A FRAMEWORK FOR ENHANCING THE ORGANIZATIONAL PERFORMANCE OF LOCAL CONTRACTORS IN KENYA

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A Framework for Enhancing the Organizational Performance of Local Contractors in Kenya

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DECLARATION

This thesis is my original work and has not been presented for a degree in any other University:

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DEDICATION

This thesis is dedicated to my family; my beloved wife Sally, my two charismatic sons Leon Fanaka and Miggy Chawana, my lovely angel Masha Mwende, and my two sisters Tabby and Faith. Special dedication to my late mum Mary and late friend Saiva, may your spirits guide me on my next venture.

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LIST OF ACRONYMS

ACF	Africa Competition Forum
AMOS	Analysis of Moment Structures
ANOVA	Analysis of Variance
BORAQS	Board of Registration of Architects and Quantity Surveyors
CAQDAS	Computer-Assisted Qualitative Data Analysis
CAK	Competition Authority of Kenya
CAS	Complex-Adaptive Systems
CBK	Central Bank of Kenya
CCA	Canonical Correlation Analysis
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CMIN/Df	minimum discrepancy per degree of freedom (normed chi-square)
Df	Degree of freedom
EBK	Engineers Board of Kenya
EBTIDA	Earnings Before Interest, Taxes, Depreciation
FDI	Foreign Direct Investment
GATS	General Agreement on Trade in Services
GDP	Gross Domestic Product
GII	Global Innovation Index
GoF	Goodness of fit
GoK	Government of Kenya
GST	General Systems Theory
H&S	Health and Safety
IBM	International Business Machines Co.
ICT	Information Communication Technology
IFI	Incremental Fit Index
ILO	International Labour Organization
KNBS	Kenya National Bureau of Statistics
KPDA	Kenya Property Developers Association
KPI	Key Performance Indicators

LAPSSET	Lamu Port Southern Sudan and Ethiopia Transport corridor
LISREL	Linear Structural Relations
MBV	Market-Based View
MBO	Management by Objectives
MTMM	Multi-Trait Multi-Method
NACOSTI	National Commission For Science, Technology, and Innovation
NCA	National Construction Authority
OHS	Occupational Health and Safety
OP	Organizational performance
PI	Performance Indicator
PPE	Personal Protective Equipment
PPOA	Public Procurement and Oversight Authority
RBV	Resource-Based View
RFI	Relative Fit Index
RII	Relative Importance Index
RMSEA	Root Mean Square Error of Approximation
ROI	Return on Investment
SAS	Statistical Analysis System
SEM	Structural Equation Modelling
SPSS	Statistical Package for the Social Sciences
SRMR	Standardized Root Mean Square Residual
SWOT	Strength Weakness Opportunity Threat
TLI	Tucker-Lewis Index
UCLA	University of California, Los Angeles
UNCTAD	United Nations Conference on Trade and Development
VIF	Variance-inflating factor
WIPO	World Intellectual Property Organization

LIST OF CODES ADOPTED FOR THE STUDY VARIABLES

CODE	STUDY VARIABLE
PR	Profitability
CS	Client satisfaction
GR	Growth
TC	Technical capability
BE	Business efficiency
ES	Employee satisfaction
FS	Financial stability
QP	Quality of products
MC	Managerial capability
SP	Safety performance
OP	Organizational performance (overall)
ST	Strategic planning practices
PM	Performance measurement practices
QS	Quality of service
OS	Organizational structure of the firm
CI	Contractor's innovativeness
EP	Employee performance
CE	Clients' effectiveness
SE	Suppliers' effectiveness
CN	Competition
GS	Government support
DT	Determinants of Organizational performance (overall)

ABSTRACT

Foreign construction firms have increasingly dominated the Kenyan construction industry over the last couple of years. The main reason for the continued foreign dominance in the local construction industry has been attributed to poor organizational performance by the local contractors. Some of the weaknesses associated with local contractors include; poor workmanship, below-par management capability, deficient planning, inadequate mechanization, and project abandonment among others. Whilst it is generally agreed that the organizational performance of local contractors is insufficient, such a notion is arbitrary and most of the time based on anecdotal evidence. This study, therefore, sought to evaluate the organizational performance of local contractors, establish its determinants, and propose a framework for enhancing it, to ensure they compete favorably with their international counterparts. Reviewed literature established ten major dimensions of organizational performance and ten determinants drawn from both the internal and external environment of the contractor. Philosophically, this research was anchored on objectivism and positivism. While a quantitative research strategy was adopted, a survey research design was selected. Questionnaires were chosen as the data collection instruments. A sample size of 612 drawn from NCA1, NCA2, and NCA3 local contractors and registered consultants who had worked with these contractors in current or previous projects was adopted. Quantitative data was analyzed using descriptive statistics, bivariate correlations, multiple regression, and structural equation modeling. Qualitative data was analyzed thematically. Based on ten dimensions drawn from both financial and non-financial aspects, the overall level of organizational performance of local contractors in Kenya was established to have a mean of 6.374 when measured on a scale of 1 to 10. Such performance was described as suboptimal. The determinants which represent the environmment in which local contractors operate were found to have a mean of 6.468. Further results indicated there were significantly strong positive relationships between the determinants and dimensions of organizational performance. It was therefore concluded that the organizational performance of local contractors can be improved by enhancing the internal and external environment in which they operate. A framework for achieving such was formulated and validated. It was recommended that there was a need for local contractors to constantly evaluate their organizational performance regularly and continuously seek to improve their internal environment while at the same time adapting to the prevailing external environment.

Keywords: Determinants; Dimensions; Local Contractors; Organizational Performance; Structural Equation Modelling

CHAPTER ONE
INTRODUCTION

1.1 Background of the Problem

The main goals of most organizations include effectiveness, efficiency, and growth. Contractors are no exception. Due to the highly competitive nature of the construction industry, those who do not live up to these goals are destined to fail. Increased competition in recent years has been fuelled by globalization. International contractors can enter local markets with ease. While there may be a debate as to whether the entry of foreign contractors in developing countries has a net positive impact on local economies, based on international trade regulations, these contractors cannot be barred from doing business in developing countries. There is also no doubt that buying from local organizations promotes their growth and stability. Indeed, the ILO (2020) observes that local contractors hold the greatest potential for overall economic development since they minimize the outflow of financial resources from the country. However, consumers cannot just be compelled to procure local products amid cheaper and better-quality foreign products. Studies have also shown that the protection of local businesses ends up hurting them and the economy in the long run (Guarino, 2018). It is for these reasons that local contractors have no option but to improve their effectiveness and efficiency if they are to compete favorably with their foreign counterparts. This research seeks to provide information that can be used to improve the organizational performance of local contractors and give them a competitive advantage over foreign contractors. This can result in a scenario where clients who demand quality at competitive prices do not automatically prefer foreign contractors. The local contractors can also be able to grow and develop international competitiveness.

Construction is among the oldest industries. The industry is of critical importance to any economy. It not only creates employment but is also critical in ensuring other sectors of the economy function due to the need for built facilities. In recent years, the Kenyan construction industry has experienced a boom. Some of the notable projects funded by the government include Lamu Port Southern Sudan and Ethiopia Transport

corridor (LAPSSET); 5,538MW of additional electricity generation; Standard Gauge Railway; Police Housing; Konza Technopolis; National Optic Fibre Backbone Infrastructure (NoFBI) Phase II; Kenya Petroleum Technical Assistance Project (KEPTAP); among others. In a policy statement, the infrastructure budgetary allocations for financial years 2017/18, 2018/19, and 2019/20 have been Kshs 509.4 billion, Kshs 527.9 billion, and Kshs 480.2 billion respectively (Government of Kenya, 2016). The boom in the construction sector is set to continue in the foreseeable future due to several proposed mega projects and the current government's agenda of providing affordable housing to Kenyans. In the recent past, however, most of these major projects have been awarded to foreign firms. There is an increasing concern that the boom is more beneficial to foreign contractors at the expense of local contractors. Foreign construction firms have increasingly dominated the Kenyan construction industry over the last couple of years (Nguku, 2015). As reported by Deloitte (2016), the influx of Chinese firms and workers has caused tension among stakeholders in the construction industry around the country.

One of the main reasons for the continued foreign dominance in the local construction industries is the poor performance of the local contractors. Mwangi (2016) points out that the award of mega construction contracts in less developed countries is skewed in favor of foreign contractors at the expense of their local counterparts since the international firms are more advanced technically, financially, and managerially. In Nigeria, a study by Olubunmi and Olukanyin (2015) revealed that foreign contractors enjoy an upper hand in project execution due to technological advancement, high quality of work, and financial assistance from their countries of origin. In Tanzania, local contractors are said to lack the required skills, experience and working capital to undertake complex projects and thus large overseas companies have dominated the local construction industry (Tesha et al., 2017). In Ghana, Amoah (2018) and Dadzie and Yalley (2018) reported that local contractors were out-competed by foreign contractors in the execution of major projects due to the underdevelopment of the former. All these deficiencies reported regarding local contractors are attributes of poor organizational performance among local contractors.

In practice, attempts have been made to enhance the organizational performance of local contractors in developing countries. According to Udochukwu et al. (2017), the capacity of local contractors can be upgraded and improved through technology transfer from foreign contractors. Indeed Gathu (2018) supports this assertion by pointing out that the formation of joint ventures (JVs) between foreign and local contractors can promote the transfer of technology related to construction. However, according to Oti-sarpong and Leiringer (2016), the hiring of foreign contractors to execute local projects due to local contractors' lack of capability can result in a vicious cycle of technology gaps between local contractors and foreign contractors which in the end can promote an unhealthy dependence on the latter by developing countries in their quest to deliver major infrastructure projects. In a bid to prevent the continued dependence on foreign contractors, the United Nations proposed international joint ventures (IJVs) as likely means for technology transfer into developing countries (UNCTD, 2014). The World Bank undertook several infrastructure projects in developing countries using this approach between the 1980s and 1990s to transfer technology to LCs (Oti-sarpong & Leiringer, 2016). This endeavor did not bear any meaningful fruits (Gathu, 2018). This clearly shows that the continued award of mega projects to FCs in the hope that they will transfer technology to local contractors enabling them to undertake future projects on their own is faulty.

1.2 Statement of the problem

The organizational performance of local contractors in Kenya remains insufficient. Local contractors in Kenya exhibit the following shortcomings; managerial incompetence at all levels of the firm, inefficiency, inadequate staffing, ineffective procurement management practices, lack of access to finance, poor alliances, lack of motivation, insufficient coordination, poor planning, inadequate supervision, and lack of adequate engagement with regulatory stakeholders (Munene, 2017). Waweru and Omwenga (2015) also found the following weaknesses in Kenyan local contractors; internal and external inefficiencies, reduced profitability and growth, minimal usage of technology, lack of cohesion and fluidity in organizational teams, lack of strategic roadmaps, and weak management structures. Simiyu (2018) pointed out that local contractors in Kenya lacked the adequate capacity to deliver construction projects

effectively and efficiently. Wainaina (2020) observed 73% of stakeholders in the construction industry cited low coordination levels, lack of enforcement of regulations and inadequate qualified workers among local contractors. Whilst it is generally agreed that the organizational performance of local contractors is insufficient, such notion is arbitrary and most of the times based on anecdotal evidence.

The poor organizational performance has resulted in over-reliance on foreign contractors in the execution of mega projects. According to Nguku (2015), most mega construction projects, recently completed and others ongoing, have been awarded to foreign contractors. Simiyu (2018) noted that there was an over-reliance on foreign contractors in cases of massive construction projects. Wainaina (2020) also observed that only two percent (2%) of major construction projects are awarded to local contractors with the remaining ninety-eight percent (98%) being awarded to foreign contractors. Local contractors have continued to miss out on major construction projects being financed by the government, private investors, foreign governments, and international financial institutions. It is in the public domain that the following mega projects have been awarded to foreign contractors; Mombasa-Nairobi SGR, Nairobi-Naivasha SGR, Lamu Port, Mombasa Port Development Project, Lake Turkana Wind Power Project, Arror and Kimwarer Dams among other projects awarded or completed in the recent past.

In practice, attempts have been made to improve the performance of local contractors here in Kenya. The National Construction Authority of Kenya (NCA) published guidelines requiring foreign contractors to collaborate with their local counterparts to a tune of thirty percent of the project value (NCA, 2012). This move was aimed not only at increasing the volume of work being handled by local contractors, but also improving technology transfer from foreign to local construction firms. However, previous studies have already established that such attempts to transfer technology via international joint ventures have not been successful (Rwelamila et al., 2013). This has mostly been blamed on inefficiencies within the internal operations and structures of local contractors (Bakar & Tufail, 2012).

Previous studies have also made attempts to better the situation befalling local contractors. While some studies such as Chonge, Mbiti and Gwaya (2016) manage to describe the overall performance of local contractors in project execution, they fall short in discussing the performance of the local contractors at a corporate level. Most studies carried out concerning the issue of performance has been at the project level (Gichunge, 2000; Kibuchi, 2012; Kihoro & Waiganjo, 2015; Kithinji & Kamaara, 2017; Mbiti, 2017; Ogutu & Muturi, 2017; Talukhaba, 1999; Wafula, 2017; and Wanjau, 2015). Attempts to solve the problem of poor performance at the project level rather than firm-level could be likened to treating the symptoms rather than the root cause. Other researchers have tackled the problem at the firm level but instead of a holistic approach, they have adopted unidimensional approaches (K'Obonyo & Arasa, 2012; Waweru & Omwenga, 2015). Any attempt that provides a partial solution while holding other problems constant is an exercise in futility. This is because all operations of an organization, both internally and externally are interlinked. For example, attempts to provide solutions to the financial aspects of an organization end up being unsuccessful since the non-financial aspects also have an impact on the financial aspect.

While in practice attempts have been made to distinguish Construction Project Management from general management, both are guided by the body of theory of management. This research identifies two weaknesses of the theory of management. Firstly, the body of the theory of management is very diverse and in some instances contradictory. For example, while classical theorists focused on the physical and economic needs of workers, neoclassical theorists emphasized employees' sociological welfare (Őnday, 2016). Though the management thought has evolved to accommodate dynamism in current times, some aspects of the traditional approach remain relevant. Secondly, all management theories are based on products and production. While it could be argued that projects fall under the former and project management falls under the latter, this assertion is misleading due to the very nature of the construction activities. While there is some similarity, construction companies are significantly different from other companies due to the nature of their business. The theory of management, in general, does not, therefore, depict a true picture. The

only way the theory is applicable is by extracting relevant principles from various aspects of the body of the theory of management and apply to the construction setup. It is for this reason that this study seeks to discuss multiple facets of the theory of management and select principles (concepts and constructs) which are most relevant to construction companies.

1.3 Aim and Objectives of the study

This study aims to develop *a framework for enhancing the organizational performance of local contractors in Kenya*. The adoption of such a framework would create the ideal situation whereby local contractors can compete favorably with their international counterparts both effectively and efficiently. To achieve the aim of the study, it is important to not only evaluate the current level of performance but also to understand the critical factors influencing such performance. The specific objectives therefore include;

1. To assess the level of organizational performance of Kenyan local contractors using a multidimensional approach.
2. To evaluate the determinants of organizational performance of local contractors in the construction industry of Kenya.
3. To establish the effect of the determinants on the organizational performance of Kenyan local contractors
4. To formulate a framework for enhancing the organizational performance of local contractors.

1.4 Research Hypothesis

It was hypothesized that there was a statistically significant relationship between organizational performance and its determinants. A multidimensional approach was used to evaluate the organizational performance of Kenyan local contractors. This meant that there were multiple criterion variables. A statistical (multivariate regression) model for testing the research hypothesis may be expressed as follows;

$$y_{ik} = \alpha_k + \sum_{i=1}^{n} (\beta_{jk} x_{ij}) + \varepsilon_{ik}$$

Where:

- y_{ik} is the k^{th} criterion variable (dimensions of organizational performance) for the i^{th} observation;
- α_k is the regression intercept for the k^{th} criterion variable;
- β_{jk} is the j^{th} predictor variable's (x_j) regression slope for the k^{th} criterion variable (y_k);
- x_{ij} is the j^{th} predictor variable (determinants of organizational performance) for the i^{th} observation;
- ε_{ik} is the error of fit for the k^{th} criterion variable in the i^{th} observation.

The criterion variables (y_k) in the equation are; profitability, client satisfaction, growth, technical capability, business efficiency, employee satisfaction, financial stability, quality, managerial capability, and safety performance.

The predictor variables (x_j) in the equation are; contractor's strategic planning, performance measurement, quality of service, organizational structure of the firm, contractor's innovativeness, employee performance, clients' effectiveness, suppliers' effectiveness, competition, and government support

Null Hypothesis (H_0): $\beta_{jk} = 0$ for all relationship coefficients of x_j. This means that predictor variables have no effect on the dimensions of organizational performance.

Alternate Hypothesis (H_1): $\beta_{jk} \neq 0$ for at least one of the relationship coefficients of x_j. This implies that at least one of the predictor variables affects the dimensions of organizational performance.

1.5 Significance of the Study

Most of the research undertaken in the construction industry of Kenya concerning the subject of performance has either been about individual projects or labor within these projects. A lot of emphasis has been laid on the aspects of time, cost, and quality of work in construction projects. Little research has been done concerning the organizational performance of contractors. In the little research that has been done, the majority of the studies have considered only one dimension of measuring

organizational performance, the financial perspective. Limited research has been done about the subject of organizational performance of Kenyan contractors and how it has been affected by the foreign dominance of the local construction industry. Such dominance is fueled by two main factors; the perceived poor organizational performance of local contractors, and increasing globalization. This research is therefore timely. It is not only multidimensional, capturing both financial and non-financial aspects of measuring organizational performance, but also incorporates the aspect of competition from foreign contractors.

By adopting a multidimensional approach, the subject area of organizational performance was found to be very diverse. No single theory was found adequate to address the subject of organization and its performance. Theory triangulation was therefore adopted, drawing paradigms from both natural and social sciences; biology, performance studies, economics, and sociology. This research urges that an organization and its performance be viewed from multiple perspectives. It is only through such a position that we could understand the relationships between the many determinants and dimensions of organizational performance.

1.6 Justification of the Study

The issue of competition between foreign and local contractors is very political. Bills have been proposed in parliament to protect local contractors by limiting the volume of construction work undertaken by foreign firms. This research promotes the idea of a rational debate informed by facts rather than an emotional debate fueled by hate for foreign firms. The economy of any country very much depends on the performance of its industries. Improved organizational performance of local contractors promotes the economy not only through increased tax remittances but also by creating the required infrastructure for other sectors of the economy such as transport, tourism, and agriculture among others. The perception that ‘better’ cannot be found locally can only change if local contractors can perform just like their foreign counterparts. Improved stability of local contractors will translate to improved performance of construction projects to the benefit of clients. Their projects will be completed on time, within budget, and to the desired quality.

The government plays the role of enacting legislation, formulating policies, and providing incentives to private investors. The findings of this research will inform the government on the direction it should take in its law-making concerning the protection of local companies involved in the construction sector. Government agencies such as the NCA will get valuable data to enable them to formulate policies that promote fair competition between local and foreign contractors. The government will also be informed on how to provide incentives aimed at bringing equity in the market share. One difference between local and international firms is that for the former, profits realized from construction projects are mostly re-invested in the local economy while the latter will mostly invest in their mother countries. This means that the increased growth and sustainability of local contractors has a positive impact on the general Kenyan economy.

1.7 Scope of the Study

1.7.1 Geographical Scope

This study was based on the Kenyan construction industry. The study focused on NCA1, NCA2, and NCA3 contractors countrywide. In these three categories, it was expected that they had well-established systems which allowed their organizational performance to be evaluated.

1.7.2 Theoretical Scope

The theoretical framework of this study was guided by five main theories namely; organizational theory, theory of performance, evolutionary theory, theory of the firm, and theory of competitive advantage. Some of the key concepts from these theories which guided the research include; effectiveness, efficiency, productivity, performance, natural selection, struggle for existence, environment, growth, constraints, capacity protection, and the threat of extinction. The variables of the study included; Profitability, Client satisfaction, Growth, Technical capability, Business efficiency, Employee satisfaction, Financial stability, Quality, Managerial capability, Safety Performance, Contractor's strategic planning, Performance measurement, Quality of service, Organizational structure of the firm, Contractor's innovativeness,

Employee performance, Clients' support, Suppliers' effectiveness, Competition and Government support.

1.7.3 Methodological Scope

This research adopted a quantitative research strategy and a survey research design. Data was collected by the use of questionnaires. The main reason for choosing the survey was to ensure the generalizability of results. Quantitative data was analyzed descriptively, formulation of correlations and regression of variables using various statistical tools.

1.8 Assumptions of the Study

Assumptions relate to statements or "things" that are taken to be true, mostly temporarily for the research. Statistical assumptions have been explained in chapter three. This study makes the following assumptions about theories and methods:

- ***Theoretical assumption;*** enhanced organizational performance of local contractors is beneficial to the Kenyan construction industry
- ***Ontological assumption;*** organizational performance and its determinants is observable and measurable. There is a single defined reality for these study constructs which if measured, will be visible to its observers.
- ***Epistemological assumption;*** acquisition of knowledge regarding organizational performance and its determinants is an objective and reliable process.
- ***Methodological assumptions;*** a quantitative strategy is the only acceptable method of understanding the relationship between organizational performance and its determinants. Adoption of a 20-input construct model is adequate to describe the organizational performance and its determinants in the context of local contractors

Other general assumptions include;

(1) The main goal of the organization is the maximization of profit and growth. This means that the organization is not only interested in the short term but also the long-term success within the industry.

(2) The needs of the organization outweigh those of individuals within the organization. This means that any decisions taken by the company leadership are for the benefit of the firm but not a few individuals.
(3) This research posits that if the firm is not effective and efficient at a corporate level, good performance in projects will not solve its ultimate problems. It solves the problem in short term. This is because while the overall performance in projects is improved, organizational inefficiencies will always manifest themselves through poor project performance in the long run.

1.9 Study organization

This study has been organized into seven chapters: (1) Introduction; (2) Literature Review; (3) Research Methodology; (4) Data Analysis and Interpretation; (5) Discussion of Findings; (6) A Framework for Enhancing Organizational Performance of Local Contractors; (7) Conclusions and Recommendations. The contents of these chapters have been elaborated as follows.

Chapter one presents the problem and its setting in the background and statement of the problem. It also highlights both the research objectives and hypothesis. The significance of the study and its justification are also provided. Other items discussed in this chapter are; scope of the study, assumption of the study, study organization, and conclusion.

Chapter two reviews literature with relation to the concept of organizational performance, the evolution of organizational performance, measurement of organizational performance, and determinants of organizational performance. Related theories have been explored and key concepts from such theories extracted. Also covered in this chapter are; research gap, conceptual framework, conceptualization, and operationalization of variables.

Chapter three describes the methodology adopted to not only measure but to evaluate the relationships between the variables identified in the previous chapter. Presented in this chapter are; philosophical underpinnings, research strategy, and design adopted, population targeted, sampling techniques, methods used to collect, analyze

and present data. Issues to do with validity, reliability, generalizability, and ethical considerations have also been outlined in this chapter.

Chapter four describes the response to the research instruments (response rates, adequacy of yielded sample, margin of error, missing values, and outliers); reliability tests; common method bias tests; statistical comparison between the two data sets; testing statistical assumptions; remedies for statistical assumption violations; and demographic profiles of both contractors and consultants. The chapter is mainly dedicated to the analysis of collected data to achieve the specific study objectives. Data for the first two objectives has been analyzed descriptively. The levels of both dimensions and determinants have been established and discussed. Qualitative data has been analyzed thematically.

Chapter five presents a discussion on the results found in chapter four. Such discussion has been done as per the objectives. The first section discusses the established level of organizational performance of local contractors in Kenya. The second section discusses the determinants of organizational performance. The third section is dedicated to discussing the established relationships between determinants and dimensions of organizational performance while the last section provides a discussion regarding the developed model for improving the organizational performance of Kenyan contractors.

Chapter six presents the proposed framework for enhancing the organizational performance of local contractors. The first part of the framework presents a detailed breakdown of how to assess the current level of organizational performance while the second part, which also incorporates a summarized version of the first part, presents the processes to be undertaken to achieve enhanced organizational performance. The following details regarding the framework have been included in this chapter; its formulation, underlying principles, validation, and benefits.

Chapter seven takes a reflection of the research journey from the start to this point by providing a summary of the entire research. The conclusions made from this study have also been presented. The contribution of the research has been discussed in two parts; philosophical contribution and contribution to knowledge. Also presented in

this chapter are; research implications, limitations and recommendations of the study, and areas of further research.

1.10 Chapter Summary

This chapter laid the foundations of the research. The research problem and its setting were discussed. Four specific objectives were found adequate to solve the identified problem. It was hypothesized that the listed determinants of organizational performance had an effect on the level of organizational performance across the selected dimensions. A definition of all the study variables was provided. This research was justified politically, economically, socially, technologically, environmentally, and legally. The significance of this study was seen in its uniqueness and timeliness. The study's contribution to knowledge has been presented in the last chapter. The scope of the study was stated theoretically, geographically, and methodologically. The underlying assumptions of the study were also provided in this chapter. It is based on this solid foundation that the research can now proceed to the next phase which is a review of relevant literature.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter reviews literature with relation to the concept of organizational performance, the evolution of organizational performance, measurement of organizational performance, determinants of organizational performance, major studies in the area, and existing models of evaluating or improving organizational performance. Related theories have been discussed and key concepts from such theories extracted. Also covered in this chapter are; research gap, conceptual framework, conceptualization, and operationalization of variables.

2.2 Organizational Performance

2.2.1 The Concept of an Organization

Organizations play an important role in everybody's life and thus when they are successful; they are a key ingredient in the development of nations. It is for this reason that most economists consider institutions and organizations as engines that drive social, economic, and political progress (Gavrea et al., 2011). An organization is a social unit of individuals which is structured and managed to meet a certain need or pursue collective goals. An organization relies on the concept of synergy where a group is capable of achieving more than the sum of the individual efforts. Aldrich and Ruef (2006) pointed out that organizations are not just socially constructed systems of human activity but are also goal-oriented and boundary maintaining. It is not a random group of people brought together by chance, but rather a formally and consciously established entity that is designed to attain some goals that the individual members wouldn't achieve by themselves (Miles, 2012). McLean (2005) describes it as a structure through which a collection of individuals cooperate systematically to undertake business. Ferdous (2016) however opined that organizations are neither structures nor set of plans and processes, but rather a group of people whose affiliations lie to each other and interrelate to execute vital roles

There exists a symbiotic relationship between organizations and the environments in which they exist. They both affect each other, either positively or negatively. Actions

taken by the organization affect the environment. The vice versa is true. However, the environment tends to have a higher effect on an organization than the other way around. Edwards et al. (2014) observed that organizations are limited to influencing the specific industry in which they operate. However, other industries can wield influence on an organization. According to Edwards et al. (2014), it is important to understand an organization's environment because it is not only a source of resources but also opportunities and threats.

2.2.2 The Concept of Performance

The concept of performance has its origins in the world of sports and is currently incorporated in virtually all economic sectors and other aspects of life. Performance, in general, is concerned with the relationship between the desired objective and the achieved result. Indeed, Criveanu and Elena-Iuliana (2016) associate performance with reaching targeted objectives. Individuals or subjects can register progress resulting from efforts aiming to achieve or even overcome established goals (Pintea & Achim, 2010). Kaplan and Norton (1992) described performance as a set of financial and non-financial indicators which define the extent to which objectives and results have been achieved. Folan et al. (2015) assert that performance is governed by its relevance to its environmental context. Didier (2002) defines performance as the achievement of given goals in the convergence of a firm's orientation. He argues that performance is not just about achieving an outcome, but rather a positive outcome matching set objectives. Figure 2.1 below illustrates the concept of performance as perceived by Grüning (2002).

From the foregoing, it is clear that there is no agreed standard definition of performance. Though Samsonowa (2012) tries to find a common ground by pointing out that the concepts of effectiveness and efficiency are embedded in almost all definitions of performance, there is also no agreed measures of evaluating these two concepts. This means performance is perceived and evaluated differently from one organization to the other. Hauber (2002) asserted that performance isn't an absolute but rather a relative measure of success. This means that it is important for performance levels to be compared at different points in time.

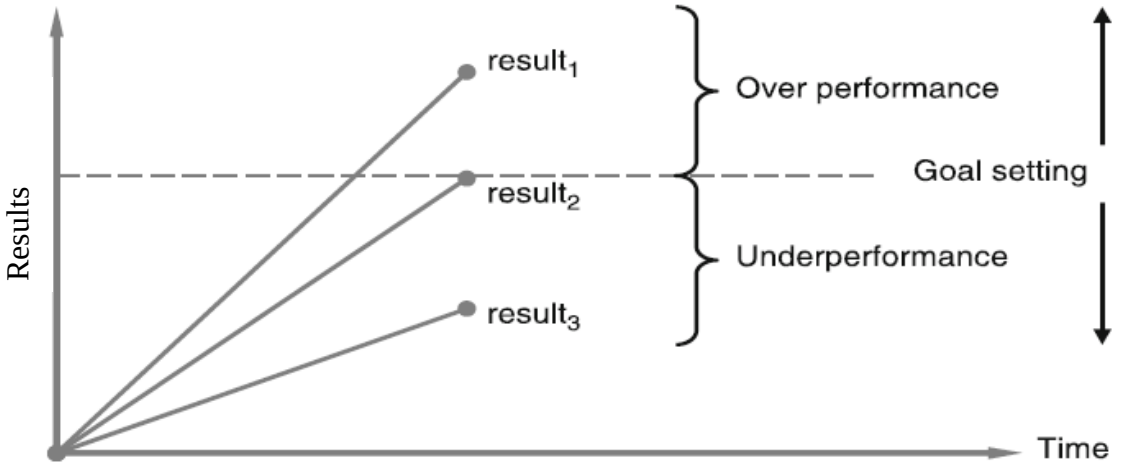

Figure 2.1: Definition of Performance
Source: (Grüning, 2002)

Performance and the dimension of scale are interrelated quantitatively in that the former is quantified in various dimensions (Jenatabadi, 2015). While performance level can be expressed as absolute values, it can also be expressed in terms of percentages in a way that is easily understood by internal and external stakeholders.

2.2.3 The Concept of Organizational Performance

Every organization has a set of objectives from inception, which are constantly reviewed as the business grows in the dynamics of its environment. Organizational performance is arguably the most important criteria for measuring the success or failure of a firm. Singh et al. (2016) describe it as 'a central outcome variable of interest'. It has been defined as the extent to which an organization achieves its objectives or goals using a minimum amount of resources (Gavrea et al., 2011). Criveanu and Elena-Iuliana (2016) point out that the concept of organizational performance is mystified in notions such as effectiveness, efficiency, productivity, earning capacity, economy, competitiveness, profitability, among others.

Organizational performance depends on many factors. Gavrea et al. (2011) categorized the variables affecting organizational performance into two: (i) external factors which include customers, competitors, and suppliers; (ii) internal factors which include structure, leadership, strategy, employees, performance measurement, quality, information technology, innovation, and corporate governance. It is therefore

of critical importance that a firm's management anticipates how each of these factors is going to affect the company.

2.2.4 Evolution of Organizational Performance

The concept of organizational performance measurement has evolved over the years. According to Jenatabadi (2015), the history of organizational performance can be discussed in five phases. During the 1960s, Etzioni (1960) believed that good organizational performance could only be realized through frequent assessments to ascertain whether or not organizations achieved their set goals and objectives. However, the number of resources needed to achieve these objectives was not taken into consideration. Chandler (1962) and Thompson (1967) argued that the ultimate organization performance criterion was its growth and long-term survival. The underlying similarity between these three researchers was their focus on 'effectiveness', the company's aim to realize set objectives. Research by Lawrence and Lorsch (1969) provided the concept of organizational performance with another dimension, 'relevancy', which was deemed to be the measure of client satisfaction. Lorsch (1970) introduced a new way of measuring organizational performance which involved analyzing the relationship between the organization, its environment, and its employees. The firm was considered to be successful if there was a good relationship between the company and its environment while maintaining employee satisfaction.

It is in the 1970s when the aspect of resource utilization during the attainment of goals was introduced. According to Lupton (1977), effective organizational performance was characterized by high levels of productivity rate, satisfaction and employee motivation, and low levels of costs, turnover, and labor unrest. Katz and Kahn (1978) argued that both 'effectiveness' and 'efficiency' (ration of output to input) were vital components of overall organizational performance. It is evident from the foregoing that the three most critical dimensions of organizational performance were 'effectiveness,' 'efficiency,' and 'relevancy'.

In the 1980s, performance was measured as the extent to which organizations, being social systems, could not only consider the ends but also the means (Robbins, 1987). Organizational performance was viewed as an indication of the organizational manner

in which it was performing effectively in its attempt to achieve its goals successfully (Cherrington, 1989).

During the 1990s, focus shifted towards the effectiveness and efficiency of the employee. Adam (1994) considered organizational performance to be heavily reliant on the performance quality of employees. He argued that for any organization to perform highly, there was a need for regular training of employees while exposing them to up-to-date technology and skills. This would ultimately improve the quality of organizational performance. On their part, Harrison and Freeman (1999) argued that a high-performing organization was that which kept the demands of their stakeholders satisfied. Such stakeholders included customers, shareholders, and employees. Such arguments supported the earlier raised dimension of 'relevancy'.

Recently in the 2000s, organizational performance revolved mostly around the capability of a firm to efficiently deploy available resources in achieving accomplishments that are consistent with the organization's set objectives while maintaining relevance to its users (Peterson et al., 2003). Such a definition seems to put similar emphasis on the three main dimensions, 'efficiency,' 'effectiveness,' and 'relevancy'.

Cornerstone Learning (2017), an international performance and leadership consulting organization, has made an attempt to analyze the evolution of organizational performance based on a six-point criterion. This has been presented on Table 2.1. They argue that companies of today should be employee-led and leader-supported. This means all the employees should be adequately trained and equipped to lead in every activity they are engaged in.

Table 2.1: Evolution of Organizational Performance

	Industrial Age	**1970s–1990s**	**2000s - Today**	
What's important	The Company	The Process	The Customer and the People	Network of Teams
Focus	Company Power	Operational Efficiency, Financial and	Agility, Collaboration and Change	Disruptive Thinking and Sustainability

	Industrial Age	1970s–1990s	2000s - Today	
		Quality Engineering		
Motivation	Company Directive	Process-Management by Objectives	Vision, Mission and Purpose	Purpose, empowerment and Impact
Examples	Rockfeller Carnege Ford	Jack Welch Peter Drucker Toyota	Apple Starbucks Netflix	Google Uber Airbnb
Accountability	Company Executive Driven	Manager and Process Driven	Employee-led Leader Supported Organization Enabled	Purpose-Driven Employee-led
Drivers	The What	The How	The Why	The Why

Source: (Cornerstone Learning, 2017)

2.3 Measurement of Organizational Performance

While performance can be measured both qualitatively and quantitatively, it is the latter that gives it more meaning and makes it easier for stakeholders to understand. Indeed, Singh et al. (2016) assert that quantitative expression of performance goals is probably the only way to make them meaningful. Qualitatively, performance can be measured in terms of the nature of actions taken by the firm in its attempt to accomplish its objectives. Quantitatively, performance levels can be measured in terms of percentages or absolute values.

Generally, measurement of organizational performance can be achieved by establishing organizational performance indicators. Such indicators can broadly be categorized into financial and non-financial. However, based on the Balanced Scorecard concept developed by Kaplan and Norton (1993) organizational performance can be measured based on four perspectives: (i) financial; (ii) customer; (iii) internal business; and (iv) learning and growth. Byremo (2015) proposes a 3-point approach: (i) financial and market performance; (ii) operational performance; and (iii) employee attitude and behavior.

The following are some of the indicators highlighted by different researchers: Profitability; Return on capital employed; Return on value added; Interest cover; Ratio

of value added; Repeat business; Customer/Client satisfaction; People; Environment; Schedule performance; Cost performance; Safety; Labour efficiency; Rework; Training; Planning effectiveness; Growth; Stability; Market share; Development; Technological capability; Business efficiency; Informatization; Organization competency; Employee satisfaction; Environment impact; Cash flow; Reliability; Internal business; Financial stability; Financial status; Credit rating; Quality; Technical ability; Management capability; Health and safety; Reputation; Innovation; Efficiency; Effectiveness; Productivity and Employee efficiency (DETR, 2000; Yu, Kim, Jung, & Chin, 2007; Wang, El_Gafy, & Zha, 2010; Horta, Camanho, & Costa, 2010; El-Mashaleh, 2003; El-Mashaleh, Minchin, & O'Brien, 2007; Adhiprasangga, Sari, Putra, & Java, 2016; Schermerhorn, Hunt, Osborn, & Osborn, 2004; Byremo, 2015; Department of Trade and Industry, 2002; Nudurupati, Arshad, & Turner, 2007; Draghici et al 2014; Ramirez et al 2004; Alarcon et al. 2001; Pounder, 1999; Puri & Tiwari, 2014; Haddadi & Yaghoobi, 2014; Kaganski, Majak, Karjust, & Toompalu, 2017). A list of these factors together with their respective sources has been listed in Appendix 7.

Combs et al. (2005) pointed out that although very relevant, research into organizational performance suffers from several deficiencies including the selection of indicators based on convenience, lack of consensus, and little consideration of its multidimensionality. Indeed Glick et al. (2005) noted that most studies measure organizational performance using a single indicator, even while admitting its multidimensionality. Richard et al. (2009) advise that any researcher should select the most relevant dimensions and judge the outcome of such choices. It is for this reason that, out of the numerous factors established, the researcher identified ten (10) dimensions of organizational performance to be considered in this study. The rationale behind the selection of these ten dimensions in this study lies within three premises; (i) the need to incorporate both financial and non-financial aspects of organizational performance, (ii) compliance to the Balanced Scorecard concept developed by Kaplan and Norton (1993) which considers four perspectives of organizational performance i.e. financial, customer, internal business, and learning and growth, and (iii) compliance to the 3-point approach advocated by Byremo (2015) which recognizes

financial and market performance, operational performance, and employee attitude and behavior. Other considerations included significance as evaluated in numerous studies, the frequency with which they have been studied, and relevance to contractors as established in previous research.

2.3.1 Profitability

Profitability has traditionally been the most common way of measuring the performance of any business. While new non-financial ways of measuring the success of the organization have been devised, profitability remains of critical importance. Profitability can be measured through several financial indicators. The study by Murphy et al. (1996) stated that profitability could be measured in many ways; net profit margin, net profit level, return on sales, pretax profit, earnings per share, gross profit margin, net profit from operations, stock price appreciation, respondent assessment, average return on sales, clients' estimate of incremental profits, average net profit margin, price to earnings, and market to book value. Santos and Brito (2012) identified the following ways through which profitability may be determined; return on investment, net income/revenues, return on assets, economic value-added, return on equity, and EBTIDA margin.

2.3.2 Client satisfaction

Client satisfaction is the contractor's ability to meet the client's expectations. Al-Damen (2017) noted that organizations must understand not only the current but also future needs so that they can not only fulfill but exceed their expectations. It is among the most important criterion for measuring the performance of a contractor. This is because almost all indicators of project success are directly linked to client satisfaction. Indeed, Mwangi (2016) asserts that the contentment of clients is the primary gauge for measuring a contractor's performance. Sunindijo et al. (2014) also point out that client satisfaction is one of the most crucial indicators of performance in the construction industry. According to Xiao and Proverbs (2003), enhanced performance of a contractor leads to better client satisfaction. Shortcomings such as poor quality, low productivity, poor work ethic, late completion, among others are all ingredients of low client satisfaction.

Satisfaction by clients can be assessed in several ways. Rahman and Alzubi (2015) established seven aspects of a contractor which are key to the satisfaction of clients; (i) service quality, (ii) adherence to schedule, (iii) safety performance, (iv) adherence to budget, (v) communication skills, (vi) personnel skills, and (vii) management capabilities. Research by Santos and Brito (2012) established the following ways through which client satisfaction can be measured; the number of complaints, mix of products, repurchase rate, general customers' satisfaction, new customer retention, and the number of new products launched.

2.3.3 Growth

Growth is a critical aspect of every organization, individual, and living being. It is the desire of each of these to experience growth in their lives. It can be defined as a positive change in amount coupled together with the process that results in that change (Davidsson et al., 2005). Growth is heterogeneous since it occurs along different dimensions and exhibits different patterns over time (Davidsson et al., 2005)

Growth can be measured based on a variety of a firm's outputs, systems, and processes. The study by Santos and Brito (2012) highlighted the following aspects through which growth can be measured; market-share, asset, net revenue, net income, and the number of employees. Murphy et al. (1996) on the other hand pointed out twelve (12) ways of measuring growth; change in sales, market share growth, job generation, changes in CEO compensation, company births, change in employees, number of acquisitions, loan growth, change in labor expense to revenue, change in present value, change in pretax profit, and change in net income margin. Davidsson et al. (2005) mentioned the following indicators of growth; profit, sales, assets, employment, physical output, and market share

2.3.4 Technical capability

The technical capability of a company is a combination of knowledge, skills, and/or abilities that are required to fulfill the firm's goals and objectives. Dave et al. (2017) identified the following aspects through which technical capability can be evaluated; experience in previous works, plant and equipment, personnel, and ability to deliver. Park and Shin (2017) on the other hand highlighted the following attributes of

evaluating technical performance; technological advancement in related fields, product innovation, and production innovation.

2.3.5 Business efficiency

While effectiveness relates to an organization's attempt to meet its objectives, efficiency on the other hand is concerned with the extent to which resources are used or misused in achieving the said business objectives. An efficient organization would be that which has a high output-input ratio. Efficiency measures the rate at which the firm converts inputs such as materials, labor, and capital into outputs such as products, services, and revenue (Spacey, 2017). Business efficiency is so critical that several researchers have used it as a primary dimension of measuring performance (Cameron, 1986; Murphy et al., 1996; Venkatraman & Ramanujam, 1987).

Business efficiency has different dimensions. According to Spacey (2017), business efficiency can be categorized into; financial efficiency (expenses as a percentage of revenue), labor productivity (employees' output per given time), energy efficiency (energy consumed per output of the business), operational efficiency (efficiency of the core firm processes), process efficiency (efficiency of particular processes), eco-efficiency (environmental cost as a percentage of revenue) and return on investment (net present value). Others include; marketing efficiency (customer acquisition cost), revenue per employee, and equipment efficiency (Spacey, 2017). Murphy et al. (1996) highlighted the following methods of measuring business efficiency; return on investment, return on assets, return on equity, gross revenue per employee, relative product costs, net sales to total capital, and return on net worth. According to Carton (2004), typical ratios which can be used to measure efficiency in a business include; receivables turnover, asset turnover, inventory turnover, net profit per employee, net profit per square foot, sales per employee, sales per square foot, and fixed asset turnover.

2.3.6 Employee satisfaction

Organizations exist to satisfy the needs of the owners, employees, suppliers, clients among other stakeholders. The needs of any stakeholder are equally important. In some cases, the needs of employees are not given priority. Dash et al. (2008) identified

the following motivation factors as key to improved employee satisfaction; chances for promotion, recognition for good performance, compensation, professional growth, and incentive schemes. Khatun et al. (2014) on the other hand stated that enhanced employee satisfaction can be seen through a favorable working environment, high job satisfaction, low employee turnover, favorable workload, and reward programs. Santos and Brito (2012) highlighted the following ways of determining employee satisfaction; investments in employees development and training, turn-over, wages and rewards policies, organizational climate, career plans, and general employees' satisfaction. Mwebia (2018) listed the following indicators of measuring employee satisfaction; reward and recognition, working conditions, coaching and development, and teamwork.

Employee satisfaction is affected by several factors. Al-Damen (2017) found the following factors to affect employee satisfaction; job safety and security, working condition, career development, and rewards system. Jones and Kato (2005) highlighted employee involvement in decision-making to be a key component in their satisfaction. Nanzushi (2015) established five main work environmental factors which influenced employee performance; physical workplace environment, reward, management/leadership style, training and development, and work-life balance. Training and development were also mentioned by Khatun et al. (2014).

2.3.7 Financial stability

Financial stability is a condition in which the firm's financial system is capable of withstanding economic shocks and correcting its financial imbalances, thereby decreasing the likelihood of disruptions in its operations (Ozili, 2020). Financial stability of a company is associated with the ability to generate profits, repayment of liabilities, and increase in value of invested capital (Myšková & Hájek, 2017). During the tendering process, the financial status of a contractor is established through current asset liability ratio analyses, bank references, turnover history and credit reference. Financial stability is established through; expense ratios, leverage ratios, equity ratios, year-on-year losses, capital and liquidity ratios, loan quality, credit ratings, liquidity premiums and volatility, and equity indices (Ozili, 2020). Other measures of a firm's

financial position include assets, liabilities, shareholders' equity, and income statements. Working capital of any contractor is an important measure of their financial stability. It is comprised of cash at hand, bank credit, invoiced amounts and overdraft. According to Mwangi (2016), local contractors are characterized by inadequate working capital.

2.3.8 Quality of products

Quality is a relative term and the concept of 'value for money' is perhaps the best applicable in an attempt to define it. This concept basically means the 'best for the client, for the given money'. Some of the aspects associated with the definition of quality include; pleasing to look, free from defects on completion, delivered on time, fit for the purpose, supported by worthwhile guarantees, reasonable running costs and satisfactory durability (Rad & Khosrowshahi, 1998). These aspects clearly demonstrate that quality is not just about the product but also the process.

The focus on quality continues to take a more central role in any firm's activities. According to Hajjat and Hajjat (2014) the quest for good quality has in recent years become the central focus of most organizations in an attempt to solve organizational problems. As such, they formulated a model which described the relationship between product quality and business performance. In their model, quality was measured in eight dimensions namely: performance (primary operating characteristics); features (special supplements to the performance of the product); conformance (the extent to which the product's design and performance meet predetermined standards); aesthetics (look, texture, smell, sound, and taste of the product); durability (life span of the product); serviceability (ease of repair of the product and courtesy, speed and competence of the service people); reliability (probability of the product to fail in a specified period); and perceived quality or value (quality as viewed by the customer). The first four were termed as product extrinsic value and the last four as product intrinsic value. Organizational performance was also measured in eight dimensions namely; profits, sales, return on investment, market share, job significance, employee tenure, self-esteem and organizational identification. They referred to the first four as external performance and the last four as internal performance.

2.3.9 Managerial capability

The strategy that guides an organization is formulated by the leadership and management of the firm. It would be correct therefore to say that the performance of the organization hinges on the capability of the management to steer the firm towards success. The success of the organization depends upon the leaders' competency and the organizational culture such leaders create (Almatrooshi et al., 2016).

A firm's managerial capability is a measure of its; conflict management skills, consistency in the decision-making process, and clarity in goals and objectives (Khatun et al., 2014). It is a combination of effective strategic management, prudent financial management, efficient human resource management, and the promotion of a values-based culture (DiTommaso et al., 2017). Hatush (1996) identified the following aspects of measuring managerial capability; past performance and quality, project management organization, the experience of technical personnel, and management knowledge.

2.3.10 Safety performance

Due to the nature of business undertaken by contractors, safety performance is an important aspect of measuring organizational performance. Indeed, qualification for some complex construction projects is dependent on the capacity of the firm's health and safety systems. The criteria established by Hatush (1996) include; safety, experience modification rating, OSHA Incident rate, and management safety accountability. Other criteria for evaluating contractor safety performance include: site safety management planning and safe work methods (for construction project work); hazard identification, risk assessment, and control; the presence of a health and safety policy and officer; use of personal protective equipment; use of warning signage and barriers; site induction of workers; and contractor criteria used for the selection of sub-contractors based on health and safety performance (University of South Australia, 2017)

A summary of various criteria used by different authors to measure these variables has been provided in Appendix 9.

2.4 Determinants of Organizational Performance

The level of organizational performance depends on many factors which either affect it positively or negatively. Iravo et al. (2013) indeed stated that every firm's organizational performance is dependent on specific organizational value drivers. The following factors have been highlighted by different authors as the major determinants of organizational performance: Strategy/strategic planning; Innovation/information technology; Firm resources; Dynamic capabilities; Corporate governance; Firm size; Leadership; Employee turnover; Employee performance; Organizational structure; Quality; Performance measurement; Clients; Suppliers; Competitors; Business uncertainty and Government support (Almatrooshi, Singh, & Farouk, 2016; Atalay, Anafarta, & Sarvan, 2013; Draghici et al., 2014; Gårdängen, Oguz, & Dincer, 2016; Gavrea et al., 2011; Ghi, 2017; Hansen & Wernerfelt, 1989; K'Obonyo & Arasa, 2012; Kemp, Folkeringa, Jong, & Wubben, 2015; Khatun, Islam, & Tehseen, 2014; Koech & Namusonge, 2012). A list of these factors together with their respective sources has been listed in Appendix 8. Out of these factors, the researcher identified ten (10) variables to be considered in this study based on their significance as evaluated in these studies, the frequency with which they have been studied, relevance to contractors as reported in previous studies, and the need to consider both internal and external environments in which local contractors operate.

2.4.1 Contractor's strategic planning

Generally, strategic planning involves the setting of organizational goals and formulating detailed plans which enable the firm to achieve the set objectives. Bateman and Zeithml (1993) define strategic planning as a systematic process through which decisions concerning the goals and activities individuals, work units, or organizations will pursue in the future.

Strategic planning involves a series of steps that ought to be undertaken in a certain logical sequence. Wendy (1997) mentions three processes namely; strategic analysis, strategic choice, and strategic implementation. The first step involves setting the direction of the company concerning its vision, mission, and goals. The second step consists of generation, evaluation, and selection of appropriate strategy. The final step

in the process involves the actualization of the plan where appropriate policies and frameworks are put in place. A study by K'Obonyo and Arasa (2012) sequenced these three steps into five generic but logical steps namely; (i) defining the firm's purpose and goals, (ii) appraisal of business environment, (iii) identification and analysis of firm's strategic issues, (iv) choice of strategy, and (v) implementation, evaluation and control systems. Another study by Isik et al. (2009) identified eight categories of strategic decisions that a contractor may adopt; differentiation strategies, market selection strategies, project selection strategies, client selection strategies, partner selection strategies, project management strategies, investment strategies, and organizational management strategies.

Well-executed strategic planning has been associated with enhanced firm performance. A study on 36 companies by Thune and House (1970) established that formal planners outperformed their informal counterparts on all performance measures. Greenley (1986) observed that strategic planning possesses intrinsic values and potential advantages which translate into enhanced organizational performance. The study by K'Obonyo and Arasa (2012) revealed a positive significant relationship between strategic planning and organizational performance where Pearson's correlation coefficient was 0.616 at $p<0.01$. Indeed all the processes of strategic planning were all positively related to the firm performance.

2.4.2 Performance measurement

While performance is an outcome of some actions, performance measurement on the other hand is a tool for gauging how the said performance is achieved. It seeks to find out whether appropriate activities are being undertaken in the promotion of achieving desired goals. According to Lichiello (2000), performance measurement involves systematic data collection and reporting with the aim of tracking work produced vis-à-vis achieved results. Takim et al. (2003) define performance measurement as the regular collection and information reporting regarding inputs, effectiveness, and efficiency. Ankrah and Mensah (2015) noted that performance measurement was not just necessary but vital in any firm.

A performance measure is a quantifiable indicator that is used in assessing how well a firm is achieving its desired goals. The Office of Financial Management (2009) defines it as a quantifiable expression of the quantity, cost, or result of actions that indicate how well, how much, and at what level products/services are provided to clients at a given time. Sandt (2005) listed the following features of good performance measures: (i) meaningful, clear, and widely understood; (ii) appropriate employee involvement; (iii) based on a high degree of data integrity; (iv) data collection embedded within normal procedures; (v) ability to drive improvement; (vi) synced with critical goals of the organization, (vii) commitment by top leadership, and (viii) simple measurement and evaluation. According to Office of Financial Management (2009), good performance measures are supposed to be: relevant (the measure relates to the activity being measured clearly); understandable (clear, concise, and easily understood by non-specialists); timely (information comes at right time to make decisions); comparable (allow the level of performance to be compared over time); reliable (data is accurate, free from bias and can be verified); cost-effective (must justify the time, cost and effort of collecting, recording and analyzing the data). According to Kazan and Gumus (2013), performance standards and measures should be specific, measurable, achievable, reasonable, and time-bound (SMART). Beijer (2012) listed the following features of a good performance measurement system; objective, incapable of mall usage, clear and easy to understand, provide fast feedback, simple to use, the purpose of every performance criterion must be clear, linked with organizational strategy and objectives, stimulate continuous improvement rather than simply monitoring, comprise a balanced combination of qualitative and quantitative criteria, dynamic over time, and should match the existing reward system.

A performance measurement framework is an outline of the metrics, collection, and analysis of data, taking actions to improve performance. A good performance measurement framework is designed to measure the right things. According to Sandt (2005), a performance measurement framework is composed of four main steps; (i) conversion of the organization's objectives into desired standards of performance, (ii) development of metrics that are capable of comparing achieved standards with the desired performance, (iii) identification of gaps, and (iv) initiation of improvement

actions. These steps have been illustrated in Figure 2.2. The steps (framework) should be continuously implemented and constantly reviewed.

