T.C.
ISTANBUL GEDİK UNIVERSITY
INSTITUTE OF GRADUATE STUDIES

INCREASING CONSTRUCTION PROJECT MANAGEMENT KNOWLEDGE AREA IN SOMALI REGIONAL STATE IN ETHIOPIA

MASTER'S THESIS

Abdulahi Osman MUSE

Engineering Management Master in English Program

MAY 2021

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Thesis Advisor: Asst. Prof. Dr. Ahmed GÜLLÜ

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İSTANBUL GEDİK ÜNİVERSİTESİ

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FOREWORD

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ABBREVIATIONS

SDSWE : Somali Design and Supervision Work Enterprise
ESDSWE : Ethiopian Somali Design and Supervision Work Enterprise
SOE : State Owned Enterprise
PEs : Public Enterprises
GDP : Growth Development Plan
LDCs : Least Developed Countries
ESRS : Ethiopian Somali Regional State
PM : Project Management
CPM : Construction Project Management
EPPA : Ethiopian Public Procurement Authority
RM : Project Management
PD : Project Document
PO : Project Organization
QM : Quality Management
HR : Human Resource

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INCRESING CONSTRUCTION PDROJECT MANAGEMENT KNOWLEDGE AREA IN SOMALI REGIONAL STATE IN ETHIOPIA

ABSTRACT

The purposes of this study were to evaluate construction project management in Somali regional state design and supervision work enterprise (SDSWE) knowledge areas ability in Ethiopia. To accomplish the whole objective of the study considering ten basic areas that can affect the enterprise construction project management practice such as, construction process management, scope, cost management, time, quality, risk area, communication management, procurement management, human resource and safety. Attaining the significant data the study collect data from several construction professionals that accomplish project duty of the enterprise using clustered sampling technique this is because to include construction management professionals from several associated departments. In this method the study take 110 professionals as a sample of the study and the collected data using questionnaire and open interviewed analyzed using mixed approach of descriptive survey design. Depend on the methods the key finding of the study implied that, SDSWE as organization and its project are introduced. Construction project management Knowledge areas executed and the real performance from SDSWE 2017 and 2020 annual project reports; accordingly, the enterprise organization implied a good activities in some areas of construction project management section such as, in a good performance of in using Construction Project management process, scope management, procurement and human resources management , the enterprise work implementing, Construction Project time management, cost management, time, ,riskk and quality management. Depending on challenge findings in this study recommend that, Planning time of project should be more practice able, preparing variation time plan and revising or evaluating the overall obstruction without affecting the project schedule. to have meeting regularly between the project members may similarly increase the performance. The design enterprise must have motivation system to insure achievements. Furthermore, the enterprise should have scheduled safety training to insure better achievement and supervision work.

Keywords: *Projects design process, Scope, Cost, Risk, Supervision work, Quality, Safety and project process management*

ETİYOPYA'DA SOMALİ BÖLGE DEVLETİNDE İNŞAAT PROJE YÖNETİMİ BİLGİ ALANININ ARTIRILMASI

ÖZET

Bu çalışmanın amaçları, Etiyopya'daki Somali bölgesel devlet tasarım ve denetim iş girişimi (SDSWE) bilgi alanları becerisinde inşaat proje yönetimini değerlendirmekti. İnşaat süreç yönetimi, kapsam, maliyet yönetimi, zaman, kalite, risk alanı, iletişim yönetimi, tedarik yönetimi, insan kaynakları ve güvenlik gibi kurumsal inşaat proje yönetimi uygulamasını etkileyebilecek on temel alanı göz önünde bulundurarak çalışmanın tüm amacını gerçekleştirmek. . Çalışma, kümelenmiş örnekleme tekniğini kullanarak işletmenin proje görevini yerine getiren birkaç inşaat profesyonelinden veri toplar; bunun nedeni, ilişkili birkaç departmandan inşaat yönetimi profesyonellerini içermesidir. Bu yöntemde, araştırmaya 110 profesyonel örneklem olarak alınır ve anket ve açık görüşme kullanılarak toplanan veriler, tanımlayıcı anket tasarımının karma yaklaşımı kullanılarak analiz edilir. Yöntemlere bağlı olarak, çalışmanın anahtar bulgusu, bir organizasyon olarak SDSWE'nin ve projesinin tanıtıldığını ima etti. İnşaat proje yönetimi Yürütülen bilgi alanları ve SDSWE 2017 ve 2020 yıllık proje raporlarından gerçek performans; buna göre, işletme organizasyonu, İnşaat Proje yönetimi sürecini kullanmada iyi bir performans, kapsam yönetimi, tedarik ve insan kaynakları yönetimi, işletme işinin uygulanması, İnşaat Projesi zaman yönetimi gibi inşaat proje yönetimi bölümünün bazı alanlarında iyi bir faaliyet ima etti. , maliyet yönetimi, zaman, risk ve kalite yönetimi. Bu çalışmadaki zorluk bulgularına bağlı olarak, projenin planlama süresinin daha pratik olması, varyasyon zaman planı hazırlanması ve proje takvimini etkilemeden genel engelin gözden geçirilmesi veya değerlendirilmesi tavsiye edilmektedir. proje üyeleri arasında düzenli olarak toplantı yapılması da benzer şekilde performansı artırabilir. Tasarım girişimi, başarıları garantilemek için bir motivasyon sistemine sahip olmalıdır. Ayrıca, işletme, daha iyi başarı ve denetim çalışması sağlamak için planlanmış güvenlik eğitimine sahip olmalıdır.

Anahtar Kelimeler: *Proje tasarım süreci, Kapsam, Maliyet, Risk, Denetim çalışması, Kalite, Güvenlik ve proje süreç yönetimi*

1. INTRODUCTION

1.1 Background of the Study

Beginning of 1930s mainly later on word war two , several enterprise known as

state owned enretprise (SOEs), also known as puplic enterprises (PEs), was formed together developed and developing countries for statement market insufficiencies and deficits, encourage economic growth, minimize joblessness or guarantee state regulations of the total way of the budget. To offer capital, knowledge and to considered the state in which specific party lack of the capability to capitalise infrastructure etc. majority of the state reported that the public enterprises can rise up the economy and also increase the investment, making at a lower cost products or infructure, increase employment and participate the financial growth of countries or the whole state. The concept of the developing SOEs or PEs continued till the early eighties (UN, 2005).

Even though, increasing corruption, management inefficiencies, more employment (without regarding to their financial capability, a lot of nations used PEs as simply a ways of making employment (job creation) and a suitable automobile for investment creation), increase and accelerating existing account deficiencies in 1980s, showing dangerous "state failure" and the margins of public Enterprises considered as the main actors in economic growth. More over the organization shortfalls majority of the PEs also faced challenges from technological shortcomings. Introduced through either external support or credits from overseas, majority the PEs were equipped by second hand equipment's or machineries whose have low performance ratio, and recognized without account to their financial and monetary sustainability. The Couse of the familiarity, the giving the full privatization of PEs was started in the 80s and 90s (Ibid).

Even though reduce considerably; PEs continues to gain supplementary occurrence of state profitable.

In terms of employment, SOEs are important till now many developing countries (Ibid). The developing or creating of public PEs in Somali regional state of Ethiopia since SRS is one of the Ethiopian regional states which located the most east part of Ethiopia and has the largest occupation area and third most populated in ten regional states.

PES in Ethiopia is contemporary with the transformation efforts of the nation itself in the early twentieth century. During Haileselasie's regime many public enterprises were formed by the state as a only holder and as joint risk-takers with private individuals, specially foreign person, for national private capital were nearly doesn't existent. With the adoption of the socialist precepts, the Derg regime was characterized by state ownership and control of the major means of production. The Derg regimes were to born the leader.

The slowly flourishing of the private sector was a target of nationalization and put side small areas, even though there was a theatrical increase in the same of public enterprises. The rule of some public enterprises was considered as decision-making organ assigned with the power and established for this reason. However, it brought to be an ineffective body, and therefore it failed to carry out its legal obligations. Insuring that the PEs are so lately, public enterprises (PEs) have more or less similar output or input as the case may be were fused together to form a corporation (Dagnachew & Addissie, 2009). Nearly the end of 1980's and early 1990s their condition has worsened as they prepared the whole economy. Public enterprises were generally embarrassed by lack of management freedom, foreign exchange shortage, and lack of inputs. These have seriously constrained capacity utilization of enterprises. Similarly, their financial influence to enduring excess has constantly declined (Mekonnen Manyazewal, 1993). The post 1991 financial era was a mixed system (organism) where governmentaly responsibility and offering by private capital owners coexist. The economic reform during this period purposes to refresh the economy and bring favorable macroeconomic and sectoral strategy of the environment for development, and create market- based economy (Ibid).

The new plan requires that public enterprise (PEs) will have full independence and their performance will be judged by profitability. They are probable to play a model role in the PEs and they will not be awarded special rights. To implement the policy,

“According to the Ethiopian Federal, Public Enterprises law proclamation no 25/1992 has been issued.

The regulation has been recognized a Supervising Authority and Management Boards for Public Enterprises to upturn their dependence. The regulation highlights the need for public enterprises to create an organizational arrangement where they can appreciate their administration independence in order to facilitate the organizational performance in order to be effectual, productive and profitable as well as to reinforce their skill to work by competing with private enterprises (Ibid).

The growth of infrastructure in Ethiopia has so far been given due importance with their provision of services to the public. Increasing the growth infrastructures in the region such as: - the increasing road network of the country, providing of water and electricity to the public, construction of irrigation canals were among the priority areas in the government’s investment decision making during the last two decades or so the government of Ethiopia has taken the advantage of launch developmental public enterprises to light the increasing needs and development the socio-economic demand of the country.

To achieve their aim of establishment, these initiatives need to be competent. With a increasing number of national contractors and competitiveness in the industry, it has become challenging for many public enterprises to deliver what they were intended for. Therefore it is essential and obligatory to reinforce and improve the competitiveness of a several tactical developmental enterprises over different means (Worldfolio, n.d.).

Somali Design Supervision Works has been created August 2010 (Nehase 2002) as a public enterprise with the Somali Regional State Cabinets Regulation. Later with “the establishment proclamation of Ethiopian Somali design and supervision works enterprise” by proclamation No 148/2014 the state cabinet decided to continue with the name “Ethiopian Somali Design and supervision Enterprise (ESDSE)” by approving the effective date of establishment to be August 2010 (Nehase 2002) by the revised Article 49(3.A) of the Regional Council of the Somali Regional State. Accordingly, the Enterprise may take part in tenders and bid publicized at local, national or international levels.

The SDSWE is a benefit making governmental organization established for the response of a deep clear and accurate study, design, supervision and planning requirements of the enormous vast development projects in Ethiopia with a special focus in Ethiopian Somali Regional State. In addition, to minimize the subsistence of failing projects and maximize the feasible economical sustainability of project works SDSWE is a specialized enterprise for Fulfilling professional design study and supervision work of the fields such as:- hydraulics, dams, irrigation, water supply, sewage disposal, roads, bridges, buildings, architecture, urban planning, small hydropower, geotechnical, medium flood control, Agriculture, Land resource study, Basin Development and environmental impact assessment along with laboratory services.

The Enterprise carry out these project sectors through studies, surveys and designs also consulting services regarding studies and designs evaluation of contracts concerning water, roads, bridges, and related works beside laboratory services of soil, water and construction materials.

1.2 Organizational Background

The Somali Design Supervision Works Enterprise (SDSWE) has been created in august, 2010 (nehase2002) as a public enterprise with the Somali Region's cabinet regulation later with ``the establishment proclamation of Ethiopian Somali Design and Supervision Works Enterprise (ESDSWE)`` by proclamation No 148/2014 (148/2006).

The state cabinet decided to continue as Ethiopian Somali Design and Supervision Works Enterprise (ESDSWE) `` by proclamation No 148/2014 (148/2006) by approving the effective date of establishment to be august 2010/nehase.2002 by the revised article 49(3.A) of the Somali regional council of the state.

The ESRS Design and supervision enterprise is a benefit making governmental organization established for the response of a deep clear and accurate study, design, supervision and planning requirements of the enormous vast development projects in our region. The enterprise was made functional to minimize the subsistence of failing projects and maximize the feasible economical sustainability of our ongoing as well as new projects.

SDSWE is a specialized enterprise for Fulfilling professional design study and supervising of field such as:- dam, irrigation, water resource and water supply sewage, sanitation, roads, bridges, buildings, architecture, urban planning, land use and environmental impact assessment as well as laboratory services.

Majority of the country's construction and supervision companies are preserved and belongs to external organization also Organization strives for transformation these situation establishment ties with Higher Education and other pertinent stakeholders in capitalizing human development efforts and technology transfer (Meseret, 2018).

The Company is occupation to insure the second growth and transformation plan (GTP 2) by attractive of planned projects such from the irigation,road , dams and many additional services of the constrution design efforts. Organization is originated Awash Basin design to prevent the risk of flood that could be caused by river Awash (Ibid).

1.2.1 Board of management office

The Board of Management members of the SDSWE are assigned by the Supervisory Authority. It is the supreme institution that supervises operations of the Enterprise. The Board of Management focuses on major policy matters pertaining to general operations of the Enterprise. It executes the following main functions.

- Decides on policy issues other than those to be submitted to the supervising Authority according to Article 11 of the proclamation;
- Appoints and dismisses the General Manager of the Enterprise and fix his salary and allowance;
- Approves the employment, assignment and dismissal of those officials in the Enterprise accountable to the General Manager, including their salaries and allowances;
- Approves the internal regulations of the Enterprise as well as its work program and budget;
- Ensures that proper books of accounts are kept for the enterprise; and
- Proposes to the supervising Authority the increase or decrease of the capital of the Enterprise; The Board of management shall have secretary and its office at the Enterprise level.

1.2.2 Chief executive officer (CEO) office

The CEO Office implements policy decisions of the Board. It gives strategic direction and ensures accountability through the Enterprise's operational units. The CEO discharges all the duties and responsibilities, including the following:

- Leads and develops the Enterprise as a profitable company;
- Plans, Organizes, directs, administers and control the overall operation of the Enterprise in line with the policies and directives of the Board and Government;
- Issues policy guidelines to the various work units of the Enterprise;
- Chairs management and other similar committee meetings of the Enterprise;
- Reports to the Board of Management;
- Represent the Enterprise in all issue.

1.2.3 Deputy chief executive officer (DCEO)

DCEO is a member of the top management team of the Enterprise and in absence of the CEO, he automatically represent/act in behalf of the CEO. He is responsible for planning and the implementation of technical operations of the enterprise and a focal person to the customers with all issues related with the above activities. He discharges all the duties and responsibilities with respect to technical operation of the enterprise, containing even though it is not restricted only as flows.

- Plans, Organizes, direct, administer and control technical operation of the Enterprise so as to gear to productive and profitable;
- Leads, motivates, persuades, and communicates the enterprise technical personnel;
- Follow-up technical and technological development in Engineering areas that are vital to the achievements of the objectives of the enterprise;
- Follow up execution, ensuring quality standards and timely completion of the projects;
- Issues guidelines as needs necessary to the various work units of the Enterprise with respect to technical operation issues;
- Approves the operating system procedures (technical operation manuals) of the Enterprise as well as the operation program;

- Chairs management and other similar committee meetings of the Enterprise in the absence of CEO;
- In the absence of CEO, represent the Enterprise in all issues.

1.2.4 The management of the enterprise

The management team is the key for the success or failure of any organization. The planned process performance should be regularly measured and appropriate improvements should be designed and implemented by the strong leadership of the Enterprise. The management should work to fulfill the duty of the team rather than being a boss.

The Enterprise Management Team is proposed to be classified into three categories. These categories are:

- Executive management team;
- Senior Management Team;
- Management Team.

1.2.5 The executive management team (Top management)

The Executive Management Team is hierarchically the top in the enterprise and it is accountable the whole enterprise management. It establishes overall strategic issues and guide the enterprise's internal interactions and interactions with its environment. To fulfill its duty of the Team shall make regular and irregular meetings. The meeting can be held daily in the morning or two or three times weekly based on the actual situations of Enterprise.

