7.1	7.1
		Total	28	100.0	100.0



### 2.2.17. When was the last time you have undertaken organizational restructuring

Type and Grade of contractor		Frequency	Percent	Valid Percent	Cumulative
GC 1	Valid	2017	1	3.8	3.8
		Before 2 or 3 years	7	26.9	26.9
		Never	18	69.2	69.2
		Total	26	100.0	100.0
RC 1	Valid	Before 2 or 3 years	1	33.3	33.3
		Never	2	66.7	66.7
		Total	3	100.0	100.0
BC 1	Valid	2017	3	6.1	6.1
		Before 2 or 3 years	8	16.3	16.3
		Never	38	77.6	77.6
		Total	49	100.0	100.0
BC 2	Valid	Before 2 or 3 years	6	21.4	21.4
		Never	22	78.6	78.6
		Total	28	100.0	100.0

### 2.2.18. What were the driving forces to undertake those changes

Type and Grade of contractor		Frequency	Percent	Valid Percent	Cumulative
GC 1	Valid	Need for revision	3	11.5	37.5
		Growth in volume	5	19.2	62.5
		Total	8	30.8	100.0
	Missing	999	18	69.2	
	Total	26	100.0		
RC 1	Valid	Need for revision of departments	1	33.3	100.0
		999	2	66.7	
	Total	3	100.0		
BC 1	Valid	Change in level	1	2.0	9.1
		Need for revision	3	6.1	27.3
		Growth in volume	7	14.3	63.6
		Total	11	22.4	100.0
	Missing	999	38	77.6	
Total	49	100.0			
BC 2	Valid	Change in level	2	7.1	33.3
		Need for revision	1	3.6	16.7
		Growth in volume	3	10.7	50.0

	Total	6	21.4	100.0	
Missing	999	22	78.6		
	Total	28	100.0		

### 2.2.19. Are there clear assignment of responsibilities, authorities and accountabilities

Type and Grade of contractor		Frequency	Percent	Valid Percent	Cumulative Percent
GC 1	Valid	Yes	18	69.2	69.2
		No	8	30.8	100.0
		Total	26	100.0	100.0
RC 1	Valid	Yes	3	100.0	100.0
		Total	3	100.0	100.0
BC 1	Valid	Yes	34	69.4	69.4
		No	15	30.6	100.0
		Total	49	100.0	100.0
BC 2	Valid	Yes	15	53.6	53.6
		No	13	46.4	100.0
		Total	28	100.0	100.0

### 2.2.20. How do you assess the level of relationships between/among individuals

Type and Grade of contractor		Frequency	Percent	Valid Percent	Cumulative
GC 1	Valid	Firm or cooperative	19	73.1	73.1
		Moderate	4	15.4	88.5
		Soft or Cooperative	3	11.5	100.0
		Total	26	100.0	100.0
RC 1	Valid	Firm or cooperative	2	66.7	66.7
		Moderate	1	33.3	100.0
		Total	3	100.0	100.0
BC 1	Valid	Firm or cooperative	28	57.1	57.1
		Moderate	16	32.7	89.8
		Soft or Cooperative	5	10.2	100.0
		Total	49	100.0	100.0
BC 2	Valid	Firm or cooperative	22	78.6	78.6
		Moderate	4	14.3	92.9
		Soft or Cooperative	2	7.1	100.0
		Total	28	100.0	100.0

**2.2.21. How do you assess the level of relationships between/among units or departments**

Type and Grade of contractor		Frequency	Percent	Valid Percent	Cumulative
GC 1	Valid	Firm or cooperative	22	84.6	84.6
		Moderate	4	15.4	100.0
		Total	26	100.0	100.0
RC 1	Valid	Firm or cooperative	2	66.7	66.7
		Moderate	1	33.3	100.0
		Total	3	100.0	100.0
BC 1	Valid	Firm or cooperative	34	69.4	69.4
		Moderate	12	24.5	93.9
		Soft or Cooperative	3	6.1	100.0
		Total	49	100.0	100.0
BC 2	Valid	Firm or cooperative	25	89.3	89.3
		Moderate	3	10.7	100.0
		Total	28	100.0	100.0