Figure 2.2: A performance measurement framework
Source: (Sandt, 2005)

2.4.3 Quality of service

Organizational performance is to a great extent influenced by the quality of services the company provides. Quality of service is a measure of the overall performance of a service as experienced by the clients. According to Ghotbabadi et al. (2015), service quality measurement enables a firm to understand clients' needs by analyzing their experience and satisfaction of services provided to them. They also pointed out that the description of service by clients is borne in expressions such as experience, trust, feeling, and security which are hard to measure due to the intangibility of services. Landy et al. (2020) suggested the following indicators for measuring the quality of service; responsiveness (behavior and responsibility), reliability (service dependence and accuracy), credibility, communication, construction quality, assurance (trust and guarantee), and empathy with the client. Sunindijo et al. (2014) on the other hand listed the following four measures of service quality; assurance, reliability, tangibles (such as appearance, design, physical facilities, and equipment), and responsiveness. In addition to these four, Jaya et al. (2019) gave an additional indicator, empathy (attention and concern). Giao (2018) measured the quality of service of construction project management using the following indicators; competence, collaboration, effectiveness, credibility, and commitment. Several studies have shown that quality is positively correlated to business performance (Almansour, 2012; Carter, Lonial, & Raju, 2010; Chin & Sofian, 2011)

2.4.4 Organizational structure of the firm

An organization structure is a pattern of inter-relationships, responsibility, and authority which is established among the players to achieve the objectives of the firm. While smaller firms can be managed through informal organizational structures, big firms need to have structured and formal organizations due to the complexity of their operations. An organization structure is like the skeleton of an organization which enables standardization of procedures and roles to allow work to be carried out economically. Carlton and Perloff (2015) defined organizational structure as the demarcation of internal organization and the arrangement of various departments and units relative to the operational objectives and the nature of business.

An in-depth study by Bucha (1992) which sought to establish the effect of organizational structures on firm performance noted that contractors needed to have organizational structures which provide a framework for enhanced management processes where maximum performance is achieved concerning organizational objectives and the good of the construction industry at large. He pointed out the following problems emanate from structural weaknesses in organizations; poor or late decisions, too much paperwork, inability to cope with change, industrial conflict, low morale, lack of competitiveness, and increased overhead cost. His study listed the following features of an effective organization structure; well expressed in writing, dynamic, flexible, contains stability and continuity, reflects the nature of work, and the communication flows.

Tran and Tian (2013) asserted that organizational structure was a factor of; size and age of the firm, level of technology, and environmental factors. The study by Gavrea et al. (2011) measured organizational structure through structural issues related to company size (number of workers), age, the formality of the structure, its adaptability, and flexibility of functions and positions. Sharma (2020) listed nine features of an effective organization structure; simplicity, flexibility and continuity, clear line of authority, application of ultimate authority, proper delegation of authority, unity of command and direction, minimum possible managerial levels, proper emphasis on staff, and provision for top management. Chand (2020) on the other hand listed five

features; a clear line of authority, an adequate delegation of authority, lesser managerial levels, a proper span of control, and simplicity and flexibility.

According to Zheng et al. (2010), the three most important aspects of organizational structure are; formalization, centralization, and control. Formalization is related to the standardization of rules and procedures, centralization is where there is a single source of authority, while control involves measuring and monitoring performance. Chen and Huang (2007) established that decentralized and informal structures were associated with high performance. Germain (2008) noted that in a stable environment, a formal organizational structure has a positive impact on performance while in a dynamic environment, the effect is negative. Haid et al. (2010) noted that complex organizational structures often lead to ineffective implementation of the business strategy. A study by Yesil and Kaya (2013) found no relationship between organizational culture dimensions and a firm's financial performance. Another study by Maduenyi et al. (2015) found a relationship between organizational structure and organizational performance though they did not explore the nature of the relationship.

2.4.5 Contractor's innovativeness

Innovation is a concept that has a wide range of definitions. In the Oslo Manual, innovation has been defined as the implementation of new or significantly improved products, new processes, new marketing techniques, and new organizational methods (OECD & Eurostat, 2005). The argument by Rubera and Kirca (2012) is that innovation at the organization level refers to the company's receptivity and propensity in adopting new ideas which lead to the development and launching of new products. Schumpeter (1934) was among the first authors to write extensively on innovation and its importance to firm success. In his definition, he highlighted the following key areas; creation of new products, qualitative improvements of existing products, new processes, new markets, new sources or inputs, and new organizational structures. Atalay et al. (2013) classified innovativeness into four categories; product innovation, process innovation, organizational innovation, and marketing innovation. Park and Shin (2017) on the other hand suggested the following ways of evaluating

innovativeness; developing new products, improving existing products, developing new processes, and improving existing processes.

Innovativeness is an important ingredient to improved organizational performance due to the vast benefits associated with enhanced innovation. Varis and Littunen (2010) asserted that the main reason why organizations engage in innovativeness is to enhance organization performance. Improvements in products and processes lead to more efficient and profitable firms (Atalay et al., 2013). A study by Calantone et al. (2002) established a positive correlation between innovativeness and firm performance. A longitudinal study focusing on different industries in the U.S.A established that an increased number of patents and product innovations had a significant influence on firm performance (Artz et al., 2010). In a different study, market and product innovation were also found to impact positively on firm performance (Therrien et al., 2011).

2.4.6 Employee performance

The main engine that drives any organization is its workforce. It is for that reason that employee performance is almost synonymous with organizational performance. Employee performance is a measure of an employee's contribution towards achieving organizational goals. Simply put, it is a measure of whether the employee is doing what is expected of them. Sonnentag and Frese (2002) pointed out that firms needed highly performing individuals to meet their organizational goals. Almatrooshi et al. (2016) posited that employee performance is a key contributor to enhanced organizational performance.

Employee performance could be measured in several ways. According to Güngör (2011), the performance of employees could be measured in terms of; quality of output, the quantity of output, cooperativeness, timeliness of output, and presence at work. Koopmans et al. (2013) on the other hand identified the following indicators of measuring employee performance; work quality, planning, and organizing work, being result-oriented, prioritizing, working efficiently, taking initiative, accepting and learning from feedback, cooperating with others, communicating effectively, showing responsibility, being customer-oriented, being creative, taking on challenging work

tasks, showing resiliency/working under pressure, keeping job skills and knowledge up-to-date, dealing with uncertain and unpredictable work situations, and adjusting work goals when necessary. Most of these indicators were also found in the study by Pradhan and Jena (2017). Other performance measures include attendance and time management (Bika, 2020).

Nanzushi (2015) established five main work environmental factors which influenced employee performance: physical workplace environment; reward; management/leadership style; training and development; and work-life balance. Training and development were also mentioned by Khatun et al. (2014). Kazan and Gumus (2013) established that employee performance was reliant on; salary, promotion, relations with the administration, institutional commitment, motivation, employee relations, physical work environment, and work definition. Adam (1994) believed that enhanced organizational performance could only be achieved if company staff was regularly exposed to new and current skills and knowledge which would enable them to adapt to new market changes.

2.4.7 Clients' effectiveness

Clients, especially in the construction industry have a huge influence on the business. They pay for the end product and therefore they not only indirectly finance the activities of the organization, but they are also a direct source of the firm's profit. They influence sales volume by deciding to bring in or shut out business. The client plays a critical role in construction. Al-Harthi, Soetanto, and Edum-Fotwe (2014) asserted that clients of today are not just funders but play an active role alongside other stakeholders in the industry. Mwangi (2016) identified the following roles of a construction project client; provision of accurate designs, timely payments, prompt issue of instructions, timely approvals of variations, ensuring stakeholder involvement, thorough project supervision, and certification of completed works. Some of these roles are delegated to the client's consultants. Other roles of the client include; selection of team players, securing relevant permissions, site handover, ensuring suitable management arrangements, and provision of information to

designers and contractors. Client support for a contractor is seen in the extent to which the client plays their role as expected of them.

2.4.8 Suppliers' effectiveness

Traditionally, a supplier in the construction industry has always been considered to be an organization contracted by the contractor to deliver physical supplies including but not limited to materials, plant, equipment, and general goods. The supplier of today has been defined by the British Standards International (BSI) as a provider of both goods and services, both directly and indirectly through a supply chain (BSI, 2019). Based on this definition, a 'supplier' in this research shall be taken to include plant and equipment manufacturers, plant and equipment hire firms, suppliers of building and other related materials, subcontractors, among other related stakeholders.

Though the organization and the supplier are independent of each other, they both work in a partnering environment towards the same goal, satisfying the needs of the end-user. In such a partnership, product quality should be the main criterion for the selection of the supplier (Al-Damen, 2017). The main responsibility of a supplier is to provide goods and services of required quality and quantity and at required times.

Minahan and Vigoroso (2002) established the following criteria for measuring the performance of suppliers; quality, on-time delivery, service, price, total cost, contract compliance, lead times, responsiveness, and technical support in order of reducing significance. Gordon (2005) identified five main criteria; financial health (sales, profitability, and liquidity), operational performance metrics (quality, on-time delivery, lead times, inventory turns, responsiveness, and customer service call response time), business processes and practices, enabling behaviors or cultural factors (customer focus, continuous improvement, agility, and teamwork), and risk factors (associated with the four previous criteria). IADC Supply Chain Committee (2015) argued in favor of the following criteria: on-time delivery; price variance; lead time management; percentage of overage, shortage, and damage; and invoice accuracy. Arslan et al. (2008) suggested the criteria for selecting subcontractors as follows; efficiency, quality of production, the reputation of the company, employment

of qualified members, completion of the work on time, and accessibility to the company.

2.4.9 Competition

Competition arises when firms offer similar products to clients. It has been defined as the process of rivalry amongst business enterprises for clients (Gaur, 2012). All businesses in the construction industry face competition. Competition has both positive and negative effects on the firm. Some of the positive effects include; increased efficiency, improved quality, and enhanced client satisfaction among others. Mbamali and Okotie (2012) identified the following opportunities arising from foreign competition; technology transfer, development of local contractors, improved general standards, and more opportunities for linkages. Godfrey (2008) argued that competition was a key component of market operations and that it fostered productivity, innovation, and growth. Negative effects of competition on the firm include; low construction output (annual turnover), reduced prices and reduced profitability.

2.4.10 Government support

In most industries, the government plays the role of regulation. In the construction industry, the government also happens to be a major client. Aniekwu (2003) asserted that the government's actions in the construction industry include; regulation, formulation of procurement policy, skills formation through formal training, direct support (including financial support), and institutional support. Jin (2018) pointed out that the government plays roles such as regulation and recipient of services. Through regulation, the government controls the registration and running of both local and foreign contractors through the NCA. The government also regulates the professional practice and undertakes approval of construction development. As a client, the government's strategy in expenditure influences the demand of services in the construction industry.

A summary of various criteria used by different authors to measure these variables has been provided in Appendix 10.

2.5 Existing Models of Organizational Performance

A number of models have been developed by various researchers. Such models either seek to measure the level of organizational performance or establish relationships that exist between variables related to organizational performance. Ashraf and Abd Kadir (2012) pointed out that there is no single model which applies to all organizations. Ten (10) models have been discussed hereafter and their weaknesses pointed out. It is due to these shortcomings that a new model for measuring and enhancing the organizational performance of local contractors in Kenya is required.

2.5.1 Gavrea, Ilies and Stegerean Model

Their study sought to develop a model which could be used to identify and compare the organizational performance of manufacturing firms in Romania. Their model had three key elements; (i) structural issues related to company size (numerical size of their staff), age and purpose of the firm, (ii) variables used to analyse selected firms, and (iii) the organizational performance measured on the basis of its results (Gavrea et al., 2011). The first and the last elements are not diagrammatically represented in the model. The variables were categorized into external and internal environment as seen in Figure 2.3.

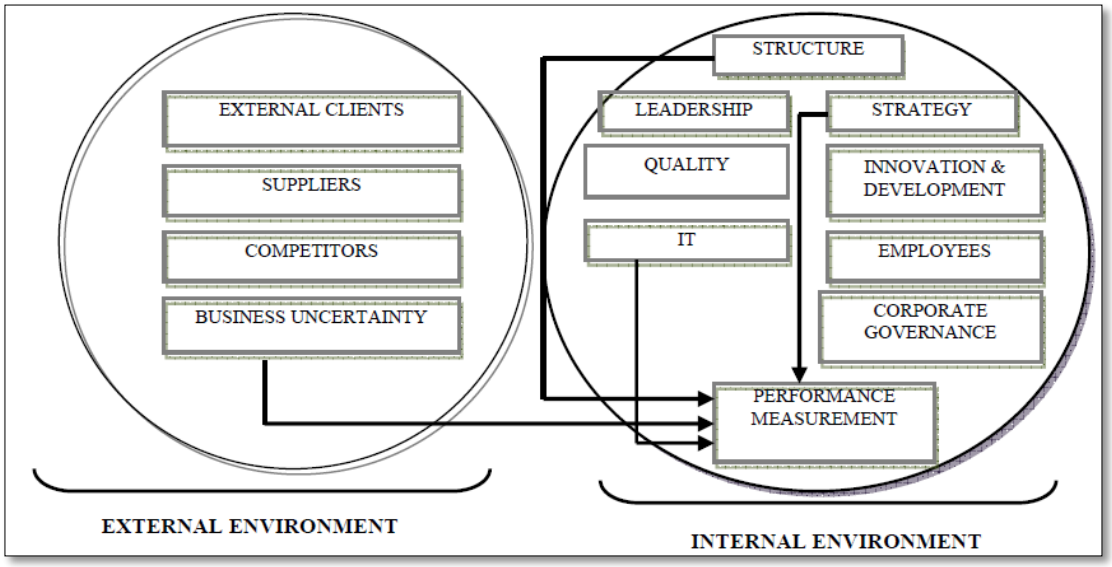

Figure 2.3: Dimensions of the organizational performance model
Source: (Gavrea et al., 2011)

One major weakness of the model is that it only covers the determinants of organizational performance and ignores the other side of the equation, the indicators of the organizational performance.

2.5.2 Santos and Brito Model

Santos and Brito (2012) pointed out that the constructs of firm performance can either be unidimensional or multidimensional. Figure 2.4 below shows two models to explain possible representations of organizational performance. The authors note that they have limited the number of dimensions for simplicity purposes.

The unidimensional model suggests that all the indicators demonstrate the firm performance in an almost interchangeable way. In this case, indicators are strongly related. The multidimensional model implies that each of the dimensions symbolize one facet of the overall outcome of the firm, and can be represented by a cluster of related indicators.

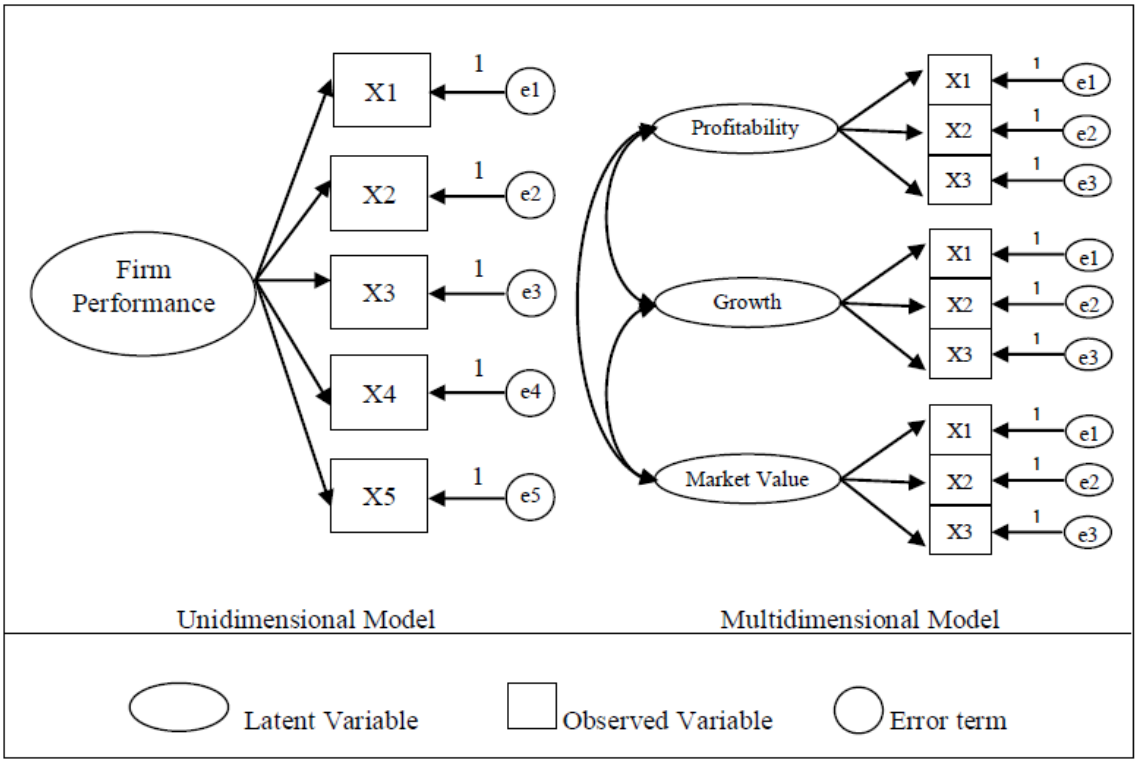

Figure 2.4: Unidimensional and Multidimensional representation of organizational performance
Source: (Santos & Brito, 2012)

In their model, Santos and Brito (2012) heavily borrowed from previous works by Glick et al. (2005) and Venkatraman and Ramanujam (1987). Glick et al. (2005) suggested that multidimensional constructs of organizational performance could be represented in first and second order dimensions where one second order construct (firm performance) reflects itself on its multiple first order dimensions as seen in Figure 2.5 (model on the left). Although they are different from each other, the first order dimensions would be a manifestation of a more general higher order. In this case, all dimensions are required to have strong positive correlations (Glick et al., 2005). Venkatraman and Ramanujam (1987) had suggested an alternative conceptual representation where performance has two second order dimensions (financial and strategic/operational) with each of the two represented by multiple first-order dimensions. This is illustrated in Figure 2.5 (model on the right)

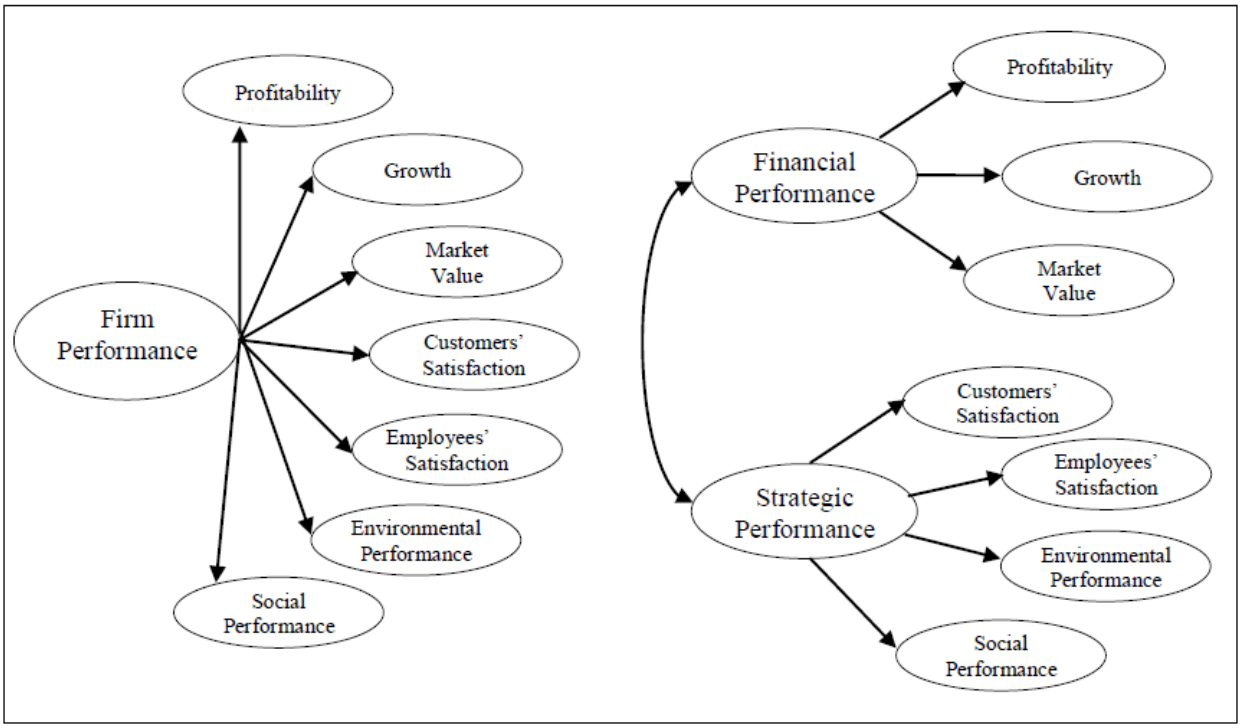

Figure 2.5: Second order models organizational performance
Source: (Glick et al., 2005; Venkatraman & Ramanujam, 1987)

2.5.3 Draghici, Popescu and Gogan Model

Draghici et al. (2014) developed a generalized model (shown in Figure 2.6) for measuring organizational performance in the context of actual field trends. Their

model takes into account three determinants of organizational performance; objectives, resources and results. The model relies on the premise that objectives are set by the managerial team, resources are scarce, and results are either manifested through quick delivery of high quality products to customers or positive financial indicators.

The relationships between these three determinants explains three significant characteristics of the organization; (i) efficiency (comparison between results and the corresponding resources), (ii) effectiveness (confluence of results and the objectives), and (iii) and pertinence (comparison between managerial objectives and the resources they allocate to achieve them). Efficiency is concerned with doing the thing right, effectiveness involves doing the right thing and pertinence is concerned with realistic decision-making process by the managerial team (Draghici et al., 2014).

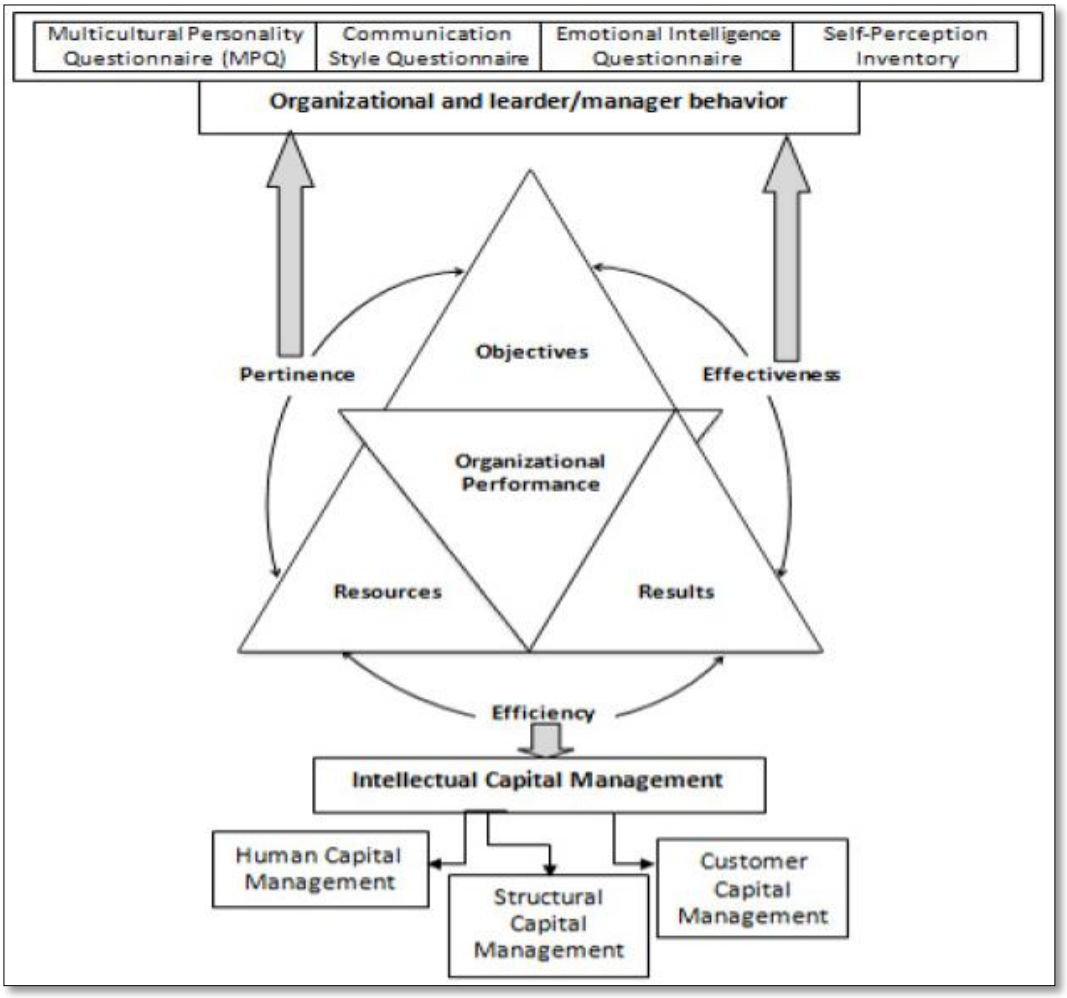

Figure 2.6: Conceptual model for monitoring organizational performance
Source: (Draghici et al., 2014)

2.5.4 Haid, Schroeder-Saulnier, Sims and Wang Model

Right Management, a talent and career management company tasked the authors to carry out a global study to understand how elements of an effective organization relate. The sample size included 28,810 employees spread from 15 countries across 10 industry sectors. The research sought to examine the interrelationships the enablers/inhibitors of strategy execution and organizational performance. The study took the following variables into consideration; organizational structure and roles, strategy, leadership, employee engagement, people systems and organizational culture/values. Their model is represented in Figure 2.7.

In the study, Haid et al. (2010) established two critical relationships; (a) effective strategy implementation contributes immensely to enhanced financial performance, and (b) failure to fully engage the workforce in business strategy results to poor results.

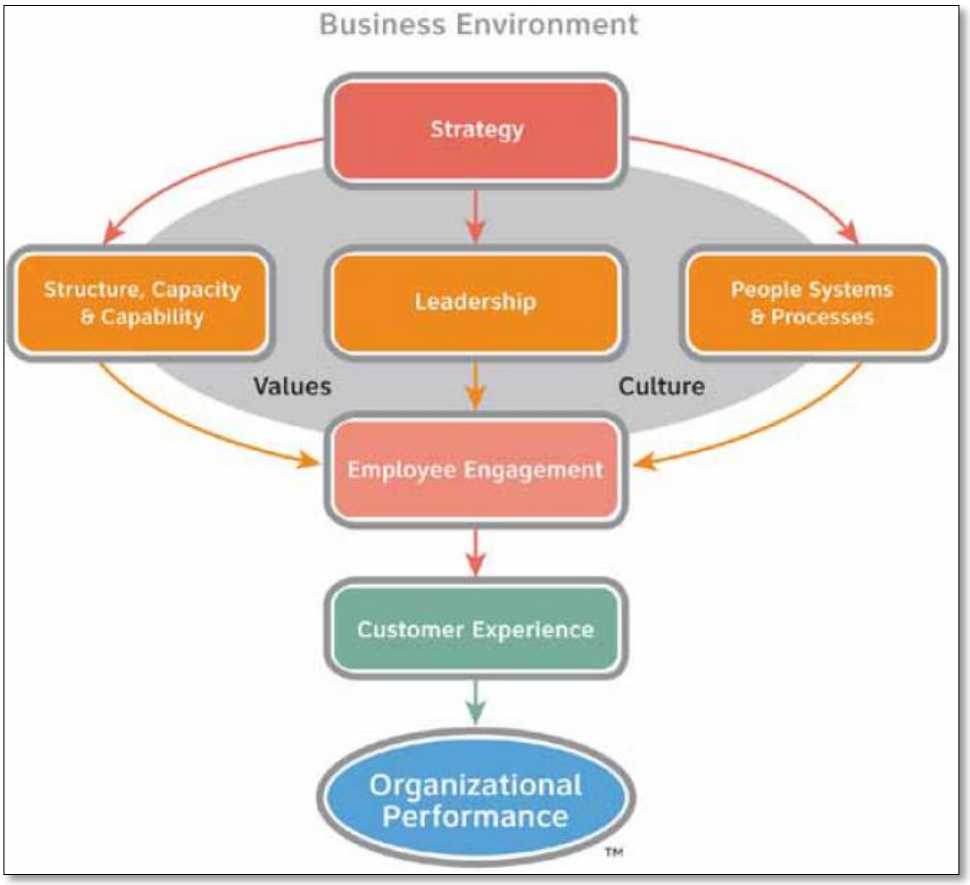

Figure 2.7: Right Management's Organizational Effectiveness Framework
Source: (Haid et al., 2010)

2.5.5 Popova and Sharpanskykh Model

Popova and Sharpanskykh (2010) noted that each organization existed for the purpose of achieving some goals. These goals vary from one organization to another. Any firm that seeks success must first understand its goals. Organizational performance should be monitored based on these goals which formed the building blocks of their modelling approach. Figure 2.8 shows a graphical representation of the interrelationships between concepts in a performance-oriented view.

The model provides tools for analyzing individual and organizational performance and relating it to the organization's goals and their fulfilment as well as to the organization's tasks and processes. Mechanisms of assessing the performance are enabled by establishing links between performance indicators and goals (Popova & Sharpanskykh, 2010). Performance-Indicator expressions are used to describe goal patterns which are attributes that can either be true or false for the individual, unit or organization for a given period or a certain point in time. The goal patterns can either be achieved, maintained or optimized. The goals can either be individual or organizational.

One weakness associated with the model is that the authors recommended it for use in enterprise information systems as opposed to the entire organization. The model also sought to analyze the subject of organizational performance from one dimension only, the performance indicators, and ignored the determinants. It is also relatively complicated to apply it.

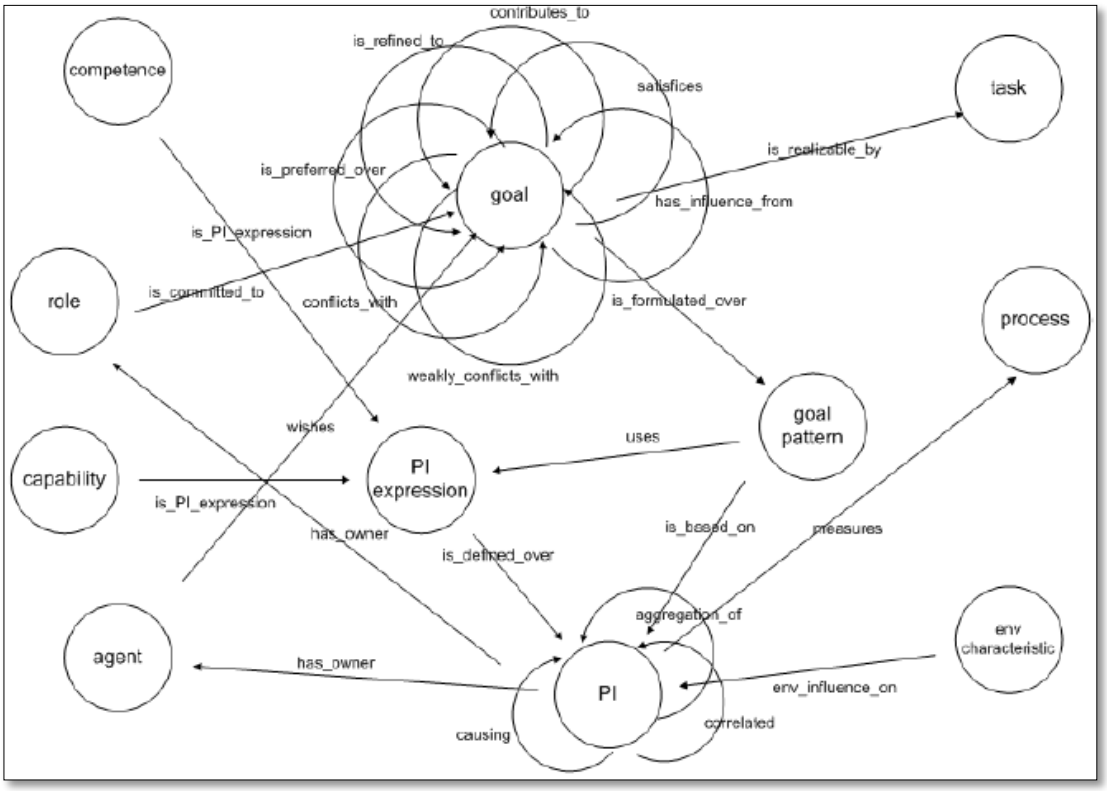

Figure 2.8: A meta-model for measuring organizational performance.
Source: (Popova & Sharpanskykh, 2010)

2.5.6 The Organizational Systems Model

Dave (2013) noted that most managements make the mistake of addressing organizational issues in isolation. Processes such as strategy formulation, devising hiring criteria, outsourcing, scaling or downsizing, and others should be considered as part of a system if they are to yield desired results. In a quest to formulate a framework which can be used to analyze the firm holistically, the author developed the Organizational Systems Model (OSM) shown in Figure 2.9 which takes account of key variables which affect organizational performance.

The model consists of six main elements namely; (i) stakeholders needs, (ii) strategy and capabilities, (iii) organizational systems, (iv) culture, (v) results, and (vi) underlying values and beliefs. Some of the *stakeholders'* needs which must be fulfilled by the organization include shareholder expectations on returns, customer expectations on product quality, supplier expectations on timing and trust, employee expectations on income and job security, community expectations on environmental responsibility and corporate citizenship. These needs must be identified and met. The *strategy* sets the organization's direction and is expressed in the company's mission, vision, values and goals. *Organizational capabilities* are the intangibles which are required in the fulfilment of the strategy. They include things such as collaborations, efficiency, leadership, shared mindset, strategic clarity, accountability, innovation, and customer connectivity (Dave, 2013). The strategy and organizational capabilities act as a guidance to the organizational systems.

Organizational systems are the tools used execute the strategy and deliver organizational capabilities. Such systems include; processes (work processes), structure (organizational structure), rewards (incentives and consequences associated with conformity or lack of it to the strategy and capabilities), and people (personnel and leadership competencies). It is important when these systems are aligned with each other and the organizations strategy. These tools are the glue that holds the culture in place (Dave, 2013). The *culture* of an organization consists of norms and work habits which explain how the company really operates. It is how the systems operates that determines the type of results that will be achieved. The actual *results*

being delivered will either satisfy or fall short of the earlier listed stakeholders' needs. The last element are the underlying values and beliefs of the people in the organization. These could include things such as individual beliefs, values and assumptions. They influence how all other elements are regarded and even designed. The beliefs also determine when changes in the system are needed.

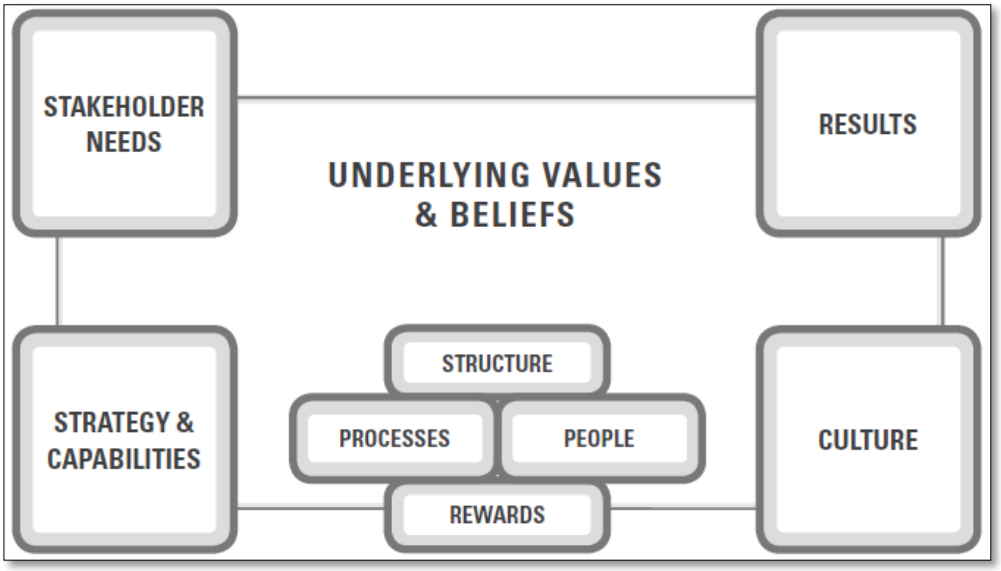

Figure 2.9: The Organizational Systems Model
Source: (Dave, 2013)

2.5.7 System Resources Model

The systems resource model is concerned with the inputs in an organization. Success is measured by the extent to which the organization is capable of acquiring resources from the external environment for its use (Schermerhorn et al., 2004). This approach demands that the organization not only be considered as a whole, but also as part of a bigger group. According to Cameron (1986), the model is best applicable when there is a clear connection between inputs and performance (outputs)

A weakness associated with this model is that its application is only effective if there is a clear relationship between the resources received and the products it produces (Cameron, 1981). Sometimes due the aspect of preliminary and overhead costs which might not be associated with any particular work, this model may not be the best for contracting firm. In other cases, results (outputs) may not be experienced as soon as

inputs are received. A good example is a case of acquiring steel formwork which is costly at the beginning but the benefits span over a longer period.

2.5.8 Goal Model

This approach is focused on the extent to which an organization accomplishes its goals. Cameron (1986) argued that the model is most applicable where the goals are clear, concise, measurable and time-bound. Accomplishment of goals is associated with good performance. Some of the common goals among most organizations include profits, product quality and innovation.

The models relies on a number of assumptions. The first one is that there is a general agreement on the goals and the commitment of all individuals in achieving those goals. The second assumption is that the number of the firm's goals is limited and vital resources are required to achieve them (Robbins, 2003).

The major weakness of the goal model is that it only works where the goals and outputs have been described concisely and in a measurable way.

2.5.9 Strategic-Constituencies Model

The focus of this approach is on the groups or individuals who have a stake in the company. These include suppliers, financiers, lenders, customers, shareholders among others. The model is most preferred when the constituents have a powerful influence on the firm which has no option but to respond to their demands (Cameron, 1986). Success is measured on the basis of stakeholder satisfaction.

In summary, the system resources approach is focused on inputs, the internal processes are focused on transformational processes, the goal approach is focused on outputs and the strategic constituencies approach is focused on feedback. Since the four approaches can hardly enhance overall organizational performance when acting in isolation, it is possible for all of them to be combined to generate a composite model as shown in Figure 2.10. At the core of the model is organizational system surrounded by inputs, transformations, outputs and feedback. In the outer core lies the four models of organizational performance together with a fifth approach which is a combination of the four.

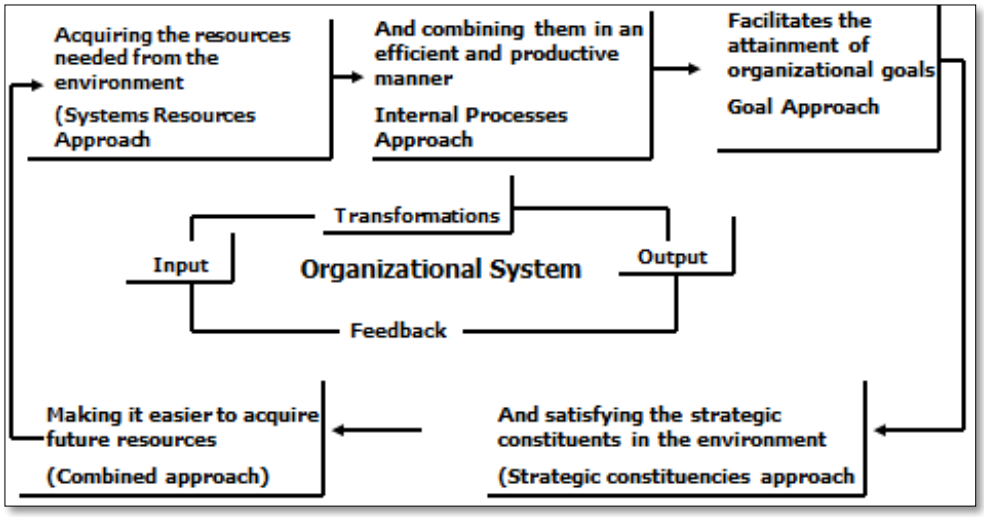

Figure 2.10: A composite model for enhancing organizational performance
Source: (Author, 2020)

Other models which have been discussed by Cameron (1986) include; Competing-values Model, Ineffectiveness Model, the Legitimacy Model, High Performing Systems Model, and Fault-Driven Model. Most of these models have however been formulated in the context of institutions of higher learning and may not be applied accurately in construction companies.

2.5.10 The Balanced ScoreCard (BSC)

Kaplan and Norton (1992) noted that most previous researchers had concentrated on the financial aspect of measuring business performance. In their approach, they proposed that accurate performance can be measured based on four dimensions; financial, customer satisfaction, internal processes, and innovation/learning/growth. They referred to the last three as operational measures of a business. The four perspectives were interrelated such that enhanced employees' knowledge and skills (learning and growth) were crucial to improving strategic capabilities and efficiencies (internal processes) in order to not only to deliver enhanced value to the market (customer) but also fulfil the needs of the shareholders (financial). Figure 2.11 below shows the four perspectives of measuring organizational performance as formulated by Kaplan and Norton (1992). In their argument, their model provided a link between measurement and strategy.

With regard to the customer perspective, Kaplan and Norton (1992) recognized the importance of the customers and therefore included core measures such as customer satisfaction, retention of customer, production of new products, customer complaints, on-time delivery, and customer profitability. This could only be achieved if goals such as quality, time, performance and service were clearly defined and converted into specific measures. While the financial perspective of measuring firm performance was an old tradition, they recognized it to remain relevant and therefore included financial measures such as profitability, return on assets, market value of the firm, liquidity, investment, and equity among other ratios in their score card.

According to Kaplan and Norton (1992), the internal business perspective aimed at identifying and improving critical internal businesses which gave the firm a competitive edge and resulted in improved customer satisfaction. In other words, this perspective was concerned about the effectiveness and efficiency of the organization. To achieve all these, Kaplan and Norton (1992) noted that the firm had to constantly innovate and learn. Some of the measures which can be used to evaluate the innovation and learning perspective include; IT usage, speed of transactions, new product and services development, training and development, and strategic alliance and partnerships (Kaplan & Norton, 1992).

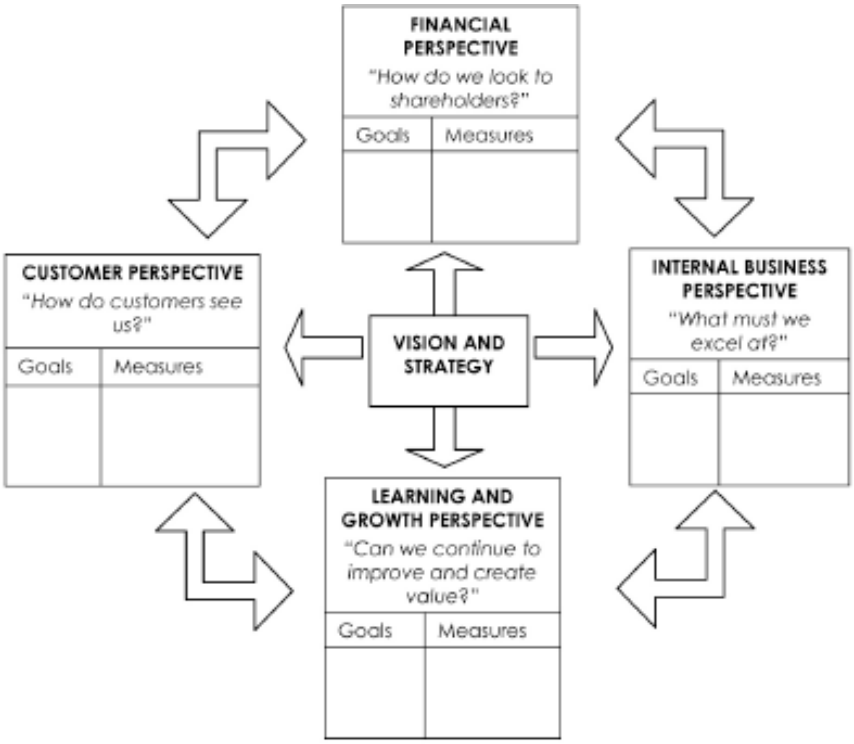

Figure 2.11: The balanced scorecard
Source: (Kaplan & Norton, 1992)

Proctor (2006) recommended that companies should limit the number of goals per perspective to approximately four from which performance can be tracked using key performance indicators (KPI) otherwise known as critical success factors (CSF). The purpose of this is to ensure that the performance measurement is manageable.

While the model has been praised by a number of researchers, it has received its share of criticism. Tangen (2004) noted that the model ensured there was no information overload since it limited the number of used measures. To achieve this, managers only focused on the CSFs. Chan and Hiap (2012) praised the model by pointing out that it was not only a performance management system but also a strategic management tool. (Bourne & Bourne, 2007) applauded its flexibility and applicability to organizations from various industrial sectors, of different sizes, and even use in sections of organizations. Witcher and Chau (2008) viewed the model as a monitoring tool rather than a tool for improvement. Tangen (2004) also observed that the tool was mostly suitable for an overall view of operations rather than operations at lower levels of the organization. Oyewobi, Windapo and Rotimi (2015) pointed out five weaknesses of

the BSC; (i) a top-down approach which does not offer interaction between top management and low level employees, (ii) it does not identify relationships between measures formulated for each goal, (iii) it is a time consuming exercise which is difficult to implement in large organizations, (iv) the selection of measures is problematic, and (v) information generated does not allow comparisons across industries.

2.6 Related Theories

This study is anchored on the following theories from which several concepts and constructs have been extracted.

2.6.1 Organizational Theory

Most living things especially animals are organizational. This can be observed in a pride of lions, a flock of birds, or a colony of ants. Man is not any different; he has created organizational units ranging from simple family units to complex government systems. Ferdous (2016) indeed notes that we belong to an organizational society.

The organization theory is a set of interrelated concepts and definitions which explain the behavior of individuals, subgroups, and groups whose interaction in performing activities is aimed at accomplishing a common goal. The theory seeks to understand and explain how social relationships amongst actors in an organization affect it as a unit. The theory not only studies the internal processes but also external aspects of the organization such as political, economic, legal, and cultural among others.

Organizational theory is applied in the study of organizations to identify patterns and structures such bodies use in solving problems; maximizing effectiveness, efficiency, and productivity; and meeting the stakeholders' expectations. The theory can be understood from two perspectives, micro, and macro. While the former deals with the individual and/or group dynamics within the organization, the latter studies the whole organization together with the industry in which it lies, including how the organization adapts and the structures, strategies, and contingencies guiding them. This study shall consider both aspects.

While organizations vary in their nature, organizational theory is only concerned with formal organizations. Such organizations are believed to have goals, hierarchies, and guidelines of operations. Ferdous (2016) points out that the focus of the organizational theory is on how the core organizational arrangement can work to inspire members and produce results that are aligned to the organization's objectives.

While the theory could be viewed from a 'singular' perspective as described above, many authors discuss it in a composite approach where many related theories are seen to contribute towards the theory. According to Irefin and Bwala (2012), organizational theories are those that are concerned with the formulation of ideas and approaches which are appropriate to any organization irrespective of geographical or societal surroundings. Őnday (2016) notes that organizational theories have evolved just like the organizations themselves. Figures 2.12 below shows a chronology of some of the notable organizational theories.

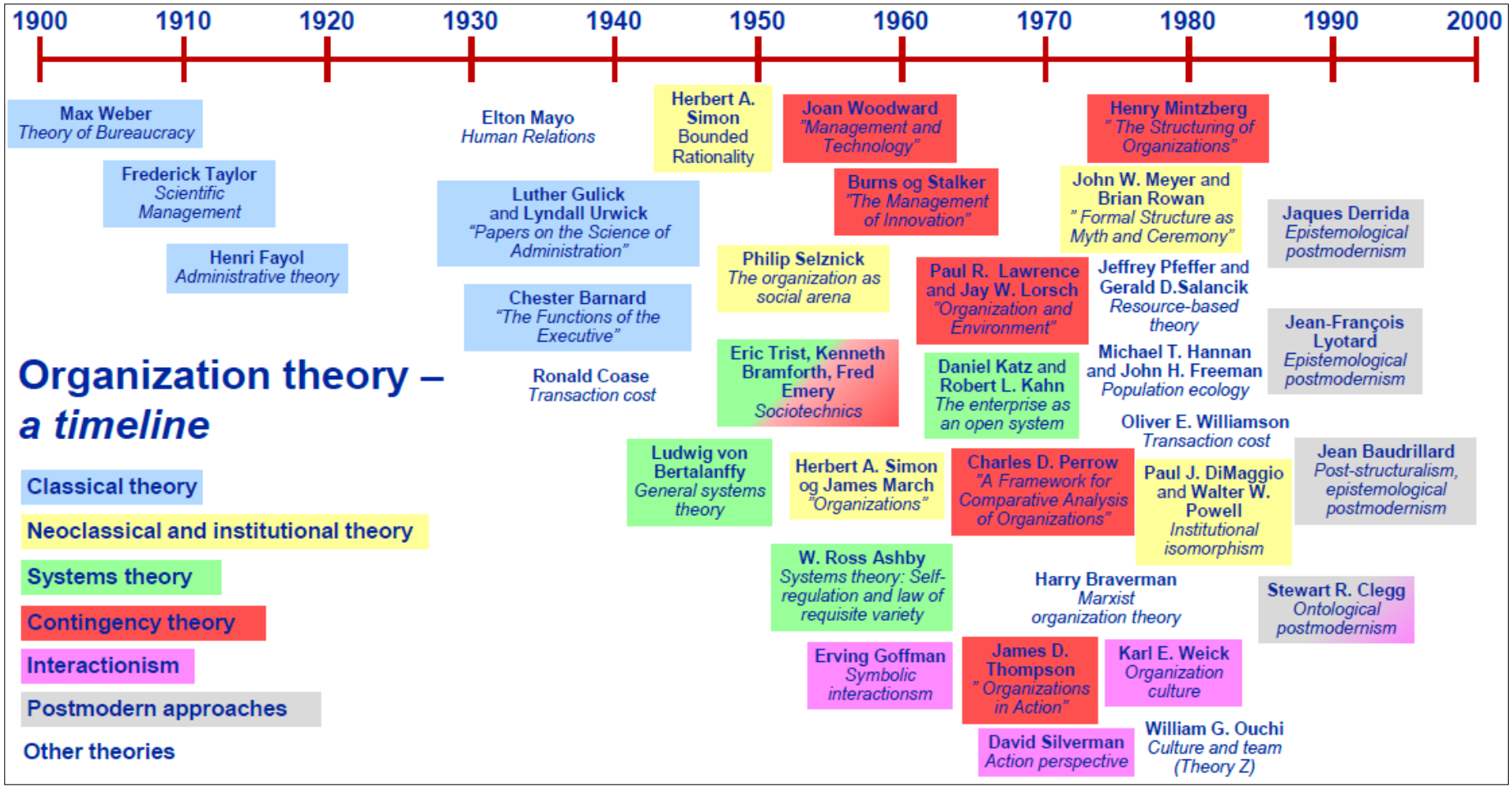

Figure 2.12: Overview of Theories on Organizations and Management
Source: (Groth, 2011)

2.6.2 Theory of Performance (ToP)

The theory of performance has been discussed by several authors. There is common agreement among authors that any attempt to conceptualize performance must differentiate between two perspectives; action and outcome (Campbell, McCloy, Oppler, & Sager, 1993; Roe, 1999). The action perspective is what is referred to as the behavioral aspect and is concerned with only behavior which is related to the organizational goals. Any behavioral actions outside this context are considered not to be part of the performance concept. It is for this reason that performance is not just defined by the actions but rather evaluative processes (Sonnentag & Frese, 2002). Furthermore, it's only those actions that are measurable that are said to constitute performance (Campbell et al., 1993). The outcome perspective is the result or consequence of the individual's behavior. According to Sonnentag and Frese (2002), there is an empirical relationship between the actions and outcomes, even though the latter is not entirely dependent on the former. Factors beyond the individual's behavior can affect the individual's outcomes.

Performance is a multidimensional concept. Task performance should be distinguished from contextual performance (Borman & Motowidlo, 1993). While task performance is concerned with individuals' actions that are related to the organization's core business, contextual performance on the other hand refers to the supportive actions which are not related to the organization's core business. Dimensions falling under task performance include; job-specific task proficiency, non-job-specific task proficiency, written and oral communication proficiency, supervision proficiency, and management/administration (Motowidlo & Schmit, 1999). Proficiencies falling under management/administration include organizing and planning; directing and motivating subordinates; training and developing subordinates; and efficient communication.

Performance is also a dynamic concept. Performance varies depending on learning processes and other long-term changes such as innovation and age (Avolio et al., 1990). These are affected by issues such as procedural knowledge and psychomotor abilities. Changes in performance over time are not uniform across individuals

(Sonnentag & Frese, 2002). Variabilities such as working hours and environment also affect individuals' performance.

Performance can be measured from different perspectives. Sonnentag and Frese (2002) pointed out three perspectives as illustrated on Table 2.2; individual differences perspective, situational perspective, and performance regulation perspective. The individual differences perspective is concerned with individual characteristics such as personality, education, training, interests, experience, motivation, and mental ability which result in variation in performance among different individuals. Situational perspective is concerned with factors within individuals' environment which either support or hinder performance. Such factors include; workplace factors, reward systems, and leadership among others. The performance regulation perspective is concerned with the performance process itself. In this perspective, performance is affected by factors such as goal development, planning, implementation, monitoring, and processing of feedback. Other factors which can enhance performance include; continuous learning, proactivity, increased teamwork, trends toward globalization, and improved technology.