The team:

- Insures that the overall operation of the Enterprise is in line with the policies and directives of the Board and the Government;
- Makes sure that the different parts of the enterprise are working together harmoniously;
- Creates the context in which the different parts of the enterprise works are facilitated and encouraged;
- Make sure that the organization is operating by optimal performance of the enterprise mission and vision;
- Issues guidelines to the various work units of the Enterprise;

- Monitor performance and initiate performance improvement approach;

The Executive Management Team includes:

- The Chief Executive Officer;
- Chief Operation Officer (COO);
- Study and Design Process Executive Officer;
- Construction Supervision Process Executive Officer;
- Technical Staff Coordination Executive Officer ;
- Planning, Business Development
- Contract Adm. Manager;
- Finance, Procurement & Property Adm. Manager;

1.2.6 The senior management team

The Senior Management Team members shall meet once or two times monthly on regular base. The Team shall perform the following functions.

- Decides on strategic issues other than those to be submitted to the Board of Management;
- Approves the internal working procedures of the Enterprise as well as its work program and budget of different parts of the enterprise;
- Approves guidelines to be submitted to the Board of Management;
- Make sure that the allocation of resources to the different parts of the enterprise are fair and reasonable;
- Builds and develops team capability to ensure the optimal performance of the Enterprise ;
- The Senior Management Team includes:
- The Executive Management Team members;
- System Development and IT Application Manager;
- Human Resources Management Head;
- Internal Audit Head;
- Communication Affairs Head;
- Ethical & anti-corruption Team Leader.

1.2.7 The management team

The Management Team deals with the actual execution or operation of the Enterprise. The Management Team meets quarterly and makes discussions of the actual performance and performance improvement of the Enterprise.

The Management Team includes:

- The Senior Management team members;
- All Sub process Managers;
- Project Managers as required.
- Detail decision making responsibilities will be described in Authority Guideline to be prepared.

1.2.8 Legal advisor

Legal advisor is very important both for safeguarding the interest of SDSWE and to provide sound and dependable legal advice in connection to contract drafting and administration. In addition, the legal expert is required to advise various working units of the Enterprise on any legal issues, policies, regulations as well as government directives and on international agreements, conventions and declarations pertaining to the Enterprise objectives and goals. To summarize, the legal advisor shall:

- Assist and advise the general manager in all legal matters
- Evaluate all contracts and tenders prior to their enforcement
- Give legal assistance to all work units of the enterprise upon request.

1.2.9 Internal audit process

The unit will be reporting to the Board of Management and to CEO. The unit will be organized at Enterprise level and is responsible for:

- Review and appraise the internal control system of the Enterprise to ascertain appropriate implementation of policies and procedures of the Enterprise and to check that results are consistent with established objectives and goals;
- Ensure that adequate controlling system are established at every work units and review its effectiveness;
- Review and verify accuracy of financial statements, proper handling and safe custody financial records and other related documents;

- Ensure adequate safeguard of all fixed and movable assets of the Enterprise and check that actual physical counts agree with registered values;
- Follow up of proper implementation of the instructions given by board and higher level of authorities ;
- Carry out performance audit to ascertain proper utilization of resources and perform extra-ordinary audit activity when deemed necessary;
- Collaborate and cooperate with external auditors and follow up the effective
- implementation of recommendations forwarded by internal and external auditors;
- Ensuring that different policies, regulations and procedures of the Enterprise are compiled and executed properly;
- Advise the board of management in the area of action required to control resources of the Enterprise;
- Perform other related duties as assigned by the board of management.

1.2.10 Organization duties

Somali design and supervision work enterprise (SDSWE) is organization that established to insure or to improve the flowing sectors: hydrololc structures Design and Supervision Sector, Transportation and Supervision Works Sector, Building and Urban Planning Supervision Works Sector, Geotechnical Investigation, Geotechnical Engineering and Underground Design and Supervision Works Sector, Research, Laboratory and Training Centre, Surveying, Geospatial, and Civil Informatics Center.

1.2.11 Human resources

As the competitive edge of the sector mainly goes to skilled human resources, the Enterprise is complete with variety of disciplines that can render full service. In this line, the staff has an accumulated knowledge and wide experience in the sector through many time. Staff composition includes specialists of water resource development study, design and construction supervision of irrigation systems, water supply , sanitation schemes and Small hydropower works; hydro geological and geo-technical investigation, soil, agronomy, sociology, economics and environmental studies.

Currently, SDSWE has more than 150 highly qualified & experienced professionals comprising senior expertise i.e. Engineers, agriculturalists, soil experts, Surveyor, quality management experts, sociologists, planners, economists, financial experts, materialists, and many other specialists from different level of educational background. With years of experience and demonstrated competence of its staff, the Enterprise is offering its Clients with adequate and efficient consultancy service in all fields of water resource development.

The staffs of the company are highly capable specialists, appreciative and Informative. Their tough provision permits us in effectively sympathetic and sufficient the specialized requirements of company's customers.

The effort of Enterprise's professionals is very much appreciated by the customers.

The company's main areas of expertise have traditionally been in the soil chemistry, water resource engineering, chemistry and geotechnical engineering fields.

In addition, SDSWE has developed very strong ties with a number of specialized consulting and engineering firms in the country. A number of association agreements have been setup with such national firms in order to combine the resources and expertise of SDSWE with such partnering firms for specific projects in the Ethiopian Somali and neighboring Regions.

The company's permanent professionals staffs are includes engineers (civil, structural, mechanical, geotechnical, electrical, highway, hydraulic, irrigation & dam), architects and urban planners, environmentalists, hydrologists, hydro geologists, geologists, socio economists, agronomists, sociologists, financial analysts, accountant, economists, biologist, surveyors, and drafting technician.

The organizational structure of the company is shown in the figure below. It is contains the over all of the flow order or the admiration process of the company.

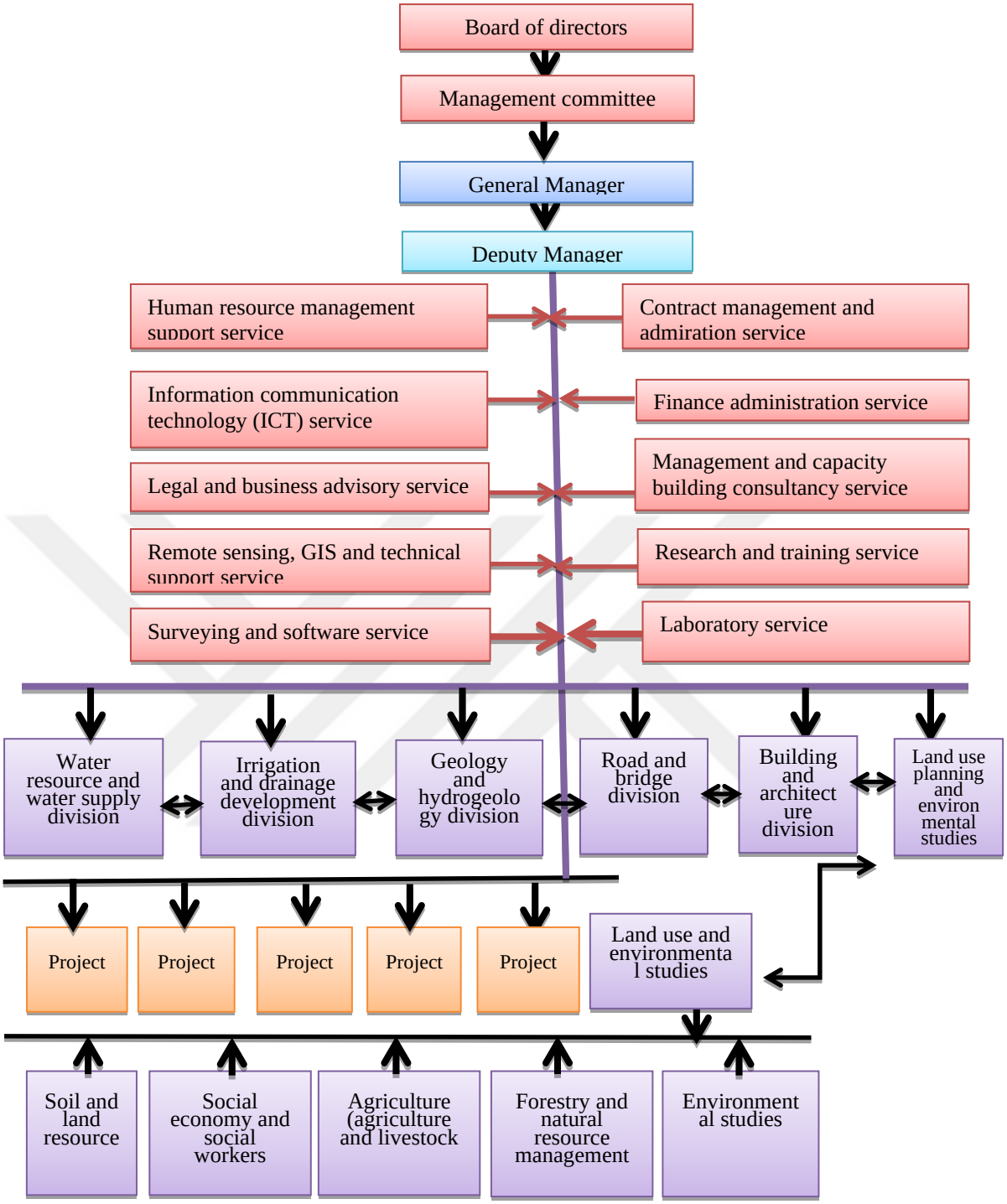

Figure 1.1: Organization Structure

Source: SDSWE company profile

1.2.12 Material resources

The SDSWE owns office buildings with essential services and located in Jigjiga including. The Ethiopian Somali design and supervision enterprise work (SDSWE) has:

- A laboratories specialized in material testing (e.g. soil mechanics, asphalt,

concrete, rock and aggregate, reinforcement bar, chemical tests), water quality and soil fertility tests. The laboratories render services to in-house projects and external customers.

- Slip and automobile straddling rigs and all ranges of drilling accessories, crane trucks, cranes, and water vessel trucks used for geotechnical core drilling. Furthermore, it is equipped with state-of-the-art geophysical survey equipment, namely Tetrameters, Transient Electro-Magnetic (TEM), Magnetic and borehole camera, which are utilized for indirect investigation of sub-surface geological conditions at engineering structures foundation sites and assessment of groundwater potentials.
- Topographic surveying equipment as fixed differential GPS, Total Stations, theodolites, Levels, Handheld GPS, and Radios (walky-talky) that are used to provide the required services to its customers. The Corporation also provides GIS services such as creating, managing, analyzing, and visualizing wide ranges of data in the areas of topography, surface/subsurface geology mapping, satellite images, soil surveys, etc. Moreover, GIS technology help to manage and share civil engineering data from various sources that can be easily analyzable and communicated to others.

1.2.13 Objective of the enterprise

The objectives or the purposes intended to be accomplished by SDSWE are indicated as follows;

- To Fulfill studies relating to hydraulics, dams, irrigation, water supply, industry, sewages disposal, roads, bridges, buildings and land use and environmental studies.
- To carry out survey and designs and specifications regarding hydraulics, small hydropower, geotechnical, weir and irrigation structure, medium flood controller, water supply, sewage discarding, roads, bridges, building and further associated mechanism.
- To extract services about construction and design
- To purify amenities concerning the planning of tender and documents and collection of contractors regarding, water works, roads, bridges and buildings.
- To carry out surveying and drafting services

- To carry out laboratory services in making different checking of soil, rock, water quality.

1.2.13.1 Mission of the enterprise

The enterprise is determined to carry out all projects and tasks professionally, to the highest standards of quality and within the agreed timeframe

1.2.13.2 Vision of the enterprise

To be a well-respected, domestically and internationally as well as consulting firms, providing a service of the highest quality and to be competent consulting firm in east Africa by 2025 is the vision of the company.

1.3 Statement of the Problem

According to the construction industry plays an essential part in country's well-being, as well as the growth of domestic housing, organization structures and manufacturing plants, and the reinstallation of the country's arrangement and further community facilities. Projects containing like dams, roads, irrigation works, colleges, buildings, factories and hospitals are the fundamental for development efforts and enhanced high live standards establishment. Application to develop organizational ideas is a necessary instrument to development, establishment, management as well as regulation of work, which leads to increase better performance and improved productivity (Hendrickson, 2008).

Companies combine or attain to succeed development and increase economic internalization by responding essential deviations their industry and aware of risk as well as improving flexibility and productivity.

According Ethiopian construction project management service does not have attention by Construction sector and even by the government. A promotion revision has concentrated on classical management theory more than modern construction management practice. Hence there are expressions Failure in projects because of lacking and having without practice suitable modern construction project management knowledge area plan which are due to lack of awareness in construction Project management knowledge area , consideration of construction project management area in the management of contract administration and also non loyal

expert member particularly who share as contractors and consultancy perspective, then many familiarities happened in the construction project areas.

Therefore the declarations of the problem of this study was assess SDSWE's construction project management knowledge areas are not training in construction Project management strategy .additionally to this study was concern on the role of construction project management member in implementing Project contract administration by practicing the Project management knowledge areas whether to success or failure of SDSWE. This contractor makes income by giving different facilities such constructing building, road, bridge, to its clients, the hypothesis Somali design and supervision work enterprise's constraint in addressing successful construction management and contract administration activities would increase the questions to be answered the reasons to delay almost all projects in SDSWE. for example according to 2017 semiannual performance report of SDSWE spire irrigations projects the plan was to execute 256,500,000 ETB but the total executed of 4 spate irrigations was only 132,567,290 ETB which has more deference even though the projected concluded but still it is not well functional. The reason behind of the failure is client. Moreover, the survey study and design research was week in addition to this the project payment was not as per planned, there was a delay of payment. Therefore, it is related construction project management knowledge areas.

1.4 Research Questions

- What is the company's practice of Project management knowledge area to construction project managers and supervisors to contract administration planning for the long and shortcoming in the construction practice?
- What are preconditions given attentions to implement project management knowledge areas by the organization before deciding in construction project management and contract administration procedure strategy?
- What is understanding status SDSWE's managements and project managers on construction project management knowledge area?
- What are the project supervision managers' networks in admiration of the project?
- What are the forthcoming predictions of SDSWE by insuring the quality and

the wellbeing of the construction management?

1.5. Study Objective

The primary aim of the SDSWE is supporting the efforts to increase the performance in Somali Regional State and to ensure food security, to provide water supply, to efficiently and effectively use the natural resources such as water, land and vegetation in such a manner that it speeds up the overall Socio economic achievements in the Region in particular as well as the whole country in general.

The study considered both the general aim or objective and specific objective these are discussed in below sub titles.

1.5.1 General objective of the sttudy

- To maintain provision quality oriented services in the consultation and supervision of construction industries in Ethiopia.
- To Utilizing all the effort and ethics to become creditable in the Engineering consultation sector all the time.
- To Providing latest technology and high-level qualified professionals in the Engineering, design study and Supervision of construction industry.
- Adapting appropriate and sustainable technologies by using updated engineering software technology.
- Promote quality access to water supply, irrigation and renewable energy solutions to rural, semi-urban and urban Ethiopia and beyond.

1.5.2 Specific objective

- To manage considerations relating to buildings, roads, bridges, sewerages, irrigations, hydraulic structures and related structures.
- To Carry out survey, designs, and specifications regarding hydraulics, small hydropower, geotechnical, irrigation structures , dam , medium flood control, water supply, sewerage disposal, road, building and other related works.
- To extract facilities concerning the structural designing and preparations of takeoff sheet as well as and bill of quantity (BOQ).
- To prepare contract document and bid for clients and its own works.

- To control, supervise all infrastructures of their client.
- To involve all related works to achieve its objective.