**2.2.22. How do you assess the level of relationships between the people and their jobs?**

Type and Grade of contractor		Frequency	Percent	Valid Percent	Cumulative
GC 1	Valid	Firm or cooperative	15	57.7	57.7
		Moderate	7	26.9	84.6
		Soft or Cooperative	4	15.4	100.0
		Total	26	100.0	100.0
RC 1	Valid	Firm or cooperative	2	66.7	66.7
		Moderate	1	33.3	100.0
		Total	3	100.0	100.0
BC 1	Valid	Firm or cooperative	34	69.4	69.4
		Moderate	12	24.5	93.9
		Soft or Cooperative	3	6.1	100.0
		Total	49	100.0	100.0
BC 2	Valid	Firm or cooperative	17	60.7	60.7
		Moderate	9	32.1	92.9
		Soft or Cooperative	2	7.1	100.0
		Total	28	100.0	100.0

### 2.2.23. Independent Samples Test for BC 1 and BC 2

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Does the company have a Business Plan	Equal variances assumed	1.457	.231	-2.524	75	.014	-.291	.115	-.520	-.061
	Equal variances not assumed			-2.548	57.961	.013	-.291	.114	-.519	-.062
Does the company have a clearly stated Vision and mission Statement	Equal variances assumed	11.308	.001	-1.572	75	.120	-.179	.114	-.405	.048
	Equal variances not assumed			-1.627	62.324	.109	-.179	.110	-.398	.041
Does the company have clearly stated objectives	Equal variances assumed	11.308	.001	-1.572	75	.120	-.179	.114	-.405	.048
	Equal variances not assumed			-1.627	62.324	.109	-.179	.110	-.398	.041
Does the company have clearly stated strategies?	Equal variances assumed	16.667	.000	-1.782	75	.079	-.184	.103	-.389	.022
	Equal variances not assumed			-1.924	69.315	.059	-.184	.095	-.374	.007

Does the company have a set of organizational culture/values?	Equal variances assumed	9.874	.002	-1.586	75	.117	-.184	.116	-.414	.047
	Equal variances not assumed			-1.627	60.703	.109	-.184	.113	-.409	.042
Are employees aware of the above stated company's strategy?	Equal variances assumed	1.883	.174	-.663	75	.509	-.061	.092	-.245	.123
	Equal variances not assumed			-.688	62.692	.494	-.061	.089	-.239	.117
who has established the company Vision and Mission Statements?	Equal variances assumed	1.023	.321	-.732	26	.471	-.190	.260	-.725	.344
	Equal variances not assumed			-.748	10.708	.471	-.190	.255	-.753	.372
Objectives of the company	Equal variances assumed	.056	.813	.049	75	.961	.010	.208	-.404	.425
	Equal variances not assumed			.049	57.012	.961	.010	.207	-.405	.425
Type of business Style	Equal variances assumed	.007	.934	.102	75	.919	.020	.199	-.376	.417
	Equal variances not assumed			.103	56.744	.919	.020	.199	-.377	.418
Employment attitude	Equal variances assumed	13.330	.000	-1.745	75	.085	-.199	.114	-.426	.028
	Equal variances not assumed			-1.809	62.565	.075	-.199	.110	-.419	.021
Wage/Salary System	Equal variances assumed	1.090	.300	1.702	75	.093	.296	.174	-.050	.642

	Equal variances not assumed			1.720	58.084	.091	.296	.172	-.049	.640
Decision Making Process	Equal variances assumed	11.771	.001	-1.930	75	.057	-.270	.140	-.549	.009
	Equal variances not assumed			-2.097	70.190	.040	-.270	.129	-.528	-.013
Working Environment	Equal variances assumed	8.424	.005	.037	75	.971	.005	.138	-.270	.280
	Equal variances not assumed			.042	74.932	.966	.005	.120	-.235	.245
In-house Education for employees	Equal variances assumed	3.080	.083	.754	75	.453	.082	.108	-.134	.297
	Equal variances not assumed			.806	67.836	.423	.082	.101	-.120	.284
Salary Difference	Equal variances assumed	.458	.500	-.235	75	.815	-.026	.109	-.242	.191
	Equal variances not assumed			-.241	61.182	.810	-.026	.106	-.237	.186
How is the organization's work divided up	Equal variances assumed	51.270	.000	2.612	75	.011	.730	.279	.173	1.286
	Equal variances not assumed			3.077	74.252	.003	.730	.237	.257	1.202
Who has prepared the organizational structure of the company at Head and Project Offices	Equal variances assumed	.001	.975	.091	75	.927	.010	.112	-.212	.233
	Equal variances not assumed			.092	57.225	.927	.010	.111	-.212	.233