Table 2.2: Overview of perspectives on performance

	Individual differences perspective	**Situational perspective**	**Performance regulation perspective**
Core question	Which individuals perform best?	In which situations do individuals perform best?	How does the performance process look like? What is happening when someone is 'performing'?
Core assumptions and findings	Cognitive ability Motivation and Personality Professional experience	Job features Role stressors Situational constraints	Action process factors Adequate hierarchical level
Practical implications for performance improvement	Training Personnel selection Exposure to specific experiences	Job design	Goal setting Feedback interventions Behavior modification Improvement of action process Training Job design

Source: (Sonnentag & Frese, 2002)

Elger (2000) discussed this theory from the context of learning institutions. While highlighting the rationale for this theory, he pointed out that human beings were capable of extraordinary accomplishments. He quoted accomplishments such as Mahatma Gandhi's nonviolent revolution and the United States of America's travel to the moon as high-level performances which necessitated the use of ToP in numerous traditional and non-traditional contexts. The former context included learning environments such as classrooms and workshops while the latter was associated with 'non-learning' environment situations such as self-development and workplaces. According to Elger (2000), a performer could either be an individual or a group of people. The author further asserted that six foundational concepts can be used to describe performance; quality, cost, capability, capacity, knowledge, skills, identity, and motivation. The level of performance is equated to a particular point in a journey. High performance is associated with a decrease in cost and an increase in all other measures. Just like the performance of a system depends on the system components, the level of performance in an organization depends on its components. Figure 2.13 below shows the advancement of performance through levels where each level indicates the effectiveness of performance.

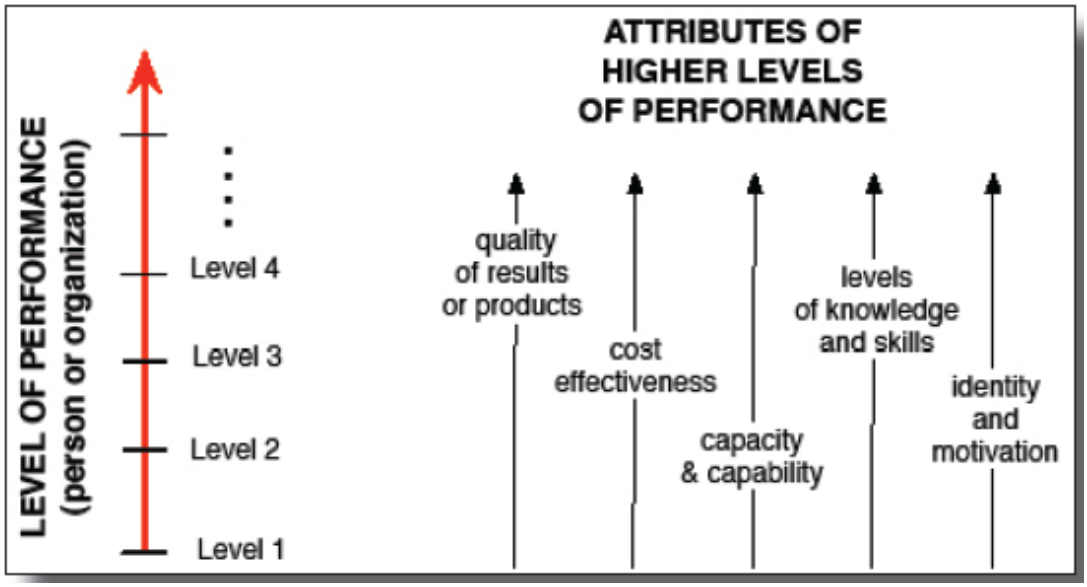

Figure 2.13: Levels of performance
Source: (Elger, 2000)

2.6.3 Evolutionary Theory

The phrase ‘survival of the fittest’ was first coined by Herbert Spencer in 1864 after reading Charles Darwin's first edition of ‘On the Origin of Species’. The phrase was later used in 1869 by Darwin in the fifth edition of his book (Paul, 1988). In his book, Charles Darwin, the famous naturalist of the 19th century observed that every single organic being around us may be said to be striving to the utmost to increase in numbers; that each lives by a struggle at some period of its life and that heavy destruction inevitably falls either on the young or old, during each generation or at recurrent intervals (Darwin, 1859). Just like Darwin’s observation on organisms, companies strive to increase their numbers concerning sales volumes, annual income turnovers, profitability, clientele, products among others. Similarly, most companies struggle in one way or the other in their quest to increase these numbers.

Glor (2015) argues that to apply the concept of evolution in the context of organizations requires the acceptance of the idea that an organization can change fundamentally, either through a passive process in subsequent generations just like Darwinian evolution or through acquired and/or deliberate change just like Larmakian evolution, or both. Although organizations can emulate animals and plants by either acquiring and/or retaining some changes, in most cases changes are introduced when new organizations are created (Glor, 2015). This argument has its roots in previous works by Stinchcombe (1965) and McKelvey (1982) which argued that evolutionary changes in organizations occur more through anagenesis and less through cladogenesis. While both are evolutionary mechanisms that lead to the creation of new species, the former involves the transformation of a particular species of organisms to a new one in successive generations and the latter involves the splitting of original species into several and new species (Lakna, 2017).

According to Darwin (1859), climate plays an important part in determining the average numbers of a species, and sometimes it is favorable to some species. Some government policies and regulations sometimes are seen to favor different classes of companies. The regulations by the NCA on one hand are seen to favor LCs (NCA, 2012). However, the PPOA guidelines on the other hand favor FCs by allowing them

to apply for benefit from the preference and reservation scheme (PPOA, 2005). The climate brought about by these regulations could result in unfair competition in the construction industry. Darwin argued that while a prodigious number of plants in our gardens suggest endurance to our climate, they can never become naturalized and can neither compete with our native plants nor resist destruction by our native animals. While there could be an element of comparison with the existing environment in the Kenyan Construction Industry, the situation is mostly a contrast. As observed by different researchers, FCs have completely outclassed their indigenous counterparts not only in Kenya but the entire continent (Egmond & Erkelens, 2008; Broadman, 2013; Olubunmi & Olukanyin, 2015; Idoro, 2008; Aniekwu & Audu, 2010; Assibey-Mensah, 2008; and Burke, 2007)

Darwin (1859) opined that natural selection is daily and hourly scrutinizing, throughout the world, every variation, even the slightest; rejecting that which is bad, preserving and adding up all that is good; silently and insensibly working, whenever and wherever opportunity offers, at the improvement of each organic being in relation to its organic and inorganic conditions of life. According to Darwin, those organisms that failed to possess good features were faced with the threat of extinction. He asserted that was not the strongest of the species who survive, neither the most intelligent, but those who are most adaptive to change (Taraghi et al., 2011). Those that best fit the environment in which they find themselves in are most likely to survive hence the phrase, 'survival for the fittest'.

The ten factors identified by Olubunmi and Olukanyin (2015) among other factors contributing to the success of foreign contractors could be equated to the good features required to not only evade extinction but experience growth. Local contractors on the other hand were found to possess various weaknesses which act as a detriment in their struggle for growth and existence (Nguku, 2015). Competition for construction contracts could be likened to competition for resources by organisms in the natural ecosystem. Based on Darwin's theory, companies that fail to adapt to changes in their environment are in danger of facing extinction.

2.6.4 Theory of the Firm

There are different schools of thought associated with the theory of the firm. Various economists have formulated theories that seek to explain and even predict the nature of the firm with regard to its existence, growth, organizational structure, behavior, and how it relates to the market in which it operates.

O'Farrell and Hitchens (1988) point out that in most cases, small firms begin production at a smaller scale compared to the minimum efficient size in their industry. Failure to achieve the minimum efficient size suitable for their respective industry opens the door for possible closure occasioned by competition from companies operating above minimum efficiency. O'Farrell and Hitchens (1988) further argue that even though most small firms may not be efficient, they may attain the minimum efficient size by selling to partially protected or uncompetitive local and regional markets. Expansion beyond this scale depends on whether the firm's strategic goal is growth or whether it can meet the industry's demands.

Downie (1958) developed a theory in which he suggests that the rate of a firm's growth depends on several factors: demand and financial factors; availability of capital required for expanding capacity; and the product's consumers. He further argued that capacity is directly proportional to profit rate, while the rate of profit is inversely proportional to the growth of demand by consumers.

In his integrated theory on growth of firms, Marris (1963) suggests that the rate of growth of a firm is determined by four factors: (i) demand constraint; (ii) managerial constraint; (iii) the financial constraint; and (iv) objectives being pursued by the management such as sales, growth, and so on.

While O'Farrell and Hitchens (1988) point out that resources for required expansion may be obtained through borrowing, retained earnings, or issue of new shares, they also acknowledge that the extent of borrowing could be limited since high debt-equity ratio has the impact of exposing not only the firm but also the lender to increased risk. They argue that there is also a limit to the level of finance that can be raised through the issuance of new shares or retained earnings.

Churchill and Lewis (1983) identified eight factors that can determine the rate of growth of a firm: (i) financial resources such as cash and borrowing power; (ii) personnel resources such as quality of staff at staff and management level; (iii) system resources such as information, planning, and control systems; (iv) business resources including market share, client relations, technology, and reputation; (v) owner's goals; (vi) owner's operational capabilities in execution of the invention, production, marketing, and distribution; (vii) owner's managerial ability and willingness to delegate responsibilities; and (viii) owner's strategic abilities to align the company's goals with its strengths and weaknesses. The first four factors relate to the company itself while the latter relates to the firm's owner(s).

2.6.5 Theory of Competitive Advantage

The theory of competitive advantage mainly seeks to explain a firm's performance in the industry in which it exists. While it was originally developed as a single theory, it later evolved into several theories with each focused on a particular source of competitive advantage. These include; Market-Based View (MBV), Resource-Based View (RBV), Knowledge-Based View, Capability-Based View, and Relational View of Strategy (Wang, 2014).

Competitive advantage is acquired when a firm develops a set of attributes or executes actions that allow it to outperform its competitors (Wang, 2014). According to Porter (1985), competitive advantage is the key ingredient to superior performance. This argument is indeed supported by Roberts (1999) who hypothesizes that sustained superior performance is a result of sustained competitive advantage. Sustained competitive advantage is mostly attributed to three sources: (i) monopoly rents, usually obtained from a protected market where there is no competition; (ii) Ricardian rents, arising from firm-specific resources such as knowledge, leadership, or culture; and (iii) Schumpeterian rents, which are as a result of the firm's dynamic capability of renewing advantages over time by innovation (Wang 2014; Peteraf 1993; Powell 2001).

The construction industry in Kenya is a competitive one making it impossible for any firm to enjoy monopoly rents. There are limited barriers to entry into the market even

for foreign contractors. Due to the advanced status, however, international contractors operating in the local construction industry tend to enjoy Ricardian rents. Similarly, the extent to which they adopt new innovative technologies has previously been reported to be very high. This means that despite the local contractors' superior knowledge of the local market, the foreign contractors have a competitive advantage over them.

Figure 2.14 below represents interrelationships among the discussed theories as a result of shared concepts. Appendix 11 presents a detailed summary of the concepts extracted from each theory.

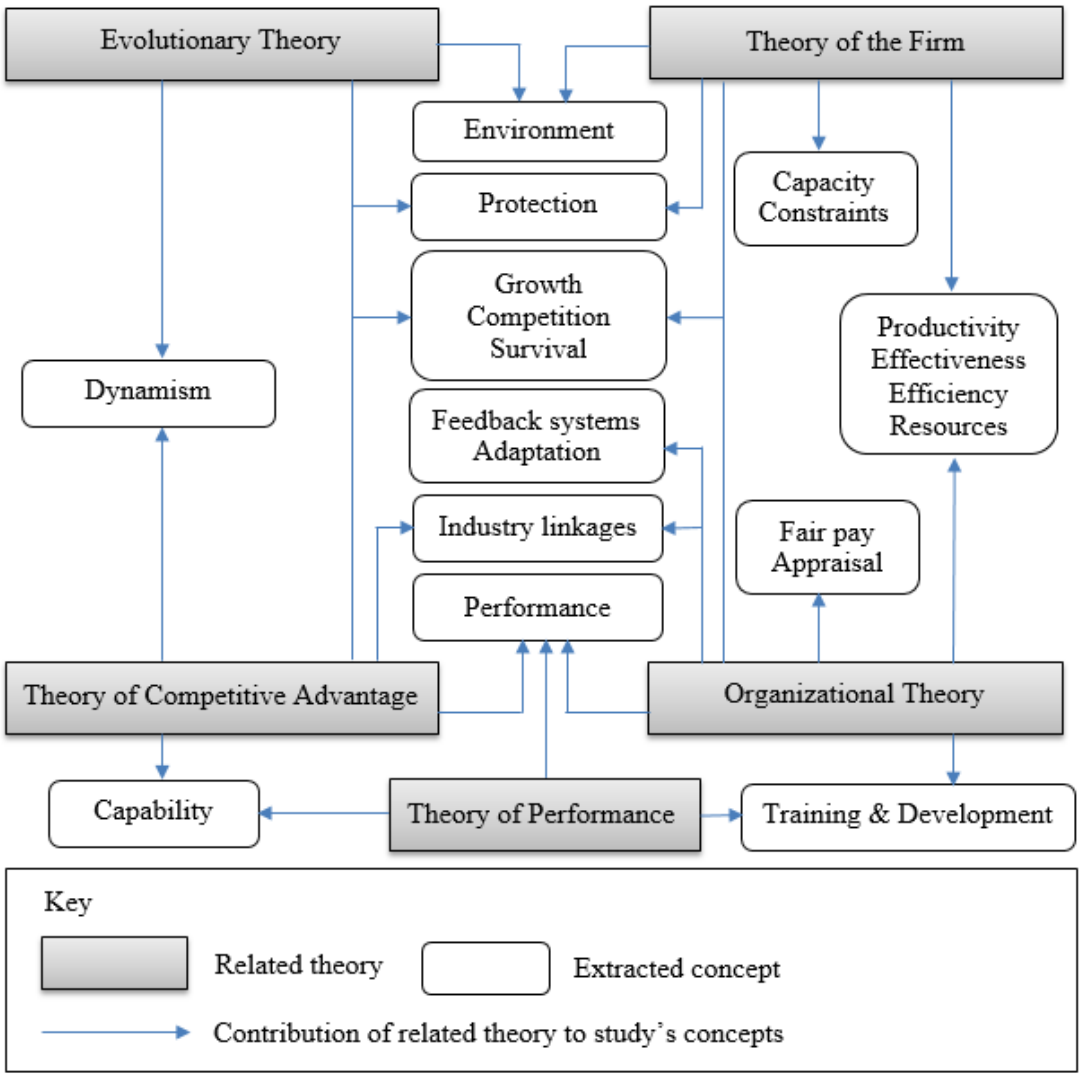

Figure 2.14: Key concepts from reviewed literature and related theories
Source: (Author, 2020)

2.7 Knowledge Gap

The knowledge gap in this study has been identified and discussed both in the reviewed literature and related theories.

2.7.1 Reviewed Literature

Most research undertaken on performance in the Kenyan construction industry is in most cases targeted towards improving the success of projects rather than the entities executing the projects. Some of the notable researches include; Gichunge (2000), Kibuchi (2012), Kihoro and Waiganjo (2015), Kithinji and Kamaara (2017), Mbiti (2017), Ogutu and Muturi (2017), Talukhaba (1999), Wafula (2017), and Wanjau (2015).

Where research has been carried out about organizational performance, it has been outside the construction industry. This is the case in Khatun et al., (2014) where the focus was on an electronic company. Such research cannot be relied upon in an effort towards improving the performance of contractors since the construction industry is unique. Construction projects are temporary endeavors each with unique working conditions and challenges.

Carton (2004) did some extensive research on how to measure organizational performance. First, while the study developed a measurement model which captures wider information regarding the impacts of organizational actions, they failed to discuss the relationships existing between organizational actions and outcomes. Secondly, while the researcher sought to describe the nature of organizational performance, he failed to examine the determinants of organizational determinants. Thirdly, the focus of the research was only on the financial aspect of organizational performance, making it unidimensional. Fourth, the research was neither conducted in the context of the construction industry nor in a developing country that has similar economic status as Kenya. The study was conducted in the U.S.A, a highly developed country.

Jin and Deng (2012) also proposed a framework for evaluating the performance of international construction companies. The focus of the study was on large international contractors rather than local contractors. While there is some overlap in

the criteria for evaluating the organizational performance of local and international contractors, in the case of the latter, emphasis is on factors such as international reputation which is not a performance indicator in local contractors. Additionally, the study did not also consider the factors affecting organizational performance.

Here in Kenya, Nguku (2015) did extensive research on the survival of local contractors. The researcher focused only on one aspect of organizational performance, growth. One of the main recommendations by the author was enacting protective laws against the competition posed by foreign contractors. However, this may have detrimental effects on the growth of the local construction industry. Knutsson and Thomasson (2014) pointed out that the creation of barriers to prevent free competition has unintended consequences such as a lack of innovation in local industries. Nguku (2015) further proposed diversification as the solution to the problems facing local contractors. He concludes that diversification can enhance the survival and growth of local contractors in Kenya who are faced with shrinking market share resulting from globalization. Though diversification could be a solution, it has a number of shortcomings such as; overextension of firm's resources, lack of expertise in the new field, increased costs, reduced innovation due to reduced focus, slow growth of the core business, incompatibility with current business, and negative synergies among other factors. Another major shortfall of Nguku's work is that he merely sought to ensure the survival of local contractors. Based on the model developed by Churchill and Lewis (1983), the growth of a firm undergoes five stages namely; existence, survival, success, take-off, and resource maturity. Based on this model, therefore, survival is not the ultimate growth goal of the firm. There's a need to ensure local contractors do not just survive but rather achieve growth and development.

Fehan and Aigbogun (2021) investigated the influence of internal organizational factors and institutional pressures on construction firms' performance using a multivariate approach. Based on the Syrian construction industry, a developing country, the study's findings would have been easier to adopt or compare in the case of Kenyan contractors. However, this could not have been possible due to two reasons. First, the study did not evaluate the organizational performance, it only analyzed its

determinants. Secondly, the study only considered the internal factors affecting the construction firms' performance. It failed to evaluate the effect of the external environment on organizational performance.

Mwangi (2016) sought to establish the factors influencing the performance of contractors in the road construction sector in Kenya. The study focused on four factors namely, working capital, skilled manpower, organization structure, and client support. Simiyu (2018) on the other hand evaluated the capacity of local contractors undertaking road projects in Nairobi city county. The study evaluated three categories of capacity namely technical, organizational, and regulatory compliance. While both studies were based on road contractors, they also focused on the determinants rather than the actual organizational performance. The factors considered in each of the two studies were also limited and did not capture a wide range to reflect the existing environment of local contractor operations.

Jin (2018) investigated the factors affecting the growth of construction organizations in Nairobi. The study established a significant relationship between both internal and external factors and the growth of local contractors. However, the research did not evaluate the organizational performance of these contractors. Additionally, the study only considered one dimension of organizational performance, i.e. growth. Having adopted a sample size of only 15 construction companies, generalization of findings was also not adequately justified.

2.7.2 Related Theories

The discussion surrounding organizational performance and its determinants covers a wide subject area. The main reason for incorporating many related theories in this research was the inability of any single particular theory to contribute to all the related concepts expected to be covered in this study. In some instances, some of the theories tend to conflict with each other, and yet they all have some important aspects applicable to this study. A good example is the classical and neoclassical organization theories. While the former emphasizes the firm's efficiency, the latter focuses on the social needs of employees. Both aspects are crucial in the evaluation of organizational performance and therefore both theories are necessary for this research. The

organization theory is the main theory in this research. One of the main challenges in its application in this study is the fact that it has its roots in the manufacturing industry. Most of the principles are based on an organization in a factory setup. Companies in the construction industry are unique in that most of their operations are based on temporary endeavors, construction projects. This has unique challenges such as having only a small proportion of the workforce being permanent. This means aspects such as the training and development of workers are met with challenges.

2.8 Theoretical Framework

This study sought to develop a framework for enhancing the organizational performance of local contractors here in Kenya. To be able to do that, it was important to not only evaluate the current level of performance but also to understand the critical factors influencing such performance. This involves the theoretical and empirical understanding of contractors' practices at a corporate level.

The theoretical framework for this research could be seen as an integration of the review of relevant literature and related theories. Indeed, it has been defined by Adom et al. (2018) as a framework that is based on existing theory in a particular field of inquiry and is usually related to the research hypothesis. It not only includes the selected theories but also relevant concepts and definitions extracted from such theories (Grant & Osanloo, 2014).

Theoretical triangulation was employed in this study. The theoretical framework for this research adopted an interdisciplinary approach drawing paradigms from both natural and social sciences; biology, performance studies, economics, and sociology. The organization and its performance can be viewed from multiple perspectives stretching back some centuries ago. This is because some organizational concepts such as survival are so fundamental to the firm that they remain relevant irrespective of their age. This theoretical framework borrows from each of the theories discussed in the previous section.

The organization can be viewed as a living organism that must adapt and survive in ever-changing environments. The organism is faced with natural challenges such as predators in the form of unfavorable competition and confounding government

policies. However, the strength of the organism lies in its ability to work together as a system and reap the benefits of synergy. This can only work if each component of the system maximizes its strengths and potential through an efficient coordination process. It is through such harmony that the system can be able to overcome sicknesses such as reduced profits, disgruntled employees, business inefficiencies, and unhappy clients among others. Just like the blood which flows through a living organism, finances are required to ensure all operations of the organization run smoothly.

Though the post-classical organizational theories seem to contradict the classical organization theories in that the latter views workers as beings with social needs while the former views workers as machines that should be managed scientifically to improve their efficiency, both perspectives remain relevant in this research. While this study adopts both perspectives, it leans more towards the post-classical era where concepts such as social welfare, employee motivation, employee involvement, interpersonal relationships, job satisfaction, self-management, teamwork, effective communication, and flexibility are employed to enhance the performance of the employees and the organization in general. Aspects of classical organization theory that remain valid for this research include; scientific selection and training of workers, division of work, management by rules, impersonality, written documentation, merit-based promotions, authority and responsibility, unity of direction and supervision, among others.

Performance is anchored on the interrelationships among four key aspects; inputs, processes, outputs, and outcomes. The organization exists to fulfill the needs of its stakeholders; shareholders, clients, employees, suppliers, and the environment. For that to happen, efficient processes should be employed in a bid to convert inputs into outputs. Such efficiency will depend on the individual characteristics of the players within the system and how they participate as a team to fulfill the organizational goals. While doing so, they must be aware of contingent factors that either support or hinder their operations and adapt accordingly. The organization will be deemed successful if the needs of all the stakeholders are fulfilled.

2.9 Conceptual Framework

Figure 2.15 represents the study's conceptual framework. This research adopts a multidimensional approach in measuring the level of organizational performance. The organizational performance of local contractors which is the main criterion variable of the study can be measured based on ten dimensions namely; Profitability, Client satisfaction, Growth, Technical capability, Business efficiency, Employee satisfaction, Financial stability, Quality of products, Managerial capability, and Safety performance. The level of organizational performance is influenced by ten factors (predictor variables) namely; Contractor's strategic planning Performance measurement, Quality of service, Organizational structure of the firm, Contractor's innovativeness, Employee performance, Clients' effectiveness, Suppliers' effectiveness, Competition, and Government support. The arrow indicates the direction of effect. The direction of the arrow indicates that organizational performance, as evaluated using the shown dimensions, is influenced by its listed determinants.

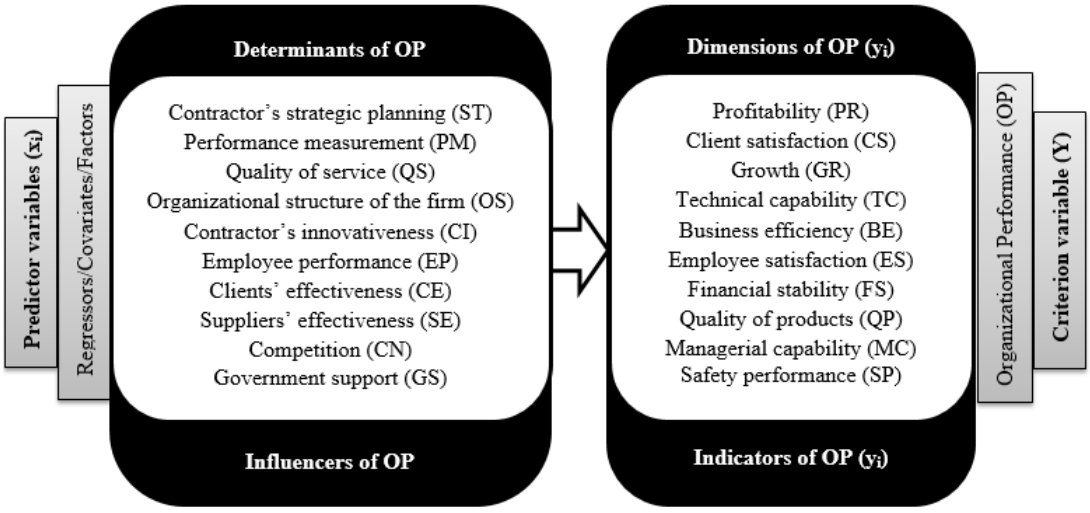

Figure 2.15: Conceptual Framework
Source: (Author, 2021)

Figure 2.16 below is a composite illustration of all the hypothesized relationships among the various determinants and dimensions of organizational performance. With ten predictor variables and equally ten criterion variables, there are a hundred (100) possible relationships between the former and the latter. Ten arrows originate from each of the ten determinants to demonstrate its influence on each of the ten dimensions

used to measure organizational performance. Similarly, ten arrows terminating at each dimension indicate the number of times it has been influenced by all the determinants on the left side of the diagram.

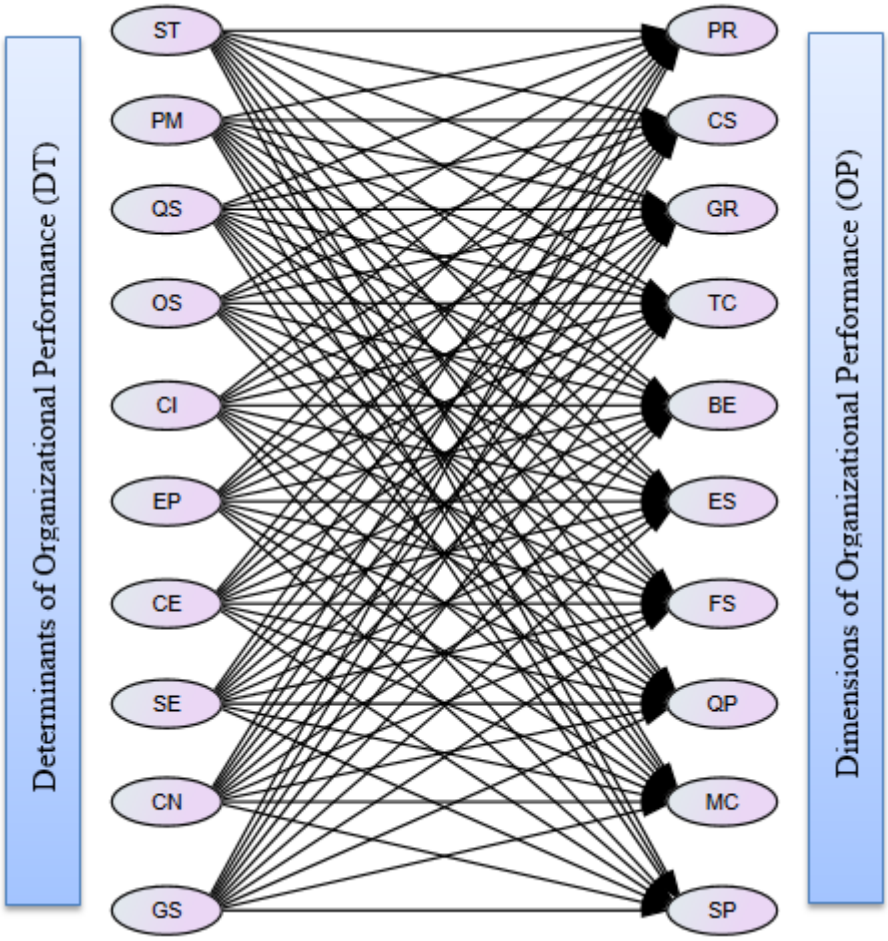

Figure 2.16: Hypothesized Relationships among Determinants and Dimensions of Organizational Performance of Local Contractors
Source: (Author, 2021)

While the main research hypothesis was presented in the previous chapter, Table 2.3 below presents the formulated research sub-hypotheses based on the hypothesized relationships among determinants and dimensions of organizational performance. Later in chapter four, structural equation modelling has been used to test each of these hypotheses.

Table 2.3: Research sub-hypotheses

Hyp.	Hypothesis
H_1	Strategic planning practices have a significant influence across all dimensions of organizational performance.
H_2	Performance measurement practices have a significant influence across all dimensions of organizational performance.
H_3	Quality of service has a significant influence across all dimensions of organizational performance.
H_4	Organizational structure of the firm has a significant influence across all dimensions of organizational performance.
H_5	Contractor's innovativeness has a significant influence across all dimensions of organizational performance.
H_6	Employee performance has a significant influence across all dimensions of organizational performance.
H_7	Clients' effectiveness has a significant influence across all dimensions of organizational performance.
H_8	Suppliers' effectiveness has a significant influence across all dimensions of organizational performance.
H_9	Competition has a significant influence across all dimensions of organizational performance.
H_{10}	Government support has a significant influence across all dimensions of organizational performance.

Source: (Author, 2021)

2.10 Conceptualization and Operationalization of Variables

While conceptualization involves articulating what is meant by a term, operationalization involves designing accurate measures for study variables (Nayak & Singh, 2015). Organizational performance will be taken as the extent to which an organization achieves its objectives or goals using a minimum amount of resources. It will be measured by aggregating the combined effect of its listed dimensions. The conceptual and operational definition of the variables has been summarised on Tables 2.4 and 2.5 below:

Table 2.4: Operationalization of the Criterion Variables; Dimensions of Organizational Performance

No	Dimensions	Conceptual definition	Operational definition
1	Profitability	The degree to which a company yields financial gain	Based on a checklist, rate the company's profitability over the last five years on a scale of 1-10
2	Client satisfaction	The extent to which clients are satisfied with work done by a contractor.	Based on a checklist, rate the company's level of client satisfaction over the last five years on a scale of 1-10
3	Growth	Increase in the size of the firm both financially and non-financially	Based on a checklist, rate the company's growth over the last five years on a scale of 1-10
4	Technical capability	The extent to which the contractors possess the required personnel and equipment to execute projects.	Based on a checklist, rate the company's technical capability over the last five years on a scale of 1-10
5	Business efficiency	The ratio of a company's output to its input	Based on a checklist, rate the company's business efficiency over the last five years on a scale of 1-10
6	Employee satisfaction	The extent to which employees are content with their jobs and the working environment	Based on a checklist, rate the company's level of employee satisfaction over the last five years on a scale of 1-10
7	Financial stability	The ability of the company to resist economic shocks and be able to smoothly execute its basic functions	Based on a checklist, rate the company's financial stability over the last five years on a scale of 1-10
8	Quality of products	The extent to which the contractor complies with the technical specifications provided by the design consultants	Based on a checklist, rate the company's quality of works over the last five years on a scale of 1-10
9	Managerial capability	The extent to which the management is capable of steering the company towards its vision.	Based on a checklist, rate the company's managerial capability over the last five years on a scale of 1-10
10	Safety performance	The extent to which the firm conforms to safety standards and protocols.	Based on a checklist, rate the company's level of safety performance over the last five years on a scale of 1-10

Source: (Author, 2021)

Table 2.5: Operationalization of Predictor Variables; Determinants of Organizational Performance.

No.	Variable	Conceptual definition	Operational definition
1	Contractor's strategic planning	The overall plan of how the organization intends to meet its goals and objectives.	Based on a checklist and a scale of 1-10, evaluate the firm's strategic planning processes over the last five years
2	Performance measurement	The degree to which the contractor evaluates the extent to which goals and objectives have been attained at a corporate level	Based on a checklist and a scale of 1-10, evaluate the firm's performance measurement practices over the last five years
3	Quality of service	Level of the overall performance of service offered by local contractors.	Based on a checklist and a scale of 1-10, evaluate the firm's general quality of service over the last five years
4	Firm's organizational structure	A hierarchical definition of the structural interaction between personnel, management, and resources	Based on a checklist and a scale of 1-10, evaluate the company's organogram over the last five years.
5	Contractor's innovativeness	The extent to which the contractor adopts new methods, new ideas, new processes, and new technologies in their operations.	Based on a checklist and a scale of 1-10, establish the innovative index of the company over the last five years
6	Employee performance	Level of efficiency and effectiveness exhibited by employees in their task performance	Based on a checklist and a scale of 1-10, describe the level of employee performance in your firm over the last five years
7	Clients' effectiveness	Level of effectiveness exhibited by clients in the execution of their responsibilities	Based on a checklist and a scale of 1-10, evaluate the effectiveness of the firm's clients over the last five years
8	Suppliers' effectiveness	Level of effectiveness exhibited by suppliers in the execution of their responsibilities	Based on a checklist and a scale of 1-10, evaluate the effectiveness of the firm's suppliers over the last five years
9	Competition	Degree of the effect of competition on the activities of the local contractor.	Based on a checklist and a scale of 1-10, evaluate the effect of competition within the local construction industry on the company's activities over the last five years
10	Government support	Degree of the effect of government's actions on the activities of the local contractor.	Based on a checklist and a scale of 1-10, evaluate the effect of the government's actions on the company's activities over the last five years

Source: (Author, 2021)

2.11 Chapter Summary

This chapter developed a critical view of the concept of organizational performance. The concepts of organization, performance, and organizational performance were discussed. The history of organizational performance was given through its evolution. The review established that organizational performance could be measured through a number of indicators and could be influenced or determined by several critical factors. In order to understand the complex, dynamic and multifaceted aspect of organizational performance, theories were drawn from both natural and social sciences; biology, performance studies, economics, and sociology. Major theories adopted included; organization theory, theory of performance, evolutionary theory, theory of the firm, and theory of competitive advantage.

The review of literature established ten (10) dimensions through which organizational performance could be measured: Profitability; Client satisfaction; Growth; Technical capability; Business efficiency; Employee satisfaction; Financial stability; Quality of products; Managerial capability; and Safety performance. Ten (10) critical factors were found to influence the level of organizational performance: Strategic planning practices; Performance measurement practices; Quality of service; Organizational structure of the firm; Contractor's innovativeness; Employee performance; Clients' effectiveness; Suppliers' effectiveness; Competition; and Government support. It is based on these twenty (20) variables that a conceptual framework was formulated. The next chapter describes the methodology of how data was collected and analyzed in order to enable meaningful inferences among the identified variables.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the methodology adopted to measure and evaluate the relationships between the variables identified in the previous chapter. Presented in this chapter are; philosophical underpinnings, research strategy, and design adopted, population targeted, sampling techniques, methods used to collect, analyze and present data. Issues to do with validity, reliability, generalizability, and ethical considerations have also been outlined in this chapter.

3.2 Philosophical Underpinnings

Philosophically, this research is grounded on positivism. This philosophy holds that empirical evidence obtained through the senses is the only firm foundation for knowledge. It takes the view that that knowledge is hard, objective, tangible and requires the researcher to adopt an observer role while conforming to the methods of natural science (Cohen et al., 2012). Indeed Bryman (2012) asserts that positivism advocates for the application of the methods of the natural sciences to the study of social reality and beyond. The main aim of choosing positivism is to enable formulations of generalizable predictions of organizational performance of local contractors. Chilisa and Kawulich (2012) assert that in a positivist paradigm, the purpose of undertaking research is discovering laws that are generalizable and govern the universe. The following are the philosophical assumptions adopted by the researcher in this study.

3.2.1 Ontological Assumptions

Ontology is concerned with the nature of reality. Ontologically, this study assumes a single, defined, and fixed reality which is capable of being validated using human senses. This means reality remains constant with changes in time, space, and observer. It is assumed that organizational performance and its determinants are observable and measurable. Data collected from the field is able to demonstrate the existing reality pertaining to the behavior of local contractors in respect of organizational performance. Adoption of reliable and valid tools for collecting such data ensures that

the reality remains constant unless changes occur regarding the behavior of studied subjects. Therefore, the truth lies within the established and unchanging reality.

3.2.2 Epistemological Assumptions

Epistemology seeks to explain how we know what we know and the validity of such knowledge. While ontology is focused on the nature of reality, epistemology is concerned with the relationship between the subject and the researcher. Since the researcher was on a quest to establish the relationship between the determinants and the dimensions of organizational performance, this research sought to employ scientific methods in achieving the research aim.

Epistemologically, this research adopted an objectivism view. According to Bryman (2012), this is a position that propagates the idea that social phenomena together with their meanings exist independent of the social actors. Crotty (2003) asserts that based on this position, the mind of the researcher is separate from the world of objects being investigated. Simply put, reality is external to individuals and it imposes itself on individuals' consciousness from without. Objectivism means that neither the knower nor the object exerts influence on each other. According to Cohen et al (2012), to assume that objects have an independent existence of the knower is to take a realist position. Indeed Pring (2000) define realism as the "the view that there is reality, a world, which exists independently of the researcher and which is to be discovered"

Objectivism allows us to analyze the organization as a tangible object. It enables us to view the organization as an entity with a life of its own and driven by goals (Cohen et al., 2012). This is a fundamental aspect of this research. In addition to having rules and regulations, the organization adopts standard procedures for doing things. It has a mission statement and a hierarchy where personnel is appointed within a setup of division of labor. Bryman (2012) argues that while the degree to which such features exist from one organization to another varies, thinking in such terms allows us to view the organization as having a reality that is external to the individuals inhabiting it. The organization also represents a social order which exerts pressure on people to comply with the organization's requirements.

3.3 Research Strategy

There are two main approaches of research; quantitative and qualitative. Based on the following three major reasons, this research adopted the former: (i) deductive i.e. it sought to test a postulated hypothesis; (ii) the ontological orientation was that of singular reality; and (iii) epistemologically, the research was oriented towards objectivism. The study also sought to employ natural scientific methods. Indeed Creswell (2003) points out that a quantitative strategy is one where the researcher uses a positivist approach in developing knowledge (i.e. formulation of questions, variables and hypothesis, use of measurement or observation, and testing theories), employs survey or experiment as the strategy of inquiry, data is collected based on predetermined instruments which yield statistical data, and generalizations and predictions arise from the data analysis. In this research, theory is tested by formulating a hypothesis after which data is collected and analyzed statistically to support or counter the hypothesis.

3.4 Research Design

This research employs a survey research design. It seeks to collect data on many cases at a single point in time to collect quantifiable data related to multiple variables, which are examined for detecting patterns of association (Bryman, 2012). The research procedure in this study involves four major phases; pilot survey, mock data analysis, main survey, and main data analysis. Details of these major processes have been discussed in subsequent sections. Figure 3.1 below represents the four main phases under which this study was conducted.

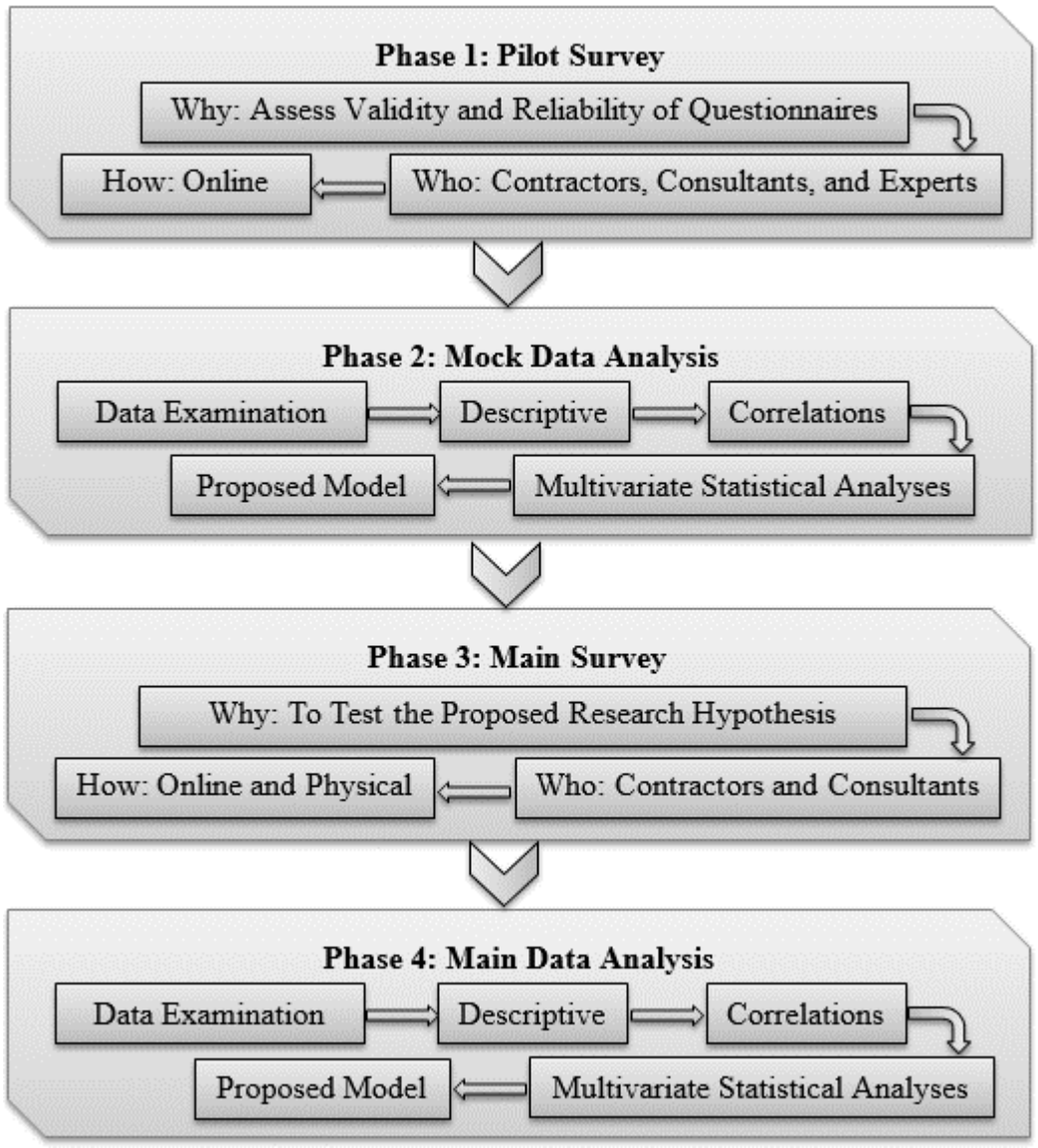

Figure 3.1: Adopted research process
Source: (Author, 2020)

3.5 Nature of research

This research is both descriptive and explanatory. While the former is seen in the attempt to describe the level of organizational performance of local contractors, the latter is manifested in the quest to link the determinants of organizational performance to the established levels by identifying causes and effects.

3.6 Triangulation Approach

Triangulation in this research is evident in its data collection process through to the data analysis. Two units of observation were used for the same unit of analysis. Other

than the self-evaluation carried out by the contractors, an external assessment by consultants was sought. The purpose of this was to validate the results from the self-assessment and eliminate bias. Three modes of survey administration were adopted; email, mobile and physical. The first mode involved sending the google survey to respondents' email addresses and LinkedIn™ accounts. The google survey was created using Google forms™. The second mode involved sharing a link to the online (google) survey using WhatsApp™ mobile application. The third mode involved the physical administration of the questionnaires to the offices of the respondents. The reason behind the use of multiple methods of administration was the low response rate observed in previous studies. The administration of the survey on the same respondents using multiple approaches was meant to achieve a higher response rate.

Two categories of investigators were used in this research; researcher and research assistants. The main reason for adopting both categories was to save on time and cost. It also helped in getting a higher number of responses and avoiding errors that could be caused by a prolonged period of data collection. Two types of questions were captured in the questionnaire; open-ended and close-ended questions. This resulted in the collection of two types of data; quantitative and qualitative. The reason for using both is that neither of the two types of data is independently sufficient in explaining causes, effects, and trends as sought in this study.

This study employed both objective and subjective measures of organizational performance. While objective measures are known to yield more reliable data, it has been observed from previous studies that they are more prone to the problem of missing values. The use of both types of measures not only yielded complementary information but also enabled a comparison between the two.

Multiple techniques were used to analyze the same data. Relationships between the predictor and criterion variables were discussed at three levels; bivariate correlations, multiple regression, and structural equation modelling. This means that the research hypotheses were tested using a multi-approach. Each statistical analysis has its weaknesses and therefore such an approach sought to exploit the strength of each analysis method in overcoming the weaknesses of the other. Additionally,

triangulation in data analysis is recommended for research validation purposes (Santos et al., 2020).

3.7 Unit of Observation and Analysis

This study aimed at measuring and developing a framework for enhancing the level of organizational performance of local contractors in Kenya. The unit of analysis was therefore the local contractor (the firm or company) and the unit of observation was any representative of the firm whom the researcher deemed to be capable of providing sufficient information about the organization. This could include managing directors, technical directors, marketing directors, financial directors, operation managers, procurement managers, and project coordinators, among others.

However, to avoid bias resulting from self-assessment, the researcher also sought to measure the level of organizational performance externally through consultants engaged by project clients. These included Quantity Surveyors, Architects, Civil and Structural Engineers, and Construction Project Managers. Such individuals were deemed capable of providing the assessment from their perspective and that of their clients.

3.8 Target Population and Sample Size

The target population consisted of local contractors who fall in NCA1, NCA2, and NCA3 categories. Based on the NCA register dated 6th September 2020, the total number of registrations under these categories is 3,517 (NCA, 2020). However, due to multiple registrations of contractors in various classes and categories, the actual number of contractors is 1,782. After excluding the 138 foreign contractor registrations, the number of local contractors currently is 1,644. Out of these, 217 are not engaged in construction as their main business activity. Therefore the target population consisted of 1,427 local contractors registered under NCA1 (457), NCA2 (562), and NCA3 (408) categories. As seen in appendix 12, three options were considered in sample size calculations. These yielded sample sizes of 302, 302, and 313 respectively. A mean sample size of 306 local contractors was adopted.

However, based on the response rates observed in previous studies, the calculated sample sizes would yield inadequate data for multivariate statistical analysis.

Therefore, the researcher opted to go beyond the calculated sample size. As such the researcher was able to administer as many questionnaires as possible. As a result, 472 questionnaires were administered. This represented 154% of the intended sample size.

To avoid bias in the data collected, it was deemed necessary to seek a second perspective regarding the organizational performance of these contractors. It is for this reason that registered consultants in the built environment were included in this study. According to the Board of Registration of Architects and Quantity Surveyors of Kenya (BORAQS), the number of registered Architectural and Quantity Surveying firms was 147 and 405 respectively as at 6th September 2020 (BORAQS, 2020a; BORAQS, 2020b). The number of registered Civil and Structural Engineering firms according to the Engineers Board of Kenya (EBK) as at 6th September 2020 was 105 (EBK, 2020). According to the Institution of Construction Project Managers of Kenya (ICPMK), the number of registered Construction Project Managers as at 6th September 2020 was 129 (ICPMK, 2020). This resulted in a total number of 863 consultants and developers. The criteria for inclusion in the survey was having worked with the selected contractors in their current or previous projects. A similar questionnaire (slightly modified) was used for the consultants since most of the target respondents working in developers' firms were also consultants. Therefore, the total sample size for this study was established to be 612.

3.9 Sampling Procedures

A combination of stratified and simple random sampling was used to identify the contractors to be included in the sample. Three strata were formed based on NCA category. Based on the overall sample size, the sample sizes for each of the strata were calculated proportionately. This has been presented on Table 3.1. Once this had been achieved, simple random sampling was then used to pick the contractors to be included in the overall sample from each NCA category.

Purposive sampling was used to identify the consultants to be included in the survey. The criteria for inclusion was participation in similar projects with the selected contractors. Since the unit of analysis is the contractor, this non-probability sampling technique does not by any chance affect the generalization of the results.

Table 3.1: Stratified sampling of contractors

No.	NCA	Target population	Sample size	Questionnaires administered
1	NCA1	457	98	153
2	NCA2	562	120	185
3	NCA3	408	88	134
Total		**1,427**	**306**	**472**

Source: (Author, 2021)

3.10 Study variables

Both the dimensions and determinants of organizational performance have been measured based on a period of five years. The researcher considered this to be appropriate in the sense that it balances between getting historical and credible data. Performance is the observed difference between two points in time. A shorter period would have been questionable in terms of observing the difference. A longer period would be questionable in terms of the respondent's recollection of the distant past.

While most of the variables and indicators touched on the contractor's practices and therefore they could be able to provide the required information to assess them, some variables such as client satisfaction and quality of products among others required a second opinion from an external stakeholder outside the contractor's firm so as to validate the information provided by the contractor. It is for this reason that the additional unit of observation (consultant) was introduced. All the study variables were therefore measured based on the two perspectives.

Study variables have been measured both objectively and perceptually. While perceptual measures have mostly been used predominantly, several objective measures have been included to check the validity of the data obtained from the perceptual measures. The use of perceptual measures is justified in four ways. First, subjective measures are preferable when firm performance is compared across firms since recording standards of objective measures vary across firms (Ketokivi & Schroeder, 2004). Secondly, they are less prone to challenges associated with objective measures such as confidentiality issues and difficulty in obtaining information (Goh et al., 2012). Thirdly, they accommodate the assessment of non-financial criteria (Richard et al., 2009). Lastly, there is evidence of their strong correlation to objective measures (Covin et al., 1994; Dawes, 1999). Therefore the

subjective measures can be considered to be valid proxy measures of organizational performance.

3.10.1 Criterion Variable; Organizational Performance (OP)

The criterion variable in this study is the organizational performance of local contractors. This research measures organizational performance from a multidimensional perspective where ten (10) indicators are considered. Each of these dimensions is measured using a five-prong approach. This means that the criterion variable, organizational performance, is measured using fifty (50) attributes. Each variable and its attributes have all been assigned a code that will be used in the statistical software as shown on Tables 3.2 to 3.11.

All the attributes have been measured on a numerical rating scale of 1-10 ranging from very low to very high. The higher the level of each of the indicators, the higher the level of the respective dimension which translates to a higher level of organizational performance. The 10-point scale was chosen due to its ability to not only offer more variance compared to smaller scales but also its higher degree of measurement precision. It also not only provides an improved opportunity to detect changes but gives more power in explaining a point of view (Taherdoost, 2019). The 10-point scale is also said to provide better reliance (Dawes, 2008).

3.10.1.1 Profitability (PR)

This is the degree to which the contractor yields financial gain. It is the firm's ability to use her resources to generate excess revenues compared to her expenses. The higher the surplus, the higher the profitability. Table 3.2 below shows the indicators used to measure profitability.

While it would have been more prudent to measure these in terms of actual figures, previous research indicated that respondents were not willing to provide absolute figures regarding such sensitive financial information. However, the researcher included some questions in the background section of the questionnaire which would be able to give information regarding revenue and expenditure. Such information was used to estimate the firms' profitability and correlated with the information from this section to establish a pattern.

Table 3.2: Profitability; Indicators

Dimension	Code	Attributes/Indicators	Code
Profitability	PR	Gross profit margin	PR1
		Operating profit margin	PR2
		Net profit margin	PR3
		Return on assets	PR4
		Asset turnover	PR5

Source: (Author, 2021)

The gross profit margin is a firm's net sales minus the cost of goods sold. The higher the difference, the higher the gross profit margin. The operating profit margin is the profit produced from operations before paying taxes and interests. The net profit margin is the ratio of net profits to revenues. The higher the ratio, the higher the net profit margin. Return on assets is the amount of profit (net income) divided by the total assets. The higher the ratio, the higher the return on assets. Asset turnover is a company's total revenues divided by its total assets. The higher the ratio, the higher the asset turnover.

3.10.1.2 Client satisfaction (CS)

This is the extent to which clients are satisfied with the services delivered by the contractor. Table 3.3 below shows the indicators used to measure client satisfaction.

Table 3.3: Client satisfaction; Indicators

Dimension	Code	Attributes/Indicators	Code
Client satisfaction	CS	Service quality	CS1
		Adherence to schedule	CS2
		Adherence to budget	CS3
		Communication skills	CS4
		Personnel skills	CS5

Source: (Author, 2021)

3.10.1.3 Growth (GR)

This is the increase in the size of the firm. It is measured as the difference observed at two points in time. Growth can be measured either as an absolute or relative change. While both approaches have their shortcomings, this study adopts the latter rather than the former. This is due to the aforementioned reasons. Table 3.4 below shows the indicators used to measure growth.

Table 3.4: Growth; Indicators

Dimension	Code	Attributes/Indicators	Code
Growth	GR	Profitability	GR1
		Annual turnover/volume of work	GR2
		Client retention	GR3
		Number of employees	GR4
		Equipment/assets	GR5

Source: (Author, 2021)

3.10.1.4 Technical capability (TC)

This is the extent to which the contractors possess the required personnel and equipment to execute projects. Technical capability is a key requirement for the success of any contractor. Construction projects require special skills, knowledge, and know-how without which the contractor cannot interpret and implement the information provided by consultants. Table 3.5 below shows the indicators used to measure technical capability.