1.6 Scope of the study

The Enterprise is engaged to participate in the study, design, construction supervision and contract administration of engineering projects as well as Agricultural, land use planning, natural resource, environmental study projects and laboratory testing within the summarized scope description shown below. These activities are managed in Water Supply; Geology and Hydrogeology; Irrigation and Drainage Development; Road & Bridge; Architectural and building Works; and, Land Use Planning & Environmental Studies main elements as well as the other related works. The scope of the enterprise listed above and some activities are mission below

- Research
- Planning
- Designing
- Supervising
- Agronomic Survey and Crop Protection.
- Land Resources and Agricultural Development: Soils, land use and land cover, Land evaluation, Agronomy, Agro-Ecology, Livestock and Rangeland, Forestry and wild life.
- Resource users and Socio-economics: stakeholder characteristics, interests, attitudes, issues and concerns.
- Environmental Status, Impacts, and Erosion Hazard assessment studies.
- Soil Fertility testing.
- Water Quality testing.
- Material testing.

This research concerns on the construction management particularly related to Somali design and supervision work Enterprise about in the scope of construction project management knowledge area and practice in Project construction contract administration.

The study was limited to the construction project management, contract administration and construction supervision improvement of Somali design

supervision work Enterprise have participated projects.

All the stake holders in the construction sector which participate as contractors, consultancy, who works with Somali design supervision work Enterprise would been considered in the research; hence the construction project management and contract administration of the industry from the clients, consultancy, and contractor organization perspective could be totally different, Therefore the study was covered about 27 projects of by distributing the same questionnaires 94 from projects, 5 From head office management, 8 from consultancy resident engineers and 3 from board member of SDSWE which are work as stake holder with SDSWE in different construction projects.

The study was covered only Ethiopian Grade -1 contractor (the highest level) Somali design supervision work Enterprise (SDSWE) and Consultancy who work As Somali design supervision work Enterprise (SDSWE) in different Projects. Thus, the research result was taken as indicative of the construction Project management and contract administration of Somali design and supervision work Enterprise.

Some of the projects previously finished by (SDSWE) and were transferred to client would be covered in the research in order to assess its services in the users output of those projects.

Somali design supervision work Enterprise (SDSWE) is as public enterprise, which established by profit increasing and expense occurred to create this income within the last decade (10 year) and contribute social responsibility to the country.

2. LITERATURE REVIEW

2.1 Introductions

This chapter is about the scholars were written about the subjects of construction project management effective exercise and tasks. Hence, the study tried to specify some of the relevant theories, models related to construction project management knowledge areas as well as empirical studies.

On the theoretical part, the study provides theories and models of constriction project management that comprises the combination process management, scope, time, cost, quality, human resource, communication, risk, procurement and safety managements are the main parts of the study.

the researcher were related to the point of view of what the other scholars written about this areas .to achieve the aim and to be satisfied it is better to review the related article, books and related sources of the topic.

2.2 Concept Construction Project Management

According to the James p., Lewis (2007) clarifies in his book Fundamental of project management Construction Management or Construction Project Management (CPM) is the general controlling, planning and coordinating to conclusion.

CPM is focusing to collect the condition of the owner to generate economical and functional sustain ability of the project. Industries, commercial, civil works, residential and environmental are the five basic sectors in industry construction. The construction manager has equivalent responsibility and competence to every sector. This may contain or may include different types of equipment, subcontractors, materials and probability location.

According to James p., Lewis (2007) states that the project management is about the application of gaining knowledge, material and methods project to attain the requirement of the project.

And the project management can achieve better performance by the integration of the applications process such as ;initiating, planning, executing, monitoring and controlling, and closing" (PMBOK 2004, p. 8).

According PMI (2003) in construction extension states project management knowledge area which is considering construction project management exceeding the nine knowledge management areas are project these include :-scope, time, cost, quality, human resource, communication, risk procurement and safety.in this scholar briefly discussed these nine management areas mansion above .

2.3 Project Integration Processes Management

According to James p., Lewis (2007) states that the project management is about the application of gaining knowledge, material and methods project to attain the requirement of the project.

And also defines as the applications process such as ;initiating, planning, executing, monitoring and controlling, and closing" (PMBOK 2004, p. 8).

A similar to that the Harold kerzener (2009) gives same definition about the Effective project management in his book the achievement of the project can reach by in relationships of time and cost at the preferred technology or performance, whereas using the preferred is resources effective and efficient by customers wells.

According to James P. Lewis (2007) also states that project is a impermanent attempt assumed to produce same result ore unique product. Which implies the scope of the work is executed only one time because of the uniqueness.

Dr Getachew T (20014) in his course module have stated project management in his course module as relatively modern approach and it is characterized by new methods of rearrangement administration and familiarizing unusual management methods with the determination of gaining enhanced control and practice of current incomes.

According to PMBOK guide (2000) edition write about the project integration management is includes a proper coordinates of the various element of project management. It includes making compromise within the proficiency of the purposes and changes to meet more expectation of the stakeholders.it are the process of describing and insuring the required elements in the project management integration

the three major processes are Project plan development, project plan execution and integrated change control. These three elements are very important and they play a model role to the construction management.

According to John P.muldoon (2014) in his fifth edition, PMBOK in this book summarized the main important of development of the project manager. Moreover, allows the project manager authority to use original resource to develop the formally authorized documents.

The main advantage is getting the clear project start concept and an official record and many processes for senior management.

PM is considered as early possible and preferred character to the wellbeing of the development and planning. Project Integration Management is the training of creating positive each volume of the project it is the Coordination and project integration process requirement.

Moreover the project manager is accountable to the coordination as whole process in the project management and the proper use of the project record, plan and information report of the project.

The PM plan contains documents of conclusions about the project scope, schedule, cost, quality, resources, communication, stakeholders, risks and procurements. When the plan collected it is engaged under the control and monitoring the project.

Under the project integration there are five basic steps implemented from their flowing sequence order:

Initiating>>>planning>>>executing>>>monitoring and controlling.

2.4 Project Scope Management

According to Kim Heldman (2009), about scope, it is selection of the product, result and service in the project. The objective of the scope of the project statement is to document purpose and deliverability of the work production requirement. So that the project team works, are the bases of the project productivity and future decision of the project.

The statement of the project scope is an agreement between the customer and project, which states the clear project production definition.

Kim heldman (2009) sates that scope of the project management are include product scope description, product acceptance criteria, project deliverables, project exclusions, project constraints and project assumptions. Product scope description: it is defines the features of service, product, or outcomes of the project. This implies that if the scope report is obeyed to the project agreement, then we can refer the project character scope statement.

Product acceptance criteria: It is system or process and principles which used to determine the deliverability and final product, service and result of the project are acceptable and satisfactory.

Product acceptance criteria: it helps us to define the project successful .it is also defined the specifications deliverability in order to accept the customers and stake holders. And it includes various numbers of elements such as quality criteria, fitness for use, and performance criteria. This component should also describe the process stakeholders will use to indicate their acceptance of the deliverables.

Project deliverables: These are the measurements of the result measurability or specific item measurement of product that considered the project phase completed.

Deliverables must be exact and verifiable. For instance, one of your deliverables may contain widgets with a three-inch diameter that will in turn be assembled into the final product. This deliverable, a three-inch-diameter widget, is specific and measurable. Most projects have multiple deliverables. As in this example, if you are assembling a new product with many parts, each of the parts might be considered independent deliverables.

Project exclusion: Project exclusions are just like when you did not think or assume that the anything is not include as work or deliverable to the project.to note the project exclusion in statement of the scope helps or give stakeholders expectation management.

Project constraints: It is everything that limits the act of the project team or decreases the actions in the project team.

Project assumption: It is the determinations of project management, which you may assume the things to be probability true or to be happening. example you are working one of the construction project and you took the assumption of availability of the

materials whose are use able to the project which are necessary for construction .also you may summed the availability of the labor or difficultness.

Each project has its own value assumptions those are the identification of the document and updated throughout the project. It is important to comprehend and document the expectations you are assembly, and the expectations your investors are creating, about the project.

The PMBOK(2000) edition describes project scope management as the procedures essential to confirm that the project contains all the effort necessary, and completion the project effectively by describing five process are begging or initiation, definition of the scope, planning the scope, verification of the scope and the control of scope change.

Initiation is the procedures of officially recognizing that an original project occurs or that a current project must remain in to it is afterward stages and it is significant this procedure is to repeat for every stage. On the further more characteristic cause for initiation project marketplace demand, commercial need, client demand, industrial improvement, lawful necessities and community requirements.

Project scope planning is the procedures of gradually expanding and documenting the project work that produces the creation of the project. Project scope preparation twitches with the first involvements of invention account, the project agreement and the original descriptions of restraint and expectations, For construction project to be effective scope preparation essential comprise all the main actors at all levels, the possessor, consultancy, the overall contractor, sub-contractors and suppliers. Though all will first be complicated in their individual parts, accomplishment rises with communicating participations.

The scope of the project is fretful with what just the project will bring and the task of the project scope management is to defined and regulator the effort mandatory manufacturing these deliverables through the procedures six scope project managements plan scope management collect necessity, describe scope, generate work break down structure, authorize scope and control scope.

2.5 Project Time Management

James P.lewis (2007) defined to Project time management as a corrupt optimal of terms, as time management indicates individual hard work to achieve one's time. For projects, it denotes to increasing a timetable that can be happened, then regulatory effort to confirm that this occurrence! It is that simple. For everybody discusses to this as preparation, it must surely be named schedule management.

On the other side project, time management clarify by Kim Heldman (2009) This Knowledge Area is apprehensive with approximating the period of the project plan actions, planning a scheme timetable, and checking and directing abnormalities from the timetable. Together, this Knowledge Area compacts with implementation the project in a suitable method (timetable). Time management is a significant feature of project management since it anxieties protection the project actions on track and checking individual actions beside the project plan to guarantee that the project is finalized on time. While every procedure in this Knowledge Area happens at minimum when in each project (occasionally additional), in numerous circumstances, mainly on minor projects, Classification Events, Approximation Action Lengths, and Progress Timetable are finalized as one action. Only single individual is required to finalize these procedures for minor projects, and they are all functioned on at the equal time.

The PMBOK (2000) edition concise identified to Project time management has progressed from simple origins to the further composite computer assisted procedures it is today. The practice CPM and the principal difference of the superiority graphing technique can incline to dominate the cost of additional humble and actual systems characteristic in the bar registering procedures for many applications. For simple projects and bitty of additional composite projects, a bar chart may be all that is required to successfully manage the time procedures. It is surely a substance of ruling and requirement be used wisely to avoid misplaced significance interdependencies. However, there is nobody stronger than a bar chart to show what has to be done.

According to PMBOK(2014) 6th version project plan offers strategy that characterizes exactly how and when the project will distribute the products, facilities and outcomes clear in the project scope and serves as a instrument for

announcement, handling, investors' outlooks, and as a elementary performance reporting.

According to Harold karezene (2007) defined project time management contains the procedures obligatory to accomplish appropriate conclusion of the project which are describe actions, arrangement actions, approximation action capitals, estimation events period, grow timetable and regulator the timetables.

According Thomas E Uhrs (2003) a timetable is arranged on the assumption of actions that will be given all the essential capitals when desired. In other words, time preparation accepts that incomes are infinite and existing when desirable. This is an impractical statement, though; meanwhile incomes may be unobtainable when desirable or obtainable in partial capacity, scope and kind or mechanical specification. Additionally, the suppositions of limitless capitals will principal in capability and distribution of capitals and the probability of advanced cost procedures include in the project time management describe events, arrangement actions, approximation actions source, approximation actions periods, progress timetable and regulator timetable. These procedures cooperate with each other and with the procedures in the other knowledge areas as well. Each procedure might include strength of more required customers, groups and individual in the construction.

2.6 Project Cost Management

The PMBOK Guide (2000) edition says, Project cost management contains the procedures obligatory to guarantee that the project conclusion within the approved budget" and delivers an over view of source preparation, cost approximating, cost planning and cost supervisory. Altogether, the main procedures are used in construction projects. Lifecycle estimate composed with importance engineering methods and constructability investigation are used in construction projects to decrease cost and time, advance superiority and presentation, and enhance the decision-making.

The Cost Management contains the procedures elaborate in approximating, costing, and regulatory costs so that the project can be accomplished within the approved budget. Project managers must make sure that their projects are well defined, have

precise period and cost estimations, and have a truthful economical that they were elaborate in complimentary. Budgets are typically stately in economic units like birr. Previously profitable to this knowledge area, we need to know with some of the meanings or terms used in Cost management. Profit is the difference between revenue and cost whereas Profit margin is the ratio profit to revenue.

Action description includes classifying and documenting the exact events that must be achieved in order to produce the deliverables and sub-deliverables recognized in the work breakdown structure.

Implied in this procedure is the essential to describe the actions such that the project objectives will be met.

Action sequencing includes classifying and documenting interactivity dependences. Actions must be sequenced precisely in order to provision later growth of an accurate and attainable timetable. Order can be completed with the help of computer software or with manual methods. Guide procedures are frequently extra actual on minor projects and in the early phases of larger ones when little detail is available. Manual and mechanical systems may also be used in combination.

Project cost management knowledge area that originates in preparation process group to create the approaches, procedures, & documentation for preparation, management, expenditure, and managerial project costs. It describes in aspect how the project costs will be managed or how the rest of the procedure in this knowledge area will be carried out.

Project cost management is the processes elaborate preparation, approximating, costing and regulatory costs so that the economical accomplished within the approved budget.

Project cost management has three procedures in its execution, these are estimation cost, regulate cost and monitoring costs. Cost is a supply surrendered or predetermined to realize an exact impartial or something given up in argument. Project cost management contains the processes essential to confirm that the project is completed within an approved budget.

2.7 Resource Planning

Bucher (2015), “Project cost management” describes as Source planning includes defining what physical resources like material, equipment and what measures of every must be used and when they could be required to achieve construction projects actions. It obligation be carefully matched with cost approximating. A construction project management crew will essential to be acquainted with resident construction programs such information is frequently willingly obtainable from local seller. Nevertheless if the local labour without knowledge with normal or particular construction methods, the supplementary cost for a specialist might be the most real way to protected awareness of the local building codes.

2.8 Cost Estimating

The PMBOK@R Guide-2000 edition declares, that the Cost estimations are measurable (quantitate) examination of the probable costs of the capitals essential to conclusion project procedures. They may be obtainable in summary or thorough. Costs must be appraised for all incomes that will be charged to the project. Cost estimations are commonly defined in units of currency to simplify comparisons both within and across projects. In some cases, the estimator may use units of measures to approximation costs, such as labor working hours or staff days, sideways with their cost approximations to simplify suitable management regulator.

Cost approximating includes rising an estimate of the cost of the source needed to comprehensive project actions. In estimate the cost the estimator, consider the causes of differences of the final estimator for purposes of better managing the construction project. When a project is performed under contract, care must be taken to differentiate cost approximating from valuing. Cost approximating includes emerging and evaluation of the probable is measurable outcome how much it will cost the accomplishment company to deliver the product. Pricing is a business conclusion how much will the execution organization change for the product or services that uses the cost estimation.

2.8.1 Cost budgeting

According to PMBOK (2000) version Cost, budgeting includes assigning the general cost approximation to separate doings or effort letters to start a cost standard for

gauging building project presentation. Realism might command that approximations are completed later budgetary endorsement is delivered, but approximations must be completed before budget appeal anywhere likely. In creation building project cost approximation there are reasons seeing similar contributions, gears and methods, and the last production.

In the contribution viewpoint cost approximations, effort failure construction, project agendas and danger organization strategy will reflect while the gears and methods for developing project costs approximations are used to grow budget for doings or effort letters as well. And out puts from cost budgeting considers the cost base line which is a time phased budget that will be used to amount and display cost presentation on the project. It is industrialized by summing approximating costs by dated and numerous projects particularly; greater ones may have many cost standards to amount dissimilar features of cost presentation. For instance, an expenditure strategy or cash flow predicting is a cost standard for gauging payment.