When was the last time you have undertaken organizational redesign/restructuring	Equal variances assumed	1.912	.171	-.574	75	.568	-.071	.125	-.319	.177
	Equal variances not assumed			-.626	70.708	.534	-.071	.114	-.299	.156
What were the driving forces to undertake those changes	Equal variances assumed	2.208	.158	.935	15	.365	.379	.405	-.485	1.242
	Equal variances not assumed			.838	7.748	.427	.379	.452	-.669	1.426
Are there clear assignment of responsibilities, authorities and accountabilities	Equal variances assumed	4.404	.039	-1.387	75	.169	-.158	.114	-.385	.069
	Equal variances not assumed			-1.354	52.373	.181	-.158	.117	-.392	.076
How do you assess the level of relationships between/among individuals	Equal variances assumed	4.012	.049	1.585	75	.117	.245	.155	-.063	.553
	Equal variances not assumed			1.640	62.324	.106	.245	.149	-.054	.543
How do you assess the level of relationships between/among units or departments that perform different tasks?	Equal variances assumed	21.489	.000	2.123	75	.037	.260	.123	.016	.504
	Equal variances not assumed			2.488	74.580	.015	.260	.105	.052	.469
How do you assess the level of	Equal variances assumed	.580	.449	-.666	75	.508	-.097	.146	-.387	.193





objectives	Equal variances not assumed			-.581	50.211	.564	-.071	.123	-.318	.175
Does the company have clearly stated strategies?	Equal variances assumed	13.681	.000	-4.863	73	.000	-.520	.107	-.733	-.307
	Equal variances not assumed			-5.252	62.960	.000	-.520	.099	-.717	-.322
Does the company have a set of organizational culture/values?	Equal variances assumed	.628	.431	-.879	73	.382	-.108	.122	-.351	.136
	Equal variances not assumed			-.879	51.115	.383	-.108	.122	-.353	.138
Are employees aware of the above stated company's strategy?	Equal variances assumed	.058	.810	.120	73	.905	.012	.098	-.184	.208
	Equal variances not assumed			.120	51.667	.905	.012	.098	-.185	.208
who has established the company Vision and Mission Statements?	Equal variances assumed	.107	.746	-.666	35	.510	-.122	.183	-.494	.250
	Equal variances not assumed			-.687	34.909	.497	-.122	.178	-.483	.239
Objectives of the company	Equal variances assumed	.946	.334	-1.376	73	.173	-.290	.211	-.711	.130
	Equal variances not assumed			-1.395	53.065	.169	-.290	.208	-.708	.127
Type of business Style	Equal variances assumed	1.296	.259	-.852	73	.397	-.180	.211	-.600	.241
	Equal variances not assumed			-.829	47.393	.411	-.180	.217	-.616	.256

Employment attitude	Equal variances assumed	1.253	.267	.530	73	.598	.064	.121	-.178	.306
	Equal variances not assumed			.532	51.656	.597	.064	.121	-.178	.307
Wage/Salary System	Equal variances assumed	.166	.685	-1.438	73	.155	-.263	.183	-.628	.102
	Equal variances not assumed			-1.420	49.336	.162	-.263	.185	-.635	.109
Decision Making Process	Equal variances assumed	.636	.428	.661	73	.511	.103	.156	-.207	.413
	Equal variances not assumed			.667	52.404	.508	.103	.154	-.206	.412
Working Environment	Equal variances assumed	.004	.948	2.039	73	.045	.316	.155	.007	.626
	Equal variances not assumed			2.125	57.355	.038	.316	.149	.018	.614
In-house Education for employees	Equal variances assumed	.689	.409	-1.037	73	.303	-.120	.116	-.351	.111
	Equal variances not assumed			-1.070	55.795	.289	-.120	.112	-.345	.105
Salary Difference	Equal variances assumed	.151	.699	.497	73	.621	.061	.123	-.184	.307
	Equal variances not assumed			.471	43.975	.640	.061	.130	-.201	.323
How is the organization's work	Equal variances assumed	18.828	.000	-1.458	73	.149	-.441	.302	-1.044	.162