Table 3.5: Technical capability; Indicators

Dimension	Code	Attributes/Indicators	Code
Technical capability	TC	experience (previous works)	TC1
		adequacy of plant & equipment	TC2
		qualification of personnel	TC3
		advancement of electronic hardware used	TC4
		advancement of electronic software used	TC5

Source: (Author, 2021)

3.10.1.5 Business efficiency (BE)

Business efficiency is the overall output of the firm per the cost of inputs. It is in the interest of every business to increase its efficiency by reducing waste in its processes. Table 3.6 below shows the indicators used to measure business efficiency.

Table 3.6: Business efficiency; Indicators

Dimension	Code	Attributes/Indicators	Code
Business efficiency	BE	labor productivity	BE1
		return on investment in equipment	BE2
		energy efficiency	BE3
		revenue per employee	BE4
		marketing efficiency	BE5

Source: (Author, 2021)

Labour productivity is the output of employees per given time. While it mostly applies to skilled personnel such as masons, plumbers, carpenters, and foremen among others, it is also applicable to professionals such as site managers, site engineers, construction managers, project coordinators, among others.

Return on investment is the amount of return on a particular investment, relative to its cost. It is also known as financial efficiency or net present value. It is a comparison of the business costs and revenues. A financially efficient firm is that which has high revenues and low costs.

Energy efficiency is the reduction in energy consumption to attain the same amount of work or output. Energy is a critical component of all business operations. Both site and office operations are reliant on energy. The higher the energy consumed, the higher the expected revenue. Energy efficiency can be improved by the use of energy-efficient equipment.

Revenue per employee is the total revenue of a firm divided by the number of employees. It is expected that a high number of employees should translate to increased revenues. Anything contrary to this is an indication of poor business efficiency.

Marketing efficiency is the total revenue of a firm divided by the marketing costs. The higher the ratio, the higher the marketing efficiency. In the highly competitive construction industry, contractors have no option but to market themselves. High marketing costs should translate into an increased number of clients, revenue, or profits.

3.10.1.6 Employee satisfaction (ES)

This is the extent to which employees are content with their jobs and the working environment. Table 3.7 below shows the indicators used to measure employee satisfaction.

Table 3.7: Employee satisfaction; Indicators

Dimension	Code	Attributes/Indicators	Code
	ES	remuneration/salary	ES1

Dimension	Code	Attributes/Indicators	Code
Employee satisfaction		reward for excellence in job performance	ES2
		favourability of working conditions	ES3
		professional growth	ES4
		training and development	ES5

Source: (Author, 2021)

3.10.1.7 Financial stability (FS)

This is the state whereby the company is capable of resisting economic shocks and be able to smoothly execute its basic functions. Table 3.8 below shows the indicators used to measure financial stability.

Table 3.8: Financial stability; Indicators

Dimension	Code	Attributes/Indicators	Code
Financial stability	FS	credit ratings	FS1
		net value of current assets	FS2
		adequacy of working capital	FS3
		net cash flow from projects	FS4
		access to overdraft facilities	FS5

Source: (Author, 2021)

3.10.1.8 Quality of projects (QP)

This is the extent to which the contractor complies with the technical specifications provided by the design consultants. Table 3.9 below shows the indicators used to measure the quality of products.

Table 3.9: Quality of products; Indicators

Dimension	Code	Attributes/Indicators	Code
Quality of products	QP	aesthetics	QP1
		freeness from defects on completion	QP2
		fitness for the purpose	QP3
		support by worthwhile guarantees	QP4
		durability	QP5

Source: (Author, 2021)

3.10.1.9 Managerial capability (MC)

This is the extent to which the management is capable of steering the company towards its vision. The performance of the organization hinges on the capability of the management to steer the firm towards success. In the context of this study, management is taken to include both the owners and appointed managers. This

excludes low-level work supervisors. Table 3.10 below shows the indicators used to measure managerial capability.

Table 3.10: Managerial capability; Indicators

Dimension	Code	Attributes/Indicators	Code
Managerial capability	MC	effectiveness of strategic management	MC1
		consistency in decision making	MC2
		promptness in decision making	MC3
		prudence in financial management	MC4
		efficiency in human resource management	MC5

Source: (Author, 2021)

3.10.1.10 Safety performance (SP)

Table 3.11 below shows the indicators used to measure safety performance.

Table 3.11: Safety performance; Indicators

Dimension	Code	Attributes/Indicators	Code
Safety performance	SP	soundness of health and safety policies	SP1
		availability of health and safety officer	SP2
		use of personal protective equipment	SP3
		use of warning signage, barriers, etc.	SP4
		induction of workers on OHS	SP5

Source: (Author, 2021)

3.10.2 Predictor Variables; Determinants of Organizational Performance (DT)

The predictor variables are the determinants of organizational performance. They are the factors influencing the level of organizational performance in local contractors. This research identified ten (10) determinants of organizational performance. Each of these determinants is measured using a five-prong approach. This means that the predictor variables are measured using fifty (50) attributes/indicators. Just like the dimensions, each variable and its attributes have all been assigned a code that will be used in the statistical software as shown on Tables 3.12 to 3.21. Again, all the attributes have been measured on a numerical rating scale of 1-10 ranging from very low to very high. The higher the level of these attributes, the higher the level of the contractors' practices which influence organizational performance.

3.10.2.1 Contractor's strategic planning (ST)

This is the overall plan of how the contractor intends to meet firm goals and objectives. The checklist presented on Table 3.12 was used to evaluate the firm's strategic

planning processes over the last five years. All the attributes have been measured on a numerical rating scale of 1-10 ranging from very low to very high.

Table 3.12: Contractor's strategic planning practices; Attributes

Determinant	Code	Attributes/Indicators	Code
Contractor's strategic planning practices	ST	definition of the firm's purpose and goals	ST1
		development of a mission and vision	ST2
		assessment of business environment	ST3
		identification and analysis of firm's strategic issues	ST4
		implementation, evaluation and control systems	ST5

Source: (Author, 2021)

3.10.2.2 Performance measurement practices (PM)

This is the degree to which the contractor evaluates the extent to which goals and objectives have been attained at a corporate level. The checklist presented on Table 3.13 was used to evaluate the firm's performance measurement practices over the last five years.

Table 3.13: Contractor's performance measurement practices; Attributes

Determinant	Code	Attributes/Indicators	Code
Contractor's performance measurement practices	PM	clarity and meaningfulness to all	PM1
		harmony with organizational goals	PM2
		reliability of data used	PM3
		commitment by top management	PM4
		employee involvement	PM5

Source: (Author, 2021)

3.10.2.3 Quality of service (QS)

The checklist presented on Table 3.14 was used to evaluate the firm's quality of service over the last five years.

Table 3.14: Quality of service; Attributes

Determinant	Code	Attributes/Indicators	Code
Quality of service	QS	reliability	QS1
		responsiveness to clients	QS2
		knowledge and courtesy of employees	QS3
		empathy towards clients	QS4
		appearance of physical facilities and personnel	QS5

Source: (Author, 2021)

3.10.2.4 Organizational structure of the firm (OS)

This is the hierarchical definition of the structural interaction between personnel, management, and resources. The checklist presented on Table 3.15 was used to evaluate the organizational structure of the firm over the last five years. All the attributes have been measured on a numerical rating scale of 1-10 ranging from very low to very high.

Table 3.15: Organizational structure of the firm; Attributes

Determinant	Code	Attributes/Indicators	Code
Organizational structure of the firm	OS	clarity of line of authority	OS1
		flexibility	OS2
		adequacy of delegation of authority	OS3
		provision of stability and continuity	OS4
		documentation of the structure	OS5

Source: (Author, 2021)

3.10.2.5 Contractor's innovativeness (CI)

This is the extent to which the contractor adopts new methods, new ideas, new processes, and new technologies in their operations. The checklist presented on Table 3.16 was used to evaluate the contractor's innovativeness over the last five years. All the attributes have been measured on a numerical rating scale of 1-10 ranging from very low to very high.

Table 3.16: Contractor's innovativeness; Attributes

Determinant	Code	Attributes/Indicators	Code
Contractor's innovativeness	CI	adoption of new processes	CI1
		advancement of construction equipment	CI2
		entry into new markets	CI3
		advancement in software technology	CI4
		research and development endeavor	CI5

Source: (Author, 2021)

3.10.2.6 Employee performance (EP)

This is the level of efficiency and effectiveness exhibited by employees in their task performance. The checklist presented on Table 3.17 was used to evaluate the employee performance over the last five years. All the attributes have been measured on a numerical rating scale of 1-10 ranging from very low to very high.

Table 3.17: Employee performance; Attributes

Determinant	Code	Attributes/Indicators	Code
Employee performance	EP	work quality	EP1
		effectiveness of communication	EP2
		creativity and taking initiative	EP3
		cooperation (level of team play)	EP4
		acceptance and learning from feedback	EP5

Source: (Author, 2021)

3.10.2.7 Clients' effectiveness (CE)

This is the level of effectiveness exhibited by clients in the execution of their responsibilities. The checklist presented on Table 3.18 was used to evaluate clients' effectiveness over the last five years. All the attributes have been measured on a numerical rating scale of 1-10 ranging from very low to very high.

Table 3.18: Clients' effectiveness; Attributes

Determinant	Code	Attributes/Indicators	Code
Clients' effectiveness	CE	promptness in payment	CE1
		selection of competent project consultants	CE2
		timeliness in appointment of project consultants	CE3
		responsiveness to information requests and decisions	CE4
		acquisition of local authority permissions	CE5

Source: (Author, 2021)

3.10.2.8 Suppliers' effectiveness (SE)

This is the level of effectiveness exhibited by suppliers in the execution of their responsibilities. The checklist presented on Table 3.19 was used to evaluate Suppliers' effectiveness over the last five years. All the attributes have been measured on a numerical rating scale of 1-10 ranging from very low to very high.

Table 3.19: Suppliers' effectiveness; Attributes

Determinant	Code	Attributes/Indicators	Code
Suppliers' effectiveness	SE	timeliness of delivery	SE1
		adherence to quality specifications	SE2
		timeliness of communication	SE3
		consistency of improvement of services	SE4
		technical support for their installations	SE5

Source: (Author, 2021)

3.10.2.9 Competition (CN)

This is the degree of the effect of competition on the activities of the local contractor. The checklist presented on Table 3.20 was used to evaluate the effect of competition on contractor's activities over the last five years. All the attributes have been measured on a numerical rating scale of 1-10 ranging from very low to very high.

Table 3.20: Competition; Attributes

Determinant	Code	Attributes/Indicators	Code
Competition	CN	increased efficiency	CN1
		improved quality	CN2
		enhanced client satisfaction	CN3
		increased innovativeness	CN4
		improved industry linkages	CN5

Source: (Author, 2021)

3.10.2.10 Government support (GS)

This is the degree of the effect of the government's actions on the activities of the local contractor. The checklist presented on Table 3.21 was used to evaluate the effect of the government's actions on contractor's activities over the last five years. All the attributes have been measured on a numerical rating scale of 1-10 ranging from very low to very high.

Table 3.21: Government support; Attributes

Determinant	Code	Attributes/Indicators	Code
Government support	GS	provision of construction jobs	GS1
		regulation of the industry	GS2
		skills development through formal training e.g. NITA, NCA	GS3
		efficiency of procurement practices	GS4
		direct support e.g. financial	GS5

Source: (Author, 2020)

3.11 'Data Collection Instruments and Procedures

3.11.1 Instrument

Data was collected by the use of questionnaires. The measured attributes were obtained from past literature and refined in such a way that not only were they appropriate for the respondents but also able to generate adequate data for hypothesis testing.

Two sets of questionnaires were used; one for contractors and another for the consultants. The only notable difference between the two questionnaires was in the first section regarding background information. Both sets contained similar questions for responding to the study objectives.

3.11.1.1 Contractors' Questionnaire

This questionnaire was meant to collect data from the local contractors regarding their organizational performance. A total of 39 questions were asked, 32 of them being close-ended and the rest being open-ended. The questionnaire was structured in five sections. The first section not only sought to obtain background information about the company but also included some general questions regarding the company's practices which would indicate its organizational performance. The second section covered the dimensions of organizational performance. Ten questions presented fifty attributes before the respondent to gauge the level of the company's organizational performance. An open-ended question was included to elicit any extra methods of measuring organizational performance. The third section covered the determinants of organizational performance. These included internal and external factors which influenced the company's organizational performance. Fifty factors were presented in ten questions. An open-ended question was included to seek any other factors which affect the level of organizational performance. The fourth section included only a single open-ended question seeking to find out ways of enhancing the company's organizational performance. The last section sought to get information about consultants who would also provide their assessment of the contractor.

3.11.1.2 Consultants' Questionnaire

This questionnaire was meant to collect data from consultants regarding the organizational performance of the selected local contractors. This was to help eliminate bias associated with self-assessment. The questionnaire was a slight variation of the one administered to contractors. A total of 25 questions were asked, 22 of them being close-ended and the rest being open-ended. The questionnaire was structured in four sections. The first section sought to obtain background information about the company. The second section covered the dimensions of organizational

performance. Ten questions presented fifty attributes before the respondent to gauge the level of the select contractor's organizational performance. An open-ended question was included to elicit any extra methods of measuring organizational performance. The third section covered the determinants of organizational performance. These included internal and external factors which influenced the select contractor's organizational performance. Fifty factors were presented in ten questions. An open-ended question was included to seek any other factors which affected the level of organizational performance of the select contractor. The fourth section included only a single open-ended question seeking to find out ways of enhancing the select contractor's organizational performance.

3.11.2 Procedure

Contact information was first obtained from several sources including company websites, yellow pages, Kenya gazette publications, online business lists, lists of prequalified contractors available online among other sources. Information collected included email addresses, phone numbers, and physical addresses.

Data was collected in four phases stretching for a period of three months, October to December 2020. The first phase involved sending the questionnaire via email and mobile phones to selected contractors. This was achieved through sharing a link to the google form to the email addresses and mobile phone numbers of the contractors. The number of firms invited to participate in the google survey was 189. However, it should be noted that some of the email addresses obtained were not reachable and some of the mobile numbers were not registered on WhatsApp™.

The second phase involved the physical administration of the printed questionnaire to contractors. This was achieved by the use of research assistants who distributed the questionnaires to the physical addresses obtained previously. A total of 283 questionnaires were administered to not only those firms whose emails were unavailable or unreachable, but also those who had failed to respond to the google survey.

During the first two phases, contractors were required to provide names and contact information for consultants involved in one of their current or recent major projects.

Some contractors provided both the names and contact details while others provided only the names of the consulting firms. Unfortunately, some contractors failed to disclose neither the names nor the contact details of the consultants.

The third phase involved sending the questionnaire via email to consultants who had been suggested by contractors participating in the survey. Just like in phase one, this was achieved through sharing a link to the google form to the email addresses obtained for the respective consultants. The number of firms invited to participate in the google survey was 150. Again, some of the email addresses obtained were not reachable.

The last phase involved the physical administration of the questionnaire to consultants. This was achieved by the use of research assistants who distributed the questionnaires to the physical addresses obtained previously. A total of 110 questionnaires were administered to not only those firms whose emails were unavailable or unreachable, but also those who had failed to respond to the google survey.

3.12 Measurement of Variables

Four levels of measurement can be used in a survey; nominal, ordinal, interval, and ratio. Checklists and rating scales were adopted in the close-ended questions. According to Brown (2011), ordinal responses with ten response categories can be treated as interval data. Such argument has been supported by Hair Jr et al. (2014). Tables 3.22 and 3.23 present the levels of measurement adopted in both questionnaires.

Table 3.22: Levels of measurement adopted in the Contractor's Questionnaire

	Quantitative data				Qualitative data
Section	**Nominal scale**	**Ordinal scale**	**Interval scale**	**Ratio scale**	
Section A	None	No. 1	None	Nos. 2,3,4,5,6,7,8, 9a,9b,9c	
Section B	None	None	No. 10	None	No. 11
Section C	None	None	Nos. 12,13,14,15,16,17,18,19,20,21	None	No. 22

		Quantitative data			Qualitative data
Section D	None	None	None	None	No. 23
Section E	No. 25b	None	None	None	Nos. 24,25a,25c,25d

Source: (Author, 2020)

Table 3.23: Levels of measurement adopted in the Consultant's Questionnaire

	Quantitative data				Qualitative data
Section	**Nominal scale**	**Ordinal scale**	**Interval scale**	**Ratio scale**	
Section A	No. 1	None	None	No. 2	
Section B	None	None	No. 3	None	No. 4
Section C	None	None	Nos. 5, 6, 7, 8, 9, 10, 11, 12,13,14	None	No. 15
Section D	None	None	None	None	No. 16

Source: (Author, 2021)

In the descriptive statistics of the study variables, sample means were computed to establish the levels of the respective indicators, attributes, and variables based on the 10-point scale used. Table 3.24 below shows the adopted interpretation of the results of these means.

Table 3.24: Interpretation of Computed Means

Magnitude of Computed Mean	Interpretation
0.1 – 1.9	Very low
2.0 – 2.9	Very low
3.0 – 3.9	Low
4.0 – 4.9	Moderately low
5.0 – 5.9	Moderate
6.0 – 6.9	Moderately high
7.0 – 7.9	High
8.0 – 8.9	Very high
9.0 – 9.9	Very high

Source: (Author, 2021)

3.13 Data Analysis

The following analyses were carried out; descriptive statistics, measures of association/correlation analysis, multiple regression analysis, and Structural Equation Modelling (SEM). These analyses were carried out with the aid of IBM® SPSS® Statistics v21 and IBM® SPSS® Amos v21.

3.13.1 Descriptive statistics

Descriptive statistics was mostly used to describe the distribution of variables in the first section of the questionnaire which contains demographic and other general data. Descriptive statistics which were carried out included; measures of frequency (count, percent), measures of central tendency (mean); measures of dispersion/variation (range, standard deviation, variance, kurtosis, skewness); and Relative Importance Index (RII). While most of these measures were used to analyze data obtained from sections A, B, and C, kurtosis and skewness were also be used for checking normality in the distribution of data.

3.13.2 Correlations

Correlations are also known as covariance relationships because they rely on the covariance between selected variables. Pearson's Correlation Analysis was used to establish the underlying relationships among the criterion variables.

3.13.3 Structural Equation Modelling (SEM)

SEM is a powerful multivariate statistical tool. It allows analysis of complex relationships among multiple variables which allows the researcher to test the validity of a theory using an empirical model (Beran & Violato, 2010; Hair Jr et al., 2014). SEM was chosen in this study due to its ability to demonstrate the influence of predictor variables on multiple criterion variables simultaneously while allowing management of the measurement error. Specifically, covariance-based SEM was adopted for two main reasons; the use of reflective rather than formative constructs, and theory testing rather than theory development. SEM was used at two levels in this research; testing of the measurement theory, and establishing the relationships between determinants and dimensions of organizational performance.

3.13.3.1 Confirmatory Factor Analysis (CFA)

CFA, a multivariate statistical analysis, is the first phase of SEM before establishing relationships among study variables. It was used to test the extent to which the measured variables (indicators) represent the formulated constructs (study variables). According to Suhr (2013), it is a statistical analysis used to test the hypothesis that there exists a relationship between underlying latent constructs (factors) and their

observed variables. CFA was used to understand the relationships between the identified indicators/attributes (100) and their respective latent variables (20). Figure 3.2 below represents the relationship between one latent variable and its measured variables.

The latent variables in this research are reflective constructs. This means that the latent variables cause the measurement variables and not vice versa. Each measured variable is explained by two causes; a single factor (the latent variable/construct) which it is supposed to measure, and all other sources of variance represented by the measurement error. In other words, the latent construct causes the measured variable and the error is the latent construct's inability to fully explain the measured variables. This explains the direction of the arrows. An increase in the latent variable is reflected by an increase in all the measurement variables. The measures that represent the underlying latent construct in a reflective model are highly correlated. Freeze and Raschke (2007) noted that the measured variables are interchangeable and dropping a measured variable does not alter the conceptual meaning of the latent variable.

The number of measured variables per latent construct is of critical importance in conducting CFA. According to Nayak (2018), when the number of variables per construct is less than two, the construct is under-identified, while the construct is said to be over-identified when the number of variables is more than three. All our latent constructs have five (5) measured variables, an indication that they are over-identified, which is critical for CFA.

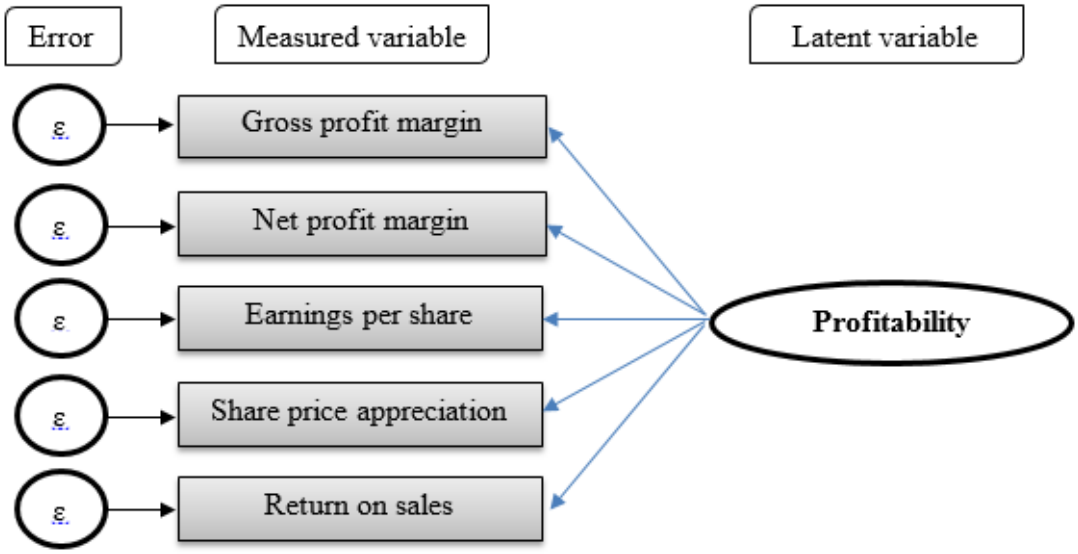

Figure 3.2: CFA between profitability (latent) and its measured attributes
Source: (Author, 2020)

Before checking the construct validity during the CFA, goodness-of-fit (GoF) indices were measured. According to Hair Jr et al. (2014), GoF is an indication of the similarity between the observed and estimated covariance matrices. Though there are many fit indices, the most common include TLI, CFI, and RMSEA (Schreiber et al., 2006). The following GoF indices were adopted in this study; CMIN/Df, RMSEA, SRMR, TLI, CFI, and IFI. Excluded fit indices have been reported to have several weaknesses in assessing complex models (Kline 1998; Kriston et al., 2008; Mohamad, 2013; Hair Jr et al., 2014; Stevens & Pituch, 2016). Generally, if the vast majority of the indices indicate a good fit, then there is probably a good fit though the most common indices are TLI, CFI, and RMSEA (Schreiber et al., 2006).

3.13.3.2 Path Diagrams

After confirming that the latent constructs have been accurately been measured using the measured variables, the second phase involves establishing the nature and strength of relationships among the latent constructs. Ten path diagrams were formulated in IBM® SPSS® Amos v21 to measure the influence of each of the determinants on organizational performance across its dimensions. Figure 3.3 below presents a simplified path diagram of the relationship between one of the determinants and the dimensions of organizational performance. A single path diagram for all the study

variables could not be achieved due to extreme complexity. In addition to the previously stated criteria for assessment of GoF, the relationships between variables were measured using path estimates/coefficients and R-Square (R^2). The statistical significance of these relationships was established at the 0.01 level.

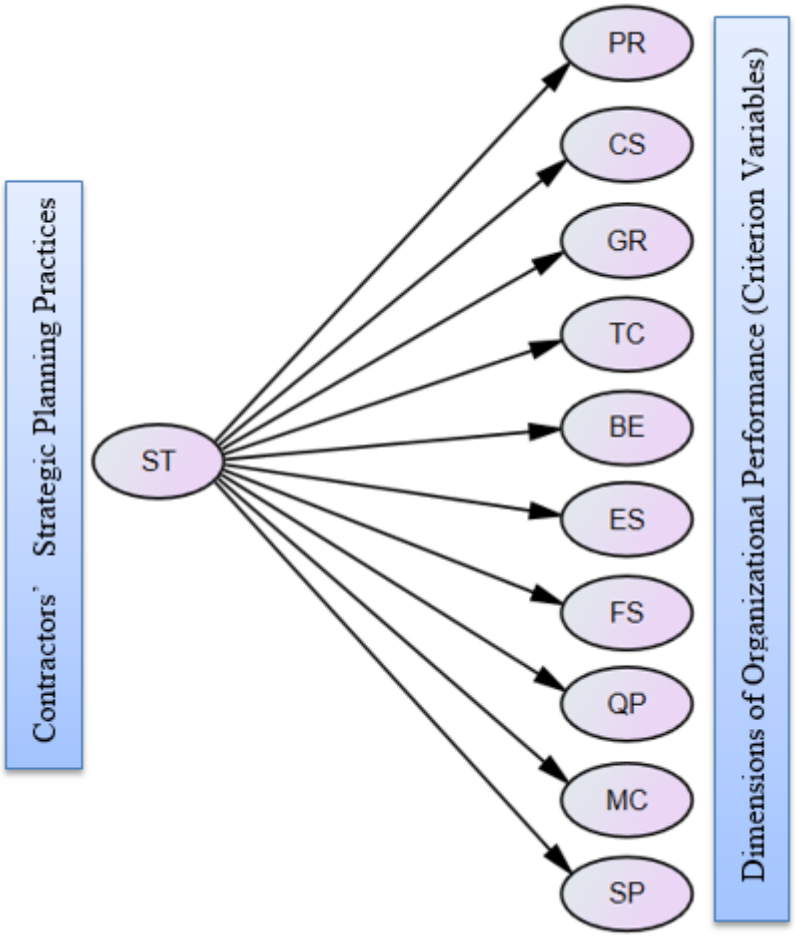

Figure 3.3: Simplified Path Diagram of Strategic Planning Practices and the Dimensions of Organizational Performance
Source: (Author, 2021)

3.13.4 Multiple Regression Analysis

Multiple regression or multivariable regression, as it is referred to by some statisticians, is a conceptual method of investigating functional relationships between a single criterion variable and multiple predictor variables. Unlike in SEM where the dimensions of organizational performance were treated as multiple criterion variables, in formulating the regression model, these dimensions were aggregated into a 'super-criterion-variable' named organizational performance. Regression analysis was used

to establish the extent to which the selected determinants were able to predict the level of organizational performance of local contractors. Both the confirmatory and stepwise regression techniques were adopted.

3.13.5 Qualitative Data Analysis

Some sections of the questionnaire had open-ended questions for collecting qualitative data. Such data included; additional criteria used to describe organizational performance, additional determinants of organizational performance, and ways of enhancing the organizational performance of local contractors. This data was analyzed thematically by use of QSR NVivo 11 which is a Computer-Assisted Qualitative Data Analysis (CAQDAS) software.

3.14 Statistical Assumptions of the Study

When statistical assumptions are not observed, the resulting information from the data analysis becomes meaningless. Hair Jr et al. (2010) observed that violations of statistical assumptions mostly result in bias or non-significance in the results which can't be distinguished from the true results. The following statistical assumptions have been adapted from Fedelis and Anthonia (2018) and Hair Jr et al. (2010).

1. ***Linearity*:** there is a linear relationship between the criterion and predictor variables. This assumption was checked by examination of scatter plots.
2. ***Normality*:** data collected for all the variables is normally distributed. Statistically, normality was be checked using kurtosis (how peaked), skewness (how symmetrical), Kolmogorov-Smirnov (K-S), and Shapiro-Wilk (S-W) tests.
3. ***Multivariate normality*:** This means that the individual variables are not only normal in a univariate sense but their combinations are also normal. Since there are no current tests for multivariate normality, univariate normality tests are relied upon.
4. ***Homoscedasticity/homogeneity***: the variance between criterion and predictor variables is constant. In other words, the criterion variables exhibit equal levels of variance across the range of predictor variables. Equality of variance was checked using Levene's test.

5. Absence of ***multicollinearity*** among the predictor variables. Multicollinearity was checked using tolerance values and Variance-inflating factor (VIF).

3.15 Data Presentation

Data analyzed through descriptive statistics and correlations shall be presented in frequency distribution tables, bar charts, histograms, and graphs.

3.16 Reliability

Reliability is concerned with the consistency with which a concept is measured. It was assessed through three measures; Cronbach's Alpha (α), Item Reliability (Squared Multiple Correlation or R^2), and Composite Reliability or Construct Reliability (CR). Cronbach's Alpha (α) values less than 0.6 were considered poor, 0.7 were considered acceptable while those greater than 0.8 were good based on the criteria provided by Bryman (2012).

3.17 Validity

Validity is concerned with whether the instruments and data collected are accurate and trustworthy. It is the degree to which a measure accurately represents what it purports to (Hair Jr et al., 2014). It is the extent to which a set of indicators that are devised to gauge a concept really measure that concept (Bryman, 2012). The integrity of inferences made from the study is dependent on the validity of the research instruments and the data they collect. The following ways of establishing validity were adopted in this study.

3.17.1 Content validity

Content validity is the degree to which a research instrument covers the concept of the latent construct that the instrument purports to measure (Krabbe, 2017). Content validity was achieved through a clear definition of the domains of the constructs, reviewing relevant literature exhaustively, extracting measurable attributes from published scales, and including leading academicians and experts in the pilot survey. This was made to ensure that all the important aspects of the 20 latent constructs in the study were well captured. Though subjective, the scale used was considered content-valid.

3.17.2 Face validity

Face validity is the extent to which a measure reflects the content of the concept it measures. It is the extent to which the instrument appears, at face value, to measure what it is supposed to measure (Johnson, 2013). According to Bryman (2012), face validity is essentially an intuitive process. Leading academicians and field experts were used as judges of determining whether the measures used seemed to reflect the study concepts and/or constructs.

3.17.3 Criterion Validity

Criterion validity is the extent to which a measurement accurately predicts specific criterion variables. There are two types of criterion validity, concurrent and predictive validity.

3.17.3.1 Concurrent Validity

Concurrent validity determines the extent to which a new measure compares with a well-established measure. The two measures should be tested at the same time. In this study, concurrent validity was achieved in two ways; (i) adoption of both objective and subjective measures in the study questionnaire, and (ii) administration of the questionnaire to both contractors and consultants to collect similar information simultaneously. Correlations were made between objective and subjective measures, and consultant and contractor data to establish any statistical differences.

3.17.3.2 Predictive Validity

Predictive ability is the extent to which results on a measurement accurately predict future performance on a different measure of the construct (Cohen & Swerdlik, 2005). Results from statistical analyses such as correlations and regression were used to demonstrate the scale's predictive validity.

3.17.4 Construct validity

Construct validity is the extent to which a set of measured items reflect the theoretical latent constructs those items are supposed to measure (Hair Jr et al., 2010). It seeks to ensure that the scale behaves as expected and represents the actual true score that exists in the population. Though construct validity was generally analyzed using CFA

and checked using the goodness-of-fit indices, the following aspects of construct validity were also addressed.

3.17.4.1 Convergent Validity

The underlying indicators of each specific study variable should converge meaning they share a high proportion of variance in common. According to Chin and Yao (2014), the underlying idea of convergence validity is that construct's indicators should be highly correlated. Convergent validity was assessed using factor loadings (correlation between the measured indicator and latent variable) and average variance extract (AVE). AVE is a summary measure of convergence among a set of indicators representing a latent construct. It is the average percentage of the variation explained (variance extracted or communality) among the indicators of a construct and is calculated as the mean of the squared loadings of the indicators within a latent construct (Hair Jr et al., 2010). Standardized factor loadings (constrained to range from -1 to +1) should be at least 0.5 and ideally 0.7 or higher while AVE should be more than 0.5. Composite reliability (CR) has also been used to establish convergent validity. According to Hair Jr et al. (2010), high values of CR (>0.7) indicate the existence of internal consistency which means that the indicators consistently represent the latent construct.

3.17.4.2 Discriminant Validity

Discriminant validity (also known as divergent validity) is the extent to which each study variable (construct) is distinct from the other variables. It is the degree to which a measure diverges from (does not correlate with) another measure that represents a conceptually unrelated construct (Hubley, 2014). It means that each construct is unique and captures phenomena that other measures do not. Discriminant validity was checked using two methods; comparing AVE values with squared inter-construct correlations (R^2), and comparing composite reliability (CR) and AVE as advised by Hair Jr et al (2010). Discriminant validity was achieved if all the AVE values were greater than the R^2 values. According to Krabbe (2017), not only should the variable correlate with related variables, but it shouldn't correlate with unrelated, dissimilar variables. This is what distinguishes convergent and discriminant validity and also

explains the AVE>R^2 criteria. Indeed, Hubley (2014) affirms that coefficients for discriminant validity should be less than those for convergent validity.

3.17.5 Nomological Validity

Nomological validity is concerned with the extent to which the measure behaves as predicted by theory (Campbell, 1960). This was achieved by comparing the effect of the determinants on the organizational performance with predictions found in the literature review. Nomological validity was achieved if the correlations among constructs were theoretically sound. Additionally, when all the p-values in the covariance tables in CFA were significant and all the inter-construct correlations were positive, the model was said to be nomologically valid.

3.18 Ethical Considerations

To ensure no harm befalls the participants, and as Bryman (2012) advocates for, the identities and records of all individuals were treated with the utmost confidentiality. Further, information obtained from one participant was not divulged to another participant. Additionally, data analysis was carried out solely by the researcher, therefore, increasing the level of confidentiality. Consent was obtained via the introductory letter issued before the questionnaire. The researcher was committed to ensuring the privacy of all participants is respected and that no element of deception was relied upon in the data collection process.

3.19 Pilot Study

After the questionnaires were formulated, they were tried out in a pilot study before the actual administration. The purpose of this was to test the wording of the questions and the techniques to be employed for the main study in order to determine their clarity, comprehensiveness, and feasibility. The sample chosen for the pretesting exercise consisted of NCA 1 contractors and consultants in the built environment including Architects, Construction Project Managers, Quantity Surveyors, and Civil/Structural Engineers. There is no agreed formula for calculating the sample size for pilot studies.

The researcher sent to a total of forty (40) respondents; twenty (20) to contractors and twenty (20) to consultants. The survey was conducted online via google forms. The

respondents were also requested to give feedback on how the questionnaire could be improved. Out of the distributed questionnaires, a total of twenty (20) were returned; eleven (11) from contractors and nine (9) from consultants.

All the questionnaires had sufficient data for analysis. The researcher used this data to perform mock data analyses to assess the viability of the chosen statistical tools of analysis. As seen on Table 3.25 below the pilot survey demonstrated a high reliability of the data collection instrucment.

Table 3.25: Reliability Test for Dimensions of Organizational Performance; Pilot Study

No.	Item	Cronbach's Alpha	N of Items	Remarks
1	Profitability	0.979	5	Good
2	Client satisfaction	0.983	5	Good
3	Growth	0.966	5	Good
4	Technical capability	0.880	5	Good
5	Business efficiency	0.962	5	Good
6	Employee satisfaction	0.932	5	Good
7	Financial stability	0.931	5	Good
8	Quality of products	0.979	5	Good
9	Managerial capability	0.982	5	Good
10	Safety performance	0.982	5	Good

Source (Author, 2021)

The respondents made a few comments regarding the questionnaire. Table 3.26 below is a summary of the comments made and how they were addressed;

Table 3.26: Comments from the pilot study

No.	Comment	Remarks
1	The scale (1-10) was too long	This comment was made by only one respondent was not considered to be weighty by the researcher
2	Attributes under “quality of service” seemed to be incorrect. (value for client’s money, fitness for purpose, freedom from defects, conformance to specifications, and satisfactory durability)	The previous attributes were describing “quality of products”. The attributes were reviewed. (reliability, responsiveness to clients, employees’ knowledge and courtesy, empathy towards clients, and appearance of physical facilities and personnel)

3	Some questions regarding finances could only be adequately answered by the contractors	This was raised in the consultants' questionnaire. The comment was ignored and consultants expected to answer to the best of their knowledge.
4	There seemed to be some words missing in question 14 of the consultants' questionnaire.	This was noted and the missing word included.
5	The attributes under "business efficiency" were too technical. (receivables turnover, asset turnover, inventory turnover, sales per employee, and net profit per employee)	The attributes were replaced with simpler but relevant attributes. (labour productivity, return on investment, energy efficiency, revenue per employee, and marketing efficiency)

Source (Author, 2021)

3.20 Chapter Summary

This chapter presented the methodology employed in this study. Philosophically, this research was anchored on objectivism and positivism. This means the research is deductive. While a quantitative research strategy was adopted, a survey research design was selected. Questionnaires were chosen as the data collection instruments. While the unit of analysis was stated as the local contractor, the units of observation were the local contractors and consultants. The sampling frame consisted of all NCA1, NCA2, and NCA3 local contractors and registered consultants who had worked with these contractors in current or previous projects. Simple random sampling was used to select the sample from the population.

The study variables were discussed and details of how they will be measured were provided. The criterion variable (organizational performance) was measured under ten dimensions while ten determinants were discussed as the predictor variables. Each of these variables was measured using five attributes and a numerical rating scale. Procedures for examining collected data were provided. Treatment of missing data and outliers was discussed. Methods of analyzing quantitative data were discussed in detail. Selected analyses comprised of; descriptive, correlations, multiple regression, and SEM. Qualitative data was analyzed thematically. Statistical software for carrying out these analyses included; IBM® SPSS® Statistics v21, IBM® SPSS® Amos v21, and QSR NVivo 10. The statistical assumptions underlying the selected data analysis methods were also provided. Validation of the resulting statistical models was

discussed. Chosen methods of presenting data included; frequency distribution tables, bar charts, histograms, and graphs. The selected tool for measuring the reliability of collected data was the Cronbach's alpha (α). Ethical considerations were given in this chapter.

A pilot study was conducted to establish the validity and reliability of the data collection tools. A mock data analysis was then conducted to establish the viability of the selected statistical tools and methods of analysis. The resulting output was not included in this study. Having achieved all that, the researcher proceeded to the field to collect data for the main study. The results are presented in the next chapter.

CHAPTER FOUR
DATA ANALYSIS AND INTERPRETATION

4.1 Introduction

This study had four specific objectives namely: (i) to assess the level of organizational performance of Kenyan local contractors using a multidimensional approach; (ii) to evaluate the determinants of organizational performance of local contractors in the construction industry of Kenya; (iii) to establish the effect of the determinants on the organizational performance of Kenyan local contractors; (iv) to formulate a framework for enhancing the organizational performance of local contractors.

This chapter describes the response to the research instruments (response rates, adequacy of yielded sample, missing values, and outliers); reliability tests; common method bias tests; statistical comparison between the two data sets; testing statistical assumptions; remedies for statistical assumption violations; and demographic profiles of both contractors and consultants. The chapter is mainly dedicated to analysis of collected data in order to achieve the first three study objectives. Data for the first two objectives has been analyzed descriptively. The levels of both dimensions and determinants have been established and discussed. For the third objective, relationships have been described using; correlations, multiple regression, and structural equation modelling. The extent of influence and prediction were established using structural equation modelling and multiple regression respectively. Qualitative data has been analyzed thematically.

4.2 Response to Questionnaires

This section discusses the following items; respondents' response rate, adequacy of yielded sample size, and handling of missing values and outliers.

4.2.1 Respondents' Response Rates

As shown on Table 4.1 below, a total of 472 questionnaires were distributed to contractors. 283 were administered physically to contractors' offices while 189 were administered online. 175 and 60 questionnaires were returned respectively. This translated to response rates of 62% and 32% respectively. Based on the total number

of questionnaires administered, the response rate was 50%. However, based on the calculated sample size, the response rate was 77% as seen on Table 4.2.

Table 4.1: Contractors' response rate

No.	Mode		Sent	Returned	Response rate
1.	Physical		283	175	62%
2.	Internet-based	WhatsApp LinkedIn Email	45 52 92	60	32%
	Total		**472**	**235**	**50%**

Source (Author, 2021)

Table 4.2: Contractors' response rate per NCA category

No.	NCA	Sample size	Questionnaires		Response rate based on	
			administered	returned	Sample	administered
1	NCA1	98	153	107	109%	70%
2	NCA2	120	185	62	52%	34%
3	NCA3	88	134	66	75%	49%
Total		**306**	**472**	**235**	**77%**	**50%**

Source: (Author, 2021)

Table 4.3 below presents information regarding the survey administration to the consultants. 110 were administered physically to consultants' offices while 150 were shared online making a total of 260 respondents. 87 and 56 questionnaires were returned respectively. This translated to response rates of 79% and 37% respectively. The overall response rate for consultants was established to be 55%.

Table 4.3: Consultants' response rate

No.	Mode		Sent	Returned	Response rate
1.	Physical		110	87	79%
2.	Internet-based	WhatsApp LinkedIn Email	32 25 93	56	37%
	Total		**260**	**143**	**55%**

Source (Author, 2021)

Table 4.4 below shows a comparison of response rates between physical and online surveys. The response rates for face-to-face survey in contractors and consultants were 62% and 79% respectively. The response rates for the online survey in contractors and consultants were 32% and 37% respectively. The overall response rate for the face-to-face survey was 67% while that of the online survey was 34%.

Table 4.4: Comparison of responses between online and physical surveys

Group	Physical			Online		
	Administered	Returned	%	Administered	Returned	%
Contractors	283	175	62%	189	60	32%
Consultants	110	87	79%	150	56	37%
Total	**393**	**262**	**67%**	**339**	**116**	**34%**

Source (Author, 2021)

Despite their lower response rate seen on Table 4.5, consultants were more willing to participate in the survey. This is evident in their response rate (55%) recorded on Table 4.3 compare to that of contractors (50%) recorded on Tables 4.1 and 4.2. The response rates shown on Table 4.5 are based on the study sample sizes while the previous response rates were calculated based on the number of administered questionnaires. Due to sensitive (financial) information being sought from contractors, some of them opted not to participate in the survey. In addition to the consultants' questionnaire not seeking any sensitive data, it was also comparatively shorter and therefore took less time. This could have contributed to the consultants' willingness to participate in the survey.

Table 4.5: Overall response rate

Group	Questionnaires				Percentages	
	Sample	Returned	Unusable	Usable	Returned	Usable
Contractors	306	235	0	235	77%	77%
Consultants	306	143	0	143	47%	47%
Total	**612**	**378**	**0**	**378**	**62%**	**62%**

Source (Author, 2021)

As seen on Table 4.5, a total of 378 questionnaires were returned. Based on the study sample size of 612, the overall response rate was therefore 62%. Given that no questionnaire had missing values exceeding 10%, all questionnaires were deemed usable. A response rate of 50% and above is usually considered adequate (Mugenda & Mugenda, 2003).

4.2.2 Adequacy of yielded sample size

Statistical power was used to establish the adequacy of the sample size. Statistical Power (1-β) has been defined as the probability of rejecting H_0 when H_1 is indeed true (Akter et al., 2011). It is the probability of achieving a statistically significant outcome

(H_1) by the successful rejection of the H_0. G*Power is a tool capable of computing statistical power analyses and effect sizes for many different tests including; *t*, *F*, χ^2, *z*, and some exact tests (Faul et al., 2009).

The statistical power for this research was established using G*Power version 3.1.9.7. The inputs were; significance level, (α) of 0.05 (which is equivalent to a confidence interval of 1.96), effect size (difference between the sample and population means) of 0.15, and a yielded sample size of 378. The choice of the input values was based on recommendations by Akter et al., (2011) and Hair et al., (2018). The acceptable level of the statistical power according to Hair et al., (2018) is 0.80. Based on this, the required sample size had been established to be 172. The achieved sample size of 378 meant that the yielded statistical power of 0.9999612 was adequate to correctly reject the null hypotheses (H_0). This means that the possibility of correctly rejecting the null hypotheses was 99.996%

4.2.3 Missing Values

To ensure zero missing values in the survey data, questionnaires were administered to persons who were not only academically competent but also had a professional background in the built environment. However, despite such efforts, missing values were still noted in the data collected from respondents. Hair Jr et al. (2010) points out that the presence of missing values is the norm rather than the exception in survey data. Cases with missing values pose problems because typical modelling procedures in SPSS usually discard these cases from statistical analysis.

The severity of the missing values was established using IBM® SPSS® Statistics v21. The results of this process for both contractors' and consultants' data have been presented in appendices 13a and 13b respectively. It was noted that there was a higher number of missing values in consultants' data compared to those in contractors' data. This could be attributed to the fact that the information being sought in both sets of questionnaires was about the contractors and therefore some of the consultants didn't have answers to some of the questions.

Hair Jr et al. (2010) assert that cases or variables should only be deleted if the missing values exceed 50%. The highest reported percentages of missing values in

contractors' and consultants' data respectively were 10.6% (employee turnover) and 10.5% (return on assets and asset turnover). Missing values in the background section of the questionnaire were ignored while those in those in other sections covering the study objectives were replaced with the mean of the available data as recommended by Schumacker and Lomax (2010).

4.2.4 Outliers

The highest number of outliers in the contractors' data were 35 (14.9%), 23 (9.8%), and 22 (9.4%) in "provision of construction jobs", "age of the firm" and "growth of workforce" respectively. The highest number of outliers in the consultants' data were 11 (7.7%), 10 (7.0%), and 8 (5.6%) in "effective communication", "aesthetics" and "experience (previous works)/support by worthwhile guarantees" respectively. After careful examination, it was noted that none of these outliers was a result of data entry errors. This means that all the entries were within the range of choices presented before the respondents. This has been demonstrated using box plots shown in Figures 4.1 and 4.2. According to Hair Jr et al. (2010), outliers are neither beneficial nor problematic. Since the severity of the outliers was not high, the researcher, therefore, chose to ignore them.

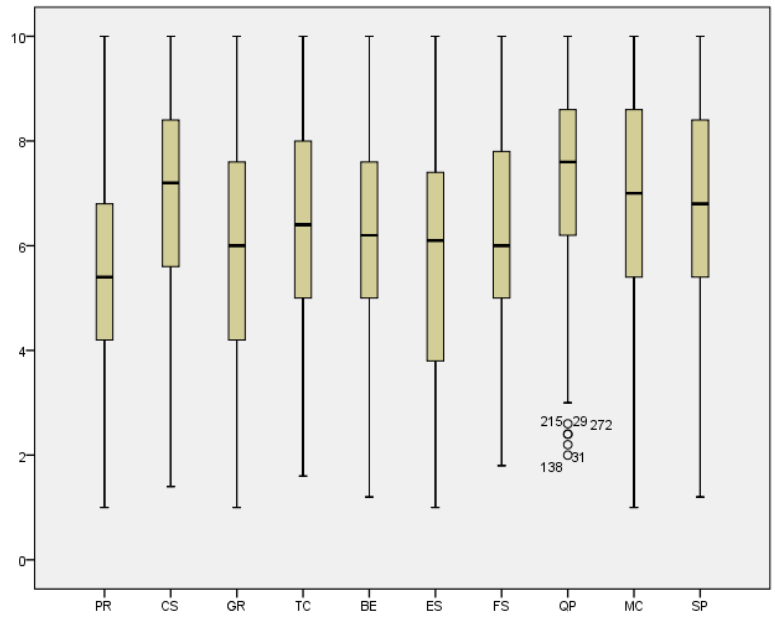

Figure 4.1: Box plots for the Dimensions of Organizational Performance
Source: (Author, 2021)

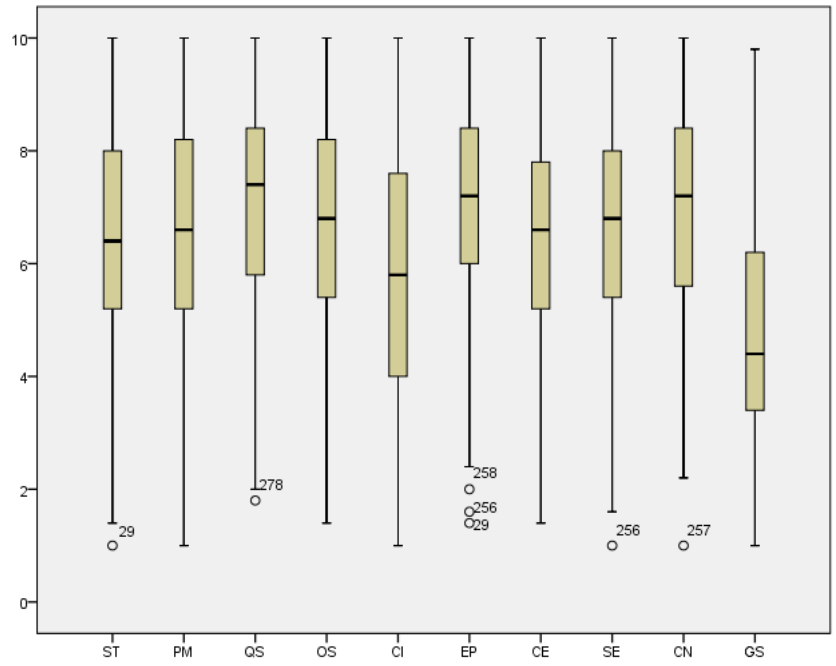

Figure 4.2: Box plots for the Determinants of Organizational Performance
Source: (Author, 2021)

4.3 Reliability and Common Method Bias

4.3.1 Reliability

Internal consistency of the questionnaires was measured through analysis of Cronbach's alpha (α). Such analysis was conducted using IBM® SPSS® Statistics v21. Reliability coefficients less than 0.60 were considered to be poor, 0.70 were acceptable, while those greater than 0.8 were considered to be good. Other measures of reliability have been discussed later in the chapter. Table 4.6 presents the results of the reliability test for dimensions of organizational performance. The highest Cronbach's Alpha values were recorded in employee satisfaction (0.970) and managerial capability (0.967) while the lowest were reported in technical capability (0.927) and safety performance (0.917) in contractors' and consultants' data respectively. The overall Cronbach's Alpha values for the ten dimensions were 0.952 and 0.954. This generally indicated a high internal consistency among all the constructs.

Table 4.6: Reliability Test for Dimensions of Organizational Performance

No.	Item	Cronbach's Alpha		N of Items	Remarks
		Contractors	Consultants		
1	Profitability	0.963	0.953	5	Good
2	Client satisfaction	0.947	0.945	5	Good
3	Growth	0.960	0.915	5	Good
4	Technical capability	0.927	0.923	5	Good
5	Business efficiency	0.949	0.933	5	Good
6	Employee satisfaction	0.970	0.945	5	Good
7	Financial stability	0.945	0.963	5	Good
8	Quality of products	0.956	0.950	5	Good
9	Managerial capability	0.964	0.967	5	Good
10	Safety performance	0.952	0.917	5	Good
11	Organizational performance	0.952	0.954	10	Good

Source: (Author, 2021)

Table 4.7 presents the results of the reliability test for determinants of organizational performance. The highest Cronbach's Alpha values were recorded in suppliers' effectiveness (0.962) and performance measurement practices (0.972) while the lowest were reported in government support (0.885 and 0.877) in contractors' and consultants' data respectively. The overall Cronbach's Alpha values for the ten determinants were 0.952 and 0.936. This also indicated a high internal consistency among all the constructs.

Table 4.7: Reliability Test for Determinants of Organizational Performance

No.	Item	Cronbach's Alpha		N of Items	Remarks
		Contractors	Consultants		
1	Strategic planning practices	0.952	0.948	5	Good
2	Performance measurement practices	0.953	0.972	5	Good
3	Quality of service	0.950	0.944	5	Good
4	Organizational structure of the firm	0.944	0.942	5	Good
5	Contractor's innovativeness	0.957	0.958	5	Good
6	Employee performance	0.949	0.962	5	Good
7	Clients' effectiveness	0.943	0.932	5	Good
8	Suppliers' effectiveness	0.962	0.956	5	Good
9	Competition	0.949	0.965	5	Good
10	Government support	0.885	0.877	5	Good
11	Determinants (overall)	0.952	0.936	10	Good

Source: (Author, 2021)

4.3.2 Common Method Bias

The presence of common method bias was checked using correlation matrix procedure and Harman's single-factor test in IBM® SPSS® Statistics v21. As seen later in the chapter, based on the first criteria, the collected data did not suffer from common method bias since the highest recorded correlation value between any two variables was 0.821. According to Rodríguez-Ardura and Meseguer-Artola (2020), common method bias exists when there is a very high correlation between any two variables (exceeding 0.9). Based on the second criteria, the total variance explained by a single factor in the contractors' data was found to be 56.97%. The figure was found to be 53.19% in the consultants' data. However, common method bias is not necessarily detrimental. Indeed, Fuller et al. (2016) demonstrated that a relatively high level of common method bias must be present to 'bias true relationships among substantive variables at typically reported reliability levels'. They concluded that common method bias does not represent a threat to the validity of study findings.