2.8.2 Cost control

According to Harrison Nujamu (2004) cost control, is the procedure of likening real presentation with strategic presentation, studying alterations, assessing likely replacements, and taking suitable remedial act as wanted. As per the overhead meaning, controller is the checking of presentation, that is, what has been completed, what is being done and what is yet to be done in contradiction of the strategy.

In building, project administration cost controller is concerned with manipulating the features that crate variations to the cost base line to defend that difference are approved upon and decisive that the cost base line has dissimilar. In the similar method gauging the real variations when as they occur. Inside cost controller contains contributions (cost base line, presentation reports, variation needs and cost administration strategy), tools and methods (cost variation controller system, presentation amount, received cost administration, further more planning and computerized tools.), productions(studied cost approximation, budget informs, remedial act, approximation at achievement, project near out and educations.

2.9 Project Quality Management

According PMBOK Guide (2000) version Project administration is includes the procedures compulsory to safeguard that the project will content the essential for which it was assumed. In the building manufacturing, this comprises of certifying that the project requirement and procedures are content within the decided agenda and budget. It comprises all doings of the general administration purpose that regulate the excellence plan purposes and errands, gears them by incomes such as excellence preparation, pledge, control, and advance, within the excellence arrangement.

FIDIC (2010) document conditions about excellence within viewpoint of servicer in the project, the Servicer will institution a excellence pledge system to prove obedience with the supplies of the Agreement. The system will be in agreement with the particulars specified in the Agreement. The Engineer will be permitted to review any feature of the system. Facts of all events and obedience documents will be submitted to the Engineer for evidence earlier each design and performance phase is began. When any document of a practical environment is distributed to the Engineer, indication of the previous endorsement by the Servicer himself will seem on the document itself. Obedience with the excellence pledge system will not release the Contractor of any of his responsibilities, duties or tasks below the Agreement.

Harold k (2009) specified excellence administration through the previous hundred years; the opinions of excellence have different intensely. Previous to World War I, excellence was observed mainly as review, sorting out the decent matters from the bad. Importance was on problematic documentation. Succeeding World War I and up to the early 1950s, importance was motionless on categorization decent matters after bad. The project director has the final accountability for excellence administration on the project. Excellence administration has equivalent importance with cost and agenda administration.

According to Rita M. (2009) stated that quality management contains producing and ensuing procedures and events to confirm that a project encounters the definite requirements it was future to chance from the customer’s standpoint. This means the same thing as implementation the project with no eccentricities from the project

obligation. Quality administration includes the processes of plan quality, perform quality assurance, and perform quality control.

John P. Muldoon (2014) states quality management applies to all projects and there are important risks and compromises when it comes to quality. There is an imperative difference among grade and quality, quality is the degree to which fulfills requirements and grade is a design issue

2.9.1 Quality planning

According to PMI (©2003), statement Quality planning includes categorizing which quality criteria are significant to the project and responsible how to satisfy them. It is one of the simplifying procedures throughout project preparation and must be achieved frequently and in equivalent with other project planning processes. The changes in the product of the project required conference recognized excellence values may require cost or timetable modification, or the anticipated product quality may require a detailed risk analysis of recognized problems

Quality planning includes regulation, standards, description, scope administration, and quality policy, output process, benefit analysis, flow chart, experimental design, cost quality, quality management plan and checklists.

2.9.2 Quality assurance (statement)

According to PMI (2003), declaration Quality assurance is the entire process of planning and regulation of activities applied to the quality process of managing the overall satisfaction of quality standards.

It is the responsibility of each individual in management team of the organizational performance.

It is allowing for contributions that contain quality control management, quality assurance management and define operational management.

According to FIDIC (2010) quality, insurance is a system to prove contract agreement requirement.

It is a process of improving engineering design document and its excursion.

Once any document of a technical nature is supplied to the Engineer, confirmation of the preceding authorization by the Contractor himself shall be apparent on the

document itself. Agreement with the quality assurance system shall not dismiss the Contractor of any of his tasks, duties or responsibilities under the Contract.

2.9.3 Quality control

According to Harold Kerzener (2009), Quality control is a combined period for actions and methods, in the procedure, that are planned to generate exact quality features. Such actions contain frequently controlling processes, classifying and reducing problem causes, use of arithmetical procedure regulator to decrease the variability and to raise the productivity of procedures. Superiority regulator confirms that the organization's quality purposes are being met.

Quality control contains observing particular projects outcomes to control if they fulfill with significant quality principles, and classifying behaviors to reduce sources of insufficient outcomes. Project consequences contain together product outcomes such as deliverable, and project management outcomes, such as budget and timetable presentation.

Finally, quality control studies productivities, which contain quality improvement, decision, rewrite, concluded specification and procedures modifications.

2.10 Project Human Resource Management

According to JAMES P. LEWIS (2007), declaration in his third edition managing human resources is frequently reduced in projects. It contains classifying the people required to do the job, important their parts, accountabilities, and commentary relations, obtaining those people, and formerly management them as the project is performed. Note that this theme does not mention to the real day-to-day management of individuals.

According to PMBOK (2008) in fourth edition conditions Project human resource management contains the procedures obligatory to create the maximum the actual use of the people complicated with the project. It comprises all the project investors' supporters, clienteles, associates, personal providers, and others labeled in-group preparation, control gaining and side growth.

Kim Heldman (2009) fifth edition declared that Project Human Resource Administration involves all features of people administration and individual

communication, comprising principal, training, concerning with conflict, leading performance assessments, and others. These procedures guarantee that the human resources allocated to the project are used in the maximum actual method probable. Several projects contributors whom you will become to repetition these talents on are investors, crew memberships, and clients. Each necessitates the use of changed announcement styles, management services, and team-building assistances. A good project administrator distinguishes when to decree firm services and statement styles based on the condition.

Composed founded on the services and capitals required to comprehensive the events of the project, and various times project crew follower's asset not distinguish one another. Since the face of each team is diverse and the investors complicated in the numerous phases of the project might change,

You will use different methods at different times through the project to achieve the processes in this Knowledge Area. The project human resource management knowledge areas contain of four procedures grow human resource plan, obtain project crew, grow project crew and manage project team concluded preparation and performing.

According to Rita M. (2009) states that the project human resource management (HRM) most of the HRM should aware to question from work experience.

According to William R. Duncan (1996) wrote about the HRM contain the procedures require to make the maximum actual use of the individuals complicated with the growth. . It comprises all the project investors' supporters, clienteles, associates, personal providers, and others labeled in group preparation, control gaining and side growth.

2.10.1 Organizational planning

According to Rita Mulcahy (2009), Structural arrangement contains classifying, recording and transmission project characters, accountabilities, and commentary relations may be allocated to specific or to group. The personnel and groups may be part of the administrative execution the project or they may be outside to it. Internal groups are often related with an exact practical subdivision such as industrial, advertising, or office. On maximum projects, the common of organizational planning is done as part of initial project phases.

2.10.2 Staff acquisition

According to William R.Duncan (1996), Crew growth contains both ornamental the skill of investors to donate as separate as well as attractive the capability the crew to meaning as a crew. Specific growth is the foundation essential to grow the crew.

The crew progress study inputs, which contain project control, development plan, individual management plan, presentation intelligences and peripheral feedstuff backbones. In the same way team, development considers tools and techniques, which contain team construction activities, general management abilities, reward and gratitude system, collocation and training. Finally, Team growth reflects productivity, which contains presentation development and input to performance appraisals.

2.11 Project Communications Management

According to PMBOK (2000) edition declares Project communications management contains the procedures essential to indemnify timely and suitable compeers, gathering, and distribution, storing, and final disposition of project information. It brings the serious relations amongst people, concepts, and evidence that are essential for achievement. Everybody difficult in the project must be ready to send and receive communications and must appreciate how the communication in which they are difficult as personalities affect the project as a whole.

According James p. Lewis (2006) in his third edition states announcement management includes planning, executing, and controlling the gaining and distribution of all evidence related to the requirements of entirely project investors.

2.11.1 Communication planning

According to Kim Heldman(2009), fifth edition states about communication plan it is procedure important and detailing the kinds of information delivering, the arrangement it will take, to whom it will be delivered, and when. The procedure contains of tools and techniques to support control these elements.

The main concept in planning a communication planning for building projects how requirements for material are to be controlled. These communications between the constructor and designer can have a thoughtful consequence on the cost and

timetable and can lead to claims. In communication, planning considering inputs, which comprise communication requirements, communications technology, constraint and assumptions.

2.11.2 Information distribution

According Kim Heldman (2009) states that in the Information distribution is the process communication management plan and information transfer between the individuals or member in the project

Information distribution it includes making required awareness between project participants and contractors or clients.

It contains applying the infrastructures organization plan, as well as replying to unexpected requirements for information. The project manager sends the draft project communication plan to the project stakeholders for review and input.

2.11.3 Performance reporting

In PMBOK (2000) defined that the performance report includes distributing and collecting information about the performance to offer investors/stakeholders With report about exactly how assets are actuality used to attain project goals. In construction design, information distribution is important to authorization discrete sector for reporting.

This process includes Performance reporting must usually offer information on scope; cost, quality and schedule. Various projects require information about procurement and risk. Reports might be organized systematically or the basis of expectations.

Performance report is allowing for feedbacks, which contain project strategy plan, outcomes and further project achievements.

Performance report is also studies of procedures and tools that consist of performance assessments, adjustment analysis, tendency analysis, earned value analysis, information delivery element and methods. Lastly, performance report considers productivities, which comprise performance report and requirement change expectation.

2.11.4 Administrative closure

It is essential stage in the cycles of the project construction management admiration, where the achieving object is accomplished.

According to The PMBOK guide 2000 edition declared that the administrative closure contains outcome or result documentation to validate the project productivity by guarantor/sponsor, client or customer.

Administrative closure comprises gathering project archives and it is also includes collecting, achievements such information for the future use, lessons learned or historical data, effectiveness, insuring specifications and project success full analyzing.

Kim Heldman (2009) states that Administrative closure processes include gathering all the minutes related with the project, evaluating the project achievement or failure, recording and collecting lessons learned, and archiving project achievements. The administrative closure must reflect responses, which involve Product documentation, performance measurement documentation and other project records.

2.12 Project Risk Management

According to the William R., Duncan (1996) stated that project procurement management contains the procedures essential to attain services and goods from the external organizational performance. For straightforwardness, service sand goods consider as manufactured goods offers by the key processes of Procurement planning, solicitation planning, solicitation, source selection, contract administration and contract close out.

According to PPA (2006), Federal Democratic Republic of Ethiopia Public Procurement and Property Disposal Service Bidding Document for the Proclamation and Directives on Public Procurement specifics the full procurement processes, instructions and techniques and the procurement approaches followed by Acquiring Objects.

According to the James P. Lewis (2007) states, that Procurement is essential services and goods for the project. It is the logistics aspect of managing a job it involves

deciding what must be procured, issuing requests for bids or quotations, selecting vendors, administering contracts, and closing them when the job is finished.

PMBOK guide (2000) edition states project management includes the processes required to acquire goods and services from external the organization, to reach project objectives, the construct facilities. It involves capital project development where it is in the form of a new grass root facility, expansion, renovation improvement, or in some cases disposition of facilities. To implement project procurement there is procedures procurement planning, solicitation planning, solicitation, source selection, contract administration and contract close out.

2.13 Project Safety Management

PMI (2003) in construction extension states that safety management comprises the procedures necessary to comforting that the construction project is completed with suitable attention to avoid accidents that can Couse damage the property. Accidents and personal injuries and deaths that results, have been, and are still a major concern in the construction industry both in terms of humanitarian losses and in terms of the direct and indirect costs to the industry. As PMI (2003) stated in the United States alone construction accidents cost approximately 6.5% of constructed value or 50 Billion USD. Project safety management in construction project has the major three processes safety planning, safety plan execution, administration, and reporting.

2.13.1 Safety planning

PMI (2003) discusses Safety planning for a construction project involves a job site analysis of the hazards inherent in the work and making decisions as to the measures to be taken to deal effectively with them. This analysis includes the survey of a geographical and physical hazard of the site, as well as a review of the normal hazards involved in the type of construction anticipated.

Government laws and regulations, contract and owner requirements also must be considered in developing the project safety plan that will be the guiding document for a safe project by considering inputs, which include laws and regulations, contract requirements, safety policy, site location and management commitment. Secondly, the safety planning considers tool and techniques that include hazard analysis sub-

contractor selection and incentives. Finally, safety planning considers outputs, which include project safety plan, authority and budget.

2.13.2 Safety plan execution

Execution of the project Safety plan involves the application and implementation of the safe construction practices on site in accordance with the requirements of the plan. According to PMI (2003) on a large construction project, there may be a separate safety staff of several persons headed by the safety officer.

Prevention of the accident is the most effective technique so that a well-informed and trained work force is the best way to assure a safety project by considering input, which includes project safety plan and contract requirements. Secondly safety execution consider tools and Techniques which include personnel protective equipment, safety equipment, construction equipment review, safety communication, training and education, safety inspection, accident investigation, medical facilities and drug testing. Finally, safety execution considers output that include reduced injures, lower insurance costs, enhanced reputation and improved productivity.

2.13.3 Administration and reporting

PMI (2003) in construction extension states that along with governmental laws and regulations that apply to safe construction practice, there are often requirements for record keeping and reporting. The Insurance companies usually require periodic activity and accident reports. Therefore, the contractor needs additional records and reports. In safety, administration and report processes procedure consider inputs that include legal reporting requirements, insurance reporting requirements, contract requirements and safety plan requirements. Secondly, administration and report processes consider tool and techniques that include inspection logs and reports, training and meeting records, injury and illness logs, accident investigations and photographs and video records. Finally, administration and report processes procedure consider output that include government logs and reports, accident reports, achievement of reports, achievement of safety incentive goals and documented safety performance.

2.14 Empirical Analysis of the Study

This part of the study summarizes various empirical studies conducted in different countries related with the construction project management experience. Based on these relevant empirical studies reveled as follow:

Brown and Adams (2000) states a new method of measuring building project management (BPM) about the time, cost and quality result performance by considering 15 circumstances' derivative from the data of united king dam UK to achieve the above circumstance they develop new model.

Chan (2001) considered Malaysian public sector's time and cost relationship. 51 public sectors in Malaysia were collected their data of time and cost performance relationship identification by using regression analysis.

Kuprenas (2003) summarizes and studies over 270 completed sewer, street project in Los Angeles and water storm as the case study to measure the impact of project management founded by project manager training, design frequency report, organizational structure, frequency meeting and cost design performance. Olawale and Sun, 2010, studies about the five most effect project time controlling in descendent order are :design changes, inaccurate evaluation of projects time/duration, complexity of works, risk and uncertainty associated with projects and ill-performance of subcontractors and nominated suppliers. Similarly, Kasimu and Abubakar (2012) studies about the delay construction industry in Nigeria and analyzing the top five influence factors in ascendant way are improper planning, lack of effective communication, design errors, shortage of supply like steel, concrete and slow decision-making.

Ugwu and Haupt (2007) considered the fundamental/main performance factors and planned a logical decision-making models and methodology structure for sustainability consideration in infrastructure projects in a developing country like South Africa. in this study the scholar/researcher was carried it out by using professional interview, study of the project's data, environmental assessment with accordance of government guide line, sustainability research and questionnaire based survey. Under these studies, the researchers develop some models and technique like multi-criteria decision analysis (MCDA) and analytical hierarchical process (AHP) for multi- criteria decision.

Dissanayaka and Kumaraswamy (1999) established wide range model by using 32 Hong Kong building project data. The researchers analysed this data and develop a model fit in the completely important procurement variables as well as none variable procurements on the bases of cost and time performance and the result compared with the reality.

Lehtonen (2001) suggested a new framework to measure construction logistics. This e are grouped by according their measurement and called two-dimensional models. First dimensional is consist of two types of measurement monitoring and improved measurements. Second dimension application measurement and simplifies at which organizational level measures can be used.