divided up	Equal variances not assumed			-1.630	67.950	.108	-.441	.271	-.981	.099
Who has prepared the organizational structure of the company at Head and Project Offices	Equal variances assumed	2.095	.152	-.432	73	.667	-.054	.125	-.304	.196
	Equal variances not assumed			-.405	42.606	.688	-.054	.134	-.324	.216
When was the last time you have undertaken organizational redesign/restructuring	Equal variances assumed	.195	.660	-.435	73	.664	-.060	.139	-.337	.216
	Equal variances not assumed			-.439	52.331	.662	-.060	.138	-.337	.216
What were the driving forces to undertake those changes	Equal variances assumed	.816	.379	.275	17	.787	.080	.290	-.531	.690
	Equal variances not assumed			.288	16.952	.777	.080	.277	-.504	.663
Are there clear assignment of responsibilities, authorities and accountabilities	Equal variances assumed	.001	.978	.014	73	.989	.002	.113	-.224	.228
	Equal variances not assumed			.014	50.602	.989	.002	.114	-.227	.230
How do you assess the level of relationships between/among individuals	Equal variances assumed	.299	.586	-.877	73	.383	-.146	.166	-.478	.186
	Equal variances not assumed			-.870	49.981	.388	-.146	.168	-.483	.191
How do you assess the level of	Equal variances assumed	12.294	.001	-1.650	73	.103	-.214	.129	-.471	.044

relationships between/among units or departments that perform different tasks?	Equal variances not assumed			-1.902	71.410	.061	-.214	.112	-.437	.010
How do you assess the level of relationships between the people and requirements of their jobs?	Equal variances assumed	4.030	.048	1.310	73	.194	.210	.160	-.109	.528
	Equal variances not assumed			1.221	42.093	.229	.210	.172	-.137	.556

### 2.2.25. Independent Samples Test for GC1 and BC 2

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Does the company have a Business Plan	Equal variances assumed	4.789	.033	-4.042	52	.000	-.486	.120	-.728	-.245

	Equal variances not assumed			-4.068	51.562	.000	-.486	.120	-.726	-.246
Does the company have a clearly stated Vision and mission Statement	Equal variances assumed	4.136	.047	-2.865	52	.006	-.365	.128	-.621	-.109
	Equal variances not assumed			-2.852	50.145	.006	-.365	.128	-.623	-.108
Does the company have clearly stated objectives	Equal variances assumed	8.346	.006	-1.931	52	.059	-.250	.129	-.510	.010
	Equal variances not assumed			-1.921	49.621	.061	-.250	.130	-.512	.012
Does the company have clearly stated strategies?	Equal variances assumed	.050	.824	-7.134	52	.000	-.703	.099	-.901	-.505
	Equal variances not assumed			-7.125	51.406	.000	-.703	.099	-.901	-.505
Does the company have a set of organizational culture/values?	Equal variances assumed	3.740	.059	-2.220	52	.031	-.291	.131	-.554	-.028
	Equal variances not assumed			-2.213	50.608	.031	-.291	.132	-.555	-.027
Are employees aware of the above stated company's strategy?	Equal variances assumed	.924	.341	-.479	52	.634	-.049	.103	-.257	.158
	Equal variances not assumed			-.477	50.101	.635	-.049	.104	-.258	.159
Who has established the company Vision and Mission Statements?	Equal variances assumed	1.109	.304	-1.355	21	.190	-.312	.231	-.792	.167
	Equal variances not assumed			-1.256	9.798	.238	-.312	.249	-.869	.244