4.4 Statistical Comparison between the Two Data Sets

The two data sets (contractors and consultants) were compared for any major statistical differences. The results have been presented on Table 4.8. The first ten variables represent dimensions of organizational performance while the last ten are the determinants of organizational performance. Based on descriptive statistics (mean and standard deviation), the two sets of data were found not to have any major differences. The overall mean level of organizational performance obtained from the self-assessment by contractors was 6.41 with a standard deviation of 1.65 while that obtained from the external assessment by consultants was 6.32 with a standard deviation of 1.55. The overall mean level of the determinants of organizational performance as measured by contractors was 6.56 with a standard deviation of 1.53 while that obtained from the external assessment by consultants was 6.32 with a standard deviation of 1.51. The overall means for all the variables were 6.48 and 6.32 as measured by contractors and consultants respectively. This represented a variation of 0.16. Based on the coefficient of variation (C_v) which is a measure of the relative standard deviation, the two sets of data were found to be almost identical. This is evidenced in the variation of only 0.1% in the overall C_v.

Table 4.8: Comparison between Contractors' and Consultants Data

		Contractors' Data				Consultants' Data				Variation	
No.	**Variable**	**N**	**Mean**	**Std. dev**	**C_v**	**N**	**Mean**	**Std. dev**	**C_v**	**Mean**	**C_v**
1	Profitability	235	5.17	1.92	37%	143	5.80	1.68	29%	-0.64	8%
2	Client satisfaction	235	7.06	1.86	26%	143	6.70	1.91	29%	0.36	-2%
3	Growth	235	5.59	2.32	42%	143	6.17	1.81	29%	-0.59	12%
4	Technical capability	235	6.49	1.85	28%	143	6.33	1.83	29%	0.15	0%
5	Business efficiency	235	6.41	1.82	28%	143	6.10	1.69	28%	0.30	1%
6	Employee satisfaction	235	5.74	2.46	43%	143	5.59	1.96	35%	0.14	8%
7	Financial stability	235	6.26	1.84	29%	143	6.22	1.93	31%	0.04	-2%
8	Quality of products	235	7.44	1.67	22%	143	7.09	1.76	25%	0.35	-2%
9	Managerial capability	235	7.02	1.85	26%	143	6.72	1.92	29%	0.30	-2%
10	Safety performance	235	6.91	2.02	29%	143	6.45	1.89	29%	0.46	0%
11	Strategic planning practices	235	6.63	1.83	28%	143	6.17	1.94	31%	0.46	-4%
12	Performance measurement practices	235	6.77	1.80	27%	143	6.41	2.11	33%	0.37	-6%
13	Quality of service	235	7.26	1.69	23%	143	6.92	1.70	25%	0.34	-1%
14	Organizational structure of the firm	235	6.87	1.84	27%	143	6.48	1.75	27%	0.39	0%
15	Contractor's innovativeness	235	5.72	2.40	42%	143	5.52	2.15	39%	0.19	3%
16	Employee performance	235	7.33	1.56	21%	143	6.73	1.86	28%	0.60	-6%
17	Clients' effectiveness	235	6.47	1.67	26%	143	6.61	1.86	28%	-0.14	-2%
18	Suppliers' effectiveness	235	6.84	1.75	26%	143	6.53	1.75	27%	0.31	-1%
19	Competition	235	6.91	1.72	25%	143	7.02	1.84	26%	-0.12	-1%
20	Government support	235	4.82	1.89	39%	143	4.76	1.97	41%	0.06	-2%
	Overall		**6.48**	**1.89**	**29.8%**		**6.32**	**1.87**	**29.9%**	**0.16**	**-0.1%**

Source: (Author, 2021)

In the descriptive statistics (mean and standard deviation), the two data sets were combined and treated as a single sample. This was justified in three ways; (i) though the unit of observation was different, both data sets essentially measured the same thing (i.e. the unit of analysis was similar, the contractor); (ii) as shown on Table 4.8, there was not notable statistical difference between the two sets of data, (iii) the need to eliminate the minor statistical difference by moderating the results of one by the other.

However, in the inferential statistics, the two data sets were treated as a split sample. They were used for analysis in two different ways; one for actual data analysis **(*calibration sample/contractors' data set*)** and the other for statistical validation (***validation sample/consultants' data set***). Data analysis, interpretation, and inferences were made based on the contractors' data while the consultants' set was used for validating the analysis carried on the contractors' data.

4.5 Statistical Assumptions

Four major statistical assumptions had been introduced in the previous chapter; linearity, normality, homoscedasticity, and multicollinearity. This section covers the testing of such assumptions and the remedies taken to overcome observed violations.

4.5.1 Linearity

Linearity of the collected data was checked using scatter plots. Figure 4.3 below presents a scatter plot of organizational performance versus its determinants. It is evident from the graph that there is a linear relationship between organizational performance and its determinants. The level of organizational performance seems to increase with an increase in the levels of its determinants.

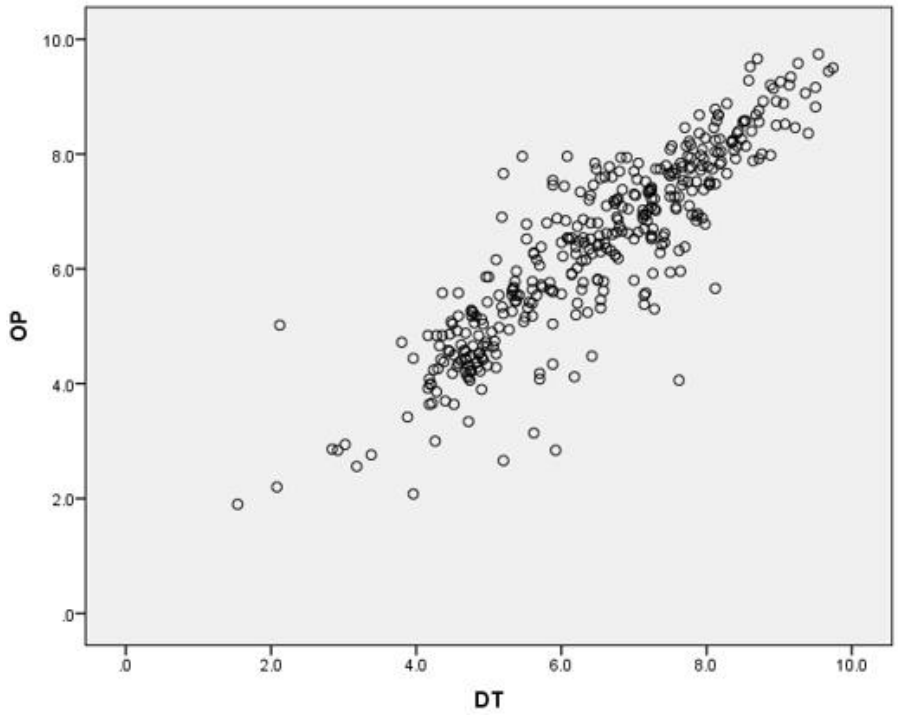

Figure 4.3: Scatter plot of Organizational Performance versus its Determinants
Source: (Author, 2021)

4.5.2 Normality

Normality was checked using Kurtosis, Skewness, Kolmogorov-Smirnov, and Shapiro-Wilk values. Table 4.9 presents the kurtosis and skewness values for the study variables. The z-values were obtained by dividing the kurtosis and skewness values by the respective standard errors. According to Hair Jr et al. (2010), the z-values should lie between -1.96 and +1.96 at a 0.05 significance level otherwise the data is either skewed or kurtotic thus denoting non-normality. Out of the 20 variables, 9 of them had kurtosis z-values within the acceptable range, an indication that the remaining 11 variables were non-normal. 10 out of the 20 variables have skewness z-values within the acceptable range meaning they had a normal distribution in terms of skewness. The rest were skewed to the left. 10 out of the 20 variables were approximately symmetric while the remaining 10 were moderately skewed to the left. Additionally, 16 of the 20 variables are approximately mesokurtic (normal) while the remaining 4 were moderately platykurtic (flatter). The highlighted cells on Table 4.9 indicate normality distribution based on the discussed criteria.

Table 4.9: Normality test using Kurtosis and Skewness

	Variable	Kurtosis			Skewness		
		Value	Std. Error	z value	Value	Std. Error	z value
1	Profitability	-.142	.125	-1.136	-.522	.250	-2.088
2	Client satisfaction	-.534	.125	-4.272	-.387	.250	-1.548
3	Growth	-.263	.125	-2.104	-.737	.250	-2.948
4	Technical capability	-.183	.125	-1.464	-.546	.250	-2.184
5	Business efficiency	-.106	.125	-0.848	-.365	.250	-1.46
6	Employee satisfaction	-.268	.125	-2.144	-.907	.250	-3.628
7	Financial stability	-.020	.125	-0.16	-.818	.250	-3.272
8	Quality of products	-.643	.125	-5.144	.065	.250	0.26
9	Managerial capability	-.382	.125	-3.056	-.503	.250	-2.012
10	Safety performance	-.252	.125	-2.016	-.593	.250	-2.372
11	Strategic planning practices	-.226	.125	-1.808	-.260	.250	-1.04
12	Performance measurement practices	-.323	.125	-2.584	-.510	.250	-2.04
13	Quality of service	-.449	.125	-3.592	-.346	.250	-1.384
14	Organizational structure of the firm	-.243	.125	-1.944	-.529	.250	-2.116
15	Contractor's innovativeness	-.107	.125	-0.856	-.947	.250	-3.788
16	Employee performance	-.505	.125	-4.04	.192	.250	0.768
17	Clients' effectiveness	-.216	.125	-1.728	-.369	.250	-1.476
18	Suppliers' effectiveness	-.226	.125	-1.808	-.466	.250	-1.864
19	Competition	-.353	.125	-2.824	-.426	.250	-1.704
20	Government support	.528	.125	4.224	-.468	.250	-1.872

Source: (Author, 2021)

Table 4.10 presents the Kolmogorov-Smirnov and Shapiro-Wilk values for the study variables. Since all the values were significant at 0.05, it can be concluded that all the variables had non-normal distributions. The reason why all the variables were non-normally distributed even though most of them had shown normal distributions as indicated using the highlighted cells in the previous table is that none of the variables had a normal distribution in both skewness and kurtosis aspects. It is important to note that the data was also consistent with the Normal Q-Q plots for all the measured variables where the observed (actual) slightly deviated from the straight line which represents the expected (normal) values.

Table 4.10: Normality test using Kolmogorov-Smirnov and Shapiro-Wilk

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Variable	**Statistic**	**df**	**Sig.**	**Statistic**	**df**	**Sig.**
1	Profitability	.048	378	.033	.989	378	.005
2	Client satisfaction	.097	378	.000	.963	378	.000
3	Growth	.058	378	.004	.975	378	.000
4	Technical capability	.054	378	.009	.987	378	.002
5	Business efficiency	.062	378	.002	.990	378	.013
6	Employee satisfaction	.095	378	.000	.962	378	.000
7	Financial stability	.073	378	.000	.981	378	.000
8	Quality of products	.084	378	.000	.963	378	.000
9	Managerial capability	.090	378	.000	.972	378	.000
10	Safety performance	.071	378	.000	.977	378	.000
11	Strategic planning practices	.048	378	.038	.986	378	.001
12	Performance measurement practices	.107	378	.000	.976	378	.000
13	Quality of service	.093	378	.000	.972	378	.000
14	Organizational structure of the firm	.064	378	.001	.982	378	.000
15	Contractor’s innovativeness	.079	378	.000	.974	378	.000
16	Employee performance	.052	378	.015	.975	378	.000
17	Clients’ effectiveness	.067	378	.000	.988	378	.003
18	Suppliers’ effectiveness	.076	378	.000	.984	378	.000
19	Competition	.084	378	.000	.975	378	.000
20	Government support	.108	378	.000	.960	378	.000
a. Lilliefors Significance Correction							

Source: (Author, 2021)

4.5.3 Homoscedasticity/Homogeneity

Equality of variance was checked using Levene’s test. The results have been presented on Table 4.11. Since for all variables, $p<0.05$, the variances are not equal. This implies a violation of the homoscedasticity/homogeneity assumption.

Table 4.11: Levene's Test of Equality of Error Variances[a]

No.	**Variable**	**F**	**df1**	**df2**	**Sig.**
1	Profitability	2.635	269	108	.000
2	Client satisfaction	4.564	269	108	.000
3	Growth	2.931	269	108	.000
4	Technical capability	3.498	269	108	.000
5	Business efficiency	3.580	269	108	.000
6	Employee satisfaction	3.751	269	108	.000

No.	Variable	F	df1	df2	Sig.
7	Financial stability	4.410	269	108	.000
8	Quality of products	3.771	269	108	.000
9	Managerial capability	4.706	269	108	.000
10	Safety performance	3.378	269	108	.000
	Tests the null hypothesis that the error variance of the dependent variable is equal across groups. a. Design: Intercept + DT				

Source: (Author, 2021)

4.5.4 Multicollinearity

Multicollinearity occurs when two or more predictor variables in the model exhibit very strong correlations. It causes difficulties in the reliability of model parameter estimates (Alin, 2010). Table 4.12 below presents the VIF values for the predictor variables. The VIF values should not exceed 10 (Hair Jr et al., 2010; Fox, 2015; Stevens & Pituch, 2016). However, Daoud (2018) argues that when VIF=1, there is no correlation, when VIF≤5, there's a moderate correlation, and when VIF>5, the variables are highly correlated. Therefore, it was concluded that though there was some correlation, there was no multicollinearity among the predictor variables since none of the values exceeded the set criteria. Further, all the tolerance values were higher than the minimum limit of 0.1 set by Lewis-Beck and Lewis-Beck (2015).

Table 4.12: Multicollinearity Test using VIF values

		Collinearity Statistics	
No.	**Determinants of Organizational Performance**	**Tolerance**	**VIF**
1	Strategic planning practices	.350	2.855
2	Performance measurement practices	.257	3.884
3	Quality of service	.224	4.474
4	Organizational structure of the firm	.217	4.618
5	Contractor's innovativeness	.302	3.309
6	Employee performance	.297	3.362
7	Clients' effectiveness	.367	2.726
8	Suppliers' effectiveness	.241	4.149
9	Competition	.389	2.567
10	Government support	.638	1.568

Source: (Author, 2021)

4.5.5 Remedies for Statistical Assumption Violations

The identified violations (normality and homoscedasticity) of statistical assumptions were remedied through a transformation of data. This was achieved using a two-step approach adapted from Templeton (2011) and executed using SPSS® v21. According to Templeton (2011), the first step involves a transformation of the variables into percentile ranks which create uniformly distributed probabilities while the second step involves the application of the inverse-normal transformation to the newly created probabilities leading to the formation of a variable with normally distributed z-scores. Table 4.13 below shows a comparison of the descriptive statistics before and after the transformation. The transformation did not alter the structural integrity of the data. Nevertheless, in analyses where the statistical assumptions were not a requirement (first and second objective), the original data was used.

Table 4.13: Comparison between Original and Transformed Data

			Original		Transformed	
	Variable	**N**	**Mean**	**Std. Dev.**	**Mean**	**Std. Dev.**
1	Profitability	378	5.406	5.406	5.4538	5.39261
2	Client satisfaction	378	6.923	1.8844	6.9332	1.86630
3	Growth	378	5.808	2.1616	5.8248	2.15107
4	Technical capability	378	6.431	1.8403	6.4424	1.82492
5	Business efficiency	378	6.293	1.7796	6.3046	1.76680
6	Employee satisfaction	378	5.683	2.2825	5.6976	2.26282
7	Financial stability	378	6.243	1.8710	6.2545	1.85493
8	Quality of products	378	7.308	1.7101	7.3148	1.68696
9	Managerial capability	378	6.907	1.8819	6.9111	1.84848
10	Safety performance	378	6.738	1.9812	6.7407	1.94062
11	Strategic planning practices	378	6.456	1.8857	6.4633	1.85947
12	Performance measurement practices	378	6.633	1.9295	6.6416	1.90423
13	Quality of service	378	7.129	1.6967	7.1348	1.67088
14	Organizational structure of the firm	378	6.724	1.8099	6.7317	1.78536
15	Contractor's innovativeness	378	5.642	2.3075	5.6569	2.28755
16	Employee performance	378	7.104	1.7025	7.1076	1.67156
17	Clients' effectiveness	378	6.520	1.7427	6.5318	1.73127
18	Suppliers' effectiveness	378	6.725	1.7519	6.7332	1.72991
19	Competition	378	6.951	1.7663	6.9591	1.74494
20	Government support	378	4.795	1.9187	4.7961	1.88958

Source: (Author, 2021)

Table 4.14 presents the kurtosis and skewness values for the transformed data. It is evidently clear that the new data was normally distributed with respect to kurtosis and skewness characteristics.

Table 4.14: Normality test using Kurtosis and Skewness; Transformed Data

			Kurtosis			Skewness	
	Variable	N	Value	Std. Error	z value	Value	Std. Error	z value
1	Profitability	378	-.052	.250	-0.208	.067	.125	0.536
2	Client satisfaction	378	-.205	.250	-0.820	.000	.125	0.000
3	Growth	378	-.125	.250	-0.500	.042	.125	0.336
4	Technical capability	378	-.196	.250	-0.784	.011	.125	0.088
5	Business efficiency	378	-.173	.250	-0.692	.016	.125	0.128
6	Employee satisfaction	378	-.198	.250	-0.792	.013	.125	0.104
7	Financial stability	378	-.194	.250	-0.776	.009	.125	0.072
8	Quality of products	378	-.262	.250	-1.048	-.027	.125	-0.216
9	Managerial capability	378	-.310	.250	-1.240	-.053	.125	-0.424
10	Safety performance	378	-.350	.250	-1.400	-.067	.125	-0.536
11	Strategic planning practices	378	-.273	.250	-1.092	-.031	.125	-0.248
12	Performance measurement practices	378	-.259	.250	-1.036	-.019	.125	-0.152
13	Quality of service	378	-.282	.250	-1.128	-.036	.125	-0.288
14	Organizational structure of the firm	378	-.265	.250	-1.06	-.024	.125	-0.192
15	Contractor's innovativeness	378	-.203	.250	-0.812	.014	.125	0.112
16	Employee performance	378	-.309	.250	-1.236	-.054	.125	-0.432
17	Clients' effectiveness	378	-.157	.250	-0.628	.022	.125	0.176
18	Suppliers' effectiveness	378	-.243	.250	-0.972	-.016	.125	-0.128
19	Competition	378	-.241	.250	-0.964	-.017	.125	-0.136
20	Government support	378	-.195	.251	-0.776	.009	.126	0.071

Source: (Author, 2021)

Table 4.15 presents the Kolmogorov-Smirnov and Shapiro-Wilk values for the transformed data. Since no significance levels for any of the values were less than 0.05 (except for three values of Shapiro-Wilk), it was concluded that all the variables had achieved normal distributions. The transformed data was also found to be consistent with the Normal Q-Q plots for all the measured variables where the observed (actual) followed the straight line which represents the expected (normal) values.

Table 4.15: Normality test using Kolmogorov-Smirnov and Shapiro-Wilk; Transformed Data

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Variable	**Statistic**	**df**	**Sig.**	**Statistic**	**df**	**Sig.**
1	Profitability	.045	378	.067	.997	378	.796
2	Client satisfaction	.036	378	.200*	.995	378	.265
3	Growth	.026	378	.200*	.997	378	.755
4	Technical capability	.036	378	.200*	.996	378	.367
5	Business efficiency	.031	378	.200*	.996	378	.503
6	Employee satisfaction	.029	378	.200*	.996	378	.396
7	Financial stability	.030	378	.200*	.996	378	.380
8	Quality of products	.034	378	.200*	.993	378	.077
9	Managerial capability	.039	378	.200*	.991	378	.017
10	Safety performance	.034	378	.200*	.989	378	.006
11	Strategic planning practices	.030	377	.200	.993	377	.098
12	Performance measurement practices	.038	377	.200	.994	377	.105
13	Quality of service	.035	377	.200	.992	377	.054
14	Organizational structure of the firm	.030	377	.200	.994	377	.106
15	Contractor's innovativeness	.027	377	.200	.996	377	.462
16	Employee performance	.046	377	.050	.990	377	.013
17	Clients' effectiveness	.030	377	.200	.996	377	.552
18	Suppliers' effectiveness	.034	377	.200	.994	377	.128
19	Competition	.032	377	.200	.994	377	.130
20	Government support	.031	377	.200	.997	377	.677

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

Source: (Author, 2021)

4.6 Demographic Profiles of Respondents and their Firms

Data was collected from contractors and consultants. Their demographic profiles have been discussed below.

4.6.1 Contractors

A total of eleven (11) questions were presented before the contractors to establish their background profile. This section discusses the results of the data analyzed regarding these questions. While the first three (3) were general, the remaining eight (8) were linked to the first objective of the study.

4.6.1.1 NCA category

While a total of 306 contractors were included in the survey, only 235 responded. NCA1 had the highest frequency (n=107, 45.5%) followed by NCA3 (n=66, 28.1%) and lastly NCA2 (n=62, 26.4%). Figure 4.4 is a pie chart for the frequencies expressed as percentages.

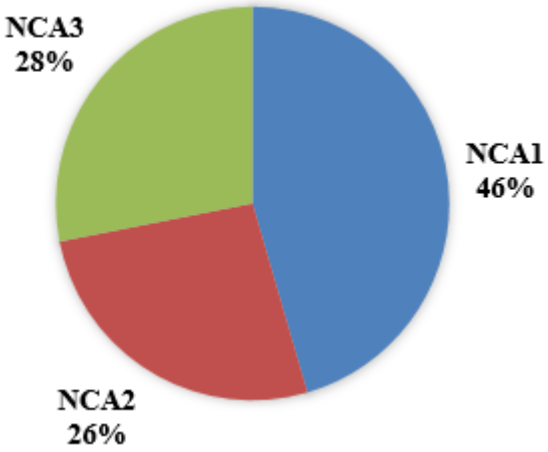

Figure 4.4: NCA category
Source: (Author, 2021)

Though the data might suggest otherwise, during the data collection exercise, it was observed that NCA2 and NCA3 were more willing to participate in the data collection process compared to their NCA1 counterparts. The only challenge with NCA2 and NCA3 contractors was obtaining the details of their workplaces. Most of them do not have websites where their current addresses can be obtained while most of their details obtained from the Kenya gazette are outdated. Some of them, especially NCA3 do not have permanent offices.

4.6.1.2 Number of permanent staff

Respondents were asked to report the number of permanent employees in their companies. The results have been presented in Figure 4.5. A majority (n=171, 73.4%) of the firms had a workforce of up to 30 employees. The highest (n=64, 27.5%) reported frequency was ‘less than 10’ while the lowest (n=2, 0.9%) frequency was ’61-70’. The frequencies generally reduced with the increasing size of the workforce except for the last category. The approximate mean (average) of the grouped data was

found to be 25.89 employees. It can therefore be concluded that most of the firms operate with a lean workforce.

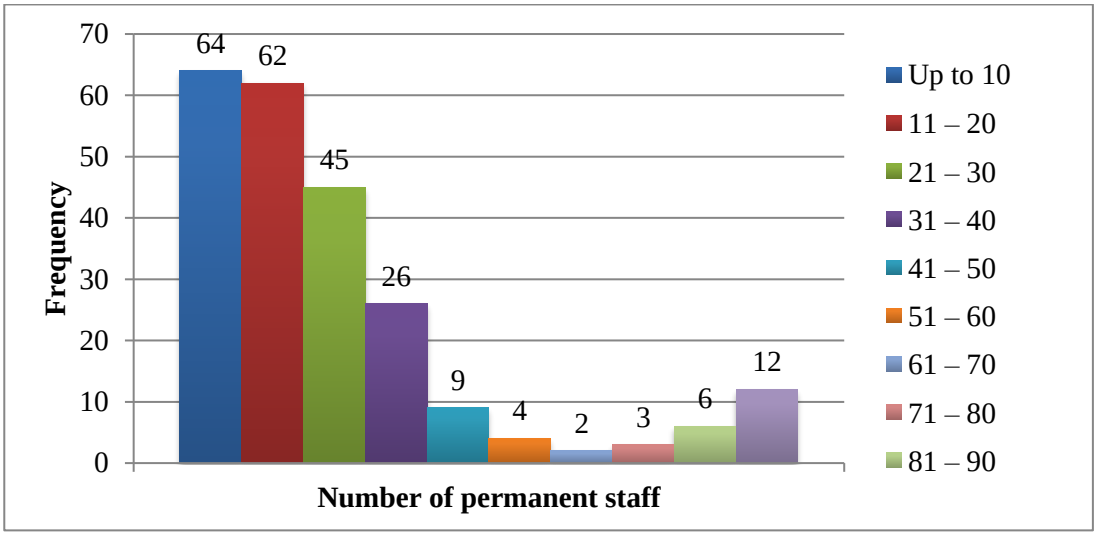

Figure 4.5: Number of permanent staff
Source: (Author, 2021)

4.6.1.3 Age of the Firm

Figure 4.6 presents data regarding the age of the firms. The category with the highest (n=62, 26.6%) frequency was '11-15' years while that with the lowest frequency (n=0, 0%) was '36-40' years. A majority (n=189, 79.4%) of the firms were aged between 0 and 20 years. The approximate mean (average) of the ages was found to be 14.4 years.

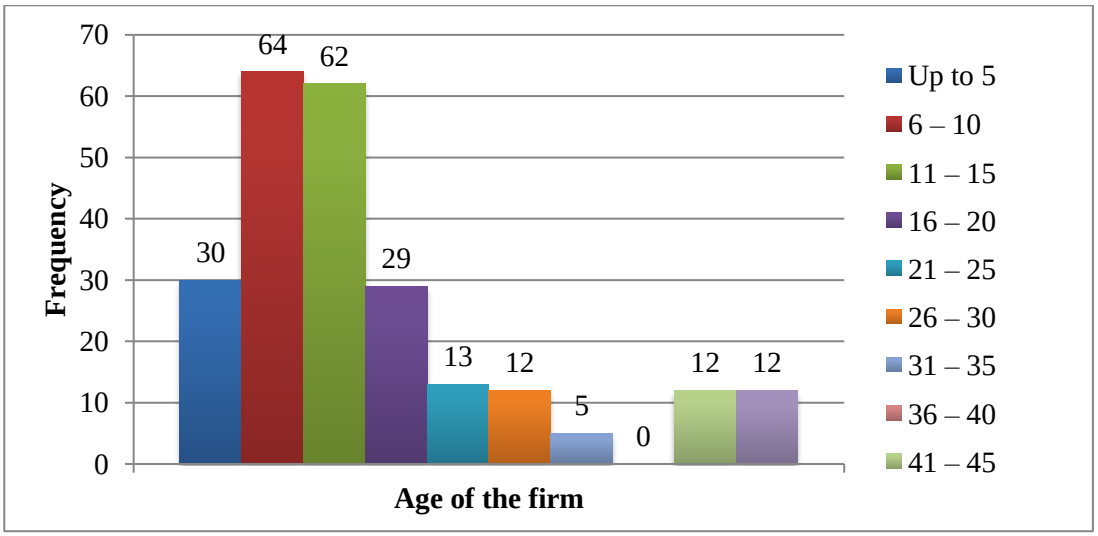

Figure 4.6: Age of the firm
Source: (Author, 2021)

4.6.1.4 Annual Turnover/Revenue

Based on provided ranges, contractors were required to indicate the average (mean) size of the organization in terms of annual turnover/revenue for the previous five years. 9 contractors failed to disclose this information. As seen in Figure 4.7, the highest (n=73, 32.3%) frequency was reported in 'up to 200 million' while the lowest (n=0, 0%) was reported in '1.601 – 1.800 billion'. Only 5 contractors representing 2.2% reported revenues above 1.8 billion. The overall mean revenue of all the contractors in the three categories was found to be Kshs. 435.84 million. Further analysis of the revenue based on the NCA categories has been presented on Table 4.16.

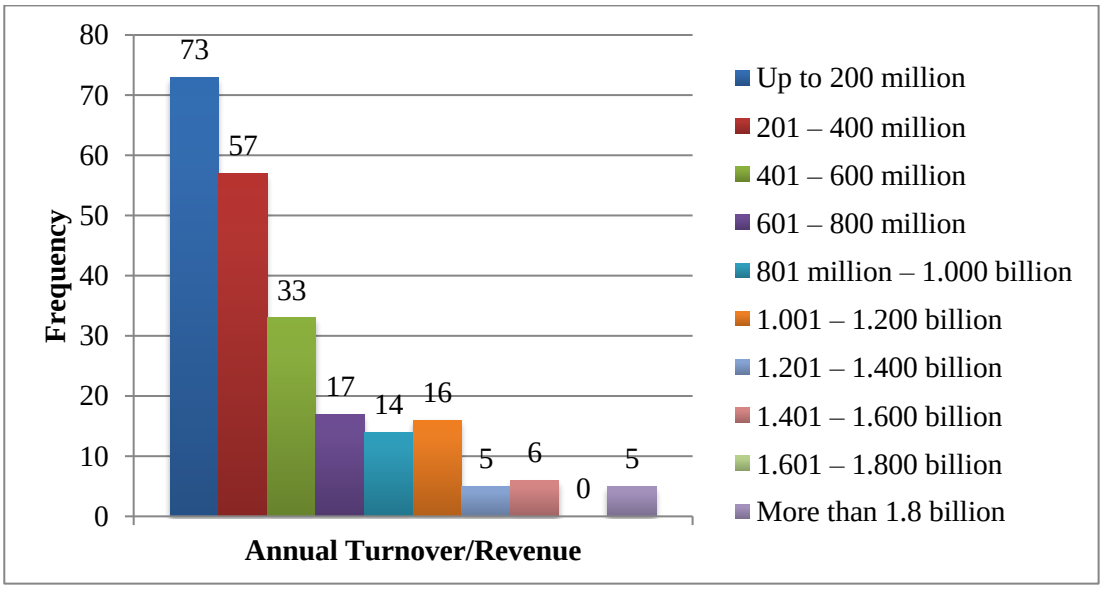

Figure 4.7: Annual Turnover/Revenue
Source: (Author, 2021)

A majority (n=41, 56.16%) of the contractors who reported their revenues to be less than 200 million were from NCA3. However, it was also noted that 14% of the total number of NCA1 contractors engaged in the survey reported revenues of less than 200 million while almost half (49.5%) of these contractors had revenues of less than 600 million. These numbers were considered to be high since according to NCA (2020), NCA1 contractors are supposed to undertake construction jobs worth more than 250 million for specialist works, more than 500 million for building works, and more than 750 million for road/civil works. This indicates that a majority of local

contractors registered under the NCA1 category are handling relatively smaller projects compared to what they are supposed to.

Table 4.16: Annual Turnover/Revenue per NCA category

		NCA1	NCA2	NCA3	Total
Valid	Up to 200 million	15	17	41	73
	201 – 400 million	20	18	19	57
	401 – 600 million	17	13	3	33
	601 – 800 million	11	6	0	17
	801 million – 1.000 billion	14	0	0	14
	1.001 – 1.200 billion	13	2	1	16
	1.201 – 1.400 billion	4	1	0	5
	1.401 – 1.600 billion	6	0	0	6
	1.601 – 1.800 billion	0	0	0	0
	More than 1.8 billion	5	0	0	5
	Total	**105**	**57**	**64**	**226**
Missing	System				9
Total					**235**

Source: (Author, 2021)

The mean revenue of NCA1 contractors was estimated to be Kshs. 617.14 million compared to Kshs. 373.68 million and Kshs. 193.75million for NCA2 and NCA3 respectively. These figures have been presented in Figure 4.8. The trend observed was as expected.

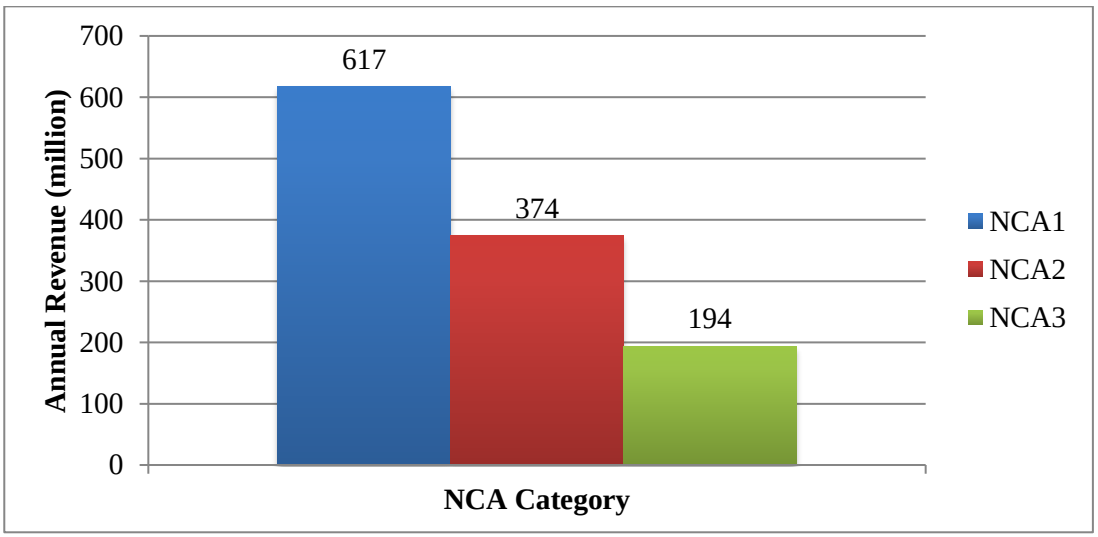

Figure 4.8: Annual Turnover/Revenue per NCA category
Source: (Author, 2021)

4.6.1.5 Total Annual Expenditure

Contractors were also required to indicate the average (mean) of their annual total expenditure for the previous five years. 10 contractors failed to disclose this information. As seen in Figure 4.9, the highest (n=80, 35.6%) frequency was reported in 'less than 100 million' while the lowest (n=6, 2.7%) was reported in 'more than 900 million'. The overall mean expenditure of all the contractors in all the three categories was found to be Kshs. 247.33 million. Further analysis of the expenditure based on the NCA categories has been presented on Table 4.17.

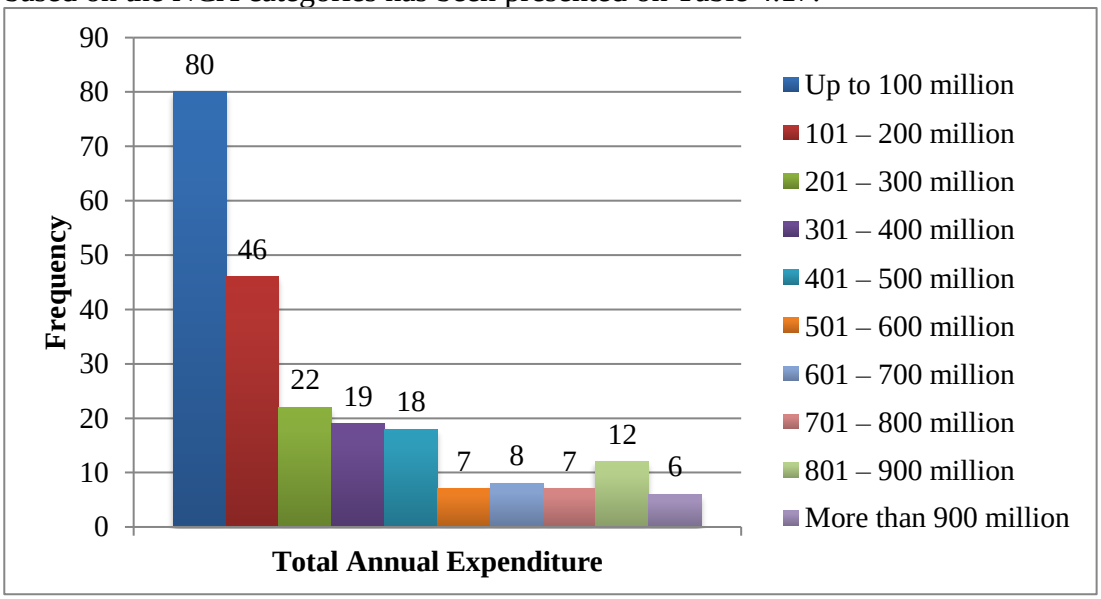

Figure 4.9: Total Annual Expenditure
Source: (Author, 2021)

Majority (n=41, 51.25%) of the contractors who reported their revenues to be less than 100 million were from NCA3 followed by NCA2 (n=22, 27.5%) and NCA1 (n=17, 21.25%) respectively. Out of the 40 contractors who reported total expenditures exceeding 500 million, 33 of them representing 82.5% were NCA1 contractors. This was expected since contractors in this category were expected to handle a relatively higher volume of construction work.

Table 4.17: Annual Total Annual Expenditure per NCA category

		NCA1	NCA2	NCA3	Total
	Up to 100 million	17	22	41	80
Valid	101 – 200 million	21	12	13	46
	201 – 300 million	7	10	5	22

		NCA1	NCA2	NCA3	Total
	301 – 400 million	13	3	3	19
	401 – 500 million	11	7	0	18
	501 – 600 million	5	2	0	7
	601 – 700 million	6	1	1	8
	701 – 800 million	5	2	0	7
	801 – 900 million	12	0	0	12
	More than 900 million	5	0	1	6
	Total	**102**	**59**	**64**	**225**
Missing	System				10
Total					**235**

Source: (Author, 2021)

The mean total expenditure of NCA1 contractors was estimated to be Kshs. 351.47 million compared to Kshs. 217.80 million and Kshs. 108.59 million for NCA2 and NCA3 respectively. These figures have been presented in Figure 4.10. The trend observed was also as expected.

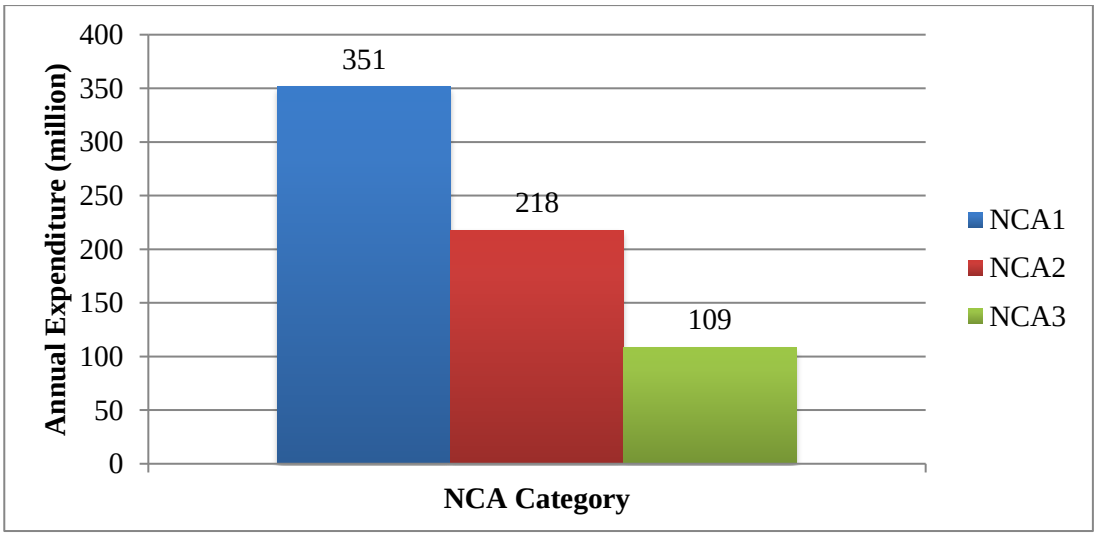

Figure 4.10: Annual Total Annual Expenditure per NCA category
Source: (Author, 2021)

4.6.1.6 Profitability

Profitability was estimated based on the revenue and expenditure values provided in the two preceding sections. The overall mean revenue of all the contractors in the three categories was found to be Kshs. 435.84 million compared to an expenditure of

Kshs. 247.33 million. This meant that the estimated mean profitability for all the three NCA categories combined was Kshs. 188.51 million.

The mean revenues of NCA1, NCA2, and NCA3 contractors were estimated to be Kshs. 617.14 million, Kshs. 373.68 million and Kshs. 193.75 million respectively compared to their total estimated expenditures of Kshs. 351.47 million, Kshs. 217.80 million and Kshs. 108.59 million respectively. Therefore, the approximate profitability for the three NCA categories was Kshs. 265.67 million, Kshs. 155.88 million and Kshs. 85.16 million respectively. These have been presented in Figure 4.11.

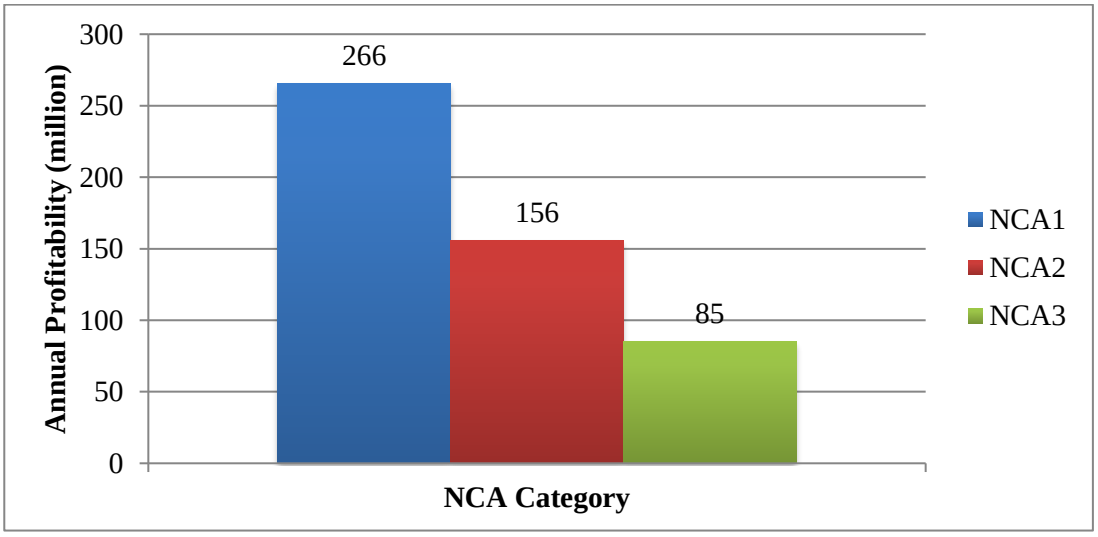

Figure 4.11: Annual Profitability per NCA category
Source: (Author, 2021)

Figure 4.12 presents the profitability for the three categories expressed as percentages of the revenues. The percentage profitability for NCA1, NCA2, and NCA3 contractors was estimated to be 43%, 42%, and 44% respectively. The difference in the three categories was very minimal.

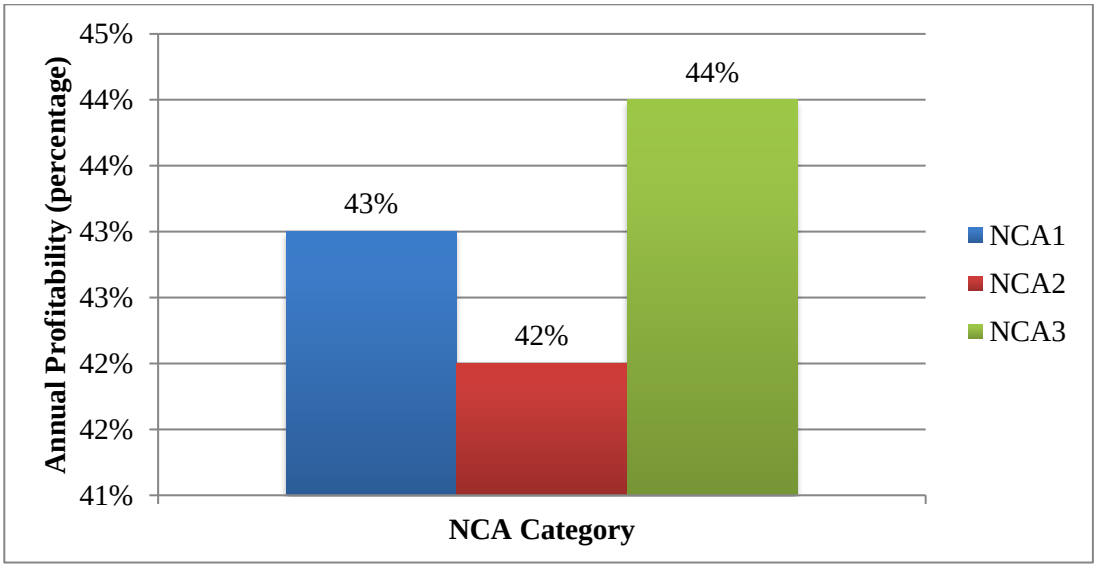

Figure 4.12: Annual Profitability (%) per NCA category
Source: (Author, 2021)

4.6.1.7 Mega projects undertaken by NCA1 Local Contractors

NCA1 contractors were asked to indicate the proportion of their projects which were worth more than Ksh 1 billion for the previous ten years. As seen in Figure 4.13, it is evident that approximately half (n=53, 49.5%) of the NCA1 contractors almost handle no projects worth more than 1 billion. A big proportion of their projects (91-100%) are worth less than 1 billion. 20% of the contractors (n=21) had 11-20% of their projects being worth 1 billion meaning 80-89% of their projects were worth less than 1 billion. 13% of the contractors (n=14) had 21-30% of their projects being worth 1 billion meaning 70-79% of their projects were worth less than 1 billion. The frequencies dropped as the proportionality of the projects worth more than 1 billion increased.

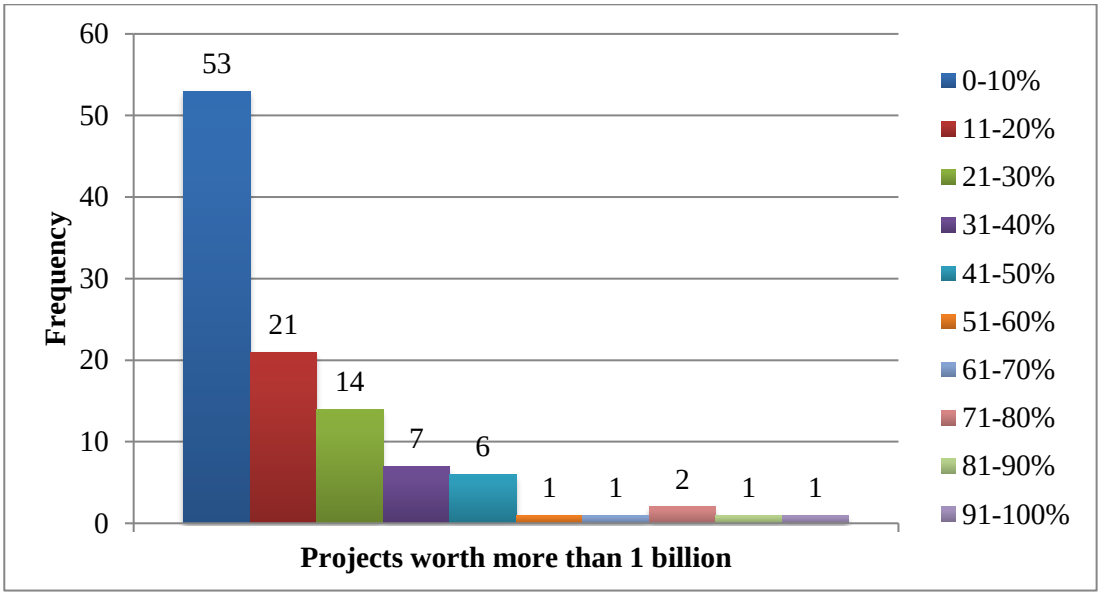

Figure 4.13: Projects worth more than 1 billion
Source: (Author, 2021)

4.6.1.8 Employee turnover

Respondents were asked to describe the employee turnover in their firms based on a ten year period. 19.5% of the contractors (n=41) reported the level of employee turnover to be 0-10%, 25.2% of the contractors (n=53) reported 11-20%, 21.9% of the contractors (n=46) reported 21-30% and 13.3% of the contractors (n=28) reported 31-40%. 5.7% of the contractors (n=12) reported 41-50%, 4.8% of the contractors (n=10) reported 51-60% and 2.4% of the contractors (n=5) reported 61-70%. 4.3% of the contractors (n=9) reported 71-80% while 2.9% of the contractors (n=6) reported 81-90%. These results have been shown in Figure 4.14.

The estimated mean employee turnover was 27.8%. Whether voluntary such as resignation or involuntary such as termination due to poor performance, employee turnover is costly and unwanted. A study conducted by Harris, Tang and Tseng (2002) conducted a study between employee turnover and productivity established that the sample mean for studied firms was 18% but concluded that the optimal employee turnover was 30%. This therefore gives an indication that the employee turnover rate in our case is slightly high but within acceptable range.

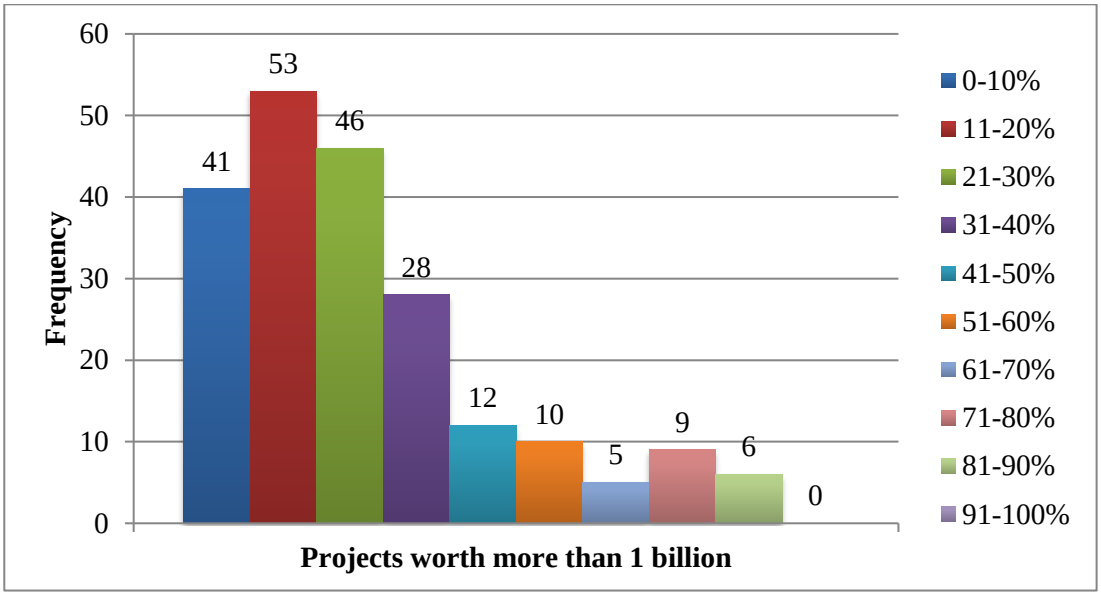

Figure 4.14: Employee Turnover
Source: (Author, 2021)

4.6.1.9 Funding of Working Capital

Contractors were required to indicate the extent to which their working capital was funded through loans over a period of ten years. Results have been presented in Figure 4.15. 10.7% (n=23) of the contractors indicated that more than 50% of their working capital was funded through loans. 19.5% (n=42) of the contractors had more than 40% of their working capital funded by loans. Only 22.8% (n=49) of the contractors operated almost without loans (0-10%). The mean proportion of the working capital funded through loans was established to be 27.73%.

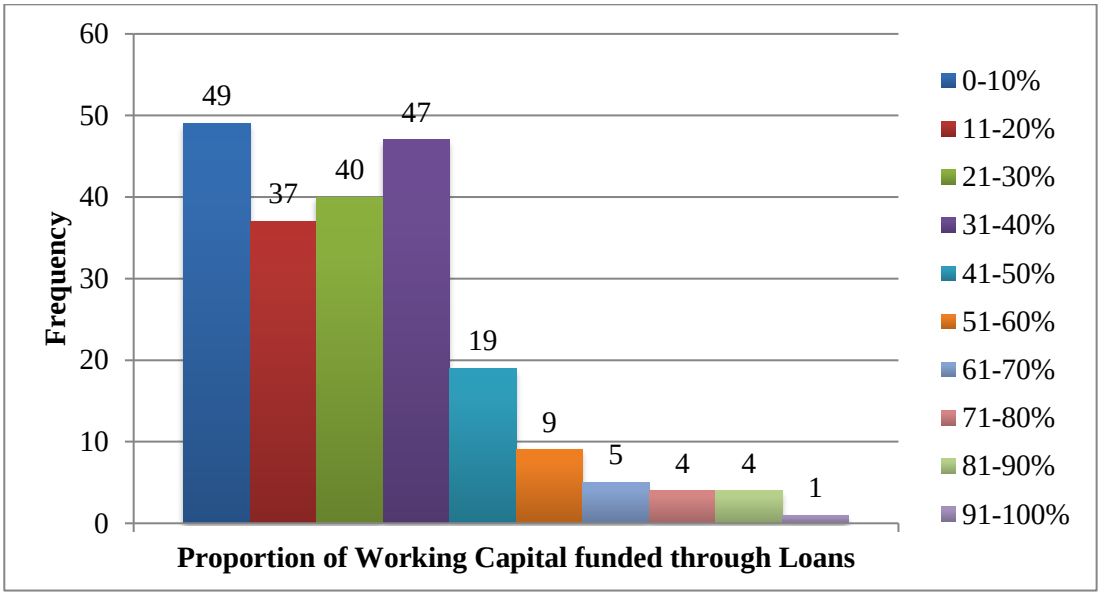

Figure 4.15: Proportion of Working Capital funded through Loans
Source: (Author, 2021)

4.6.1.10 Growth in size of workforce

Based on a five year period, the growth of the size of the workforce (both permanent and casual) was asked. Results have been presented in Figure 4.16. The highest frequency (n=62, 28.6%) was reported in '11-20%' while the lowest frequency (n=0, 0.0%) was reported in '91-100%'. 64.5% (n=140) reported growth of up to 30%, 25.4% (n=55) reported growth of between 31 and 60% while the remaining 10.1% (n=22) reported growth of above 60%. The estimated mean growth of the workforce was found to be 29.0%.