3. RESEARCH METHODOLOGY

Methodology is an assessment of the numerous tactics/methods that the information collection as well as the analyzing technique to the study; which describes the kind of investigation approach supposed the method and the kind of researcher's data collection system. Research methodology will cover the following: study of research design, sample size, sampling method, base of data, data gathering procedures, data analyzing technique and consistency of the questionnaires. The research was done and summarized in best manner.

3.1 Study of Research Design

The study of research design is engaged descriptive method for the research planned to reach in what way the company's plan, observed and assess their projects.

According to the Kothari (2004), states that descriptive method of research is as single individual and in plural form mean as group.

Observing what the Saunders et al (2009), writes about the research it states that the study approaches are seven which includes investigations, survey, case study, research action, theories, ethnography and archival research.

This study the researcher considered a survey research method which is more common strategy in management and business.it is also the most used frequently to answer these five based questions: what, who, where, how much and how many. It is also used graphics representations as well as experimental research system. In this research allows considering a large amount of data from countable population in a particularly realistic manner. Frequently accomplished by considering or using a questionnaire controlling the sample and standardize the data can attain good and easy comparison.

Additionally, the survey assessment approach is professed a more common in general easy comparable and understandable, which means it is easy for explanation and comprehensive.

Survey method is system which allows collecting quantitate data that can be analyzed easily by using descriptive statistics.

3.2 Source and the Mechanisms of Data Collection

In this part of study was measuring primary data source and secondary data source. Referring many related literature example book, article, journals and more related written publications are considered as secondary data source. While using questionnaire and interview are primary data source.

The reason deciding to choice these two systems was come in immediately when wisely comparing the benefits and weaknesses as well as the sample size of grouping.

The study supposed to plan, monitor and evaluate of administration process of the projects in S.D.S.W.E, sample of 110 the similar questionnaire was distributed to board member, head office management, to consultancy Resident engineer and General Manager, to project professional engineers and management of the enterprise. As well as, three purposively selected management staff and two Professional engineers were interviewed to set back ground of enterprise.

3.3 Sampling Techniques

In this technique study aimed data collections of SDSWE, Board member, management staffs, Project professionals and Consultancy resident engineers. According to SDSWE human resource of 2020 in Projects and head office of the enterprise, there are 150 professionals Project managers, office engineers, construction engineers and equipment professionals in construction projects. Thus, the sample size that was selected out of 150 total populations based up on sampling technique of n=N/ (1+Ne^2). The formula is large enough to allow for precision and confidence at 5%. Based on the method formula for the calculation of sample size present as follow:-

$$\boldsymbol{n = \frac{N}{1+Ne^2}} \qquad \textbf{(3.1)}$$

n = sample size

N= total population

e=Standard error used $(0.05)^2$

$$\boldsymbol{n = \frac{150}{1+150(0.05)^2}} \quad \textbf{(3.2)}$$

$$\boldsymbol{n = \frac{150}{1.375} = 110}$$

Based on the sample size of the both questionnaires that was provided to SDSWE Board member ,head office management, project managers, professionals as well as consultancy residential Engineer were contributing in questionaries' and the distribution was the following systems shown in the Table 3.1 in order to be more reliable;

Table 3.1: Sampling Technique

S/No	Participant	No of participant
1	Board member of SDSWE	3
2	Management member head office of SDSWE	5
3	Project manager and Professionals of SDSWE	94
4	Consultancy Residential engineer of SDSWE	8
	Total	**110**

Source: Sample Survey, (2020).

3.4 Methods of Data Analyzing

The techniques of examination/evaluation considered in this study were selected according to the availability of the data and the type of the data appropriate to analysis the research.

The questionnaire was qualitative hence; descriptive method was selected to analyses the data. In this method were used clarification, presentation and discussion of various scopes appropriate for analyze and present the outcome of the research.

The questionnaire was distributed to the SDSWE and collected the respondents respond in to the laptop and analysed by using SPSS Statics version 20 Software. The result was presented in the form of diagrams, charts and table.

According the result findings the conclusion and recommendation was made by the researcher in order to achieve better development and performance.

3.5 Outcome Model Test

Outcome model test is result analysing system of the questionnaires which were distributed to the company considering the survey sample of the organization in which 15 sample questionnaires were distributed to the SDSWE in order to consider their recommendations of the questionnaire if any error or un related parts are exist.

The questionnaire was distributed to the SDSWE board members, project managers, team leaders, case tem leaders, site engineers, surveyors and all office engineers. The questionnaires were collected back and adjusted their comments or reminding.

When we consider what Saunders et al., (2009) wrote about the degree of consistency states that the, attribute evaluation specifically will make deferent outcomes in deferent conditions as well as unlike times such as unlike samples.

Interior constancy contains associating of replies for every question of the questionnaire in each individual. Hence the consistence measurement is under the 15 questionnaires distributed to the SDSWE with accordance of their respond therefore there many ways of consistence calculation but Cronbach‘s alpha is the most frequent to determine the Cronbach‘s alpha coefficient the researcher use the distributed questionnaire.

According to George and Mallery (2003) a Cronbach’s alpha coefficient greater than 0.9 it indicates excellent, greater than 0.8 is good, greater than 0.6 is acceptable, greater than 0.5 is poor, and less than 0.5 is unacceptable”. The consistence, reliability, and occurrence of the result study were calculated as the 3.2 Table below shown.

Table 3.2: Reliability Statistics.

Cronbach's Alpha	N of Items	N of respondents
0.862	15	110

Source: Questionnaire (2020)

According to the cronbach’s alpha the outcome is 0.862 this tells the reliability is excellent and very high consistence. Hence, the questioner is really reliable and full of confidence, which allows the researcher to use it.

3.6 Ethical Attentions

According to the Saunders et al., (2009, p.184) - Research ethics is related to the how the research topic, data collection method, researcher design, storing data and data analysis are clear obeying the ethical and responsible system. Moreover, it is preparation of confidential method of respondents and keeping their identity and responses.

The questioner was distributed to the readiness of the respondents and willingness of every participant in his own will in order to give more confidence.

4. INTERPRETATION AND ANALYZING OF THE DATA

4.1 Introduction

According questionnaires filled by respondents in the methodology chapter

The study totally distribute 110 questionnaires though, the analysis were done based 99 the rest 11 questioners were missed.

4.2 Respondent's Background

Analysing respondent's background is essential to include the construction project management practice affected by staff academic qualification, employee work experience, and company experience. It is analyzed and discussed the below table which shows about the background of the participants.

Table 4.1: Respondent's Background

Character	**Category**	**Frequency**	**Percentage (%)**
Gender	Male	74	74.7
	Female	25	25.3
	Total	99	100
Academic status	Diploma	16	16.16
	First degree	68	68.69
	Second degree	15	15.15
	Total	99	100
Work experience	Below 1 year	2	2.02
	2-5 years	55	55.56
	5-9 years	26	26.26
	10 and above	16	16.16
	Total	99	100

Table 4.2: (More) Respondent's Background

Character	Category	Frequency	Percentage (%)
Organizational experience	Below 1 year	-	-
	2-5 years	7	7.07
	5-9 years	77	77.78
	10 and above	15	15.15
	Total	99	100
Company's grade	Grade1	63	63.64
	Grade 2	10	10.10
	Grade 3	15	15.15
	Other	11	11.11
	Total	99	100
Company's grade Regarding to ISO certification	I so certified	51	51.52
	In process	26	26.26
	Not iso certified	22	22.22
	Total	99	100

According to the general information of the respondents, 74.75% respondents are men, while, 25.25 % of them are women and their academic status 16.16% have a diploma, 68.68% have a first degree while 15.15% have a second degree. Concerning to academically status of professionals, the first-degree holders have a large proportion, even though, there are still professionals with low level of educational status that inferred by diploma and second degree holders are small compared to the others this can affect construction project management practice of the enterprises in several manner. Correspondingly the study were similarly assessed professional work experience, in this regard majority of the respondents accounted for 55.56% and 26.26% respectively engaged between the 2-5 years and 5-9 years of work experience, on the other hand, the rest 2.02% have low work experience which under one years, however 16.16% of them were engaged more than 10 years' experience . Observing to work experience of a profession the data shows that, their proportion is very low 2.02% professionals engaged in managing project with little experience and this condition low level experience could affect the designed project in quality aspects, budget, and other related challenges. In this study also observed the organization experience accordingly,55.56% and 26.26% respectively have 2-5years

and 5-9 years of work experience while, the rest 16.16% have 10 and above 10 years of work experience. However, there is no one in the organization that has less than one-year's work experience. Lastly, the study were assessed the grade of the company 63.64% and 10.10% were Grade1 and Grade 2 respectively while the rest of 15.15% and 11.11% were Grade 3 and other respectively.

4.3 Construction Project Management Experiences

In this part was the main part of the study which considers key challenges affecting project management, and respondent's concept of the area over all of the 27 projects according to the construction project management, process management, scope management, time management, cost management, quality management, human resource management, communication management, risk management, procurement management and safety management the questionnaire was distributed to each and every sector or every department .The researcher give spaces for the respondents respond in the questionnaire those are: Yes If the explanation related to the situation in the assessed project they respond yes otherwise No. However, they can choose not applicable (NA), if the practice is not applicable in their organization (projects) and (IDK) i do not know, if they do not have any evidence on the provided questions.

Even though the questionnaires was distributed according to the sample size 110 among 11 questionnaires are not return back from different projects and head office. Then the total respondent are 99 persons as mentioned in the data analyzing software SPSS statics version 20 of the responded assessment or analyzing.

4.3.1 Construction project process management

Construction project management typically includes seven tasks such as benefit increase, SDSWE help, project management office, project management approach, staff training, manager knowledge and methodology.

Below the fig implied respondent's response.

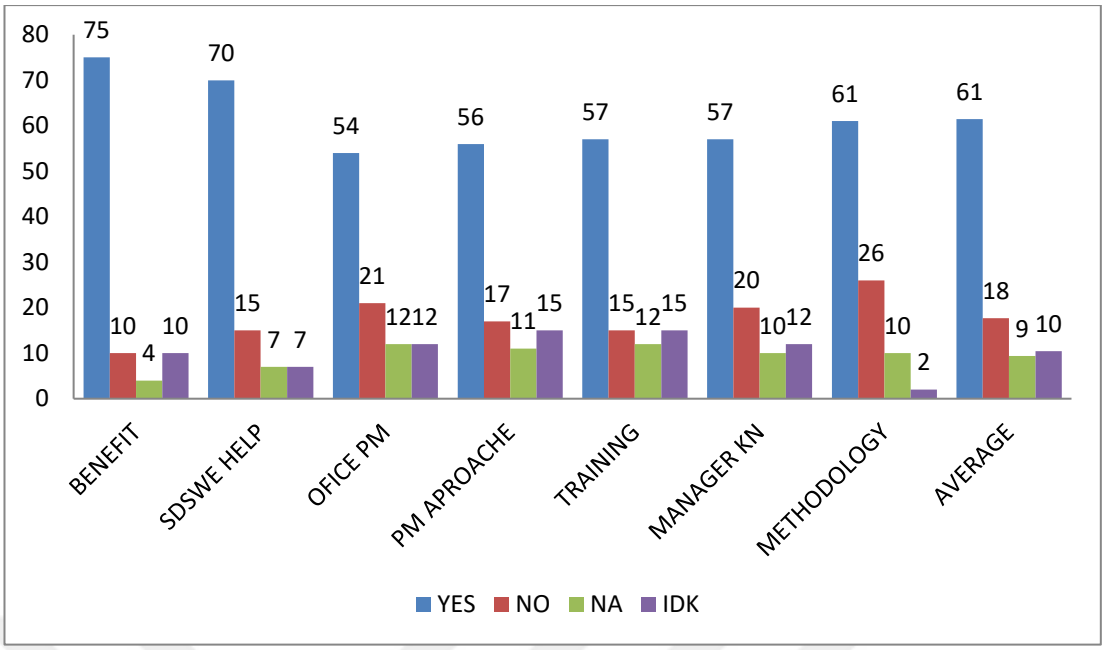

Figure 4.1: Respondent's Response Construction Project Management Process

Source: Questionnaire (2020)

According to the above graph, respondent's response is observed regarding the provided questions of construction project process management practice of SDSWE. Accordingly respondents accounted for 80 assure that, the enterprise have interest to be managed every projects through the knowledge of project management. In this regard, 70 respondents assure majority of the management bodies support the development of project management practice, however, the rest 29 implied the organization still did not use its full potential in supporting the development of project management. In relation to this challenges the study were provide may be lack of centralized office based project management challenge affect the knowledge development of the area or not accordingly, respondents accounted for 54 assure the enterprise to manage majority of the projects in centralized and organized office based practice, however, the rest 45 respondents still implied some projects are not managed in centralized system. Similarly, the study were assessed whether the organization applied standard methodologies of PM for the designed projects or not; accordingly, the response by 56 implied the enterprise more or less applied standard methods of PM for projects, however, the rest 42 of the respondents ensured though attempts in applying standardized methodology but still the organization lack applying standard methodology at every projects effectively. Regarding training practice of PM 57 respondents engaged in the sector assured the organization provide training, but the rest 42 found at several related filed have not received training. In

this regard 57 of the respondents assured that, though employee have good experience and knowledge of project management the rest 42 respondents indicated they have no full of confidence on the solid knowledge of employee of the sectors. Finally, the study respondents accounted for 61 implied the enterprise applied project management procedure formally, while the rest 37 implied the organization did not applied project management knowledge formally at every type of projects.

Generally, from the above seven questioners about 61 of the respondent indicates yes then it indicates the necessary knowledge and awareness of construction Project process management is high in the project management members by experience, training and graduated from higher education the management members in the construction project knowledge area. Even though to awareness' the construction knowledge area indicates about 82 the remaining 18, 9 and 10 respond different aspects the condition is not much to the company and not applicable and they do not aware of the condition respectively. Therefore, it expects more attention to develop more of construction Project process management knowledge area.