Objectives of the company	Equal variances assumed	.431	.515	-1.199	52	.236	-.280	.234	-.749	.189
	Equal variances not assumed			-1.201	51.888	.235	-.280	.233	-.749	.188
Type of business Style	Equal variances assumed	1.295	.260	-.667	52	.508	-.159	.239	-.639	.320
	Equal variances not assumed			-.665	50.541	.509	-.159	.240	-.641	.322
Employment attitude	Equal variances assumed	4.136	.047	-1.055	52	.296	-.135	.128	-.391	.121
	Equal variances not assumed			-1.051	50.145	.298	-.135	.128	-.392	.123
Wage/Salary System	Equal variances assumed	.221	.640	.163	52	.871	.033	.203	-.374	.440
	Equal variances not assumed			.162	50.826	.872	.033	.203	-.375	.441
Decision Making Process	Equal variances assumed	4.169	.046	-1.110	52	.272	-.168	.151	-.471	.135
	Equal variances not assumed			-1.098	46.473	.278	-.168	.153	-.475	.139
Working Environment	Equal variances assumed	15.838	.000	2.397	52	.020	.321	.134	.052	.591
	Equal variances not assumed			2.363	43.186	.023	.321	.136	.047	.596
In-house Education for employees	Equal variances assumed	.616	.436	-.340	52	.735	-.038	.113	-.265	.188

	Equal variances not assumed			-.338	49.603	.737	-.038	.114	-.267	.190
Salary Difference	Equal variances assumed	.769	.384	.263	52	.794	.036	.136	-.237	.309
	Equal variances not assumed			.260	46.529	.796	.036	.137	-.241	.312
How is the organization's work divided up	Equal variances assumed	4.371	.041	1.278	52	.207	.288	.226	-.164	.741
	Equal variances not assumed			1.264	45.866	.213	.288	.228	-.171	.748
Who has prepared the organizational structure of the company at Head and Project Offices	Equal variances assumed	1.746	.192	-.306	52	.761	-.044	.144	-.333	.245
	Equal variances not assumed			-.303	47.628	.763	-.044	.145	-.336	.248
When was the last time you have undertaken organizational redesign/restructuring	Equal variances assumed	4.128	.047	-.984	52	.330	-.132	.134	-.401	.137
	Equal variances not assumed			-.973	46.044	.336	-.132	.136	-.405	.141
What were the driving forces to undertake those changes	Equal variances assumed	6.977	.022	1.135	12	.279	.458	.404	-.421	1.338
	Equal variances not assumed			1.039	7.076	.333	.458	.441	-.583	1.499
Are there clear assignment of	Equal variances assumed	4.182	.046	-1.173	52	.246	-.157	.134	-.425	.111

responsibilities, authorities and accountabilities	Equal variances not assumed			-1.176	52.000	.245	-.157	.133	-.424	.111
How do you assess the level of relationships between/among individuals	Equal variances assumed	1.121	.295	.560	52	.578	.099	.177	-.256	.453
	Equal variances not assumed			.557	49.515	.580	.099	.178	-.258	.456
How do you assess the level of relationships between/among units or departments that perform different tasks?	Equal variances assumed	1.020	.317	.502	52	.618	.047	.093	-.140	.233
	Equal variances not assumed			.499	49.413	.620	.047	.094	-.141	.235
How do you assess the level of relationships between the people and requirements of their jobs?	Equal variances assumed	1.489	.228	.593	52	.556	.113	.190	-.269	.494
	Equal variances not assumed			.589	49.043	.559	.113	.191	-.272	.497



## 2.2.26. Coefficients

Model	Un standardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	.132	.000		.	.	.132	.132
Business Plan	1.189	.000	.600	.	.	1.189	1.189
organizational culture/values	-.321	.000	-.162	.	.	-.321	-.321
who established Vision and Mission	.849	.000	.637	.	.	.849	.849
Employment attitude	1.208	.000	.609	.	.	1.208	1.208
Wage/Salary System	-.019	.000	-.015	.	.	-.019	-.019
Decision Making Process	.321	.000	.221	.	.	.321	.321
Working Environment	-.868	.000	-.672	.	.	-.868	-.868
organizational structure	.566	.000	.778	.	.	.566	.566
clear assignment of responsibilities, authorities and accountabilities	-1.755	.000	-.710	.	.	-1.755	-1.755
level of relationships between the people their jobs	-.604	.000	-.558	.	.	-.604	-.604