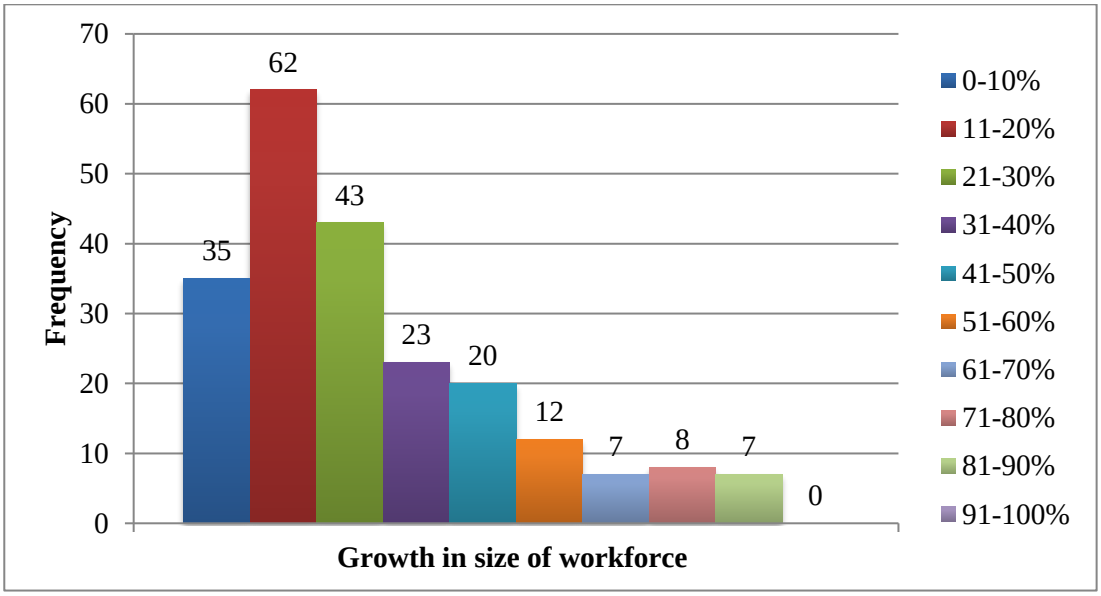

Figure 4.16: Growth in size of workforce
Source: (Author, 2021)

4.6.1.11 Growth in volume of work

The growth in the volume of construction work for a period of five years was sought. Results have been presented in Figure 4.17. The highest frequency (n=44, 20.4%) was reported in '11-20%'. The lowest frequency (n=2, 0.9%) was reported in '91-100%'. 49.1% (n=106) reported growth of up to 30%, 34.7% (n=75) reported growth of between 31 and 60% while the remaining 16.2% (n=35) reported growth of above 60%. The estimated mean growth of the volume of work was found to be 34.9%.

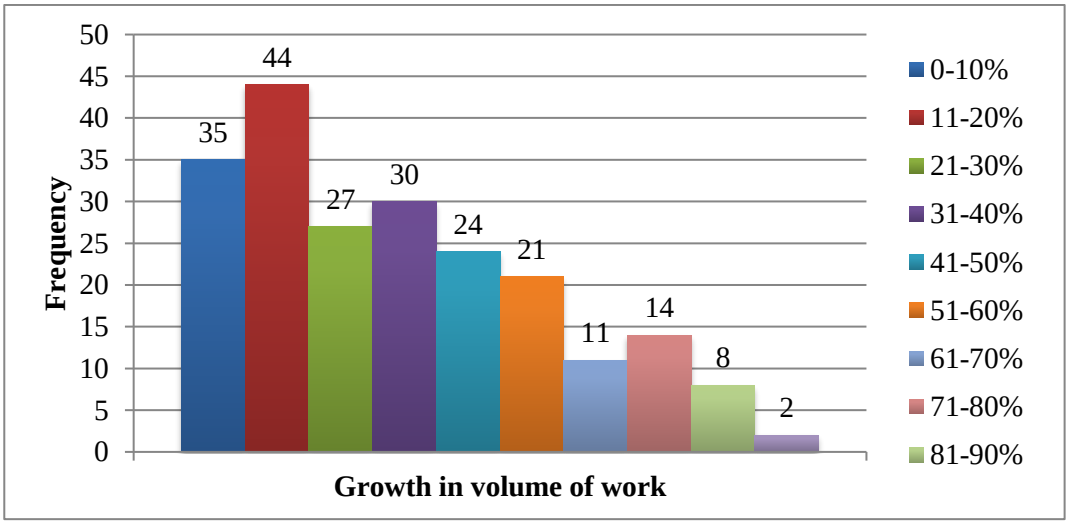

Figure 4.17: Growth in volume of work
Source: (Author, 2021)

4.6.1.12 Growth in value of owned equipment

Information regarding the growth in value of owned equipment for a period of five years was requested. Results have been presented in Figure 4.18. The highest frequency (n=54, 25.0%) was reported in '0-10%' while the lowest frequency (n=3, 1.4%) was reported in '61-70%'. 58.3% (n=126) reported growth of up to 30%, 27.8% (n=60) reported growth of between 31 and 60% while the remaining 13.9% (n=30) reported growth of above 60%. The estimated mean growth of the value of owned equipment was found to be 31.0%.

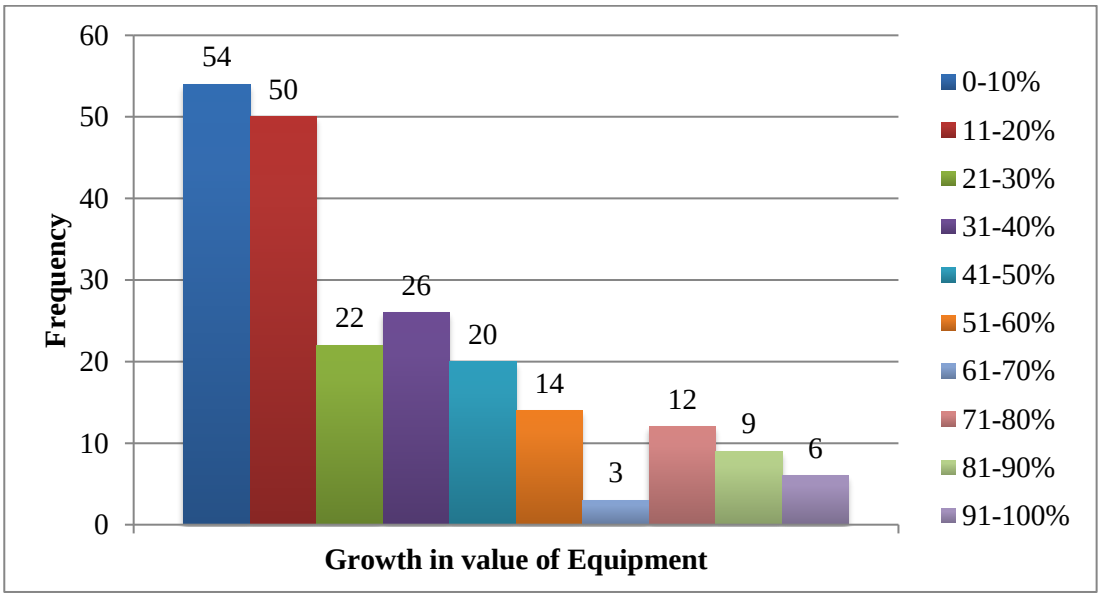

Figure 4.18: Growth in value of Equipment
Source: (Author, 2021)

4.6.2 Consultants

Though the only criterion for inclusion in the survey was professional interaction with the sampled contractors, the data collection from consultants was biased in favor of Quantity Surveyors. This is because they have an upper hand when it comes to understanding both financial and non-financial perspectives of contractors' practices.

4.6.2.1 Professional Background

Out of the 143 consultants who participated in the study, 86 (60.1%) were Quantity Surveyors, 23 (16.1%) were Construction Managers, 21 (14.7%) were Civil & Structural Engineers and 9 (6.3%) were Architects. 4 (2.8%) of the respondents did not have a background in any of the provided choices. Two of these were

Accountants, one was a Real Estate Valuer and another was a Human Resource Manager. These results have been presented in Figure 4.19.

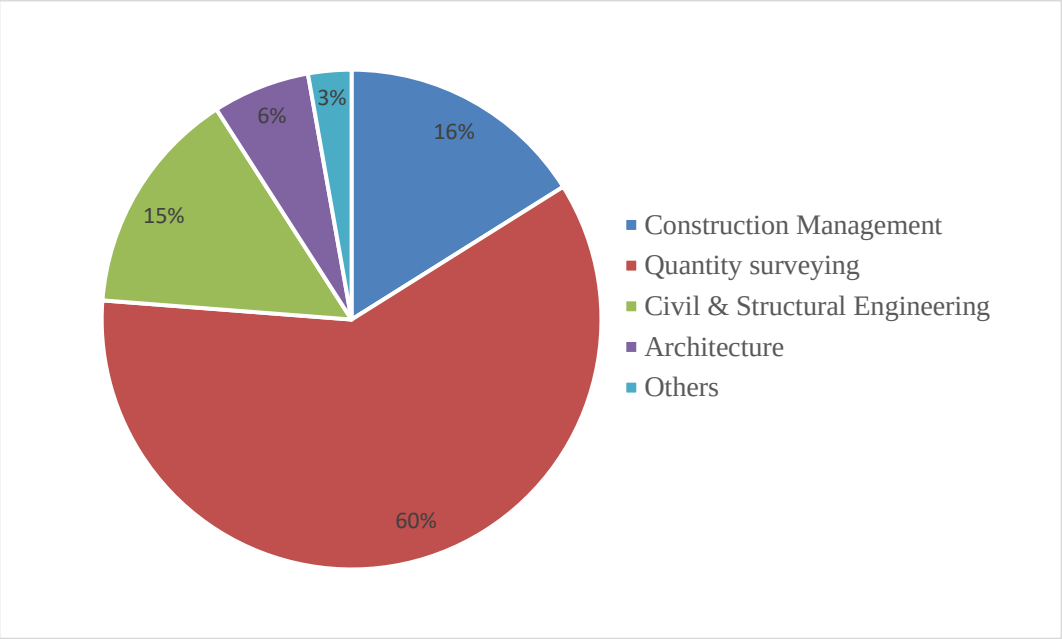

Figure 4.19: Professional Background
Source: (Author, 2021)

4.6.2.2 Professional Experience

The professional experience of the consultants was gauged using the number of years the consultants had been in practice. 67.8% (n=97) had an experience of less than 10 years, 24.5% (n=35) had an experience of 10-20 years, 7.0% (n=10) had an experience of 21-30 years while the remaining 0.7% (n=1) had been practicing for 30-40 years. These results have been presented in Figure 4.20.

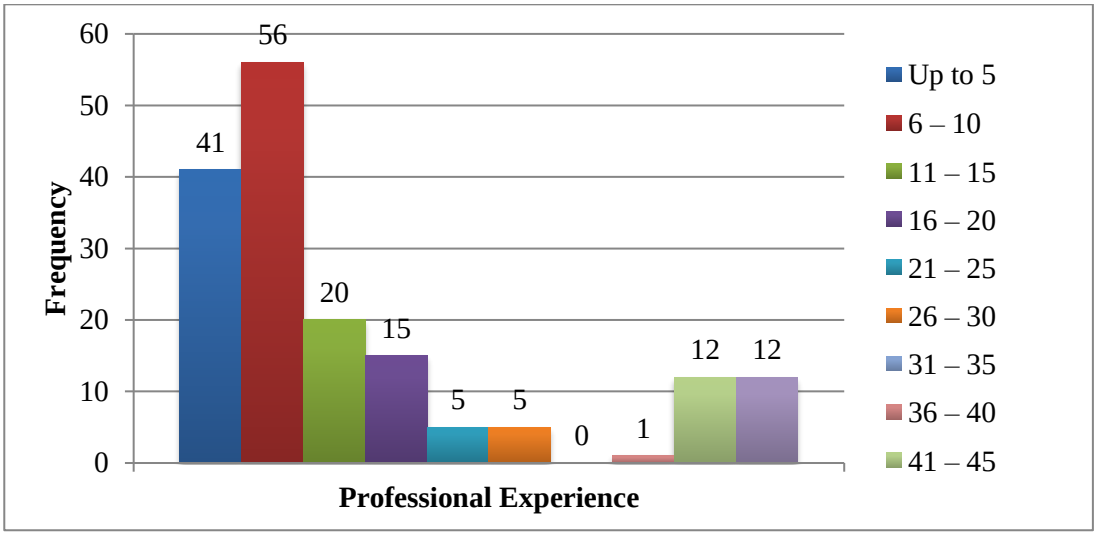

Figure 4.20: Professional Experience
Source: (Author, 2021)

4.7 Level of Organizational Performance of Local Contractors

This study employed a multidimensional approach where ten dimensions were used to measure the level of organizational performance. Each of the dimensions was measured using five indicators. All the indicators were measured on a numerical rating scale of 1-10 ranging from very low to very high.

4.7.1 Profitability

All the five indicators of profitability had almost equal means and standard deviations except for 'return on assets' and 'asset turnover' which had slightly higher standard deviations. The highest mean was 5.72 (gross profit margin) while the lowest mean was 5.26 (return on assets) as shown on Table 4.18. The overall mean for five indicators was 5.406 indicating that the level of profitability among local contractors is moderate.

Table 4.18: Profitability; Descriptive statistics

Code	Indicator	N	Min.	Max.	Mean	Std. Deviation
PR1	gross profit margin	378	1	10	5.72	1.951
PR2	operating profit margin	378	1	10	5.44	1.879
PR3	net profit margin	378	1	10	5.34	1.949
PR4	return on assets	378	1	10	5.26	2.076
PR5	asset turnover	378	1	10	5.28	2.140

Source: (Author, 2021)

4.7.2 Client Satisfaction

Results presented on Table 4.19 indicate that the item with the highest mean (7.13) under client satisfaction was 'service quality' while that with the lowest mean (6.67) was 'adherence to schedule'. The second-lowest mean (6.77) was reported in 'adherence to budget'. This is a reflection of prevailing conditions as Okweto (2012) reported that more than 70% of the projects handled by local contractors experienced time overruns exceeding 50% while 50% of similar projects experience cost overruns exceeding 20%. The overall level of client satisfaction was 6.923 which was considered to be moderately high.

Table 4.19: Client Satisfaction; Descriptive statistics

Code	Indicator	N	Min.	Max.	Mean	Std. Deviation
CS1	service quality	378	2	10	7.13	2.002
CS2	adherence to schedule	378	1	10	6.67	2.161
CS3	adherence to budget	378	1	10	6.77	2.094
CS4	communication skills	378	1	10	6.94	2.109
CS5	personnel skills	378	1	10	7.11	2.028

Source: (Author, 2021)

4.7.3 Growth

The indicator with the highest mean (6.20) under growth was found to be 'client retention' as shown on Table 4.20. This could be as a result of the relatively high level of client satisfaction reported previously. The trend in the means of the growth in 'volume of work' (5.71), 'number of employees' (5.67), and 'equipment/assets' (5.59) was almost similar to that measured earlier (demographic profiles) at 34.9%, 29.0%, and 31.0% respectively. The overall mean of the five indicators was established to be 5.808 and was considered to be moderate.

Table 4.20: Growth; Descriptive statistics

Code	Indicator	N	Min.	Max.	Mean	Std. Dev.
GR1	profitability	378	1	10	5.87	2.237
GR2	annual turnover/volume of work	378	1	10	5.71	2.208
GR3	client retention	378	1	10	6.20	2.486
GR4	number of employees	378	1	10	5.67	2.384
GR5	equipment/assets	378	1	10	5.59	2.536

Source: (Author, 2021)

4.7.4 Technical Capability

As presented on Table 4.21, the item with the highest mean (6.97) under client satisfaction was 'experience (previous works)' while that with the lowest mean (5.96) was 'advancement of electronic software used'. The second-lowest mean (6.03) was reported in 'advancement of electronic hardware used'. This means local contractors do not invest heavily in electronic hardware and software technology as compared to plant and equipment. The overall mean of the five indicators was moderately high at 6.431.

Table 4.21: Technical Capability; Descriptive statistics

Code	Indicator	N	Min.	Max.	Mean	Std. Dev.
TC1	experience (previous works)	378	2	10	6.97	1.989
TC2	adequacy of plant & equipment	378	1	10	6.34	2.166
TC3	qualification of personnel	378	2	10	6.85	1.928
TC4	advancement of electronic hardware used	378	1	10	6.03	2.149
TC5	advancement of electronic software used	378	1	10	5.96	2.249

Source: (Author, 2021)

4.7.5 Business Efficiency

'Labour productivity' recorded the highest mean (6.72) followed by 'energy efficiency' at 6.25 as seen on Table 4.22. Wachira (1999) observed that labor productivity is so important that it not only determines the contract period and costs of construction projects but also influences the performance of the entire construction industry here in Kenya. This perhaps explains the focus it's given by most local contractors. The lowest mean (6.10) was recorded in 'revenue per employee'. Earlier, the annual revenue and number of permanent staff were established to be Kshs. 435.84 million and 25.89 respectively. Though this means that the revenue per employee is Kshs. 16.83 million, which is misleading in the sense that since the construction industry is 'project-based', most of the employees engaged by contractors are casuals. The overall mean of the five indicators was moderately high at 6.293.

Table 4.22: Business Efficiency; Descriptive statistics

Code	Indicator	N	Min.	Max.	Mean	Std. Dev.
BE1	labour productivity	378	2	10	6.72	1.955
BE2	return on investment in equipment	378	1	10	6.19	1.944
BE3	energy efficiency	378	1	10	6.25	1.964

Code	Indicator	N	Min.	Max.	Mean	Std. Dev.
BE4	revenue per employee	378	1	10	6.10	1.928
BE5	marketing efficiency	378	1	10	6.21	2.057

Source: (Author, 2021)

4.7.6 Employee Satisfaction

The highest (5.92) employee satisfaction was reported in 'favourability of working conditions' while the lowest (5.38) was reported in 'reward for excellence in job performance' as seen on Table 4.23. Generally, the level of employee satisfaction was moderate at 5.683. This could be a reason why the employee turnover was relatively high at 27.8%. High employee satisfaction is associated with low employee turnover and higher employee performance.

Table 4.23: Employee Satisfaction; Descriptive statistics

Code	Indicator	N	Min.	Max.	Mean	Std. Dev.
ES1	remuneration/salary	378	1	10	5.66	2.230
ES2	reward for excellence in job performance	378	1	10	5.38	2.424
ES3	favourability of working conditions	378	1	10	5.92	2.460
ES4	professional growth	378	1	10	5.82	2.471
ES5	training and development	378	1	10	5.63	2.621

Source: (Author, 2021)

4.7.7 Financial Stability

As presented on Table 4.24, the two highest means were 6.42 and 6.30 for 'credit ratings' and 'access to overdraft facilities' respectively. This means that due to relatively good credit ratings, local contractors can access overdraft facilities from local financial institutions. The least financial stability was reported in 'adequacy of working capital'. This explains why 27.73% of the working capital by local contractors is financed through loans. The second last item was found to be 'net cash flow from projects' with a mean of 6.16. The reduced cash flow could be a result of loan repayments which reduce the net cash flow from projects.

Table 4.24: Financial Stability; Descriptive statistics

Code	Indicator	N	Min.	Max.	Mean	Std. Deviation
FS1	credit ratings	378	1	10	6.42	2.101
FS2	net value of current assets	378	1	10	6.23	1.996
FS3	adequacy of working capital	378	2	10	6.12	2.031

Code	Indicator	N	Min.	Max.	Mean	Std. Deviation
FS4	net cash flow from projects	378	1	10	6.16	1.994
FS5	access to overdraft facilities	378	1	10	6.30	2.091

Source: (Author, 2021)

4.7.8 Quality of Products

The means reported in all the indicators were high with the lowest at 7.16 as seen on Table 4.25. The overall mean for 'quality of products' was 7.303. This is a clear indication that local contractors are capable of achieving good quality in the projects they execute.

Table 4.25: Quality of Products; Descriptive statistics

Code	Indicator	N	Min.	Max.	Mean	Std. Dev.
QP1	aesthetics	378	2	10	7.19	1.903
QP2	freeness from defects on completion	378	1	10	7.20	1.983
QP3	fitness for the purpose	378	2	10	7.47	1.786
QP4	support by worthwhile guarantees	378	2	10	7.16	1.830
QP5	durability	378	2	10	7.52	1.802

Source: (Author, 2021)

4.7.9 Managerial Capability

As seen on Table 4.26, the two highest means were 6.97 and 6.96 for 'effectiveness of strategic management' and 'consistency in decision making' respectively. The least (6.81) level of managerial capability was reported in 'efficiency in human resource management'. The overall mean for managerial capability was found to be 6.907 and considered to be moderately high.

Table 4.26: Managerial Capability; Descriptive statistics

Code	Indicator	N	Min.	Max.	Mean	Std. Dev
MC1	effectiveness of strategic management	378	1	10	6.97	1.947
MC2	consistency in decision making	378	1	10	6.96	1.994
MC3	promptness in decision making	378	1	10	6.87	2.033
MC4	prudence in financial management	378	1	10	6.92	2.042
MC5	efficiency in human resource management	378	1	10	6.81	2.024

Source: (Author, 2021)

4.7.10 Safety Performance

As seen on Table 4.27, the indicator with the highest (7.09) mean was found to be 'use of personal protective equipment'. Based on regulations provided by the NCA, it is usually mandatory for all personnel on construction sites to use personal protective equipment (NCA, 2012). This could be the reason why this indicator had the best performance compared to the rest. The least performed (6.37) indicator was 'availability of health and safety officer'.

Table 4.27: Safety Performance; Descriptive statistics

Code	Indicator	N	Min.	Max.	Mean	Std. Dev.
SP1	soundness of health and safety policies	378	1	10	6.87	2.032
SP2	availability of health and safety officer	378	1	10	6.37	2.437
SP3	use of personal protective equipment	378	1	10	7.09	1.992
SP4	use of warning signage, barriers etc.	378	1	10	6.77	2.211
SP5	induction of workers on OHS	378	1	10	6.58	2.324

Source: (Author, 2021)

Figure 4.21 below is a radar chart of the means of all the 50 indicators used to evaluate the level of organizational performance. Notable low levels of organizational performance were observed in profitability, growth, and employee satisfaction while relatively higher levels were noted in client satisfaction, quality of products, and managerial capability.

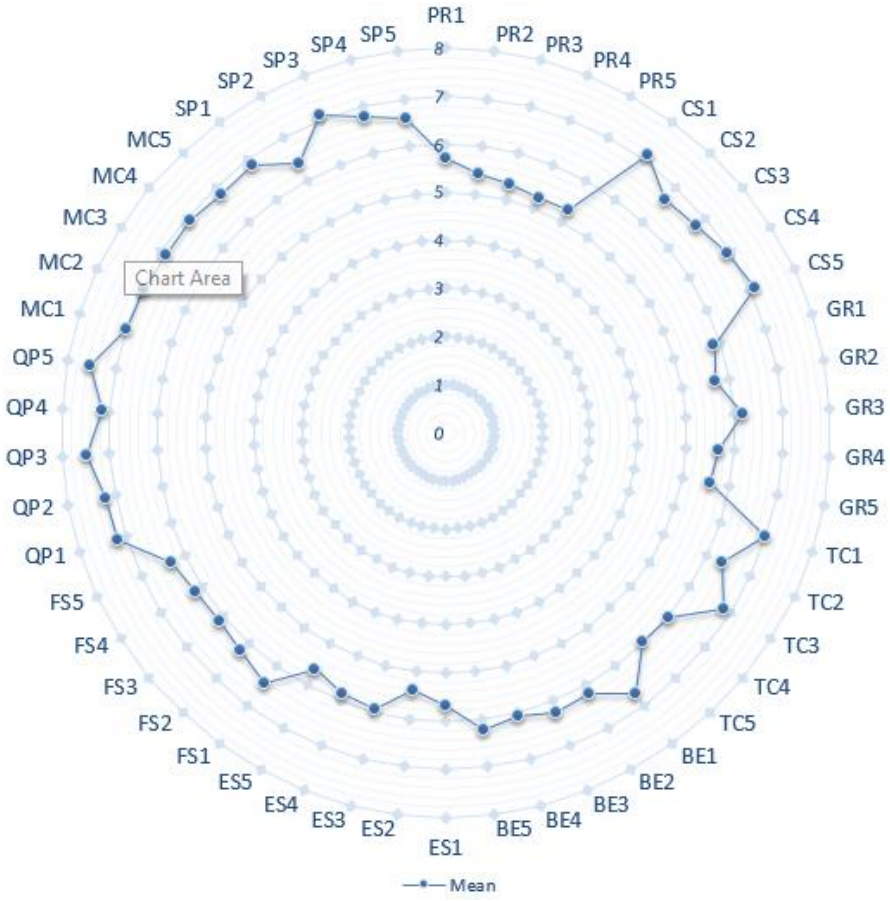

Figure 4.21: Overall Profile for the Indicators of Organizational Performance
Source: (Author, 2021)

Table 4.28 below is a summary of all the measured indicators ranked from the highest performed to the least performed based on their computed means.

Table 4.28: Ranked Indicators of Organizational Performance; Descriptive statistics

Code	Indicator	N	Min.	Max.	Mean	Std. Dev.	Rank
QP5	durability	378	2	10	7.52	1.802	1
QP3	fitness for the purpose	378	2	10	7.47	1.786	2
QP2	freeness from defects on completion	378	1	10	7.20	1.983	3
QP1	aesthetics	378	2	10	7.19	1.903	4
QP4	support by worthwhile guarantees	378	2	10	7.16	1.830	5
CS1	service quality	378	2	10	7.13	2.002	6
CS5	personnel skills	378	1	10	7.11	2.028	7
SP3	use of personal protective equipment	378	1	10	7.09	1.992	8
TC1	experience (previous works)	378	2	10	6.97	1.989	9
MC1	effectiveness of strategic management	378	1	10	6.97	1.947	10
MC2	consistency in decision making	378	1	10	6.96	1.994	11

Code	Indicator	N	Min.	Max.	Mean	Std. Dev.	Rank
CS4	communication skills	378	1	10	6.94	2.109	12
MC4	prudence in financial management	378	1	10	6.92	2.042	13
MC3	promptness in decision making	378	1	10	6.87	2.033	14
SP1	soundness of health and safety policies	378	1	10	6.87	2.032	15
TC3	qualification of personnel	378	2	10	6.85	1.928	16
MC5	efficiency in human resource management	378	1	10	6.81	2.024	17
SP4	use of warning signage, barriers etc.	378	1	10	6.77	2.211	18
CS3	adherence to budget	378	1	10	6.77	2.094	19
BE1	labour productivity	378	2	10	6.72	1.955	20
CS2	adherence to schedule	378	1	10	6.67	2.161	21
SP5	induction of workers on OHS	378	1	10	6.58	2.324	22
FS1	credit ratings	378	1	10	6.42	2.101	23
SP2	availability of health and safety officer	378	1	10	6.37	2.437	24
TC2	adequacy of plant & equipment	378	1	10	6.34	2.166	25
FS5	access to overdraft facilities	378	1	10	6.30	2.091	26
BE3	energy efficiency	378	1	10	6.25	1.964	27
FS2	net value of current assets	378	1	10	6.23	1.996	28
BE5	marketing efficiency	378	1	10	6.21	2.057	29
GR3	client retention	378	1	10	6.20	2.486	30
BE2	return on investment in equipment	378	1	10	6.19	1.944	31
FS4	net cash flow from projects	378	1	10	6.16	1.994	32
FS3	adequacy of working capital	378	2	10	6.12	2.031	33
BE4	revenue per employee	378	1	10	6.10	1.928	34
TC4	advancement of electronic hardware used	378	1	10	6.03	2.149	35
TC5	advancement of electronic software used	378	1	10	5.96	2.249	36
ES3	favourability of working conditions	378	1	10	5.92	2.460	37
GR1	profitability	378	1	10	5.87	2.237	38
ES4	professional growth	378	1	10	5.82	2.471	39
PR1	gross profit margin	378	1	10	5.72	1.951	40
GR2	annual turnover/volume of work	378	1	10	5.71	2.208	41
GR4	number of employees	378	1	10	5.67	2.384	42
ES1	remuneration/salary	378	1	10	5.66	2.230	43
ES5	training and development	378	1	10	5.63	2.621	44
GR5	equipment/assets	378	1	10	5.59	2.536	45
PR2	operating profit margin	378	1	10	5.44	1.879	46
ES2	reward for excellence in job performance	378	1	10	5.38	2.424	47
PR3	net profit margin	378	1	10	5.34	1.949	48
PR5	asset turnover	378	1	10	5.28	2.140	49
PR4	return on assets	378	1	10	5.26	2.076	50

Source: (Author, 2021)

4.7.11 Overall level of Organizational Performance in Local Contractors in Kenya

A summary of the organizational performance across the ten dimensions has been presented on Table 4.29. The three highest performed dimensions were 'Quality of products' (7.308), 'Client satisfaction' (6.923), and 'Managerial capability' (6.907). The three least performed dimensions were 'Financial stability' (6.243), 'Employee satisfaction' (5.683), and 'Profitability' (5.406). This indicates financially struggling local contractors.

Table 4.29: Dimensions of Organizational Performance; Descriptive statistics

No.	Dimension	N	Min	Max	Mean	Std. Dev.	Rank
1	Profitability	378	1.0	10.0	5.406	1.8595	10
2	Client satisfaction	378	1.4	10.0	6.923	1.8844	2
3	Growth	378	1.0	10.0	5.808	2.1616	8
4	Technical capability	378	1.6	10.0	6.431	1.8403	5
5	Business efficiency	378	1.2	10.0	6.293	1.7796	6
6	Employee satisfaction	378	1.0	10.0	5.683	2.2825	9
7	Financial stability	378	1.8	10.0	6.243	1.8710	7
8	Quality of products	378	2.0	10.0	7.308	1.7101	1
9	Managerial capability	378	1.0	10.0	6.907	1.8819	3
10	Safety performance	378	1.2	10.0	6.738	1.9812	4

Source: (Author, 2021)

The overall level of organizational performance of local contractors in Kenya was obtained using the following formula.

$$OP = \left(\sum_{i=1}^{n} p\right)/n$$

Where 'n' is the number of dimensions of organizational performance and 'p' is the individual mean of each of the dimensions.

$$OP = \frac{(5.40 + 6.92 + 5.80 + 6.43 + 6.29 + 5.68 + 6.24 + 7.30 + 6.90 + 6.74)}{10}$$

$$OP = \frac{(63.74)}{10}$$

$$OP = 6.374$$

If this was to be converted into a percentage score, the level of organizational performance would be graded as 63.74%. This illustrates a moderately high performance which means there is still plenty of room for improvement.

4.7.12 Additional Criteria used to describe the Level of Organizational Performance

This section describes the additional criteria suggested by respondents for describing the level of organizational performance among local contractors. Sixty-four (64) suggestions were made by both contractors (34) and consultants (30). The results have been analyzed thematically using QSR NVivo 11 software. Eight (8) themes were identified from the respondents' suggestions namely; profitability, managerial capability, technical capability, business efficiency, quality of products, client satisfaction, employee satisfaction, and effectiveness. Two extra categories were created for; (i) respondents who described the organizational performance in terms of levels and (ii) assorted suggestions which did not fall into any of the identified themes. Three themes were further broken down into a total of twelve (12) sub-themes as shown in Figure 4.22 and 4.23. Frequencies for each of the themes have been presented on Table 4.30 and Figure 4.24 while the sorted raw data has been presented in Appendix 14. The highest frequencies were recorded in managerial capability (9) and technical capability (7).

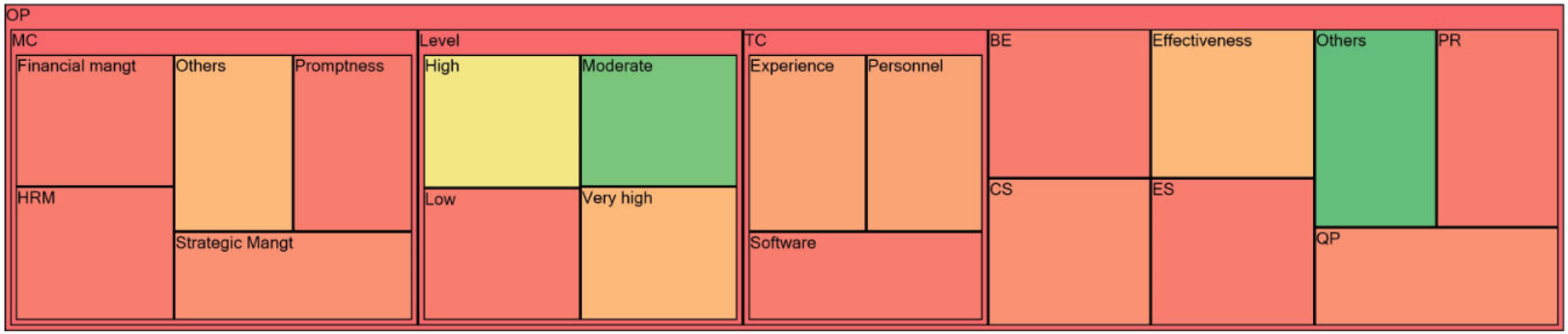

Figure 4.22: Additional Criteria used to describe the Level of Organizational Performance
Source: (Author, 2021)

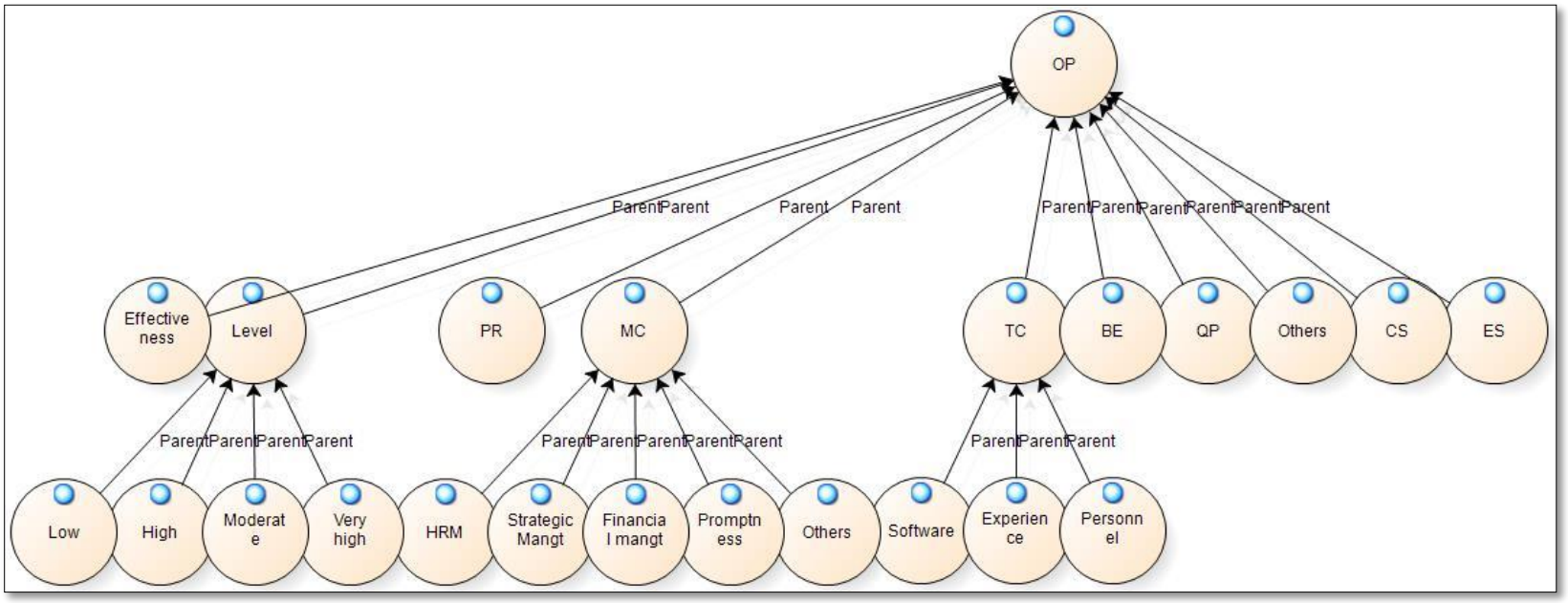

Figure 4.23: Additional Criteria used to describe the Level of Organizational Performance (Tree diagram)
Source: (Author, 2021)

Table 4.30: Qualitative Analysis of the Additional Criteria used to describe the Level of Organizational Performance

No.	Theme	Sub-theme	Frequency
1	Profitability		1
2	Client satisfaction		2
3	Technical capability	*Experience (previous works)* *Qualification of personnel* *Advancement of electronic software used*	3 3 1
4	Business efficiency		1
5	Employee satisfaction		1
6	Quality of products		2
7	Managerial capability	*Effectiveness of strategic management* *Promptness in decision making* *Prudence in financial management* *Efficiency in human resource management* *Others*	2 1 1 1 4
8	Level of organizational performance		24
9	Effectiveness		4
10	Others		13
	Total		**64**

Source: (Author, 2021)

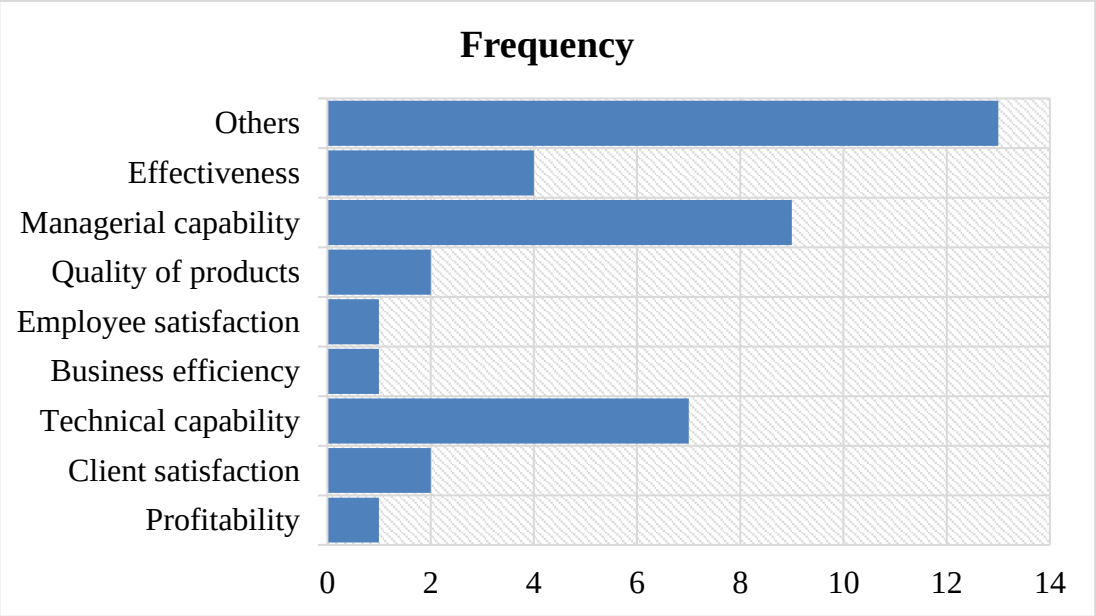

Figure 4.24: Qualitative Analysis of the Additional Criteria used to describe the Level of Organizational Performance

Source: (Author, 2021)

4.8 Determinants of Organizational Performance

Ten determinants of organizational performance were examined in this research. Each of the determinants was measured using five attributes. All the attributes were measured on a numerical rating scale of 1-10 ranging from very low to very high.

4.8.1 Strategic Planning Practices

The strategic planning practice with the highest mean (6.59) was 'assessment of business environment' while that with the second highest mean (6.53) was 'identification and analysis of firm's strategic issues' as presented on Table 4.31. The least performed (6.28) practice was 'definition of the firm's purpose and goals'. The overall mean was 6.456 which was considered to be moderately high.

Table 4.31: Strategic Planning Practices; Descriptive statistics

Code	Indicator	N	Min	Max	Mean	Std. Dev.
ST1	definition of the firm's purpose and goals	378	1	10	6.28	2.050
ST2	development of a mission and vision	378	1	10	6.38	2.043
ST3	assessment of business environment	378	1	10	6.59	1.990
ST4	identification and analysis of firm's strategic issues	378	1	10	6.53	2.091
ST5	implementation, evaluation and control systems	378	1	10	6.50	2.138

Source: (Author, 2021)

4.8.2 Performance Measurement Practices

The feature of performance measurement practice with the highest mean (6.91) was 'commitment by top management' while the second-best (6.67) was 'employee involvement'. The feature with the least mean (6.47) was found to be 'clarity and meaningfulness to all' as presented on Table 4.32. The overall mean for all the features was 6.633 and could be described as moderately high.

Table 4.32: Performance Measurement Practices; Descriptive statistics

Code	Attribute	N	Min.	Max.	Mean	Std. Dev
PM1	clarity and meaningfulness to all	378	1	10	6.47	1.955
PM2	harmony with organizational goals	378	1	10	6.52	2.013
PM3	reliability of data used	378	1	10	6.60	2.057
PM4	commitment by top management	378	1	10	6.91	2.107
PM5	employee involvement	378	1	10	6.67	2.219

Source: (Author, 2021)

4.8.3 Quality of Service

The aspect of 'quality of service' with the highest mean (7.28) was found to be 'responsiveness to clients' followed by 'knowledge and courtesy of employees' with a mean of 7.20 as shown on Table 4.33. The last two items were 'empathy towards clients' and 'appearance of physical facilities and personnel' with a mean of 7.01. However, the general quality of service by local contractors was found to be high with a mean of 7.129 just like the mean (7.303) seen in 'quality of products' earlier.

Table 4.33: Quality of Service; Descriptive statistics

Code	Attribute	N	Min.	Max.	Mean	Std. Dev
QS1	reliability	378	2	10	7.15	1.899
QS2	responsiveness to clients	378	1	10	7.28	1.822
QS3	knowledge and courtesy of employees	378	1	10	7.20	1.866
QS4	empathy towards clients	378	2	10	7.01	1.860
QS5	appearance of physical facilities and personnel	378	1	10	7.01	1.887

Source: (Author, 2021)

4.8.4 Organizational Structure of the Firm

The feature of the firm's organizational structure with the best performance (6.90) was 'clarity of line of authority' followed by 'flexibility' and 'adequacy of delegation of authority' with means of 6.74 each as presented on Table 4.34. The aspect of the organizational structure with the lowest mean (6.58) was 'provision of stability and continuity'. The overall mean was moderately high at 6.724.

Table 4.34: Organizational Structure of the Firm; Descriptive statistics

Code	Attribute	N	Min.	Max.	Mean	Std. Dev
OS1	clarity of line of authority	378	1	10	6.90	1.966
OS2	flexibility	378	2	10	6.74	1.907
OS3	adequacy of delegation of authority	378	1	10	6.74	1.923
OS4	provision of stability and continuity	378	1	10	6.58	2.069
OS5	documentation of the structure	378	1	10	6.66	2.141

Source: (Author, 2021)

4.8.5 Contractor's Innovativeness

The highest degree (5.82) of contractor's innovativeness was seen in 'adoption of new processes' and closely followed by 'advancement of construction equipment' with a mean of 5.81 as shown on Table 4.35. The lowest level of innovativeness was found

in ‘research and development endeavor’ with a mean of 5.33. The overall level of local contractors’ innovativeness was considered moderate with a mean of 5.642.

Table 4.35: Contractor’s Innovativeness; Descriptive statistics

Code	Attribute	N	Min.	Max.	Mean	Std. Dev
CI1	adoption of new processes	378	1	10	5.82	2.379
CI2	advancement of construction equipment	378	1	10	5.81	2.467
CI3	entry into new markets	378	1	10	5.71	2.433
CI4	advancement in software technology	378	1	10	5.54	2.558
CI5	research and development endeavor	378	1	10	5.33	2.650

Source: (Author, 2021)

4.8.6 Employee Performance

The best employee performance was identified in ‘work quality’ with a mean of 7.21 followed by ‘cooperation (level of team play)’ with a mean of 7.17 as presented on Table 4.36. The least performed aspect of employee performance was ‘creativity and taking initiative’ with a mean of 6.94. The overall level of employee performance was 7.104 and was considered to be high.

Table 4.36: Employee Performance; Descriptive statistics

Code	Attribute	N	Min.	Max.	Mean	Std. Dev
EP1	work quality	378	1	10	7.21	1.754
EP2	effectiveness of communication	378	1	10	7.09	1.837
EP3	creativity and taking initiative	378	1	10	6.94	1.880
EP4	cooperation (level of team play)	378	2	10	7.17	1.813
EP5	acceptance and learning from feedback	378	1	10	7.11	1.941

Source: (Author, 2021)

4.8.7 Clients’ Effectiveness

The most effective responsibility by clients was identified as ‘selection of competent project consultants’ with a mean of 6.70 followed by ‘acquisition of local authority permissions’ with a mean of 6.65 as presented on Table 4.37. The least effectiveness in clients was observed in ‘promptness in payment’ with a mean of 6.18. The overall level of clients’ effectiveness was moderately high with a mean of 6.520.

Table 4.37: Clients’ Effectiveness; Descriptive statistics

Code	Attribute	N	Min.	Max.	Mean	Std. Dev
CE1	promptness in payment	378	1	10	6.18	1.892

Code	Attribute	N	Min.	Max.	Mean	Std. Dev
CE2	selection of competent project consultants	378	1	10	6.70	1.954
CE3	timeliness in appointment of project consultants	378	1	10	6.63	1.922
CE4	responsiveness to information requests and decisions	378	1	10	6.44	1.966
CE5	acquisition of local authority permissions	378	1	10	6.65	1.997

Source: (Author, 2021)

4.8.8 Suppliers' Effectiveness

The most effective aspect of suppliers and subcontractors engaged by was identified as 'adherence to quality specifications' with a mean of 6.87 followed by 'technical support for their installations' with a mean of 6.76. The least effectiveness was seen in 'timeliness of delivery' with a mean of 6.62 as shown on Table 4.38. The overall effectiveness of suppliers and subcontractors was established to be moderately high with a mean of 6.725.

Table 4.38: Suppliers' Effectiveness; Descriptive statistics

Code	Attribute	N	Min.	Max.	Mean	Std. Dev
SE1	timeliness of delivery	378	1	10	6.62	1.875
SE2	adherence to quality specifications	378	1	10	6.87	1.851
SE3	timeliness of communication	378	1	10	6.69	1.921
SE4	consistency of improvement of services	378	1	10	6.68	1.884
SE5	technical support for their installations	378	1	10	6.76	1.908

Source: (Author, 2021)

4.8.9 Competition

This section sought to establish the extent to which competition for construction services had affected local contractors' operations. The highest impact was seen in 'enhanced client satisfaction' with a mean of 7.09 followed by 'improved quality' with a mean of 7.00 as shown on Table 4.39. The least impact was seen in 'increased efficiency' with a mean of 6.81. The overall positive impact of competition was moderately high at 6.951. This means that local contractors take competition positively.

Table 4.39: Competition; Descriptive statistics

Code	Attribute	N	Min.	Max.	Mean	Std. Dev
CN1	increased efficiency	378	1	10	6.81	1.974

Code	Attribute	N	Min.	Max.	Mean	Std. Dev
CN2	improved quality	378	1	10	7.00	1.913
CN3	enhanced client satisfaction	378	1	10	7.09	1.921
CN4	increased innovativeness	378	1	10	6.98	1.895
CN5	improved industry linkages	378	1	10	6.88	1.884

Source: (Author, 2021)

4.8.10 Government Support

This section sought to establish the extent to which the government influenced local contractors' operations. The highest level of government support was seen in 'regulation of the industry' with a mean of 5.62 followed by 'skills development through formal training e.g. NITA, NCA' with a mean of 5.39 as seen on Table 4.40. The least level of support was 'direct support e.g. financial' with a low mean of 3.21. This is a reflection of prevailing conditions as the government rarely supports local contractors directly. The overall level of government support was established to be moderately low with a mean of 4.975.

Table 4.40: Government Support; Descriptive statistics

Code	Attribute	N	Min.	Max.	Mean	Std. Dev
GS1	provision of construction jobs	378	1	10	4.87	2.364
GS2	regulation of the industry	378	1	10	5.62	2.119
GS3	skills development through formal training e.g. NITA, NCA	378	1	10	5.39	2.225
GS4	efficiency of procurement practices	378	1	10	4.88	2.332
GS5	direct support e.g. financial	378	1	10	3.21	2.585

Source: (Author, 2021)

Figure 4.25 below is a radar chart of the means of all the 50 attributes used to evaluate the determinants of organizational performance. Notable low levels were observed in government support and contractors' innovativeness while relatively higher levels were noted in employee performance and quality of service.

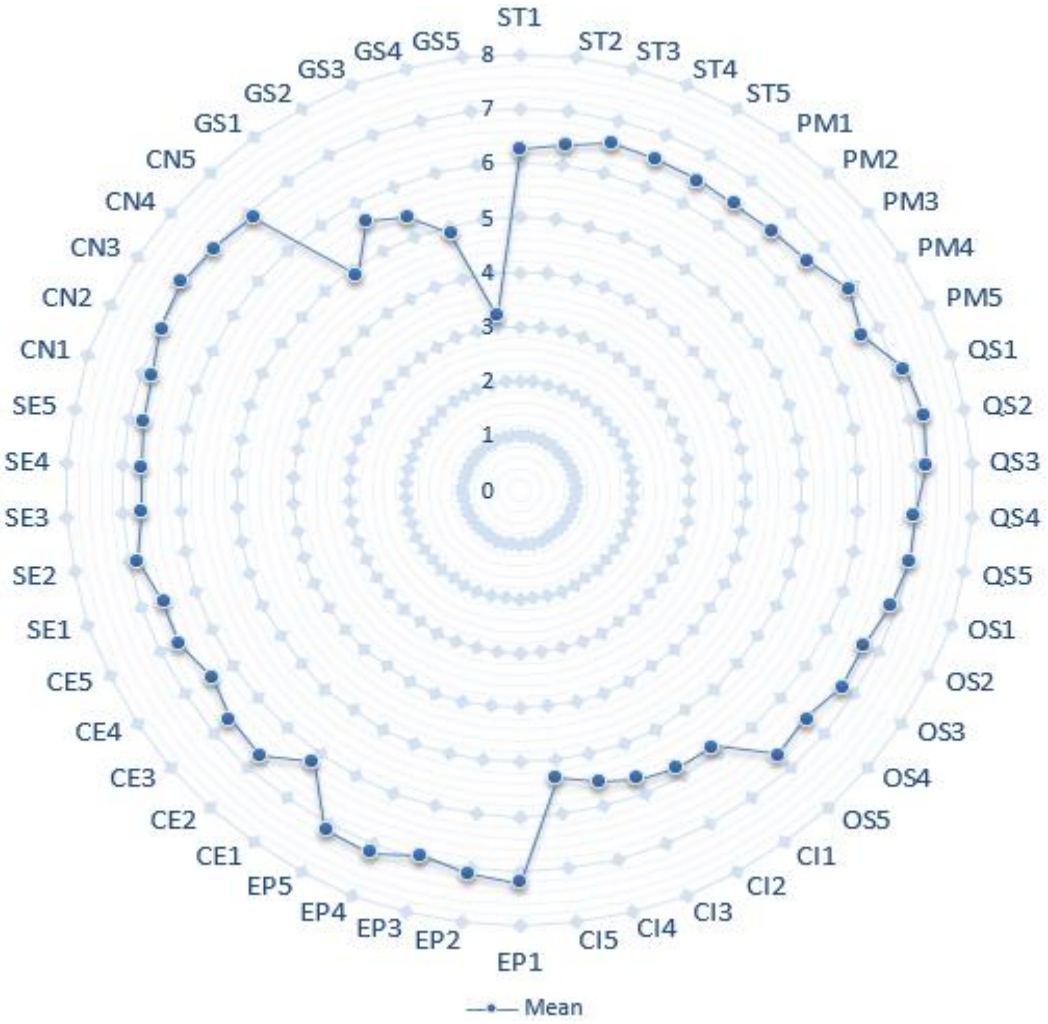

Figure 4.25: Overall Profile for the Attributes used to evaluate the Determinants of Organizational Performance
Source: (Author, 2021)

Table 4.41 below is a summary of all the measured attributes ranked from the highest performed to the least performed based on their computed means.