4.3.2 Construction Project scope management

Construction scope administration strategy should include responsiveness to importance of the management system, scope effort, detailed procedure, and effort official, and process application, project scope definition, monitoring and controlling effort and work results of scope determination. In this regard, the study was provided a related question to assess the enterprises activity on the area. Below the fig 4.3.2 implied respondents' view regarding the provided questions:

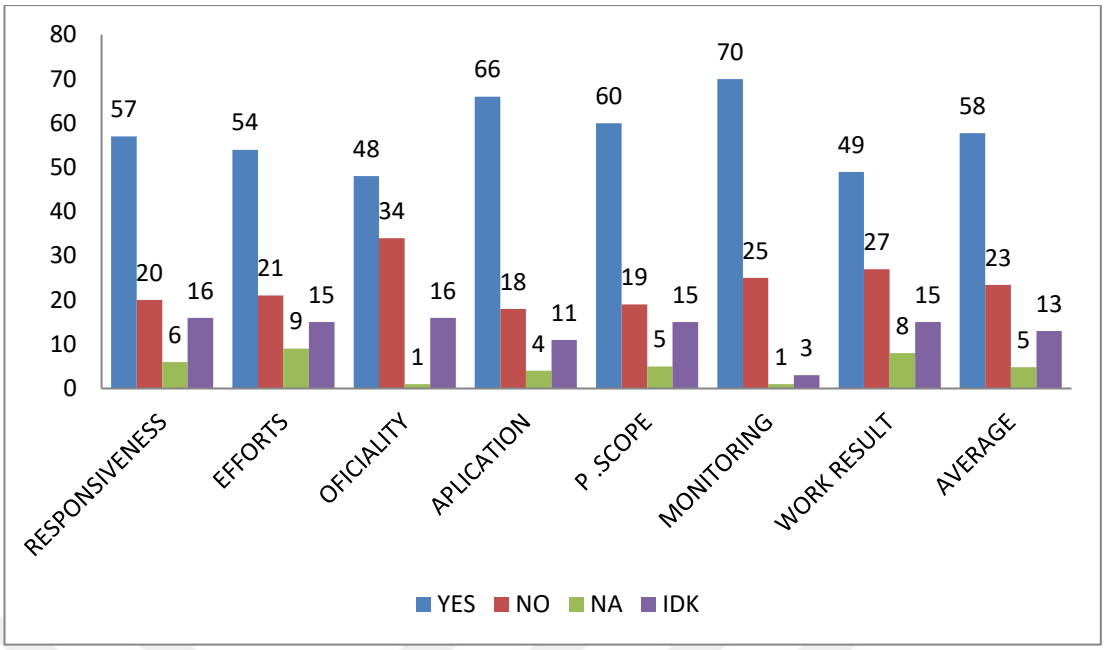

Figure 4.2: Respondents's View Regarding PM Scope

Resource: Questionnaire 2020

As implied from fig 4.3.2. The study regarding the enterprise practice of project under the requirements of project scopes, provide several types of questions. In this regards respondents accounted 57 indicated that, the organization have a good awareness that the importance of accomplishing project tasks of the enterprise under the scope of each projects, however, 32 of the respondents implied still there is a gap of knowledge in the enterprise management in understanding the importance of scope management. Similarly, the study were assessed efforts of the enterprise in accomplishing projects under their scope or not, respondents accounted for 54 assure there is an effort by the enterprise to accomplish projects under their scope, however, the rest 45 of the respondents assure the enterprise effort in accomplishing projects based on the scope management is weak. In this regard, 45 of the respondents assure, though the organization tried to set up formal procedures of scope management practice of projects, however, 48 of the respondents indicate there is a gap in providing formal procedures of scope management of projects. Similarly, 34 and 17 of the respondents respectively implied lack of computerized system application and lack of defined construction scope management affects the enterprise from applying effective project management under their scopes. Though those challenges affect the organization in applying the methods, however, 66 and 60 respondents respectively assure, the enterprises have well-established monitoring and evaluation system of projects.

Generally, from the organization, construction project management under the scope implied that, 70 of the respondents indicate yes then it indicates the necessary knowledge and awareness of construction project management is high in the project management members by experience, training and graduated from higher education in the management members by Project management knowledge areas. Even though the awareness to scope indicates about 58 the remaining 23 and 18 does not much to the situation, not applicable and they do not know about it respectively. Therefore, the analyses generally implied still there is a gap that expects more attention to develop the construction Project scope management knowledge area.

4.3.3 Construction project time management

The project's time management is about approximating of the project period per planed actions, scheduling, controlling, monitoring of the construction project .time is very important for the project as whole without time plan the construction industry's performance leads to be poor.

In this regard, the study provides relevant questions to assess the enterprise experience regarding time management practice of construction projects. Below the fig.4.3.3 implied the respondents view regarding the enterprise time management of the projects.

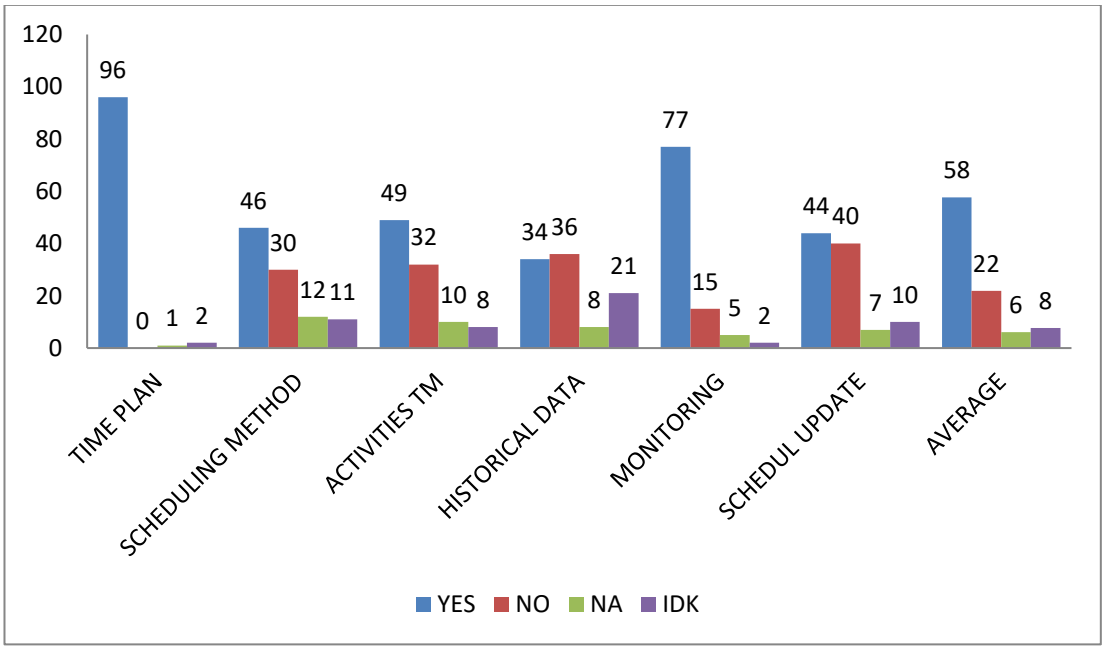

Figure 4.3: Respondents View On the Enterprise Time Management of the Projects

Source: Questionnaire (2020)

Regarding time management effectiveness of the enterprise the study had been assessed relevant areas that can affect construction site project management practice. The researcher were assessed the organization use of scheduled time plan for the provided projects or not, accordingly all of the respondent assure that, the organization use time Schulte in general, however, as indicated by 96 respondents the organization are effective in providing time plan for each activities. The rest of 3 respondents imply no effective time plan. In addition 46 and 49 respectively implied that, implied though the enterprise tried to provided networked schedule and activities time management is observed in the company while 53 and 42 respectively implies organization didn't effectively provided networked Schulte of projects and activity time management.

Regarding using historical data before providing time, plan for projects the study were assessed respondents view, accordingly. 34 of the respondents assure the enterprise use historical data, while, the rest 65 respondents contrary indicate there are projects that the enterprise didn't refer their historical backgrounds and the result affect the projects time management effectiveness. Finally respondents accounted for 77 assure though the organization have effective assessment and observing system of provided time schedule to accomplishment of the project however, respondents accounted 44 indicated lack of schedule updating mechanisms of the enterprise affect effective time management practice of the projects.

From the above data one can understand that 58 of the respondent indicates yes then it indicates the necessary knowledge and awareness of construction Project time management is high in the project management members by experience, training and graduated from higher education by construction management. even though the awareness' to project time management knowledge area indicates about 58 but the remaining 22, 6 and 8 respond different aspects the condition is not much to the company schedule and not applicable and they do not aware of the condition of time table respectively. Therefore, it shows that the company still needs more attention the scheduling method to attain suitable development to construction Project time management knowledge.

4.3.4 Construction project cost management

Cost project management contains the procedure essential for the completion of the project with the planed budget /cost and allows planning resource, cost breakdown,

budget controlling, and updating the cost. These are the most important parts used in construction project to achieve the project quality and better outcomes and to minimize the cost of the whole project. In relation to this, the study assesses relevant area that that can affect the enterprise construction cost management practice. Below the fig 4.4 implied respondents view regarding cost management practice of the organization.

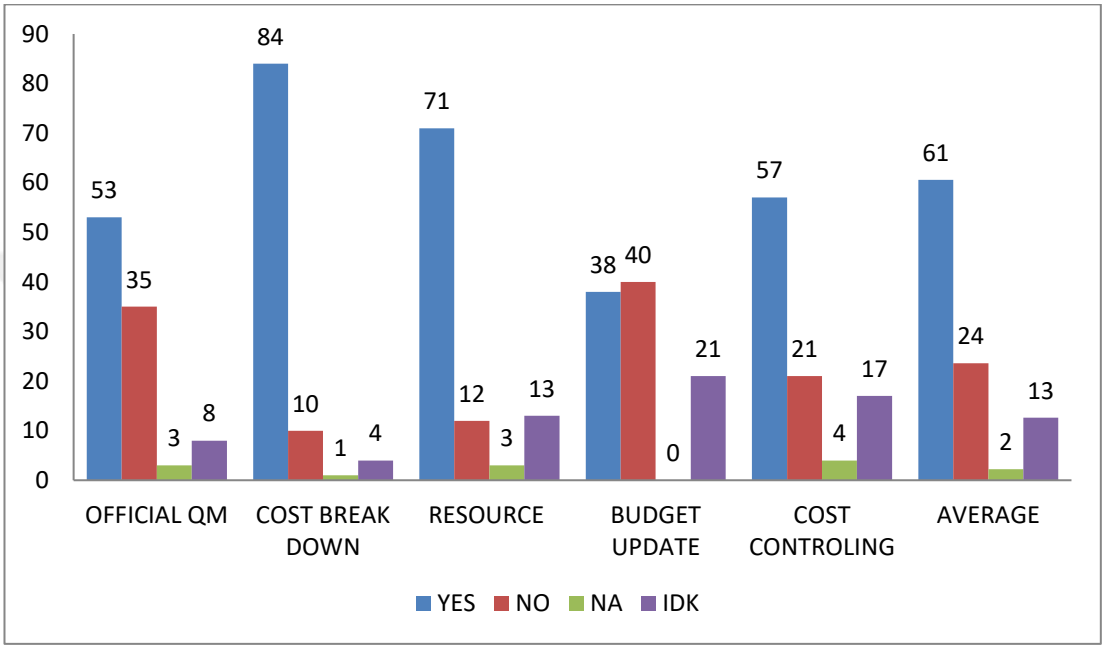

Figure 4.4: Cost management Practice of the Enterprise

Source: Questionnaire (2020)

From the above graph respondents accounted for 53 implied the enterprises have formal procedure of cost management practice of the projects, however respondents accounted for 46 the enterprise didn't applied formal procure of cost for projects. Respondents accounted for 84 and 71 insecure that the organization use cost breakdown for the provided projects and arranged them through resources category system and the rest 43 be not respectively. However, as implied by 38 respondents the organization had updated most projects cost while the rest 62 respondents the organization had not updated most projects cost. Regarding budget monitoring practice of the organization, 57 of the respondents assure there is budget utilization monitoring practice in most of the projects while, the rest 42 of the respondents implied there is no monitoring practice in some projects. From the above graph one can analyzed that, about 61 of the respondent indicates yes then it indicates the necessary knowledge and awareness of construction Project cost management is high

in the project management members. Even though the awareness' to project cost management knowledge area indicates about 61 the remaining 24, 2 and 8 respond different aspects the condition is not much to the company cost and not applicable and they do not aware of the condition of cost respectively. Therefore, it shows that the company still needs to give more attention the cost management to attain suitable development to construction Project time management knowledge.

4.3.5 Construction project quality management

Quality management includes quality management procedure (QMP), quality assurance, quality audit, quality management implementation (QMI) and quality management department to produce the effective procedures to control the project quality (QM).the following fig 4.5 shows the respondent's point of view to the QM.

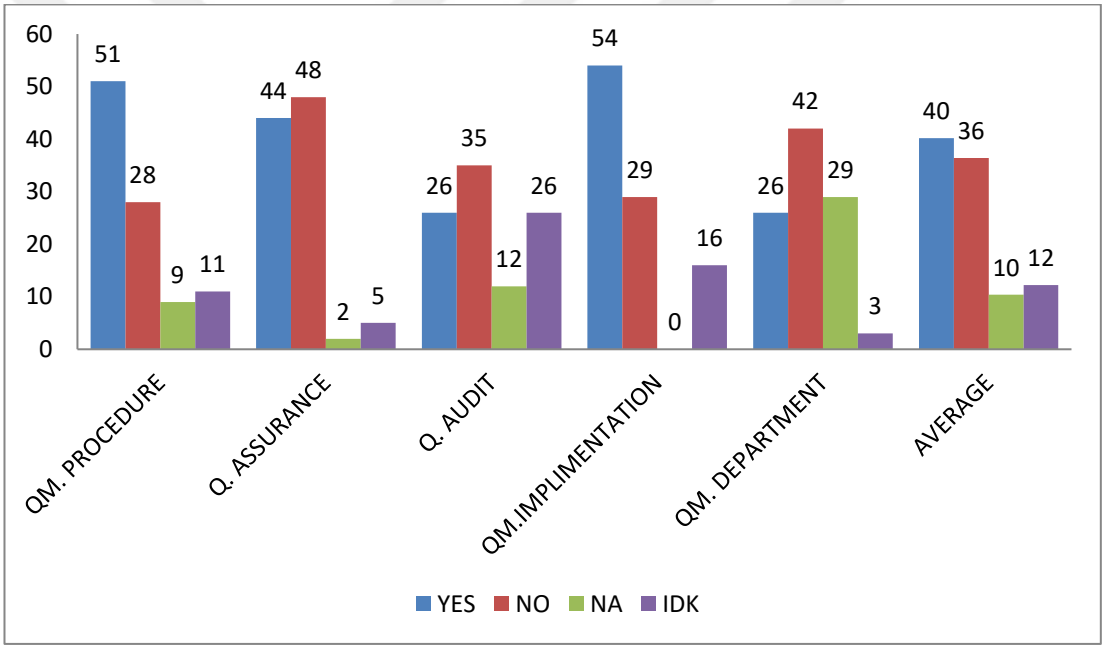

Figure 4.5: QM Practice and Challenges of the Enterprise

Source: Questionnaire (2020)

From the above quality, management data the study analyzed that, though 51 of the respondents confirmed the enterprise formal procedure use of quality management, the rest 39 replied in opposed to the majority responders, which implied, the enterprise did not strictly follow formal procedure for all construction projects. Similarly 44 responders indicate the organization use quality assurance test in the projects, however, the rest 48 ,2 and 5 responders respectively implied project quality assure are not applicable in all projects and they do not have information on the practice. Regarding quality auditing practice of the enterprise, the majority of

responders accounted for 35 implied no response that implied the organization in majority of the projects have not exercised quality-auditing practice. Regarding quality management implementation of the organization, though 54 assure the organization practice on several projects the rest 35 implied the enterprise did not also applied the practice in large proportion of the project. Respondents accounted for 42 implied the organization quality management department did not supported by qualified employee and relevant materials.

Generally the above data implied that, 40 of the respondent indicates yes then it indicates the necessary knowledge and awareness of construction Project quality management(CQM) is nearly half of project organization management members knowledge by experience, training and higher education graduated by Project management knowledge areas shows very low. even though the awareness' to project quality management knowledge area indicates about 40 but the majority remaining 36,10 and 12 no, not applicable and I don't known respective are the response of the respondents. Therefore, about half of the project and organization management members are not developed the construction Project quality management knowledge area.

4.3.6 Human resource management of the project

In the HRM includes the over all aspects of staff management in the Somali design and supervision work enterprise including HR planning, organization chart preparation (PO), project training, conflict controlling, and inter conflict management.

The system of assigning the human resource management is the only way by which the project can be effective and stakeholders, team leaders and customers can appreciate and enhance communicable manner. It is based on this the study provide relevant question to assess human resources activities of the enterprise in consternation project management regard below the figure 4.6 implied respondent's response on the provided question.