Dependent Variable: Type and Grade of contractor

**2.2.27. Does the company have a Business Plan \* Does the company have clearly stated strategies?**

**A. Cross tabulation**

		Does the company have clearly stated strategies?			
		Yes	No	Total	
Does the company have a Business Plan	Yes	Count	36	25	61
		Expected Count	24.7	36.3	61.0
		% within Does the company have a Business Plan	59.0%	41.0%	100.0%
	No	Count	7	38	45
		Expected Count	18.3	26.7	45.0
		% within Does the company have a Business Plan	15.6%	84.4%	100.0%
	Total	Count	43	63	106
		Expected Count	43.0	63.0	106.0
		% within Does the company have a Business Plan	40.6%	59.4%	100.0%

**B. Chi-Square Test**

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	20.288 <sup>a</sup>	1	.000		
Continuity Correction <sup>b</sup>	18.525	1	.000		
Likelihood Ratio	21.681	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	20.096	1	.000		
N of Valid Cases	106				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 18.25.

b. Computed only for a 2x2 table

**2.2.28. Does the company have a Business Plan \* Does the company have a clearly stated Vision and mission Statement**

**A. Cross tabulation**

		Does the company have a clearly stated Vision and mission Statement			
		Yes	No	Total	
Does the company have a Business Plan	Yes	Count	29	32	61
		Expected Count	26.5	34.5	61.0
		% within Does the company have a Business Plan	47.5%	52.5%	100.0%
	No	Count	17	28	45
		Expected Count	19.5	25.5	45.0
		% within Does the company have a Business Plan	37.8%	62.2%	100.0%
Total	Count	46	60	106	
	Expected Count	46.0	60.0	106.0	
	% within Does the company have a Business Plan	43.4%	56.6%	100.0%	

**B. Chi-Square Tests**

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.005 <sup>a</sup>	1	.316		
Continuity Correction <sup>b</sup>	.647	1	.421		
Likelihood Ratio	1.009	1	.315		
Fisher's Exact Test				.330	.211
Linear-by-Linear Association	.995	1	.318		
N of Valid Cases	106				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 19.53.

b. Computed only for a 2x2 table

**2.2.29. Does the company have clearly stated strategies? \* Does the company have a clearly stated Vision and mission Statement?**

**A. Cross tabulation**

		Does the company have a clearly stated Vision and mission Statement			
		Yes	No	Total	
Does the company have clearly stated strategies?	Yes	Count	27	16	43
		Expected Count	18.7	24.3	43.0
		% within Does the company have clearly stated strategies?	62.8%	37.2%	100.0%
	No	Count	19	44	63
		Expected Count	27.3	35.7	63.0
		% within Does the company have clearly stated strategies?	30.2%	69.8%	100.0%
	Total	Count	46	60	106
		Expected Count	46.0	60.0	106.0
		% within Does the company have clearly stated strategies?	43.4%	56.6%	100.0%

**B. Chi-Square Tests**

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	11.079 <sup>a</sup>	1	.001		
Continuity Correction <sup>b</sup>	9.790	1	.002		
Likelihood Ratio	11.190	1	.001		
Fisher's Exact Test				.001	.001
Linear-by-Linear Association	10.974	1	.001		
N of Valid Cases	106				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 18.66.

b. Computed only for a 2x2 table

### 2.2.30. In-house Education for employees \* Decision Making Process

#### A. Cross tabulation

		Decision Making Process			Total	
		Bottom-up and mutual – agreement	Discussions between superiors and subordinates	Top-down and individual direction		
In-house Education for employees	Systematic, seriously taken and Permanent	Count	1	2	6	9
		Expected Count	.6	1.9	6.5	9.0
		% within In-house Education for employees	11.1%	22.2%	66.7%	100.0%
	Considered little	Count	6	16	63	85
		Expected Count	5.6	17.6	61.7	85.0
		% within In-house Education for employees	7.1%	18.8%	74.1%	100.0%
	self-enlightenment	Count	0	4	8	12
		Expected Count	.8	2.5	8.7	12.0
		% within In-house Education for employees	0.0%	33.3%	66.7%	100.0%
Total	Count	7	22	77	106	
	Expected Count	7.0	22.0	77.0	106.0	
	% within In-house Education for employees	6.6%	20.8%	72.6%	100.0%	

#### B. Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	2.302 <sup>a</sup>	4	.680
Likelihood Ratio	2.910	4	.573
Linear-by-Linear Association	.138	1	.710
N of Valid Cases	106		

a. 4 cells (44.4%) have expected count less than 5. The minimum expected count is .59.