Table 4.41: Ranked Attributes of Measuring Determinants of Organizational Performance; Descriptive statistics

Code	Attribute	N	Min.	Max.	Mean	Std. Dev	Rank
QS2	responsiveness to clients	378	1	10	7.28	1.822	1
EP1	work quality	378	1	10	7.21	1.754	2
QS3	knowledge and courtesy of employees	378	1	10	7.20	1.866	3
EP4	cooperation (level of team play)	378	2	10	7.17	1.813	4
QS1	reliability	378	2	10	7.15	1.899	5
EP5	acceptance and learning from feedback	378	1	10	7.11	1.941	6
EP2	effectiveness of communication	378	1	10	7.09	1.837	7

Code	Attribute	N	Min.	Max.	Mean	Std. Dev	Rank
CN3	enhanced client satisfaction	378	1	10	7.09	1.921	8
QS4	empathy towards clients	378	2	10	7.01	1.860	9
QS5	appearance of physical facilities and personnel	378	1	10	7.01	1.887	10
CN2	improved quality	378	1	10	7.00	1.913	11
CN4	increased innovativeness	378	1	10	6.98	1.895	12
EP3	creativity and taking initiative	378	1	10	6.94	1.880	13
PM4	commitment by top management	378	1	10	6.91	2.107	14
OS1	clarity of line of authority	378	1	10	6.90	1.966	15
CN5	improved industry linkages	378	1	10	6.88	1.884	16
SE2	adherence to quality specifications	378	1	10	6.87	1.851	17
CN1	increased efficiency	378	1	10	6.81	1.974	18
SE5	technical support for their installations	378	1	10	6.76	1.908	19
OS3	adequacy of delegation of authority	378	1	10	6.74	1.923	20
OS2	flexibility	378	2	10	6.74	1.907	21
CE2	selection of competent project consultants	378	1	10	6.70	1.954	22
SE3	timeliness of communication	378	1	10	6.69	1.921	23
SE4	consistency of improvement of services	378	1	10	6.68	1.884	24
PM5	employee involvement	378	1	10	6.67	2.219	25
OS5	documentation of the structure	378	1	10	6.66	2.141	26
CE5	acquisition of local authority permissions	378	1	10	6.65	1.997	27
CE3	timeliness in appointment of project consultants	378	1	10	6.63	1.922	28
SE1	timeliness of delivery	378	1	10	6.62	1.875	29
PM3	reliability of data used	378	1	10	6.60	2.057	30
ST3	assessment of business environment	378	1	10	6.59	1.990	31
OS4	provision of stability and continuity	378	1	10	6.58	2.069	32
ST4	identification and analysis of firm's strategic issues	378	1	10	6.53	2.091	33
PM2	harmony with organizational goals	378	1	10	6.52	2.013	34
ST5	implementation, evaluation and control systems	378	1	10	6.50	2.138	35
PM1	clarity and meaningfulness to all	378	1	10	6.47	1.955	36
CE4	responsiveness to information requests and decisions	378	1	10	6.44	1.966	37
ST2	development of a mission and vision	378	1	10	6.38	2.043	38
ST1	definition of the firm's purpose and goals	378	1	10	6.28	2.050	39
CE1	promptness in payment	378	1	10	6.18	1.892	40
CI1	adoption of new processes	378	1	10	5.82	2.379	41
CI2	advancement of construction equipment	378	1	10	5.81	2.467	42
CI3	entry into new markets	378	1	10	5.71	2.433	43
GS2	regulation of the industry	378	1	10	5.62	2.119	44
CI4	advancement in software technology	378	1	10	5.54	2.558	45

Code	Attribute	N	Min.	Max.	Mean	Std. Dev	Rank
GS3	skills development through formal training e.g. NITA, NCA	378	1	10	5.39	2.225	46
CI5	research and development endeavour	378	1	10	5.33	2.650	47
GS4	efficiency of procurement practices	378	1	10	4.88	2.332	48
GS1	provision of construction jobs	378	1	10	4.87	2.364	49
GS5	direct support e.g. financial	378	1	10	3.21	2.585	50

Source: (Author, 2021)

4.8.11 Overall Level of the Determinants of Organizational Performance in Local Contractors in Kenya

A summary of the determinants of organizational performance has been presented on Table 4.42. The three highest performed determinants were 'Quality of service' (7.129), 'Employee performance' (7.104), and 'Competition' (6.951). The three least performed determinants were 'Strategic planning practices' (6.456), 'Contractor's innovativeness' (5.642), and 'Government support' (4.795). Based on the Relative Importance Index (RII), the same ranking was retained. The overall RII for the determinants of organizational performance was found to be 0.6468. This was described as medium based on the criteria adopted from Rooshdi et al. (2018).

Table 4.42: Determinants of Organizational Performance; Descriptive statistics

No.	Dimension	N	Mean	Std. Dev.	RII	Rank
1	Strategic planning practices	378	6.456	1.8857	0.6456	8
2	Performance measurement practices	378	6.633	1.9295	0.6633	6
3	Quality of service	378	7.129	1.6967	0.7129	1
4	Organizational structure of the firm	378	6.724	1.8099	0.6724	5
5	Contractor's innovativeness	378	5.642	2.3075	0.5642	9
6	Employee performance	378	7.104	1.7025	0.7104	2
7	Clients' effectiveness	378	6.520	1.7427	0.6520	7
8	Suppliers' effectiveness	378	6.725	1.7519	0.6725	4
9	Competition	378	6.951	1.7663	0.6951	3
10	Government support	378	4.795	1.9187	0.4795	10

Source: (Author, 2021)

4.8.12 Additional Determinants of Organizational Performance

This section describes the additional determinants of organizational performance criteria suggested by respondents. Fifty five (55) suggestions were made by both

contractors (34) and consultants (21). The results have been analysed thematically using QSR NVivo 11 software.

Eleven (11) themes were identitified from the respondents suggestions namely; Quality of service, Organizational structure of the firm, Contractor's innovativeness, Employee performance, Clients' effectiveness, Suppliers' effectiveness, Competition, Government support, Size of company, Communication, and Project characteristics. An extra category (others) was created for all suggestions which did not fall under any of the identified themes. These themes have been presented in Figures 4.26 and 4.27. Frequencies for each of the theme have been presented on Table 4.43 and Figure 4.28 while the sorted raw data has been presented in Appendix 15. The highest frequencies were recorded in employee performance (8) and clients' effectiveness (8).

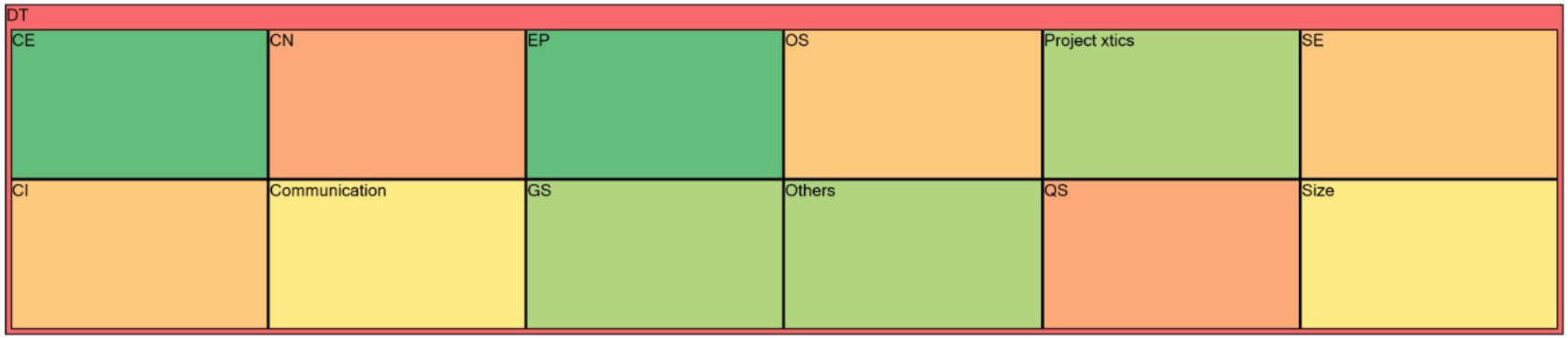

Figure 4.26: Additional Determinants of Organizational Performance
Source: (Author, 2021)

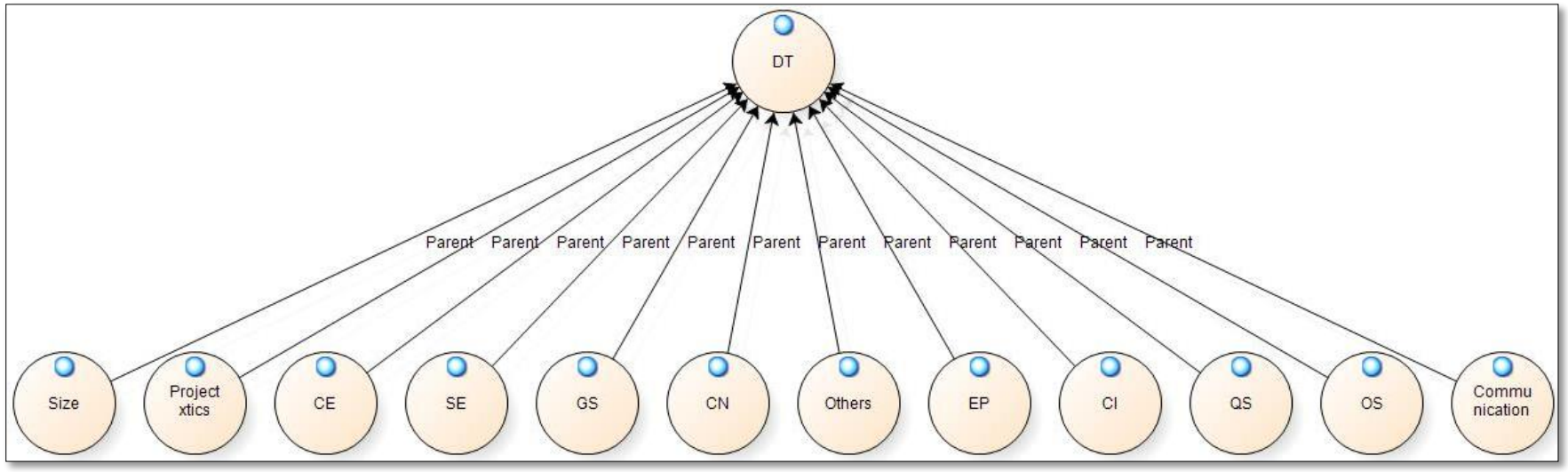

Figure 4.27: Additional Determinants of Organizational Performance (Tree diagram)
Source: (Author, 2021)

Table 4.43: Qualitative Analysis of the Additional Determinants of Organizational Performance

No.	Theme	Frequency
1	Quality of service	2
2	Organizational structure of the firm	3
3	Contractor's innovativeness	3
4	Employee performance	8
5	Clients' effectiveness	8
6	Suppliers' effectiveness	3
7	Competition	2
8	Government support	6
9	Size of company	4
10	Communication	4
11	Project characteristics	6
12	Others	6
	Total	**55**

Source: (Author, 2021)

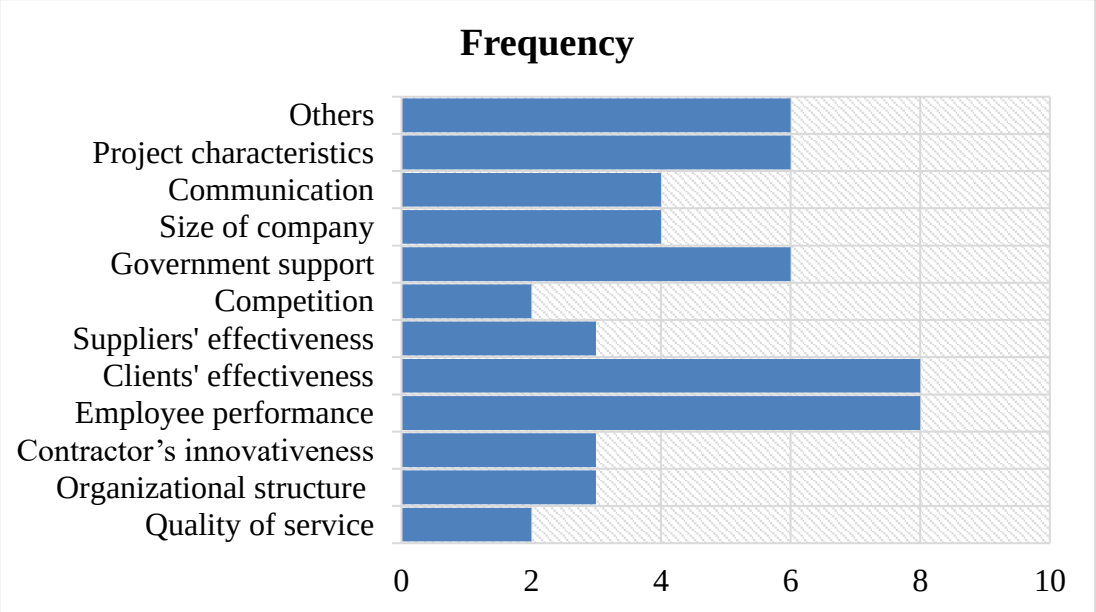

Figure 4.28: Qualitative Analysis of the Additional Determinants of Organizational Performance

Source: (Author, 2021)

4.9 Relationships between Organizational Performance and its Determinants

The third objective involved describing the relationships between organizational performance and its determinants. In order to achieve this, the relationships were explored at three major levels; correlations, structural equation modelling, and multiple regression. Under structural equation modelling, relationships were also

established at two levels; CFA (for testing the measurement theory) and path diagrams (for measuring the effect of predictor variables on criterion variables). Under multiple regression, two techniques were adopted, confirmatory, and stepwise.

4.9.1 Correlation Matrix of the Dimensions of Organizational Performance

All the 45 relationships among the dimensions of organizational performance were positive and significant at 0.01. 36 of these relationships were strong, 8 were moderate and 1 was weak as seen on Table 4.44. The strongest relationship (r=0.794) existed between 'Technical capability' (TC) and 'Business efficiency' (BE). The second strongest relationship (r=0.784) was between 'Growth' (GR) and 'Profitability' (PR) while the third strongest correlation (r=0.773) existed between 'Growth' (GR) and 'Employee satisfaction' (ES). The weakest relationship (r=0.393) existed between 'Profitability' (PR) and 'Safety performance' (SP).

Table 4.44: Correlation Matrix of Dimensions of Organizational Performance

	PR	CS	GR	TC	BE	ES	FS	QP	MC	SP
PR	1.000									
CS	.622**	1.000								
GR	.784**	.661**	1.000							
TC	.596**	.719**	.750**	1.000						
BE	.663**	.729**	.753**	.794**	1.000					
ES	.622**	.686**	.773**	.667**	.765**	1.000				
FS	.651**	.675**	.738**	.718**	.761**	.722**	1.000			
QP	.528**	.738**	.587**	.694**	.728**	.658**	.691**	1.000		
MC	.546**	.752**	.601**	.658**	.700**	.720**	.707**	.791**	1.000	
SP	.393**	.579**	.527**	.678**	.626**	.559**	.544**	.617**	.617**	1.000

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

Source: (Author, 2021)

4.9.2 Structural Equation Modelling

As indicated earlier, relationships were observed at two levels; between the measured variables and latent constructs, and among the latent constructs. In both levels, three sets of analyses were carried out using three sets of samples; calibration sample (contractors), validation sample (consultants), and full sample. The purpose of this was to confirm that the results were similar across samples and therefore enabling generalization of the findings.

4.9.2.1 Confirmatory Factor Analysis (CFA)

The aim of the CFA was to test the measurement theory i.e. hypothesized relationships of how the measured variables represent the latent constructs. By doing so, the study would be able to confirm that the chosen indicators for measuring both determinants and dimensions of organizational performance were valid.

a) Dimensions of Organizational Performance

Figures 4.29 and 4.30 present the initial and modified CFA output from IBM® SPSS® Amos v21. The results for assessing the goodness-of-fit (GoF) are presented on Table 4.45a. To achieve a better fit, model modifications were made using standardized residuals and modification indices. Where values were found to be extreme, correlations were introduced between errors that were found to have high values. This was however only applied to errors within similar constructs. There were notable improvements in the GoF. Critical ratios for correlations between constructs and indicators were significant for all items. The Hoelter Index value of 157 for checking the adequacy of sample size was above the minimum threshold of 75 given by Shadfar and Malekmohammadi (2013).

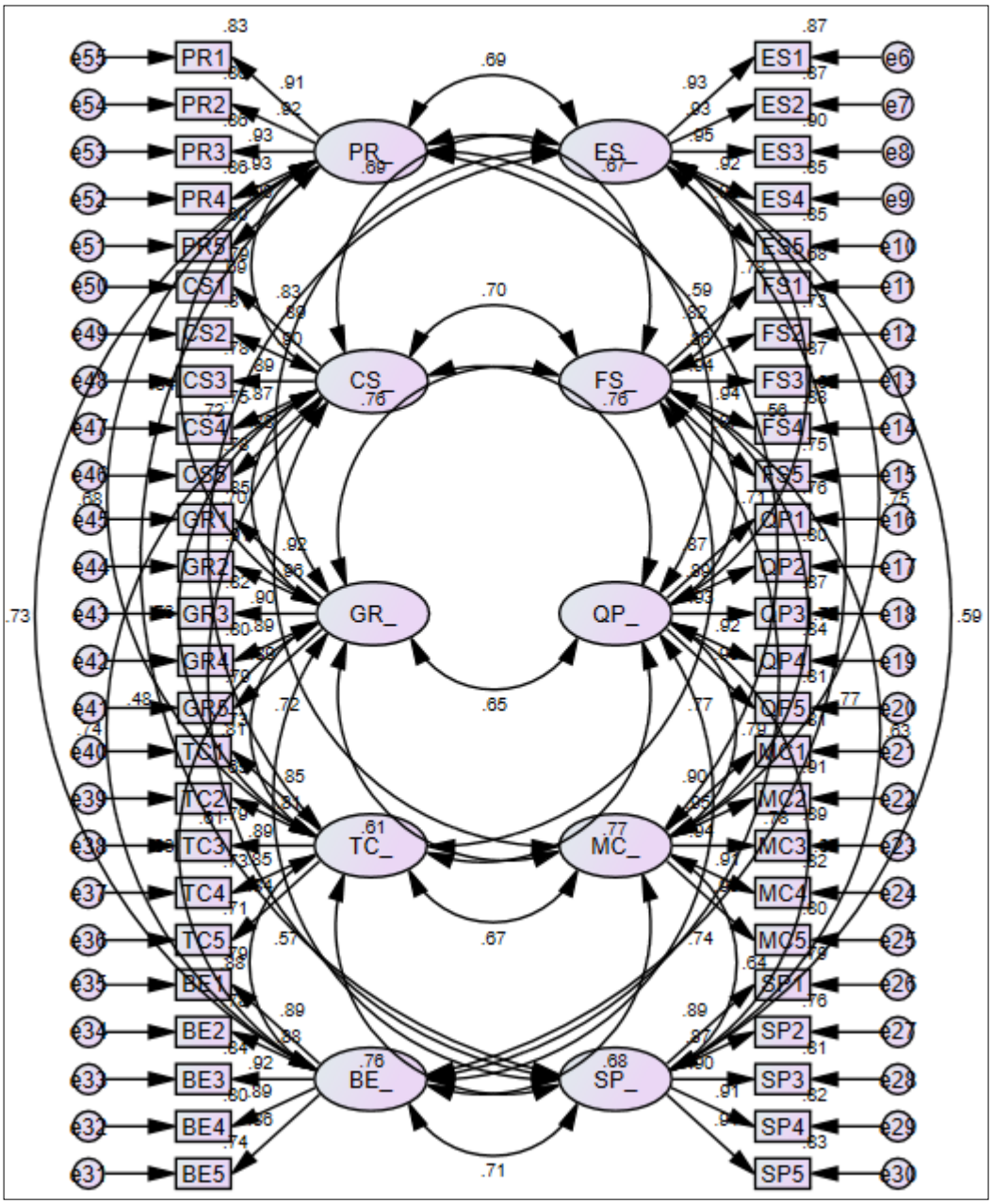

Figure 4.29: Initial CFA for the Dimensions of Organizational Performance (Calibration Sample)
Source: (Author, 2021)

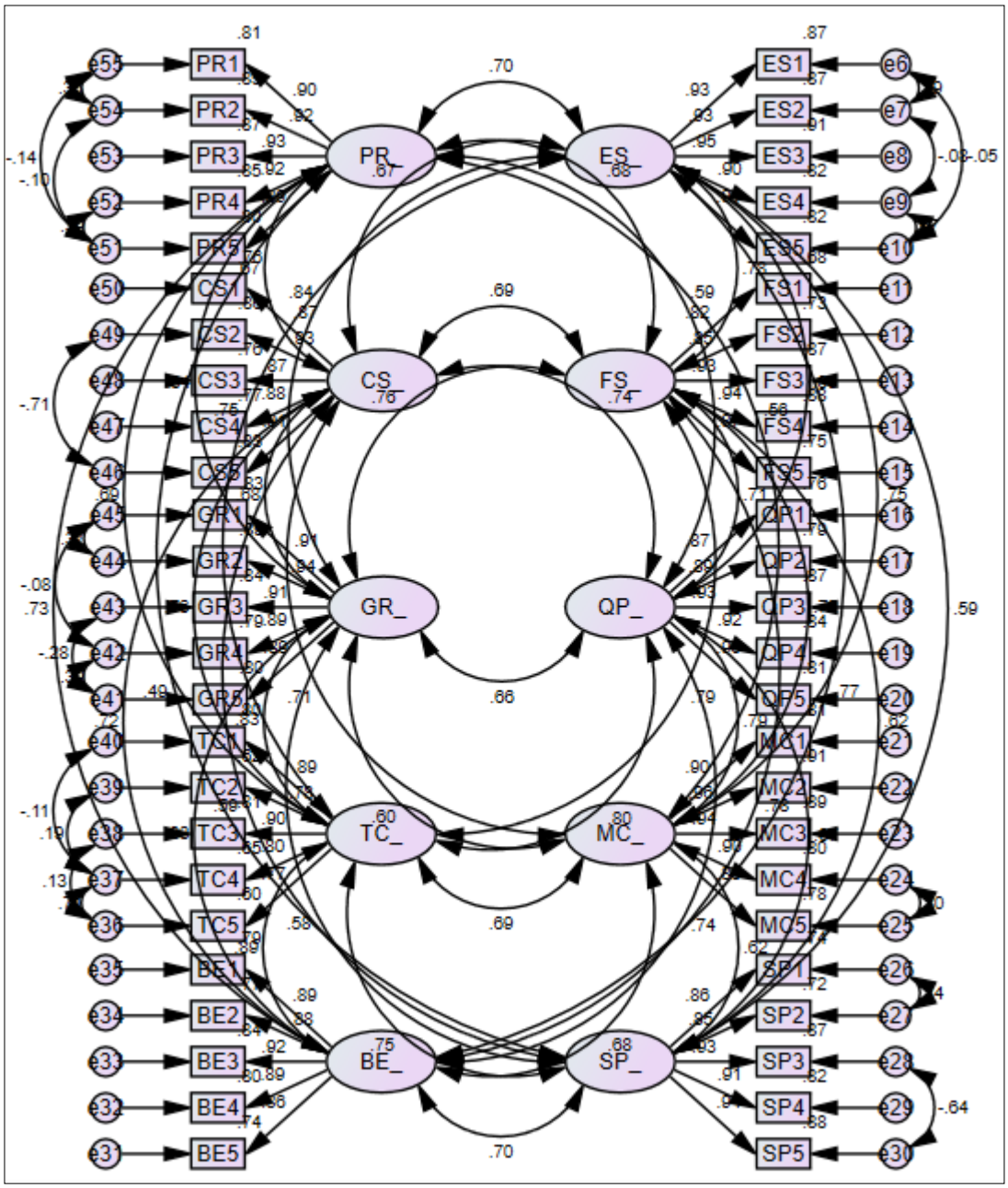

Figure 4.30: Modified CFA for the Dimensions of Organizational Performance (Calibration Sample)
Source: (Author, 2021)

As stated earlier, the statistical analysis was carried out on three samples namely; calibration sample (contractors' data set), validation sample (consultants' data set), and the full sample (combined data set). For each of these three sets, two sets of fit indices were reported, for the hypothesized (original) and modified models. Modification was achieved through the use of modification indices. Covariance

relationships were introduced among measurement errors with high modification indices. This was however only done in cases where such errors were in the same latent construct. The results used in making inferences are those of the modified calibration sample. The validation and full samples have been used to demonstrate generalization of the obtained results. Hair Jr et al. (2014) point out that validation of results using a different sample helps not only in ensuring results are appropriate for other samples but also helps in estimating the predictive accuracy.

Two approaches were used to assess validity; first was the examination of the goodness-of-fit indices and the second was to evaluate construct validity (convergent and discriminant) and reliability of the specified measurement model. Results of the former have been presented on Table 4.45a while those of the latter have been presented on Table 4.45b. Though the model was found to be significant, Hair Jr et al. (2010) asserts that it is expected in instances where the number of observed variables is more than 30 and the sample size is less than 250. Results for the modified calibration sample presented on Table 4.45a illustrates that the measurement model is a good fit for the collected data. It also shows acceptable generalizability as demonstrated in the other two samples.

Table 4.45a: GoF indices; Dimensions of Organizational Performance

No.	Fit Index	Hypothesized model			Modified model			Threshold	Remarks
		C	V	F	C	V	F		
1	CMIN/Df	2.74	2.37	3.28	2.32	2.07	2.57	≤5	Acceptable
2	RMSEA	0.09	0.09	0.08	0.08	0.08	0.07	<.10	Acceptable
3	SRMR	0.04	0.07	0.06	0.04	0.07	0.04	<.10	Acceptable
4	TLI	0.87	0.82	0.89	0.90	0.86	0.92	>.90	Acceptable
5	CFI	0.88	0.84	0.90	0.91	0.87	0.93	>.90	Acceptable
6	IFI	0.88	0.84	0.85	0.91	0.88	0.93	>.90	Acceptable

C= Calibration Sample (n=235), V=Validation (n=143) and F= Full Sample (n=378)

Source: (Author, 2021)

Other than the already checked fit indices, construct validity was also assessed using two methods; convergent validity and discriminant validity. Convergent validity was assessed using factor loadings and average variance-extracted (AVE). As seen in

Appendix 16a, factor loadings ranged from 0.773 to 0.954; the consistently high loadings on each of the latent constructs indicated that the measured variables converged on common points, the latent constructs. According to Hair Jr et al. (2010), standardized factor loadings should be at least 0.5 and ideally 0.7 or higher. AVE values ranged from 0.707 to 0.851 as seen on Table 4.45b. All these values were well above the minimum of 0.5 meaning there was adequate convergence.

Reliability was assessed through three measures; Cronbach's Alpha (α), Item Reliability (Squared Multiple Correlation or R^2) and Composite Reliability or Construct Reliability (CR). The results have been presented on Table 4.45b. The Cronbach's Alpha values ranged from 0.925 to 0.965. These values indicated a very high level of internal consistency. The Squared Multiple Correlation values ranged from 0.597 to 0.910 (Appendix 16a). Given that the threshold was 0.25, all these values were an indication of a high level of item reliability. Additionally, computed CR values were all very high.

Table 4.45b: Reliability and Validity; Dimensions of Organizational Performance

No.	Construct	Cronbach's Alpha	CR>0.5	AVE>0.5
1	Profitability	0.960	0.959	0.823
2	Client satisfaction	0.946	0.943	0.767
3	Growth	0.948	0.947	0.783
4	Technical capability	0.925	0.923	0.707
5	Business efficiency	0.944	0.945	0.773
6	Employee satisfaction	0.963	0.966	0.851
7	Financial stability	0.952	0.953	0.801
8	Quality of products	0.954	0.954	0.808
9	Managerial capability	0.965	0.964	0.844
10	Safety performance	0.940	0.940	0.757

Source: (Author, 2021)

Discriminant validity was checked using two methods; comparing composite reliability (CR) and AVE, and comparing AVE values with squared correlations. Results of the former have been presented on Table 4.45b and showed that for all the constructs, CR > AVE. Results presented on Table 4.45c indicate that all values of the squared correlations between constructs are less than AVE values.

Table 4.45c: Discriminant Validity of Constructs; Dimensions of Organizational Performance

	PR	CS	GR	TC	BE	ES	FS	QP	MC	SP
PR	**0.823**									
CS	0.428	**0.767**								
GR	0.697	0.498	**0.783**							
TC	0.407	0.651	0.610	**0.707**						
BE	0.444	0.608	0.629	0.712	**0.773**					
ES	0.383	0.507	0.626	0.513	0.615	**0.851**				
FS	0.454	0.511	0.598	0.618	0.645	0.533	**0.801**			
QP	0.297	0.608	0.394	0.596	0.582	0.461	0.520	**0.808**		
MC	0.303	0.618	0.404	0.539	0.531	0.524	0.529	0.676	**0.844**	
SP	0.176	0.396	0.300	0.486	0.444	0.350	0.341	0.432	0.420	**0.757**

*bold items are AVE values while the rest are squared correlations

Source: (Author, 2021)

Overall, the GoF stats suggest that the adopted measured variables (indicators) are indeed a representation of the respective latent constructs (criterion variables). Further evidence suggested good construct validity and overall reliability.

b) Determinants of Organizational Performance

Figures 4.31 and 4.32 present the initial and modified CFA output for the determinants of organizational performance from IBM® SPSS® Amos v21.

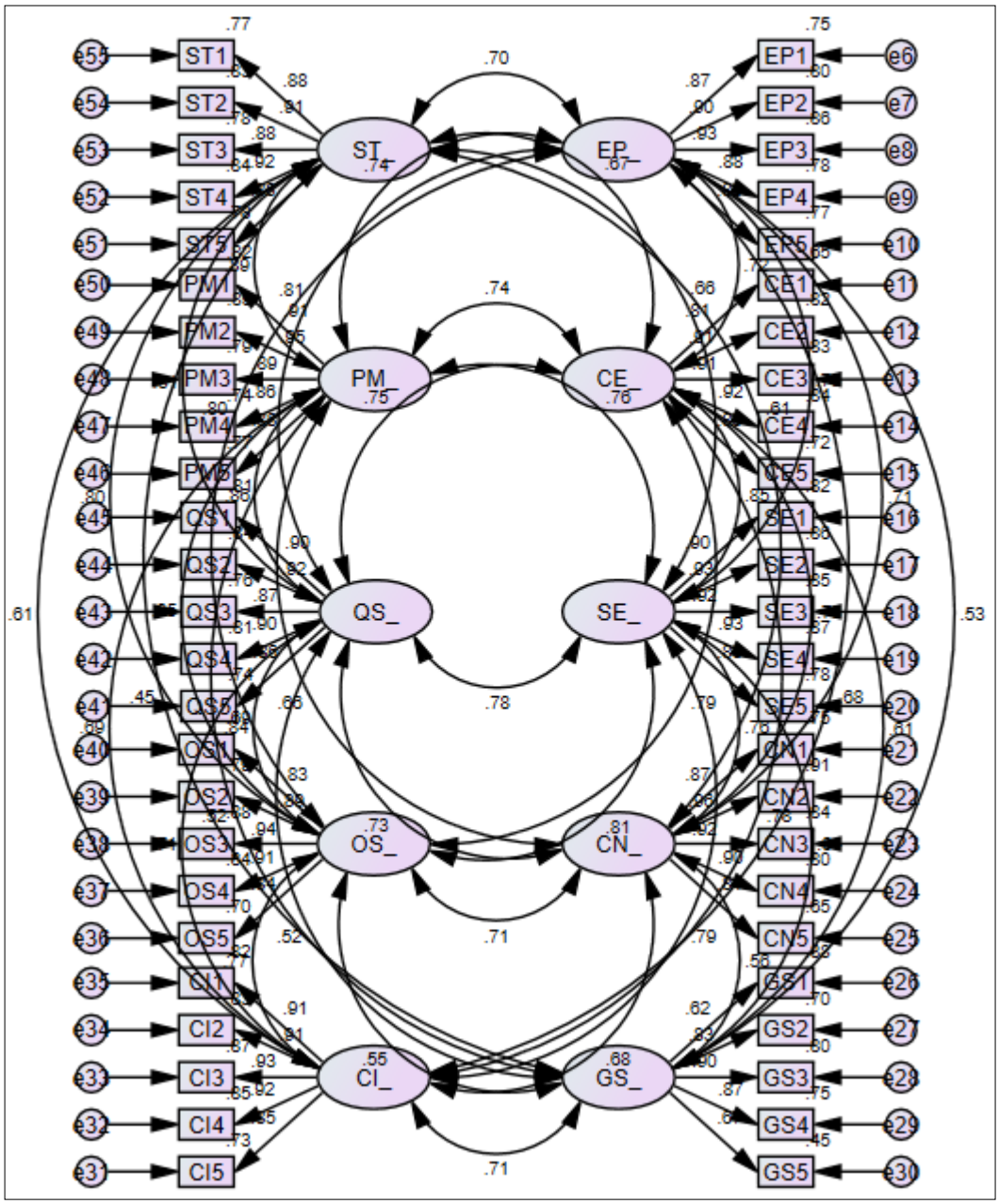

Figure 4.31: Initial CFA for the Determinants of Organizational Performance (Calibration sample)
Source: (Author, 2021)

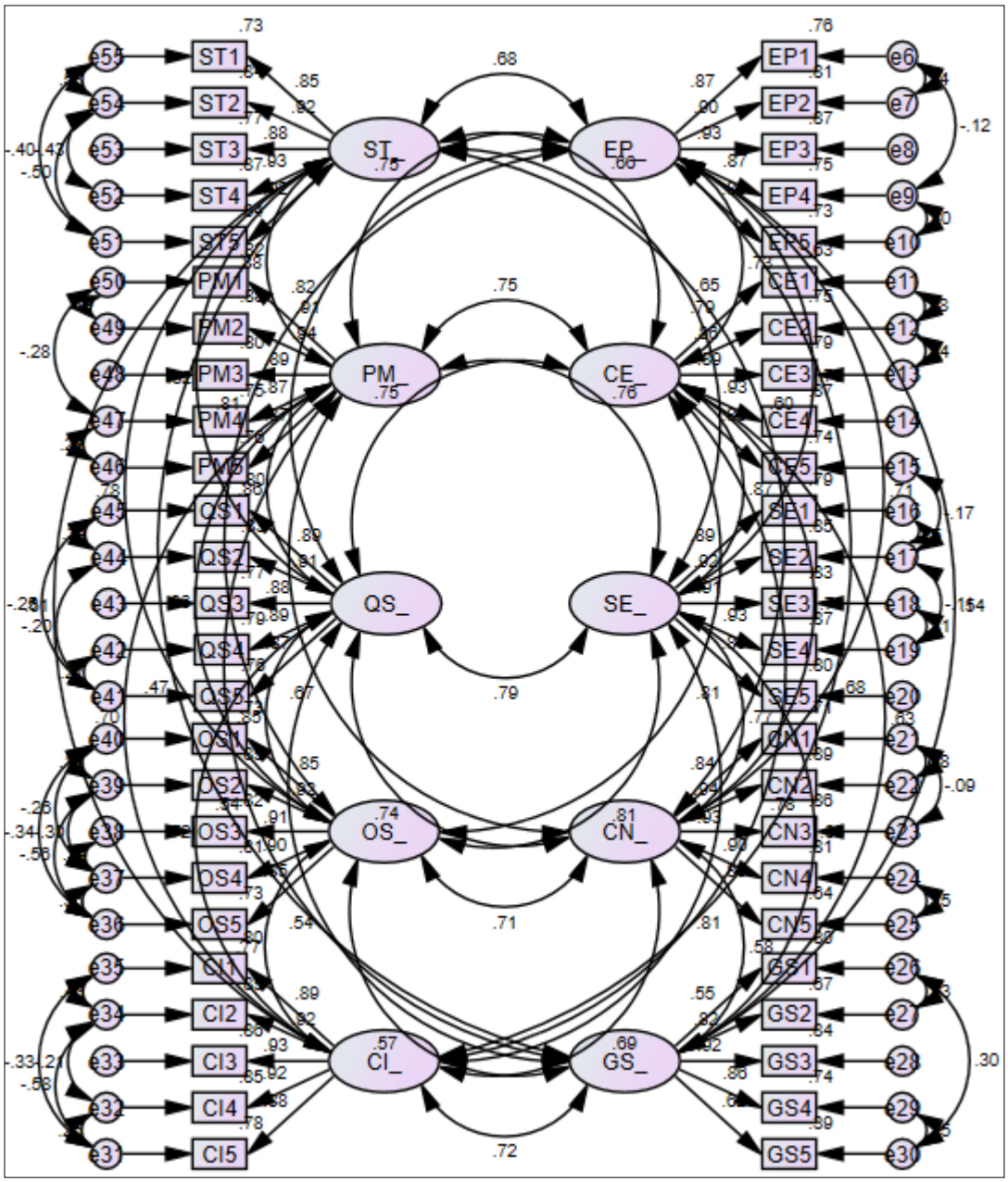

Figure 4.32: Modified CFA for the Determinants of Organizational Performance (Calibration sample)
Source: (Author, 2021)

The results for assessing goodness-of-fit (GoF) presented on Table 4.46a showed that the model was a good fit.

Table 4.46a: GoF indices; Determinants of Organizational Performance

No.	Fit Index	Hypothesized model			Modified model			Threshold	Remarks
		C	V	F	C	V	F		
1	CMIN/Df	2.48	2.13	2.95	1.88	1.90	2.14	≤5	Acceptable
2	RMSEA	0.08	0.09	0.07	0.06	0.08	0.06	<.10	Acceptable
3	SRMR	0.05	0.06	0.05	0.04	0.06	0.04	<.10	Acceptable
4	TLI	0.88	0.86	0.90	0.93	0.89	0.94	>.90	Acceptable
5	CFI	0.89	0.87	0.91	0.94	0.90	0.95	>.90	Acceptable
6	IFI	0.89	0.87	0.91	0.94	0.90	0.95	>.90	Acceptable

C= Calibration Sample (n=235), V=Validation (n=143) and F= Full Sample (n=378)

Source: (Author, 2021)

As seen on Table 4.46b, Cronbach's Alpha values ranged from 0.881 to 0.962. CR values ranged from 0.869 to 0.964 while only two squared multiple correlation values as presented in Appendix 16b were below 0.70 (i.e. 0.299 and 0.390). Therefore the model had adequate reliability. Results presented in Appendix 16b also showed that only two factor loadings were below 0.70 (i.e. 0.547 and 0.625). The threshold given for factor loadings by Hair Jr et al. (2010) is 0.5. AVE values ranged from 0.576 to 0.843 as seen on Table 4.46b. All these results indicated there was adequate convergence.

Table 4.46b: Reliability and Validity; Determinants of Organizational Performance

No.	Construct	Cronbach's Alpha	CR>0.5	AVE>0.5
1	Strategic planning practices	0.951	0.949	0.789
2	Performance measurement practices	0.962	0.964	0.843
3	Quality of service	0.947	0.943	0.768
4	Organizational structure of the firm	0.944	0.942	0.764
5	Contractor's innovativeness	0.957	0.958	0.822
6	Employee performance	0.956	0.956	0.815
7	Clients' effectiveness	0.938	0.936	0.746
8	Suppliers' effectiveness	0.960	0.957	0.817
9	Competition	0.955	0.954	0.805
10	Government support	0.881	0.869	0.576

Source: (Author, 2021)

Comparisons between AVE and R^2 showed that in all the inter-construct correlations, the AVE values for the constructs were greater than the squared correlations. These

results have been presented on Table 4.46c. Additionally, all CR values were greater than the AVE values. Therefore, the model achieved adequate discriminant validity.

Table 4.46c: Discriminant Validity of Constructs; Determinants of Organizational Performance

	ST	PM	QS	OS	CI	EP	CE	SE	CN	GS
ST	**0.789**									
PM	0.743	**0.843**								
QS	0.225	0.741	**0.768**							
OS	0.258	0.712	0.783	**0.764**						
CI	0.425	0.484	0.526	0.598	**0.822**					
EP	0.523	0.585	0.664	0.681	0.476	**0.815**				
CE	0.347	0.373	0.471	0.482	0.543	0.425	**0.746**			
SE	0.450	0.507	0.632	0.635	0.616	0.605	0.663	**0.817**		
CN	0.367	0.507	0.549	0.511	0.494	0.456	0.436	0.534	**0.805**	
GS	0.166	0.187	0.225	0.258	0.425	0.205	0.359	0.345	0.237	**0.576**

*bold items are AVE values while the rest are squared correlations

Source: (Author, 2021)

In summary, the measurement model for the determinants of organizational performance demonstrated adequate reliability, convergent validity, and discriminant validity.

4.9.2.2 Path Diagrams

Ten path diagrams were formulated to determine the extent to which each of the determinants influenced each of the ten dimensions of organizational performance. Since adequate reliability and validity had already been established in the measurement models, the assessment of the path diagrams was achieved through the examination of the overall fit indices and the structural paths.

a) Path Diagram 1: Strategic Planning Practices versus Dimensions of organizational performance

The hypothesized and modified path diagrams for establishing the influence of strategic planning practices on each of the dimensions of organizational performance have been presented in Figures 4.33 and 4.34.

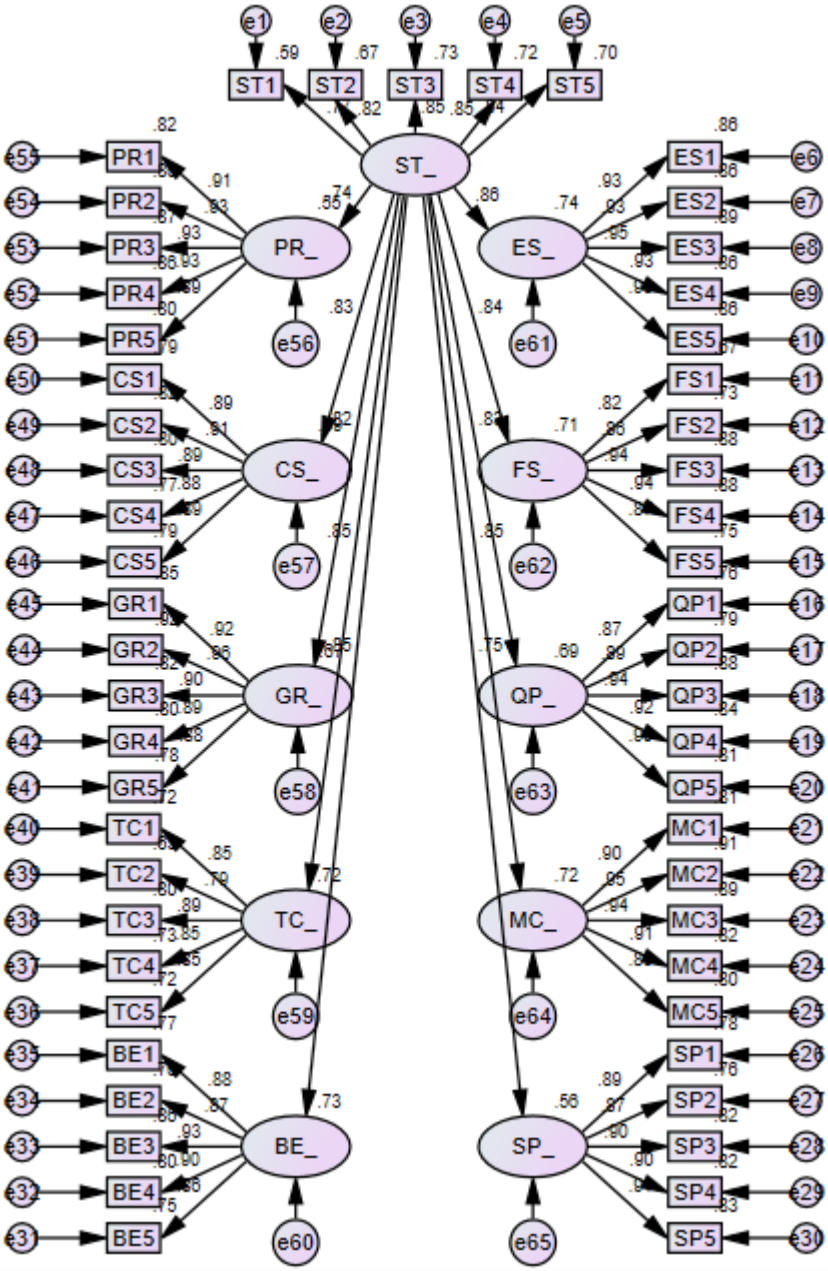

Figure 4.33: Hypothesized Path Diagram for Strategic Planning Practices versus Dimensions of organizational performance (Calibration sample)
Source: (Author, 2021)

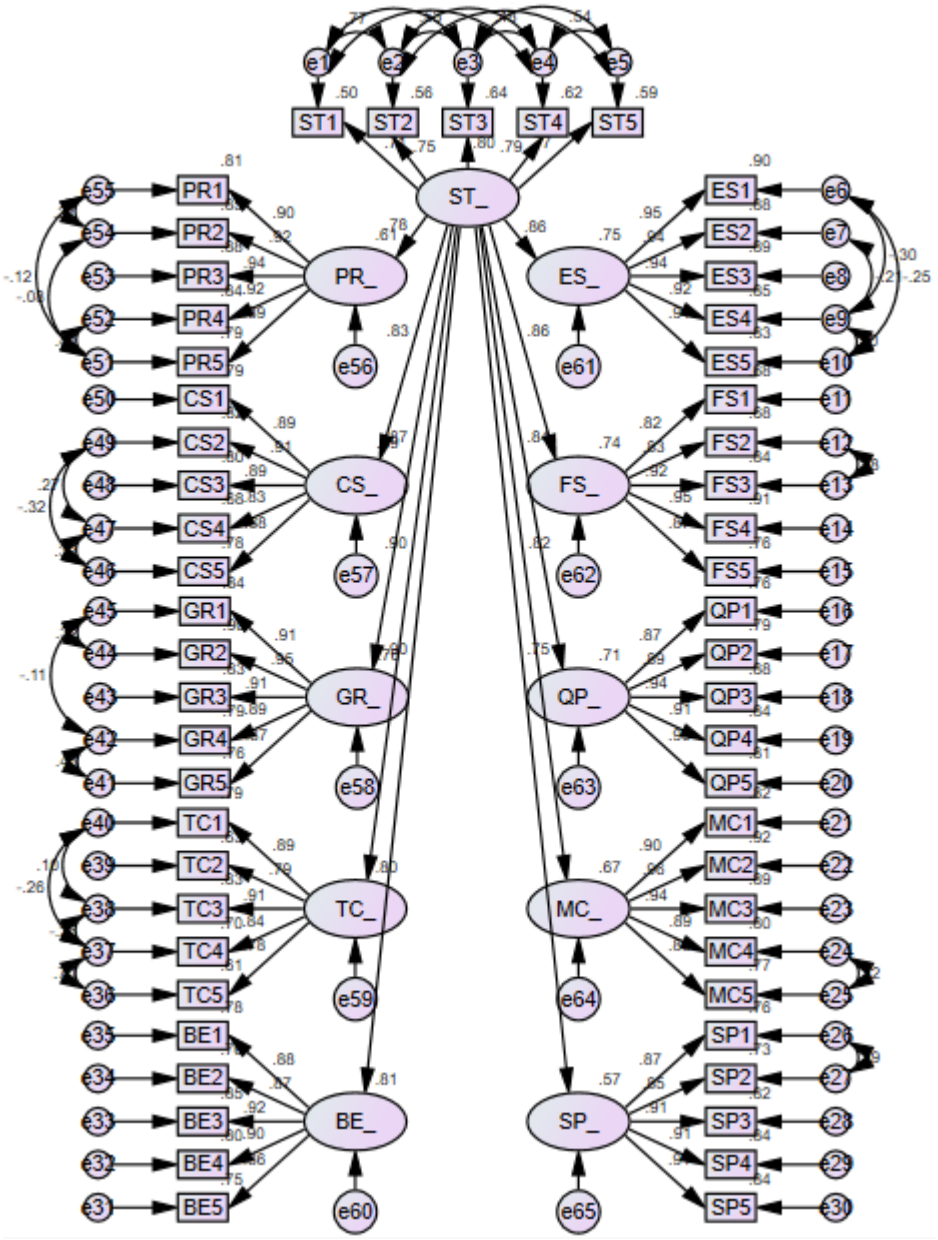

Figure 4.34: Modified Path Diagram for Strategic Planning Practices versus Dimensions of organizational performance (Calibration sample)
Source: (Author, 2021)

The goodness-of-fit indices presented on Table 4.47a showed CMIN/df=2.46, RMSEA=0.08, SRMR=0.06, TLI=0.88, CFI=0.90, and IFI= 0.89 for the modified calibration sample. These results, therefore, showed a reasonably good overall GoF. The other two samples also demonstrated almost similar results thereby indicating acceptable generalizability.

Table 4.47a: GoF indices; Strategic Planning Practices versus Dimensions of organizational performance

No.	Fit Index	Hypothesized model			Modified model			Threshold	Remarks
		C	V	F	C	V	F		
1	CMIN/Df	3.12	2.64	3.90	2.46	2.19	2.89	≤5	Acceptable
2	RMSEA	0.10	0.10	0.09	0.08	0.09	0.07	<.10	Acceptable
3	SRMR	0.07	0.08	0.08	0.06	0.08	0.06	<.10	Acceptable
4	TLI	0.83	0.77	0.85	0.88	0.84	0.90	>.90	Acceptable
5	CFI	0.84	0.78	0.85	0.90	0.85	0.91	>.90	Acceptable
6	IFI	0.84	0.79	0.85	0.89	0.85	0.91	>.90	Acceptable

C= Calibration Sample (n=235), V=Validation (n=143) and F= Full Sample (n=378)

Source: (Author, 2021)

This path diagram tested the hypothesis that strategic planning practices are significantly related to each of the dimensions of organizational performance. Table 4.47b below presents the results of the analysis of these relationships. The table may be interpreted as follows; the 'structural path' indicates the direction of the relationship, the 'estimate' represents the unstandardized and standardized magnitudes of the hypothesized relationships, R^2 is the squared multiple correlation, 'S.E' represents the standard error, 'C.R' represents the critical ratio which was obtained by dividing the unstandardized estimate by its standard error, 'P' is the significance of the critical ratio and the 'Remark' is an indication of whether the hypothesis has been supported or not. The smaller the value of the standard error, the higher the accuracy of the estimate (Byrne, 2013).

All the relationships were found to be significant, strong and positive indicating that all the sub-hypotheses were supported. The three dimensions of organizational performance which are most influenced by strategic planning practices are business efficiency (0.900), technical capability (0.896) and growth (0.871). The three dimensions which were least influenced are safety performance (0.753), profitability (0.780) and managerial capability (0.818). The squared multiple correlation (R^2) represents the variance within the respective dimension which is explained by strategic planning practices. For example, 81.0% of the variance within Business

efficiency is explained by strategic planning practices while the remaining 19.0% is explained by other unknown factors.

Table 4.47b: H1; Influence of Strategic Planning Practices on Organizational Performance

	Structural path			Estimate	R^2	S.E	C.R	P	Remark
H1a	ST	→	PR	1.079	.780	0.608	.085	12.678	.000	Supported
H1b	ST	→	CS	1.000	.832	0.692				Supported
H1c	ST	→	GR	1.401	.871	0.759	.098	14.290	.000	Supported
H1d	ST	→	TC	1.078	.896	0.803	.085	12.696	.000	Supported
H1e	ST	→	BE	1.105	.900	0.810	.075	14.790	.000	Supported
H1f	ST	→	ES	1.394	.864	0.746	.088	15.823	.000	Supported
H1g	ST	→	FS	1.017	.862	0.743	.077	13.258	.000	Supported
H1h	ST	→	QP	.956	.842	0.709	.070	13.753	.000	Supported
H1i	ST	→	MC	.986	.818	0.669	.071	13.840	.000	Supported
H1j	ST	→	SP	.936	.753	0.567	.078	11.958	.000	Supported

Source: (Author, 2020)

b) Path Diagram 2: Performance Measurement Practices versus Dimensions of organizational performance

The hypothesized and modified path diagrams for establishing the influence of performance measurement practices on each of the dimensions of organizational performance have been presented in Figures 4.35 and 4.36.