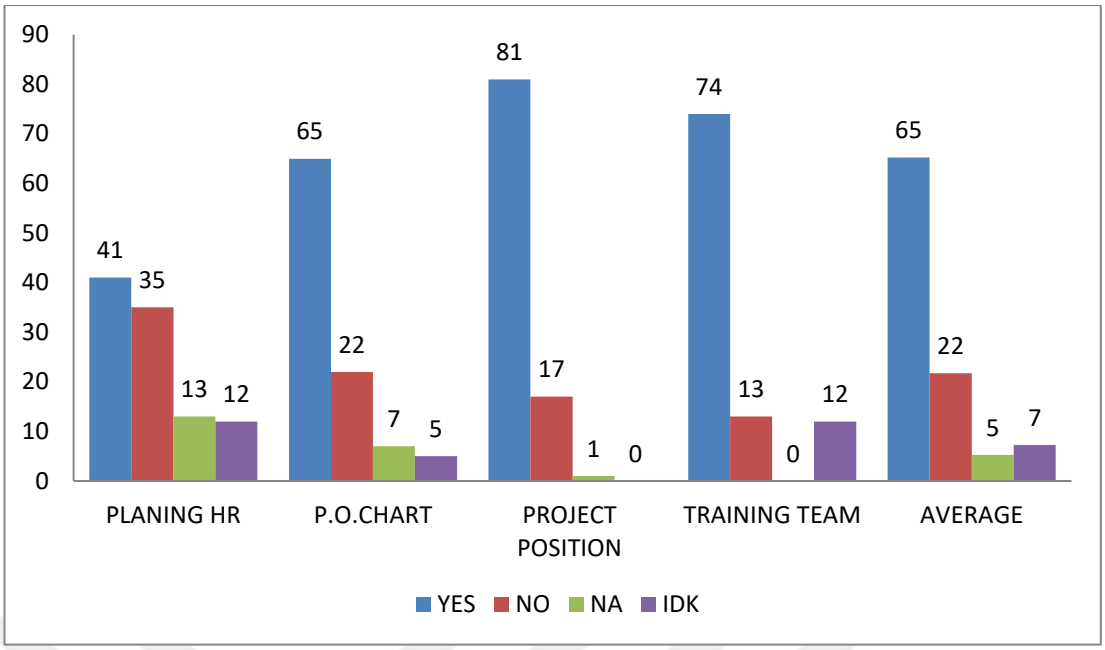

Figure 4.6: Activities of Human Resources of the Enterprise.

Source: Questioner (2020).

From the above figure the enterprise human resources, planning effectiveness' in assigning professional accomplishments of task 41 of the respondents assure it is well done, while 35 of the respondents said no which implied still the organization human resources project planning regarding human resources is weak. Though 65 of the respondents assure that the organization, provide charts that explain the human resources task regarding the projects the remaining 22, which implied no, indicate the activities are not sufficient. As implied by 81 of the respondents the human resources department give training for each of the construction project parts, however, 18 respondents indicated in the opposite, which implied the department had not effectively assigned the required human resources on the construction project. However, 74 of the respondents assure that the human resources department provides training related to project management of construction, the rest 25 still implied the training is not sufficient.

In general the above data implied that, 65 of the respondent indicates yes then it indicates the necessary knowledge and awareness of Project HR is high in the structure and company administration members by experience, training and higher education graduated by Project management knowledge areas. However, the remaining 22, 5 and 7 not flow the HR management system not applicable to adapt while the others do not know whether the he organization adapted HR management

or not respectively. Therefore 27 of the project and organization management members have to strive to develop the construction Project human resource management knowledge area.

4.3.7 Communication construction project management

Communication project administration includes about foremost assists containing Project statement requirement (PSR) analysis, communication strategy plan, hand project document, stakeholder's expectation, strategy development and performance report to insure highly communication management. The project manager and the office manager must have strong and continuous communication. Each and every individuals should be informative with any aspect in the project it increases the critical link among the other's ideas.

Communication is essential relationship between the people information and ideas which are useful for success. In this regard the study provide relevant areas assessment questions and the response for each of the questions analyzed based on the fig 4.7 provided below.

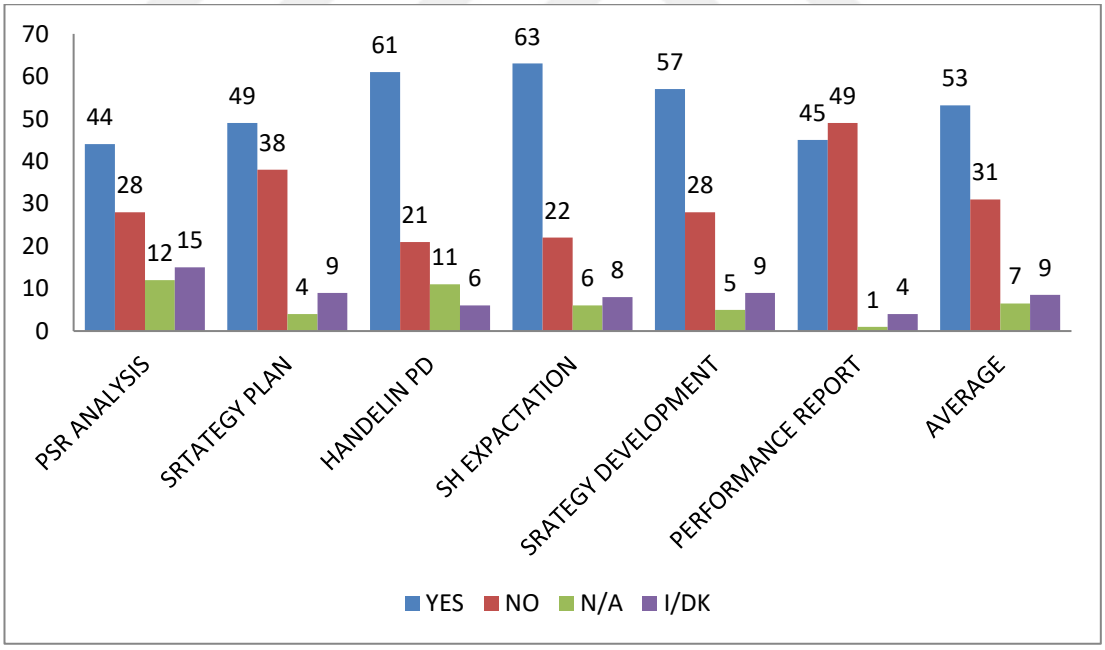

Figure 4.7: Construction Project Communication Management Practice of the Enterprise

Source: Questioner, (2020)

As the above figure states that the communication management practice of the organization practice, respondents accounted for 44 ensure the organization done need analysis for the required communication management application of the

organization. However as 28 of the respondent's response the pre-assessment of the organization is not addressing the entire projects requirement. Similarly, 49 of the respondents assure the enterprise provide strategy plan for the identified problem in the pre-assignment practice while the rest 38 response in oppose. About 61 of the respondents assure the organization has project documentation handling system in communication managements, but the rest 38 implied some of the information didn't include in system documentation. Though 63 implied that the stakeholders expectations of the organization construction project performance management, however, the rest 22 implied some of the projects information did not reported their performance.

Finally, 57 of the respondents implied the enterprise provide expectation of each professionals in communication management section while the rest 43 argued that all of the concerned bodies didn't effectively addressed their expectation.

From the above questioners about 53 of the respondent indicates yes then it indicates the necessary knowledge and awareness of construction Project communication management implemented in a good manner, however, The rest respondents accounted for 31, 7 and 9 consecutively did not much to the communication, not concerned or applicable to project about project communication management respectively. Therefore 47 of the respondent show project and organization management members are not developed the construction Project communication management knowledge area.

4.3.8 Construction project risk management

This study includes risk project management (RPM), RM (risk management) identification, its probability, its response plan and its impact.

It includes the reducing impact of the project to achieve better performance the organization should minimize the risk. This regard to study provide relevant question to assess the enterprise practice and the response implied as following figure 4.8.

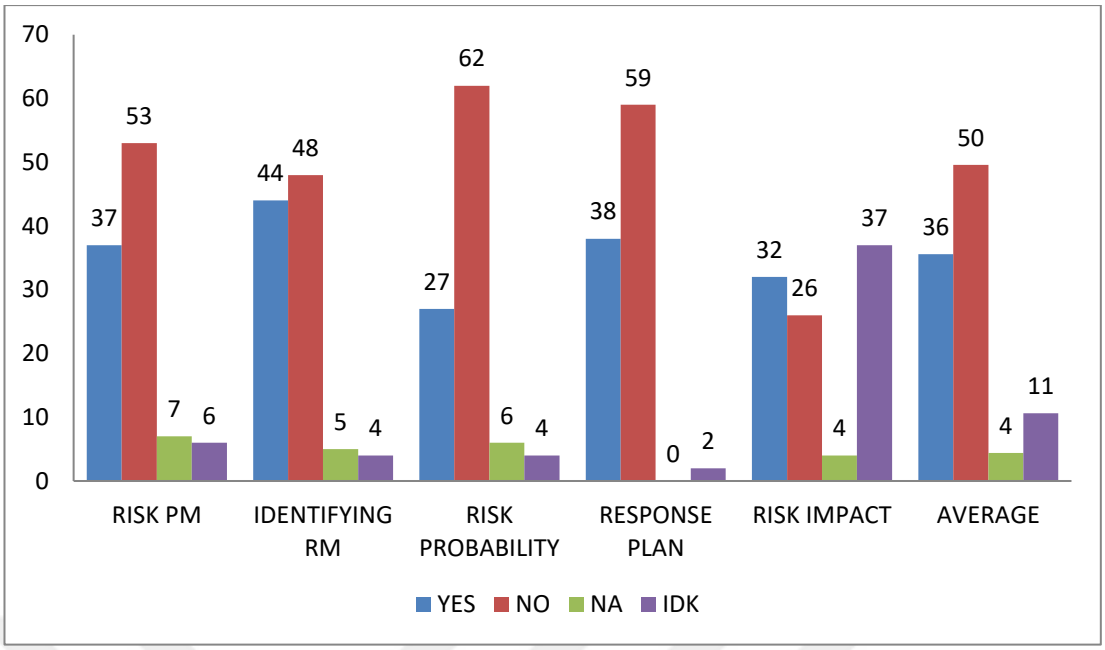

Figure 4.8: Construction Project Risk Management

Source: Questionnaire (2020)

From the above graph of risk management practice of the organization, majority of the respondents accounted for 53 implied the organization did not applied formal producer of risk management practice. Only 37 respondents agreed that the organization risk management applied. According to identification of risk management majority respondents 48 did not support for the organization identifying system.

Risk response plan and risk probability the majority of respondents 62 and 59 indicate that the organization is neither risk prioritized nor response planed respectively. Around 27 and 34 respondents are given yes this implies that the organization need more effort to develop or increase the risk management system.

Regarding 32 of the respondents assure risk impact analyses of the enterprise and respond yes while remaining respond opposite.

Generally from the above figure 4.11 in average 50 of the respondent indicates not aware about the risk management then it prove the necessary knowledge and awareness of construction Project risk management is very weak in the project and organization management members' by experience, training and graduated from higher education . Even though by Project management knowledge areas shows very weak and not practice the rest 36 respondent approves yes, 4 NA and 11(IDK) in

some of the organization construction project management activity it shows some practice of risk management.

4.3.9 Construction project procurement management

Procurement administration comprises for procedures of planning properties, facilities, standardizing document, preferred suppliers, document admiration process, trained staffs and subcontractor control.

Based on this, the study was providing relevant areas assessment questions and the response indicated as following figure 4.9.

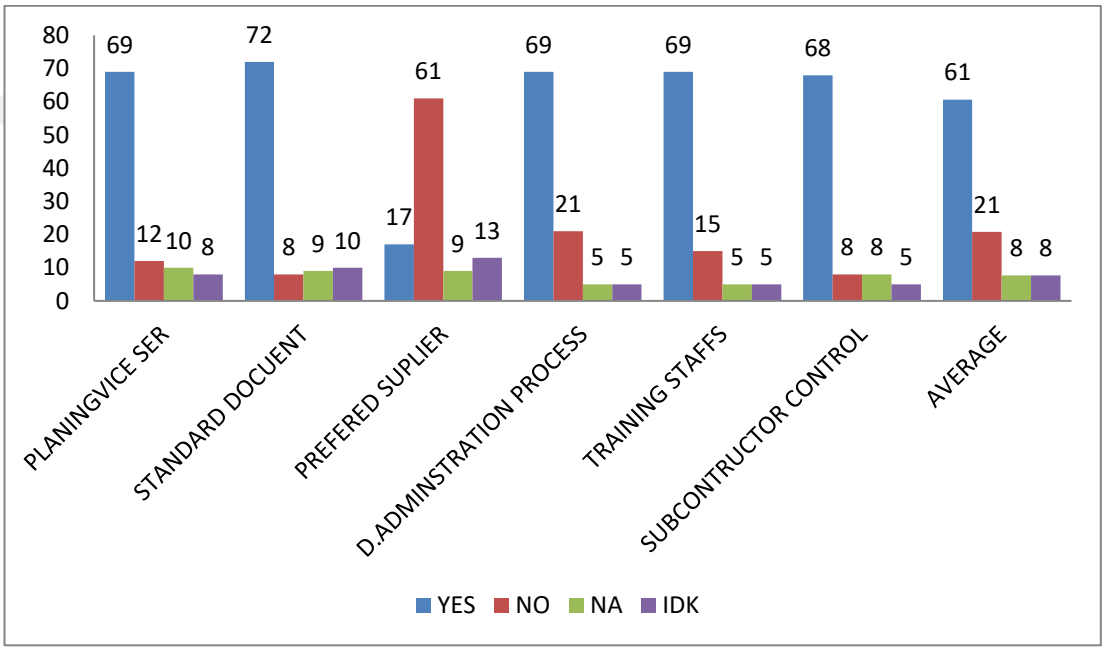

Figure 4.9: View of Respondents Regarding Project Procurement Management

Source: Questioner (2020)

In this regard, 69 of the respondents assure the enterprises apply planning service of goods practice while only 30 respondents respond deferent.

According to the question, the enterprise preferred supplier 61 respondents assumes that the organization has not preferred contractor but the enterprise chooses the qualified one.

However, as 72 of the respondents implied as a challenge the organization preferring standard documents. Regarding the question document administration process 69 of the respondents implied the enterprise use documented contract management practice. 69 of the respondent assure to exercise the organization procurement practice there are well-trained and qualified staff members.

As implied by 68 the organization procumbent management department actively follows and monitor activities in construction management and the subcontractors.

Generally the above graph though in average 61 of the respondents assure the organization have construction procurement documentation practice, but the rest 37 respondent shows there is still gap in documenting all procured construction products.

4.3.10 Construction project safety management

These parts are including over mechanisms to protect the accidents in the construction project. To keep the project safety the organization should flow the proper manner of preventing accidents from anywhere and considering constant training for the staffs.

Moreover, it includes safety planning, safety management planning, safety audit, hazard analysis; safety training and safety control. In this regard, the study provides related areas. Below the fig 4.10 implied as follow:

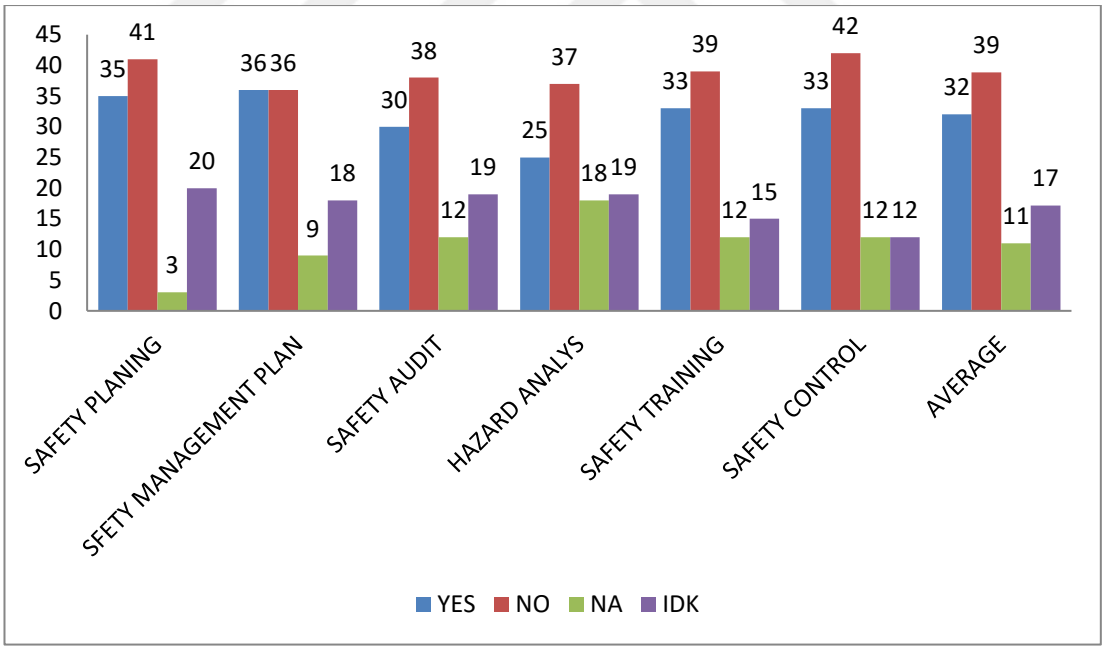

Figure 4.10: Respondents View Safety Management Practice of the Enterprise

Source: Questioner (2020)

The study were also assessed whether the organization have use inclusive safety planning, safety planning, safety, audit hazard analysis, safety training and safety control.

In this regard, 35 of the respondents implied yes which is the organization use inclusive safety planning where they engaged in project construction, while 64 of the respondents replied in opposes which is that the organization did not plan inclusive safety panning. Regarding to hazard analysis of the organization, though 25 implied as there organization doing hazard assessment, however majority of the respondents accounted for 37 implied the there is no hazard analysis practice in the majority of the projects doing by the organization. Respondents accounted for 42 and 38 respectively assure the enterprise did not apply safety controlling process and safety auditing.

In general, from the above average graph the study analyzed that, though 32 respondents assure that the organization use safety planning for some of the construction, however, the remaining massive respondents accounted for 39 indicate that the organization did not use safety plan for almost of the enterprise projects.

5. CONCLUSION AND RECOMMENDATION

5.1 Conclusion

The key concepts in this study were to measure construction project management experience in Ethiopian Somali design and supervision work enterprise (ESDSWE).

The study was focused the data collected from the professionals through the questionnaire that contributes on the project achievement SDSWE by primary method by using questioner and semi- structured interview and secondary data by using reports and organizational structure and plan SDSWE.

Mostly the study was measuring construction Project management knowledge areas under through evaluating several relate areas like Managements of the following: scope, time, cost, quality, HR, communication, risk, procurement and safety. Regarding to this major outcomes of summarized study as follow:

Under construction project, management process study areas 61 respondents indicate yes that show that the enterprise has high in construction project management.

According to the construction project scope management implied that, 58 of the respondents show yes then it indicates the necessary knowledge and responsiveness of construction Project scope management is still high in the project management members by experience, training and graduated from higher education in the management members by Project management knowledge areas in the same practice the awareness of SDSWE projects 41 respondents implied there were also challenges in detailed process of scope determination, and its control in some project construction which shows there were some defects in the company.

The finding regarding construction time management and its effect on construction management practice of the organization implied that, though 58 of respondents assured the enterprises time management was good, however the 36 implied there are also challenges to apply the necessary knowledge and awareness of construction Project time management in SDSWE projects.

The findings regarding cost management experience of the study enterprise, 61 of the respondent indicates the most SDSWE accomplished their projects based on in good controlling mechanisms of costs of projects, while the remaining 38 are not aware to construction project cost management knowledge area. The conclusion depend on the questioner respond and SDSWE 2017 semi-annual project performance report indicates the plan was to perform about 256.5 Million birr but the actual performance was only 132.56 million birr it shows 51.68% of the 4 selected projects semi -annual plan , therefore the researcher concludes even though about 61 of the respondent indicates aware to construction project cost management the actual performance of SDSWE projects from its plan indicates quit weak if the project delay from its plan the cost increases simultaneously when the time was extended.

SDSWE reports 2017 yearly performance of projects indicate was not enhance but it shows in 2017 year 51.68% perform its plan.

In the construction project, quality management majority of the respondent indicates in the study were lacks of value administration practice to the project management.

According to the above data, more than half of the respondents projects were not applied the necessary knowledge and awareness of construction Project quality management practice in their projects and some of the members were not have enough information/knowledge about project quality management. Therefore, the researcher concludes the awareness to construction project quality management was poor and the actual performance plans was very weak.

Based on the finding awareness of construction project human resource management though 65 of the respondent members of the projects have been tried to fulfill the necessary knowledge and experience construction project HRM and the rest 34 of the projects respondents not awarded to construction Project human resource management(HRM). Therefore researcher conclude as flows even though the majority of respondent says achievement of human resource knowledge area they are not well committed to implemented their awareness in practice in their projects.

Referring to the communication project management 53 respondent was agreed that the enterprise fulfilled the all necessary requirement and experience as per schedule. While 46 of the respondents respond opposite respond and mentioned that the enterprise does not fulfill the requirement of increasing of the communication project

management. Therefore the researcher concludes that there is gap of communication although the majority of respondent says aware to communication knowledge area.

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Therefore the researcher concludes that there is gap of communication although the majority of respondent says aware to communication knowledge area.

According to William R., Duncan (1996) defined that the Construction project risk management knowledge area are the procedures about classifying, evaluating and answering to project risks. It comprises increasing positive result and minimizing loses. When the researcher observed the respondents majority of them says the enterprise still did not make more efforts at the side of risk management comparing to the report in 2017 and 2020 Simi-annual report of the project performance indicate about 40% of plus failure or not accomplished for both risk and safety project managements. The cause of failure of the project plan risk and safety managements is due to lack of awareness and awarded respondents those who are executed in their projects.

According to procurement management it shows that 61 respondent have agreed that the company procurement process is good while the rest of the others respond opposite that indicate there is quit gap in this knowledge area.

In general, the Somali design and supervision work enterprise head office and project to average management construction project management knowledge areas about 61 persons respond yes from the 99 participants while the rest 38 respond not aware to construction project management knowledge area.

SDSWE projects performance report 2012 and 2020 indicated low and middle performance respectively therefore the researcher concluded that the SDSWE have high gap related to project management knowledge areas in its management and professional employees and their projects actual performance were influenced and failure due to lack of awareness in construction project management knowledge areas.

5.2 Recommendation

According to the above conclusions the performance of SDSWE projects and the awareness of construction project management have direct relation, therefore observing construction management knowledge area the researcher recommended as flows;

Since the performance and plan of their project were weak then the company have to introduce cost base projects by developing the construction project cost management knowledge area awareness in board members, head office management, project management and professional of the projects.

To manage the problems the researcher recommended that using comprehensive technique of software is better, for simplifying forecasting, observing and monitoring the project cost. The concentrated significant application or soft wares used in construction administration to governing and regulating total budget are as flows: excel and Ms. Project and majority of the study organization that achieving projects organizations are familiar with these software however there are also organization that didn't applied the method effectively and which affect the project performances.

SDSWE has to be responsive almost the best construction materials procurement competition, in order to buy the building elements in earlier of work and make constant schedule for the construction materials transportation procedure to the construction site for escaping delay of materials to site.

Even though respondents to construction project time management specifies awarded but the actual performance of the projects are very far from its time plan then SDSWE has to implement exercises the awareness of construction project time management and increasing of productivity as well as controlling of the management system in the project.

The company should employ more experienced expert to minimize the risk and to improve project quality management.

Since the majority of the respondents mention more weakness of the company in the some project construction, firms the company should have more attention over the construction project management execution process within the planed period

To standardize computers system in order the documentation process increase and each activity be easy achievable and understand able. The SDSWE has to introduce documentation software plans.

SDSWE had well awarded in the quality engagements constantly fulfillment and achieve development also to avoid the errors in the quality which may lead to the failures.

According to the majority of the provisional /experts 'recommendation they recommended in general that the company must have experience about the risk and minimize its effects and give training to the staffs to guide the construction procedure to avoid failures also increasing meeting is one of the best of quality project controlling manner.

In general, the assistant's recommendation was that the SDSWE has to improve the overall construction management knowledge area such as time, cost, quality, and risk and safety performance of projects and to make strong relationship or communication between the project and office of the company to aware construction project management knowledge areas.

SDSWE should have continuous meeting to increase their performance and many other machismos to improve the overall management system.

According to the average Construction project risk management 50 of the respondents indicates the company does not aware about the risk therefore the board members should be responsible and organize well trained, experienced and qualified managements members graduated from higher education institutes in order to keep project quality, time, cost and minimize the Construction project risk management as well as the overall ten project construction knowledge areas.

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APPENDIX:

In the interviewer or questionnaires are distributed for measuring of Project Management knowledge areas and procedures of actuality and organizing of construction projects generally in Ethiopia and particularly in Somali design supervision work enterprise (SDSWE) in particular. Hence, your assistance will contribute in providing effective research output and give information of the Project Management Development and Capability in construction firms.
Thank you

Part 1- General information

Direction: please fill in required evidence using the provided space to each.

1. Academic status
   A. First degree [ ]. B. Second degree or master [ ] C. Others [ ]

2. Experience of work
   A. less than 1 year [ ] B. 2-5 Years [ ] C. 5 – 8 Years [ ]
   D.10 and above years [ ]

3. Enterprise experience
   A. Under 1 year [ ]. B. Between 2-5 Years [ ]. C. Between 5 – 8Years [ ]
   D. 10 and above years [ ]

4. Grade of the enterprise? ……..
   A. Grade 1 [ ] B. Grade 2 [ ]. C. Grade-3[ ]. D. Other[ ]

5. Your enterprise concerning ISO
   A. ISO Certified [ ] B In process to certify ISO [ ] C. Not ISO Certified [ ]

Part II- Project management Knowledge areas practice questions

Direction
Please answer flowing question in the questionnaire based on your knowledge about your company's project management or in your enterprise, which you are working with.
Please choose the flowing and mark the space provided:
YES: select yes, if the question related to your project enterprise.
NO: if the question does not related or not practiced in your project of your enterprise or organization.
NA: not applicable if the question is not suitable in your project
IDK: (I don't know) if you have not any knowledge about it.

s/no	Questions	response				
	1 Construction project management	**YES**	**NO**	**NA**	**IDK**	

	process					
1.1	Does your enterprise aware increasing benefit and project requirement?					
1.2	Is your company giving help for the project to achieve development?					
1.3	Is your company use central office, which offers the management of the project support and facilitates activities in the project?					
1.4	Does your enterprise have any fixed procedure or approach for project management?					
1.5	Does your enterprise give for team training to the project management?					
1.6	Do the project managers in the project have knowledge base to project management?					
1.7	Does your enterprise in managing the project flows or abbeys the procedures and methods of the project management knowledge process.					
	2 Construction Project scope management					
2.1	Does your enterprise provide responsibility of the project scope and project management team?					
2.2	Does your enterprise have project management scope efforts?					
2.3	Are the scope efforts official?					
2.4	Does your enterprise use computer application in the project management scope procedures?					
2.5	Is the project scope management well defined?					
2.6	Does your enterprise have controlling and monitoring efforts in your project?					
2.7	Are there any inspect to insure scope of the work and any effort of work result revision for completion of the project?					
	3 Construction Project time management					
3.1	Is there any timetable/schedule preparation for project plan?					
3.2	Are there networked Scheduling methods such as, construction project management (CPM) using?					
3.3	Does the company prepared time plan for specific activities in the company?					
3.4	Does your enterprise use estimation duration and historical data schedule for activities					

3.5	Does the enterprise monitor progress of activities based on their time schedules					
3.6	Does the enterprise update constantly for its schedule?					
	4. Construction project cost Management					
4.1	Does your enterprise use official cost management procedure?					
4.2	Are there project cost breakdown estimation preparations in your enterprise?					
4.3	Is there budget categorized method which shows the resource?					
4.4	Is the budget updated regularly?					
4.5	Does your enterprise have any procedure to control and monitor the project cost?					
	5. Construction Project Quality Management					
5.1	Is there formal quality management procedure?					
5.2	Does your enterprise use quality assurance activities in the project?					
5.3	Does your project adopted quality audit?					
5.4	Does the total quality management is applied In your project?					
5.5	Is there quality management department or specialized in quality management?					
	6. Construction Project Human Resource Management					
6.1	Does your enterprise have human resource plan and achievement planning?					
6.2	Do project managers prepare organizational chart flow at project level?					
6.3	Are ability requirement, role and tasks defined for all project position?					
6.4	Is there training provide for project team members?					
	7. Construction Project Communication Management					
7.1	Are the communication statements analysing for performance of your project?					
7.2	Does you enterprise have a strategy plan to identify communication requirements?					
7.3	Does your enterprise have handling project document procedures or systems?					
7.4	Does your enterprise prepare the preparation of result performance report and give to the applicable stakeholders?					
7.5	Does your enterprise have key expectation strategy management for stakeholders?					
7.6	Are performance reports prepared and					

	provided to relevant stakeholder					
	8. Construction Project Risk Management					
8.1	Is there any formal for risk management in your project?					
8.2	Does your enterprise make any effort of classifying and documenting risks in the project?					
8.3	Are there any efforts of prioritizing risk impact factors like probability and urgently in your project?					
8.4	Are the risk response plan updates continuously?					
8.5	Is there budget contingency reserved for probable risk impact?					
	9. Construction Project Procurement Management					
9.1	Does your enterprise have planning of procurement service and goods needed to your project?					
9.2	Does your enterprise have standard documents?					
9.3	Does your enterprise use chosen supplier/ subcontractor or prequalify them?					
9.4	Does your enterprise have contract documentation management processes?					
9.5	Does your enterprise have trained staffs in contract procurement management?					
9.6	Does your enterprise have any process of subcontract control?					
	10. Construction Project safety Management					
10.1	Does your enterprise perform safety planning by using safety standards and requirement strategy?					
10.2	Does the safety management plan include Staffing, budget, Records, and Documentation Requirements?					
10.3	Is Safety audit done in your project?					
10.4	Is Hazard Analysis performed for activities of your project?					
10.5	Does your enterprise provide Safety training for workers?					
10.6	Is Safety control process implemented in your project?					

Recommendation of the experts form

This recommendation forms are distributed to get the strong and reliable recommendation of the company's project management knowledge areas such as project management process, Project scope management, Project time management, project cost Management, Project Quality Management, Project Human Resource Management, Project Communication Management, Project Risk management, Project Procurement management, Project safety Management.

Hence, your recommendation is important to provide effective information to develop the researcher's result findings on the ten-project construction knowledge area as well as the company.

Part 1- General information

Direction: please fill in required evidence using the provided space to each.

1. Gender _____
2. Academic status_____
3. Experience of work_____
4. Enterprise experience_____

Part 2- General information

Direction: please give your recommendation using the given space provided by observing the result finding / Interpretation and analyzing of the data in the 10 knowledge areas as shown in the attachments.

Construction project management knowledge areas	**Expert's recommendation**
1. Construction project management process	…… …… …… …… ……
2. Construction Project scope management	…… …… …… ……
3. Construction Project time management	…… …… …… ……

	…….
4. Construction project cost Management	…… …… …… …… ……
5. Construction Project Quality Management	…… …… …… …… ……
6. Construction Project Human Resource Management	…… …… …… …… ……
7. Construction Project Communication Management	…… …… …… …… ……
8. Construction Project Risk Management	…… …… …… …… ……
9. Construction Project Procurement Management	…… …… …… …… ……
10. Construction Project safety Management	…… …… …… …… ……

General recommendation	…… …… …… …… ……

RESUME

EDUCATION:

- Bachelor: 2015, Dire dawa university, institute of science and technology, civil engineering, Etthiopia
- Master : 2021, Istanbul gedik university, science and technology, engineering, engineering management, Turkey

PROFESSIONAL EXPERIENCE AND REWARDS:

- Project manager .(2015-2016) fafan and wangay bridge projects
- Chief engineer (2016-2017) in the police construction procurement and special service enterprise as well as the project manager of Karama asphalt in jigjiga Ethiopia.
- General Manager (2017-2018), general manager of police construction procurement and special service enterprise.
- General Manager of SDSWE in same year (2017-2018).