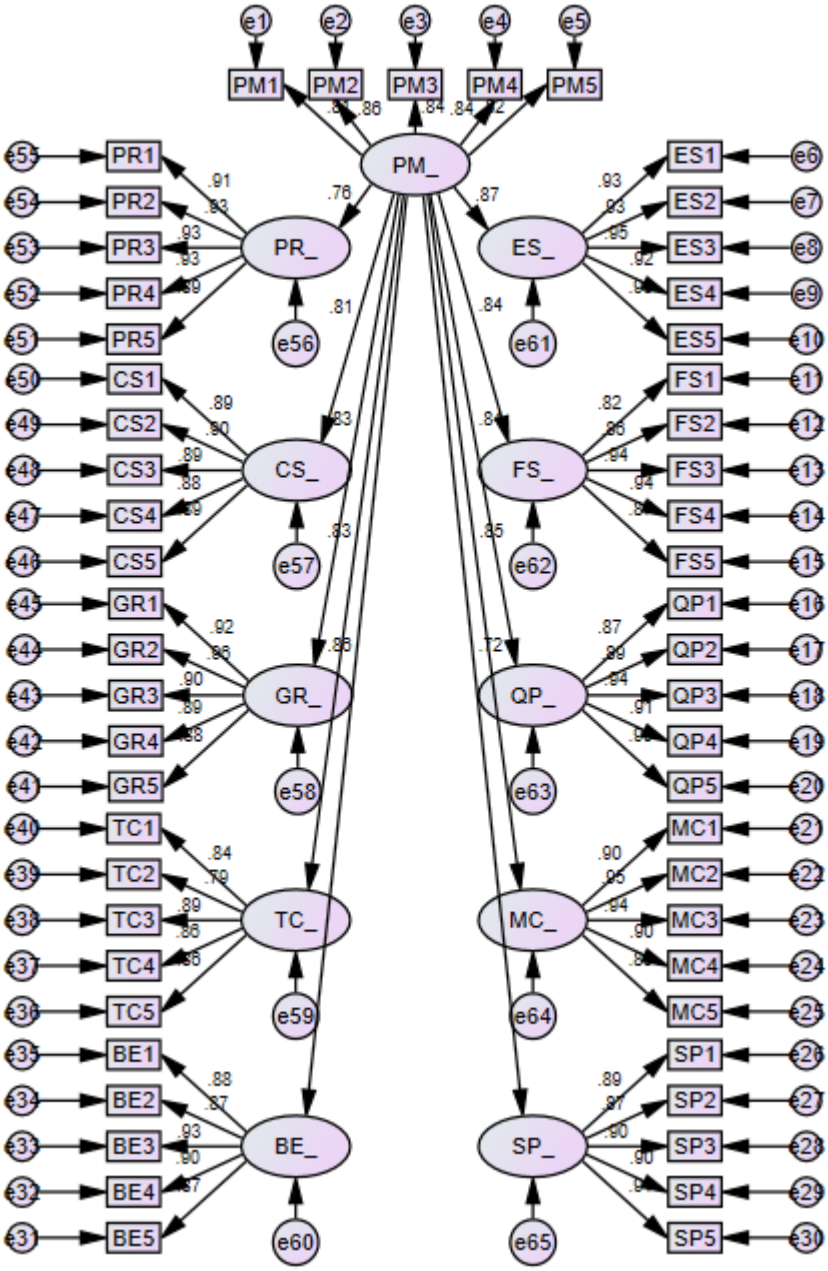

Figure 4.35: Hypothesized Path Diagram for Performance Measurement Practices versus Dimensions of organizational performance
Source: (Author, 2021)

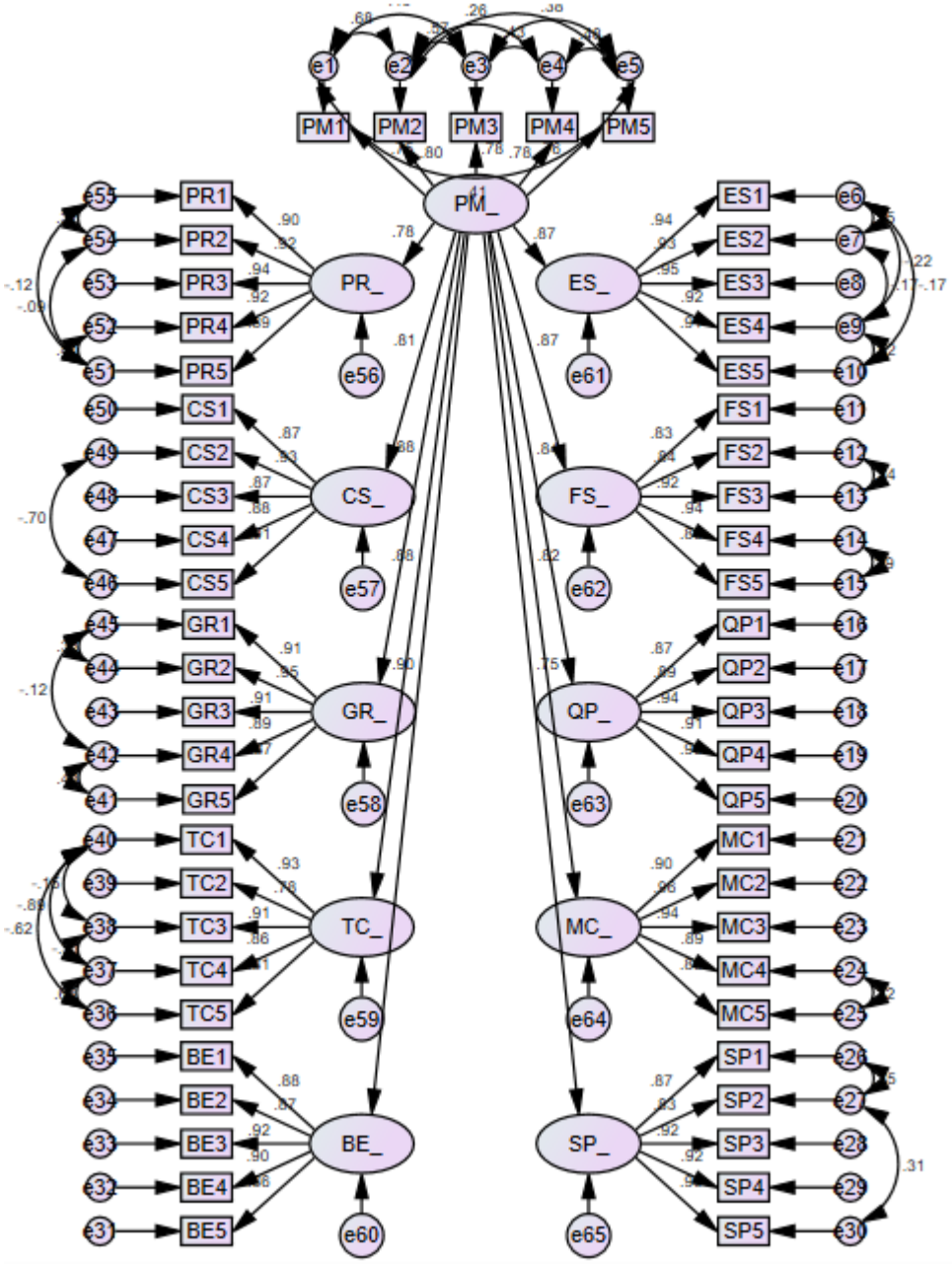

Figure 4.36: Modified Path Diagram for Performance Measurement Practices versus Dimensions of organizational performance
Source: (Author, 2021)

The goodness-of-fit indices presented on Table 4.48a showed CMIN/df=2.37, RMSEA=0.08, SRMR=0.06, TLI=0.89, CFI=0.90, and IFI= 0.90 for the modified calibration sample. These results, therefore, showed a reasonably good overall GoF. Model fit was also observed across the other two samples.

Table 4.48a: GoF indices; Performance Measurement Practices versus Dimensions of organizational performance

No.	Fit Index	Hypothesized model			Modified model			Threshold	Remarks
		C	V	F	C	V	F		
1	CMIN/Df	3.00	2.80	3.92	2.37	2.21	2.84	≤5	Acceptable
2	RMSEA	0.09	0.11	0.09	0.08	0.09	0.07	<.10	Acceptable
3	SRMR	0.07	0.09	0.08	0.06	0.07	0.06	<.10	Acceptable
4	TLI	0.84	0.76	0.85	0.89	0.84	0.90	>.90	Acceptable
5	CFI	0.85	0.77	0.85	0.90	0.85	0.91	>.90	Acceptable
6	IFI	0.85	0.77	0.85	0.90	0.85	0.91	>.90	Acceptable

C= Calibration Sample (n=235), V=Validation (n=143) and F= Full Sample (n=378)

Source: (Author, 2021)

This path diagram tested the hypothesis that performance measurement practices are significantly related to each of the dimensions of organizational performance. As seen on Table 4.48b, all the relationships were found to be significant, strong and positive indicating that all the sub-hypotheses were supported. The three dimensions of organizational performance which are most influenced by performance measurement practices are Business efficiency (0.900), Technical capability (0.877), and Growth (0.875). The three dimensions which are least influenced by performance measurement practices are Safety performance (0.747), Profitability (0.784), and Client satisfaction (0.806).

Table 4.48b: H2; Influence of Performance Measurement Practices on Organizational Performance

	Structural path			Estimate		R^2	S.E	C.R	P	Remark
H2a	PM	->	PR	1.093	.784	0.615	.084	12.969	.000	Supported
H2b	PM	->	CS	1.000	.806	0.650				Supported
H2c	PM	->	GR	1.420	.875	0.766	.097	14.683	.000	Supported
H2d	PM	->	TC	1.108	.877	0.769	.083	13.288	.000	Supported
H2e	PM	->	BE	1.114	.900	0.810	.074	15.122	.000	Supported
H2f	PM	->	ES	1.405	.871	0.759	.087	16.214	.000	Supported
H2g	PM	->	FS	1.049	.873	0.762	.076	13.818	.000	Supported
H2h	PM	->	QP	.966	.843	0.711	.069	14.067	.000	Supported
H2i	PM	->	MC	.998	.821	0.674	.070	14.184	.000	Supported
H2j	PM	->	SP	.938	.747	0.558	.078	12.024	.000	Supported

Source: (Author, 2021)

c) Path Diagram 3: Quality of Service versus Dimensions of organizational performance

The hypothesized and modified path diagrams for establishing the influence of quality of service on each of the dimensions of organizational performance have been presented in Figures 4.37 and 4.38.

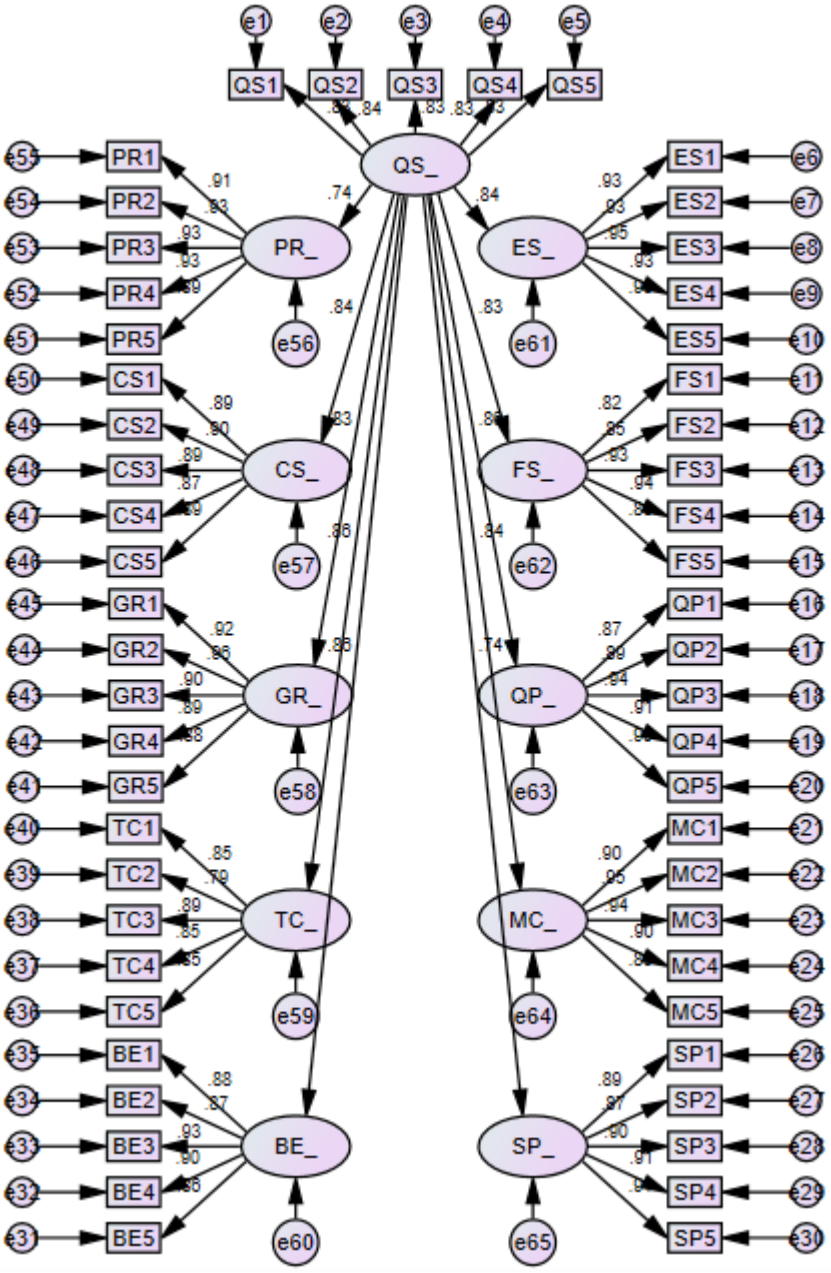

Figure 4.37: Hypothesized Path Diagram for Quality of Service versus Dimensions of organizational performance (Calibration sample)
Source: (Author, 2021)

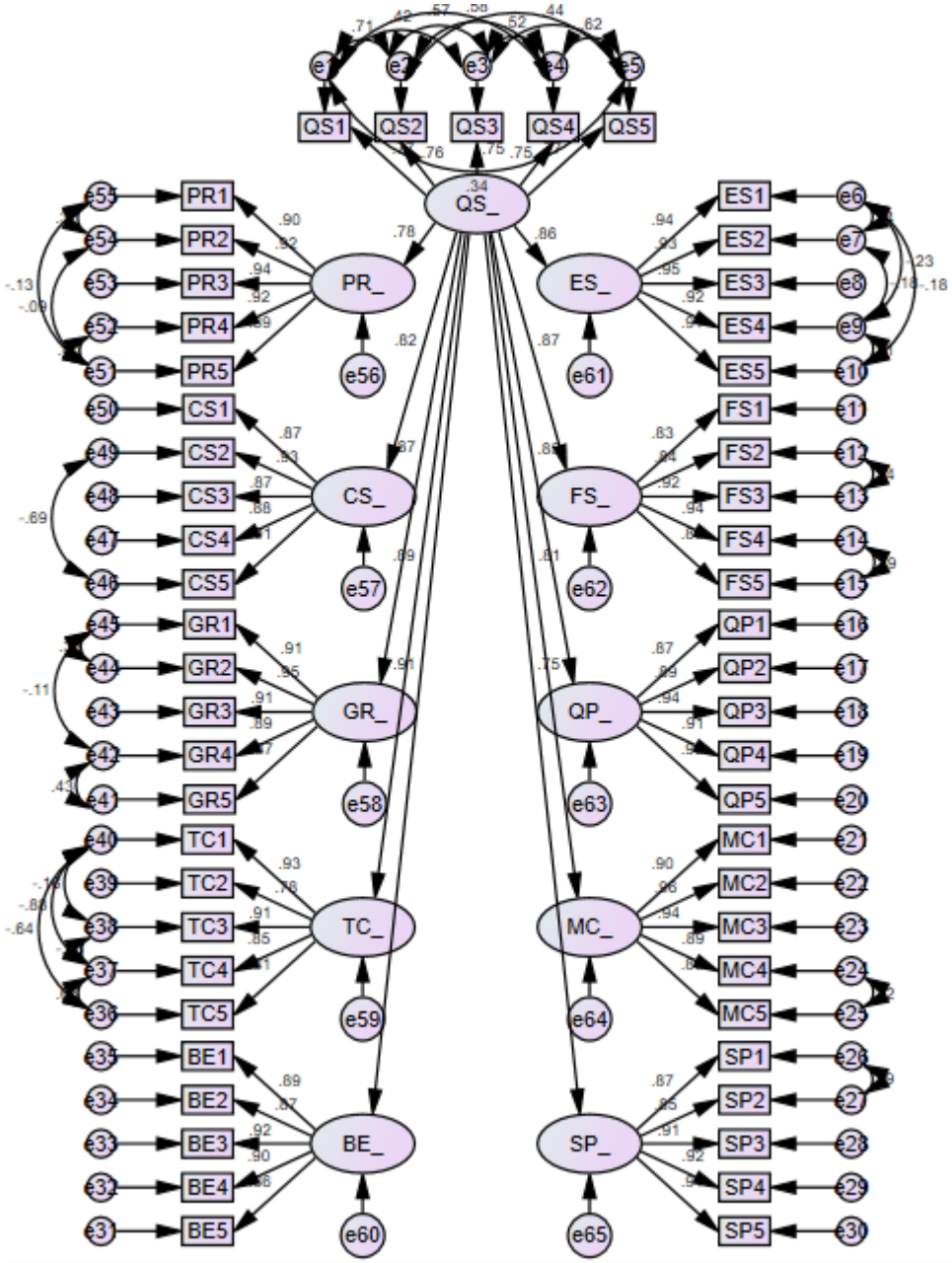

Figure 4.38: Modified Path Diagram for Quality of Service versus Dimensions of organizational performance
Source: (Author, 2021)

The goodness-of-fit indices presented on Table 4.49a showed CMIN/df=2.35, RMSEA=0.08, SRMR=0.06, TLI=0.89, CFI=0.90, and IFI= 0.90 for the modified calibration sample.

Table 4.49a: GoF indices; Quality of Service versus Dimensions of Organizational Performance

No.	Fit Index	Hypothesized model			Modified model			Threshold	Remarks
		C	V	F	C	V	F		
1	CMIN/Df	2.95	2.48	3.58	2.35	2.19	3.00	≤5	Acceptable
2	RMSEA	0.09	0.10	0.08	0.08	0.09	0.07	<.10	Acceptable
3	SRMR	0.07	0.08	0.07	0.06	0.07	0.06	<.10	Acceptable
4	TLI	0.84	0.79	0.86	0.89	0.83	0.89	>.90	Acceptable
5	CFI	0.85	0.80	0.87	0.90	0.85	0.90	>.90	Acceptable
6	IFI	0.85	0.80	0.87	0.90	0.85	0.90	>.90	Acceptable

C= Calibration Sample (n=235), V=Validation (n=143) and F= Full Sample (n=378)

Source: (Author, 2021)

This path diagram tested the hypothesis that 'quality of service' is significantly related to each of the dimensions of organizational performance. it had been hypothesized that 'quality of service' had a significant positive influence on all the dimensions of organizational performance. As seen on Table 4.49b, all the relationships were found to be significant, strong and positive indicating that all the sub-hypotheses were supported. The three dimensions of organizational performance which are most influenced by the quality of service are business efficiency (0.905), technical capability (0.887), and growth (0.874). The three dimensions which were least influenced are safety performance (0.747), profitability (0.779), and managerial capability (0.815).

Table 4.49b: H3; Influence of Quality of Service on Organizational Performance

	Structural path			Estimate		R^2	S.E	C.R	P	Remark
H3a	QS	->	PR	1.072	.779	0.607	.082	13.041	.000	Supported
H3b	QS	->	CS	1.000	.816	0.666				Supported
H3c	QS	->	GR	1.395	.874	0.764	.094	14.864	.000	Supported
H3d	QS	->	TC	1.103	.887	0.787	.081	13.633	.000	Supported
H3e	QS	->	BE	1.102	.905	0.819	.071	15.457	.000	Supported
H3f	QS	->	ES	1.368	.862	0.743	.084	16.214	.000	Supported
H3g	QS	->	FS	1.029	.869	0.755	.074	13.933	.000	Supported
H3h	QS	->	QP	.956	.848	0.719	.067	14.354	.000	Supported
H3i	QS	->	MC	.975	.815	0.664	.069	14.220	.000	Supported
H3j	QS	->	SP	.923	.747	0.558	.076	12.147	.000	Supported

Source: (Author, 2021)

d) Path Diagram 4: Organizational Structure of the Firm versus Dimensions of organizational performance

The hypothesized and modified path diagrams for establishing the influence of the organizational structure of the firm on each of the dimensions of organizational performance have been presented in Figures 4.39 and 4.40.

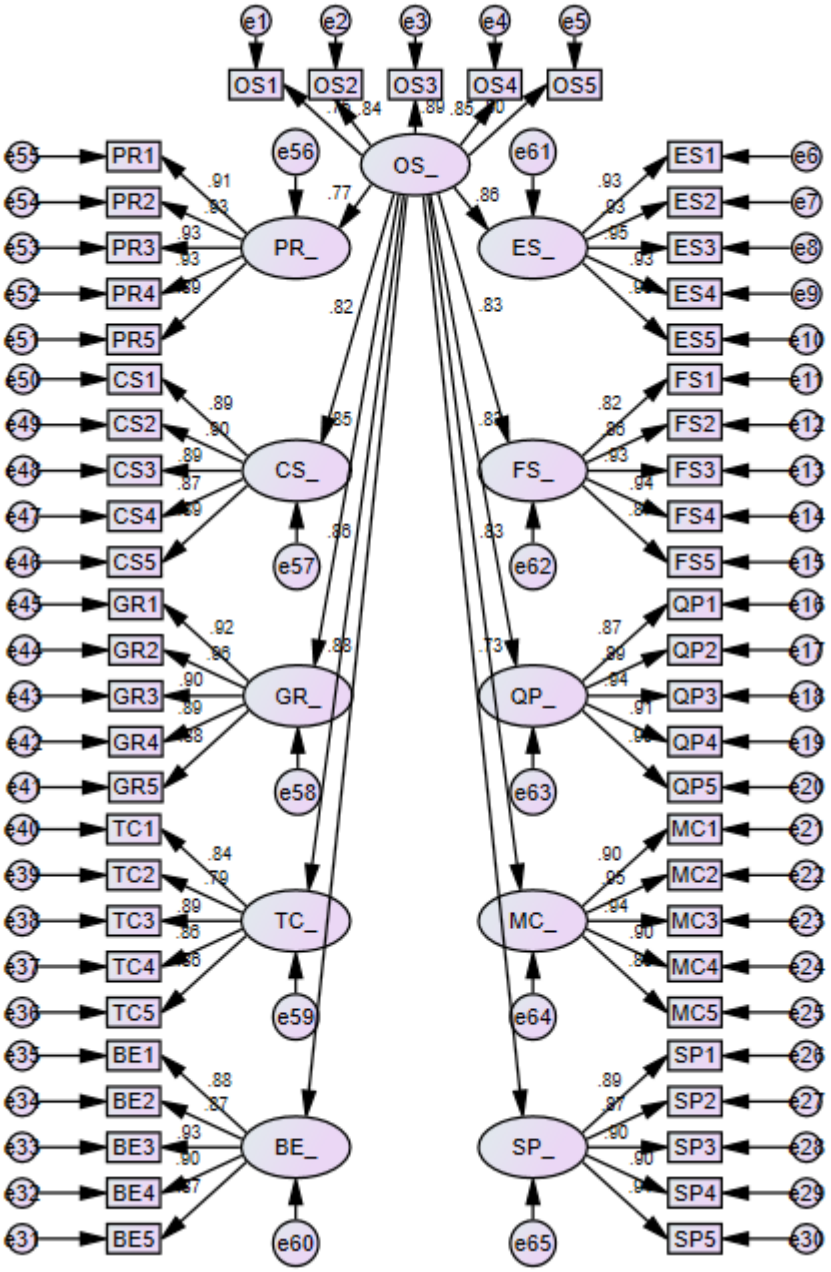

Figure 4.39: Hypothesized Path Diagram for Organizational Structure of the Firm versus Dimensions of organizational performance (Calibration sample)
Source: (Author, 2021)

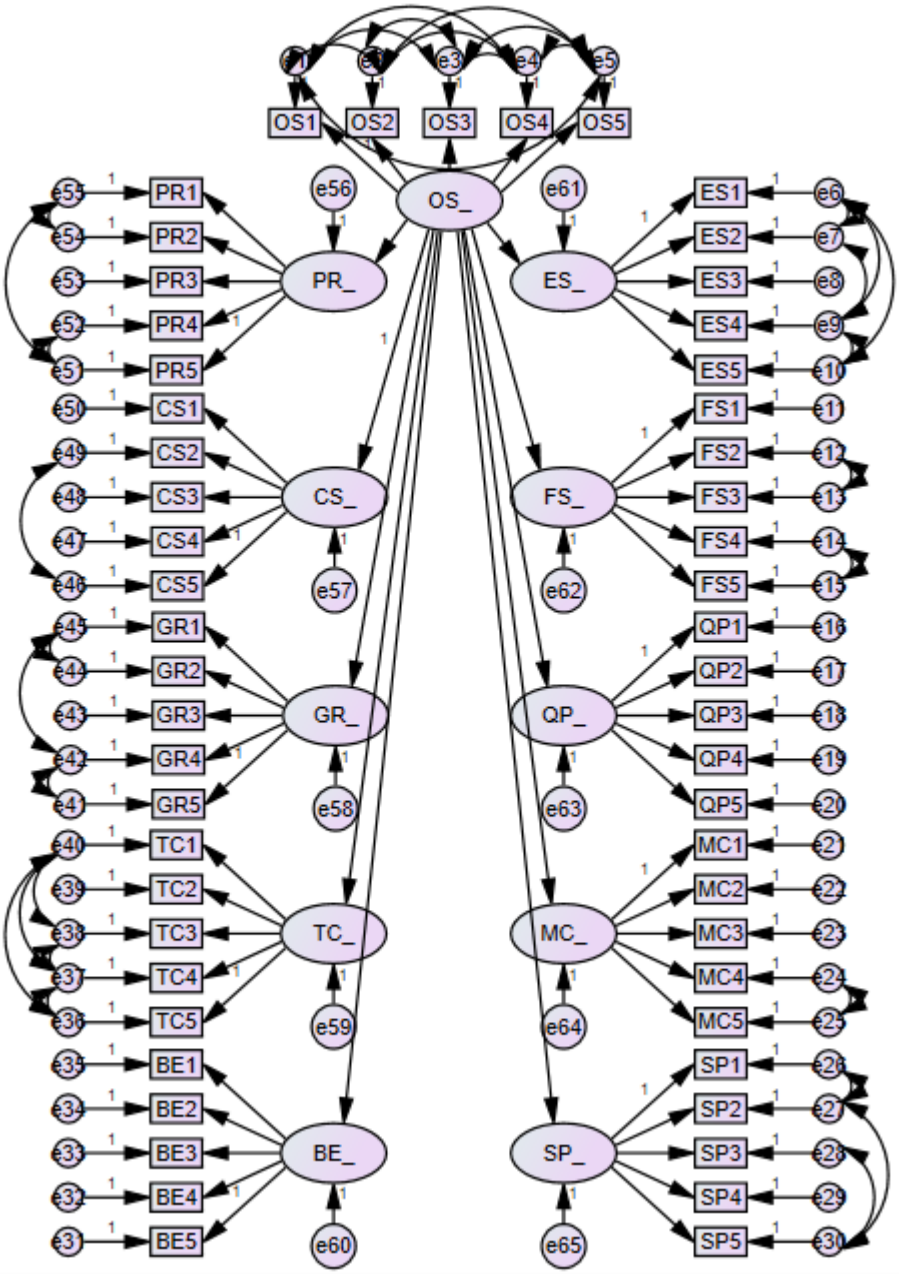

Figure 4.40: Modified Path Diagram for Organizational Structure of the Firm versus Dimensions of organizational performance (Calibration sample)
Source: (Author, 2021)

The goodness-of-fit indices presented on Table 4.50a showed CMIN/df=2.30, RMSEA=0.08, SRMR=0.06, TLI=0.89, CFI=0.90, and IFI= 0.90 for the modified calibration sample. These results, therefore, showed a reasonably good overall GoF.

Table 4.50a: GoF indices; Organizational Structure of the Firm versus Dimensions of Organizational Performance

No.	Fit Index	Hypothesized model			Modified model			Threshold	Remarks
		C	V	F	C	V	F		
1	CMIN/Df	2.91	2.48	3.59	2.30	2.12	2.66	≤5	Acceptable
2	RMSEA	0.09	0.10	0.08	0.08	0.09	0.07	<.10	Acceptable
3	SRMR	0.06	0.08	0.06	0.06	0.07	0.06	<.10	Acceptable
4	TLI	0.84	0.79	0.86	0.89	0.84	0.91	>.90	Acceptable
5	CFI	0.85	0.80	0.87	0.90	0.85	0.92	>.90	Acceptable
6	IFI	0.85	0.80	0.87	0.90	0.86	0.92	>.90	Acceptable

C= Calibration Sample (n=235), V=Validation (n=143) and F= Full Sample (n=378)

Source: (Author, 2021)

This path diagram tested the hypothesis that 'organizational structure of the firm' is significantly related to each of the dimensions of organizational performance. As seen on Table 4.50b, all the relationships were found to be significant, strong and positive indicating that all the sub-hypotheses were supported. The three dimensions of organizational performance which are most influenced by 'organizational structure of the firm' are business efficiency (0.910), technical capability (0.888), and growth (0.882). The three dimensions which are least influenced are safety performance (0.745), profitability (0.786), and client satisfaction (0.806).

Table 4.50b: H4; Influence of Organizational Structure of the Firm on Organizational Performance

Hyp	Structural path	Estimate		R^2	S.E	C.R	P	Remark
H4a	OS -> PR	1.086	.786	0.618	.085	12.745	.00	Supported
H4b	OS -> CS	1.000	.806	0.650				Supported
H4c	OS -> GR	1.429	.882	0.778	.098	14.533	.00	Supported
H4d	OS -> TC	1.122	.888	0.789	.084	13.290	.00	Supported
H4e	OS -> BE	1.122	.910	0.828	.075	14.969	.00	Supported
H4f	OS -> ES	1.394	.868	0.753	.089	15.666	.00	Supported
H4g	OS -> FS	1.035	.865	0.748	.077	13.389	.00	Supported
H4h	OS -> QP	.955	.837	0.701	.070	13.645	.00	Supported
H4i	OS -> MC	.980	.809	0.654	.072	13.631	.00	Supported
H4j	OS -> SP	.922	.745	0.555	.078	11.742	.00	Supported

Source: (Author, 2021)

e) Path Diagram 5: Contractor's Innovativeness versus Dimensions of organizational performance

The hypothesized and modified path diagrams for establishing the influence of contractor's innovativeness on each of the dimensions of organizational performance have been presented in Figures 4.41 and 4.42.

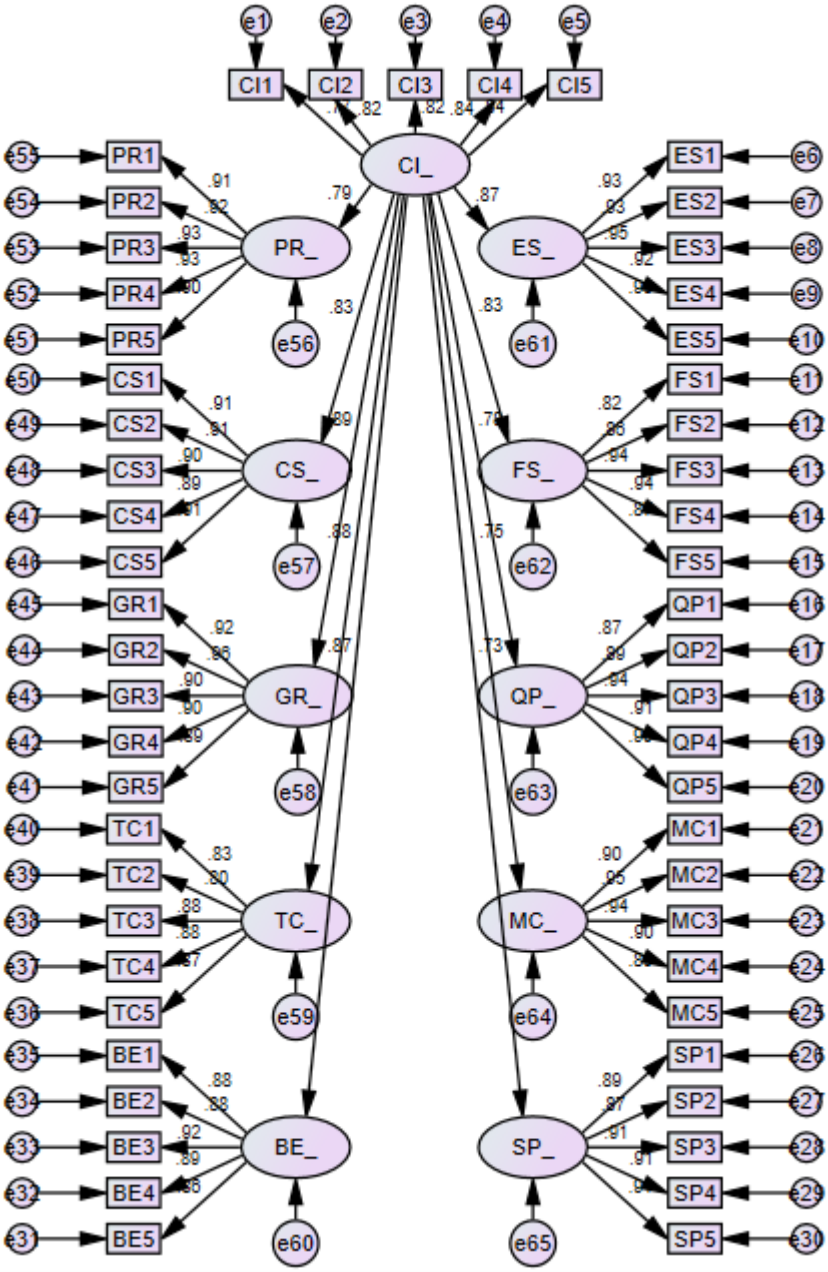

Figure 4.41: Hypothesized Path Diagram for Contractor's Innovativeness versus Dimensions of organizational performance (Calibration sample)
Source: (Author, 2021)

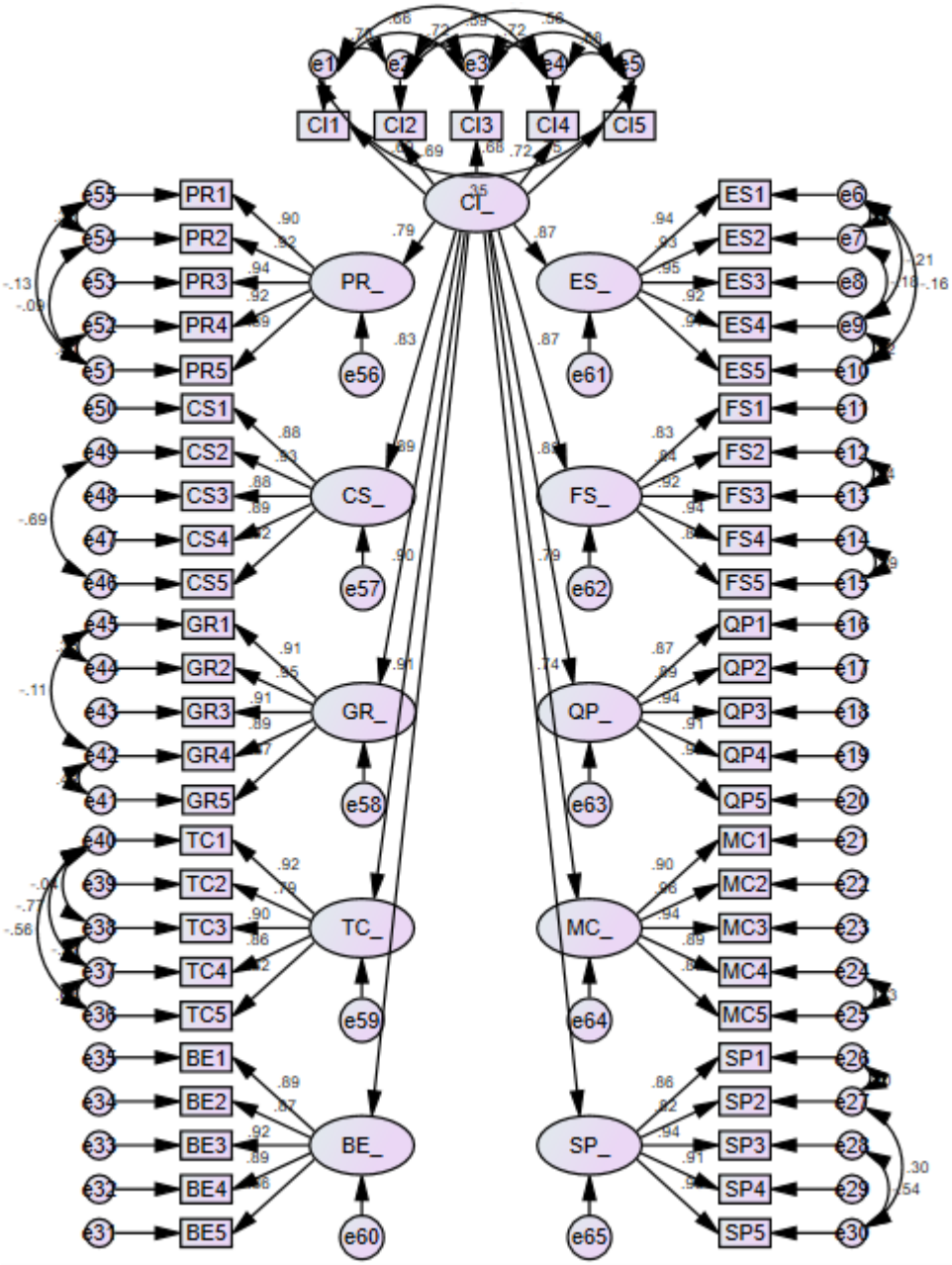

Figure 4.42: Modified Path Diagram for Contractor's Innovativeness versus Dimensions of organizational performance (Calibration sample)
Source: (Author, 2021)

The goodness-of-fit indices presented on Table 4.51a showed CMIN/df=2.37, RMSEA=0.08, SRMR=0.06, TLI=0.89, CFI=0.90, and IFI= 0.90 for the modified calibration sample. These results, therefore, showed a reasonably good overall GoF.

Table 4.51a: GoF indices; Contractor's Innovativeness versus Dimensions of Organizational Performance

No.	Fit Index	Hypothesized model			Modified model			Threshold	Remarks
		C	V	F	C	V	F		
1	CMIN/Df	3.14	2.63	3.99	2.37	2.19	2.85	≤5	Acceptable
2	RMSEA	0.10	0.11	0.09	0.08	0.09	0.07	<.10	Acceptable
3	SRMR	0.07	0.08	0.07	0.06	0.08	0.06	<.10	Acceptable
4	TLI	0.83	0.78	0.84	0.89	0.84	0.90	>.90	Acceptable
5	CFI	0.84	0.79	0.85	0.90	0.85	0.91	>.90	Acceptable
6	IFI	0.84	0.79	0.85	0.90	0.85	0.91	>.90	Acceptable

C= Calibration Sample (n=235), V=Validation (n=143) and F= Full Sample (n=378)

Source: (Author, 2021)

This path diagram tested the hypothesis that 'contractor's innovativeness' is significantly related to each of the dimensions of organizational performance. As seen on Table 4.51b, all the relationships were found to be significant, strong and positive indicating that all the sub-hypotheses were supported. The three dimensions of organizational performance which are most influenced by 'contractor's innovativeness' are business efficiency (0.910), technical capability (0.895) and growth (0.894). The three dimensions which are least influenced are safety performance (0.743), managerial capability (0.793) and profitability (0.793).

Table 4.51b: H5; Influence of Contractor's Innovativeness on Organizational Performance

Hyp	Structural path	Estimate		R^2	S.E	C.R	P	Remark
H5a	CI -> PR	.987	.793	0.629	.075	13.119	.000	Supported
H5b	CI -> CS	1.000	.829	0.687				Supported
H5c	CI -> GR	1.294	.894	0.799	.086	15.030	.000	Supported
H5d	CI -> TC	1.011	.895	0.801	.074	13.609	.000	Supported
H5e	CI -> BE	1.001	.910	0.828	.066	15.187	.000	Supported
H5f	CI -> ES	1.247	.870	0.757	.078	15.985	.000	Supported
H5g	CI -> FS	.927	.868	0.753	.068	13.609	.000	Supported
H5h	CI -> QP	.841	.826	0.682	.062	13.580	.000	Supported
H5i	CI -> MC	.857	.793	0.629	.064	13.432	.000	Supported
H5j	CI -> SP	.821	.743	0.552	.069	11.817	.000	Supported

Source: (Author, 2021)

f) Path Diagram 6: Employee Performance versus Dimensions of organizational performance

The hypothesized and modified path diagrams for establishing the influence of employee performance on each of the dimensions of organizational performance have been presented in Figures 4.43 and 4.44.

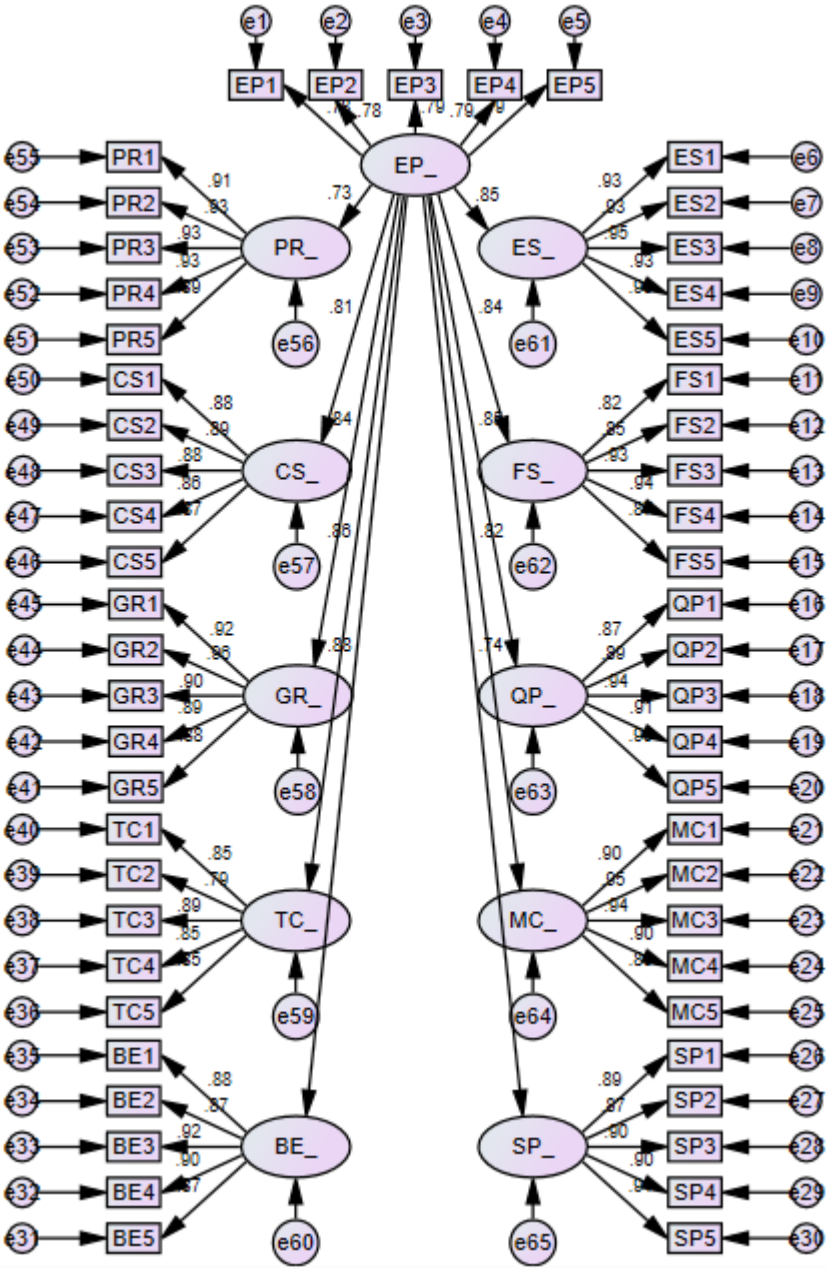

Figure 4.43: Hypothesized Path Diagram for Employee Performance versus Dimensions of organizational performance (Calibration sample)
Source: (Author, 2021)

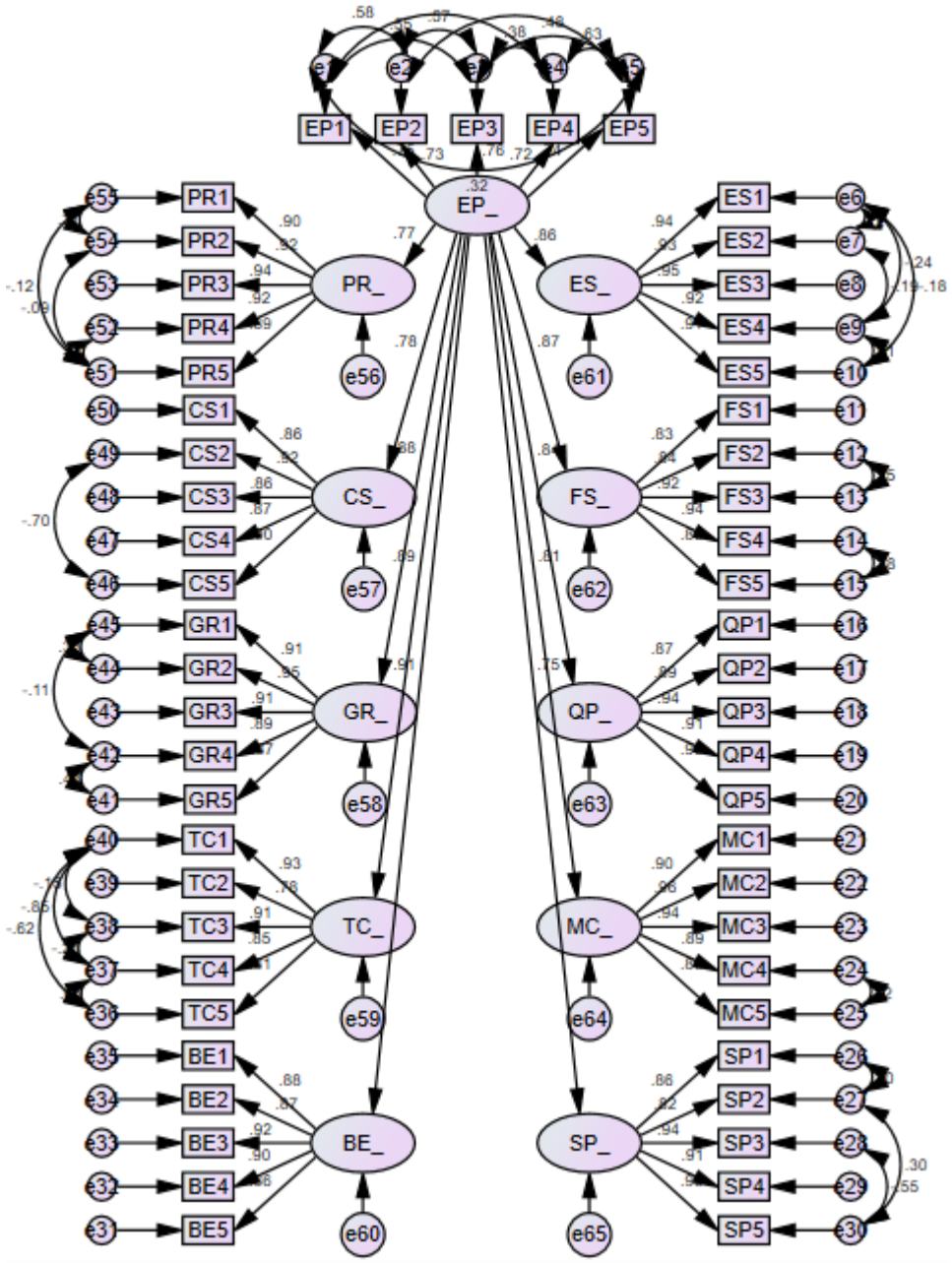

Figure 4.44: Modified Path Diagram for Employee Performance versus Dimensions of organizational performance (Calibration sample)
Source: (Author, 2021)

The goodness-of-fit indices presented on Table 4.52a showed CMIN/df=2.39, RMSEA=0.08, SRMR=0.06, TLI=0.89, CFI=0.89, and IFI= 0.89 for the modified calibration sample. These results therefore showed a reasonably good overall GoF.

Table 4.52a: GoF indices; Employee Performance versus Dimensions of Organizational Performance

No.	Fit Index	Hypothesized model			Modified model			Threshold	Remarks
		C	V	F	C	V	F		
1	CMIN/Df	3.05	2.61	3.89	2.39	2.12	2.77	≤5	Acceptable
2	RMSEA	0.09	0.10	0.09	0.08	0.09	0.07	<.10	Acceptable
3	SRMR	0.07	0.08	0.08	0.06	0.07	0.06	<.10	Acceptable
4	TLI	0.83	0.78	0.85	0.89	0.85	0.91	>.90	Acceptable
5	CFI	0.84	0.79	0.85	0.89	0.86	0.91	>.90	Acceptable
6	IFI	0.84	0.79	0.85	0.89	0.86	0.91	>.90	Acceptable

C= Calibration Sample (n=235), V=Validation (n=143) and F= Full Sample (n=378)

Source: (Author, 2021)

This path diagram tested the hypothesis that 'employee performance' is significantly related to each of the dimensions of organizational performance. As seen on Table 4.52b, all the relationships were found to be significant, strong and positive indicating that all the sub-hypotheses were supported. The three dimensions of organizational performance which are most influenced by 'employee performance' are business efficiency (0.907), technical capability (0.886), and growth (0.877). The three dimensions which are least influenced are safety performance (0.749), profitability (0.774), and managerial capability (0.809).

Table 4.52b: H6; Influence of Employee Performance on Organizational Performance

Hyp	Structural path	Estimate		R^2	S.E	C.R	P	Remark
H6a	EP -> PR	1.194	.774	0.599	.095	12.625	.000	Supported
H6b	EP -> CS	1.000	.782	0.612				Supported
H6c	EP -> GR	1.571	.877	0.769	.108	14.491	.000	Supported
H6d	EP -> TC	1.237	.886	0.785	.093	13.280	.000	Supported
H6e	EP -> BE	1.241	.907	0.823	.083	15.038	.000	Supported
H6f	EP -> ES	1.540	.863	0.745	.098	15.725	.000	Supported
H6g	EP -> FS	1.154	.868	0.753	.085	13.552	.000	Supported
H6h	EP -> QP	1.069	.844	0.712	.077	13.898	.000	Supported
H6i	EP -> MC	1.087	.809	0.654	.079	13.720	.000	Supported
H6j	EP -> SP	1.028	.749	0.561	.087	11.887	.000	Supported

Source: (Author, 2021)

g) Path Diagram 7: Clients' Effectiveness versus Dimensions of organizational performance

The hypothesized and modified path diagrams for establishing the influence of clients' effectiveness on each of the dimensions of organizational performance have been presented in Figures 4.45 and 4.46.

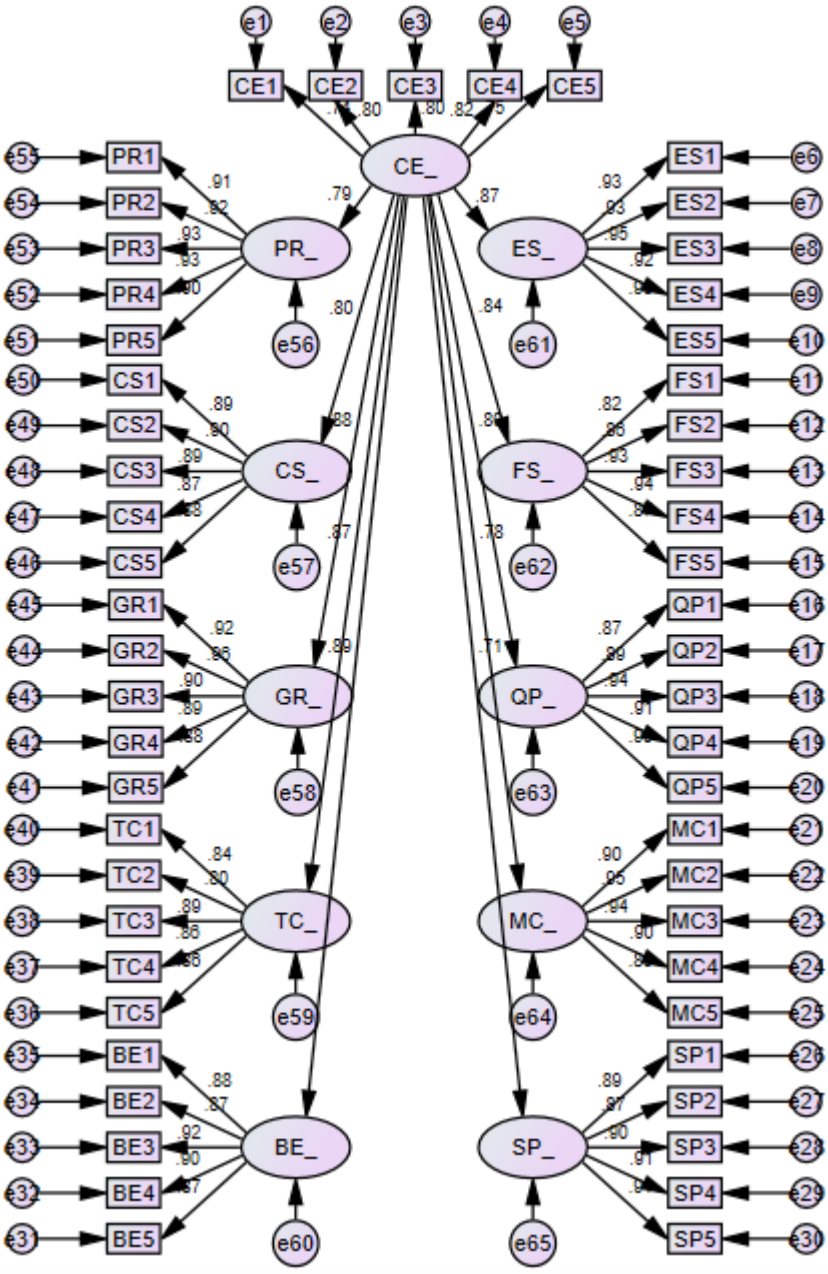

Figure 4.45: Hypothesized Path Diagram for Clients' Effectiveness versus Dimensions of organizational performance (Calibration sample)
Source: (Author, 2021)

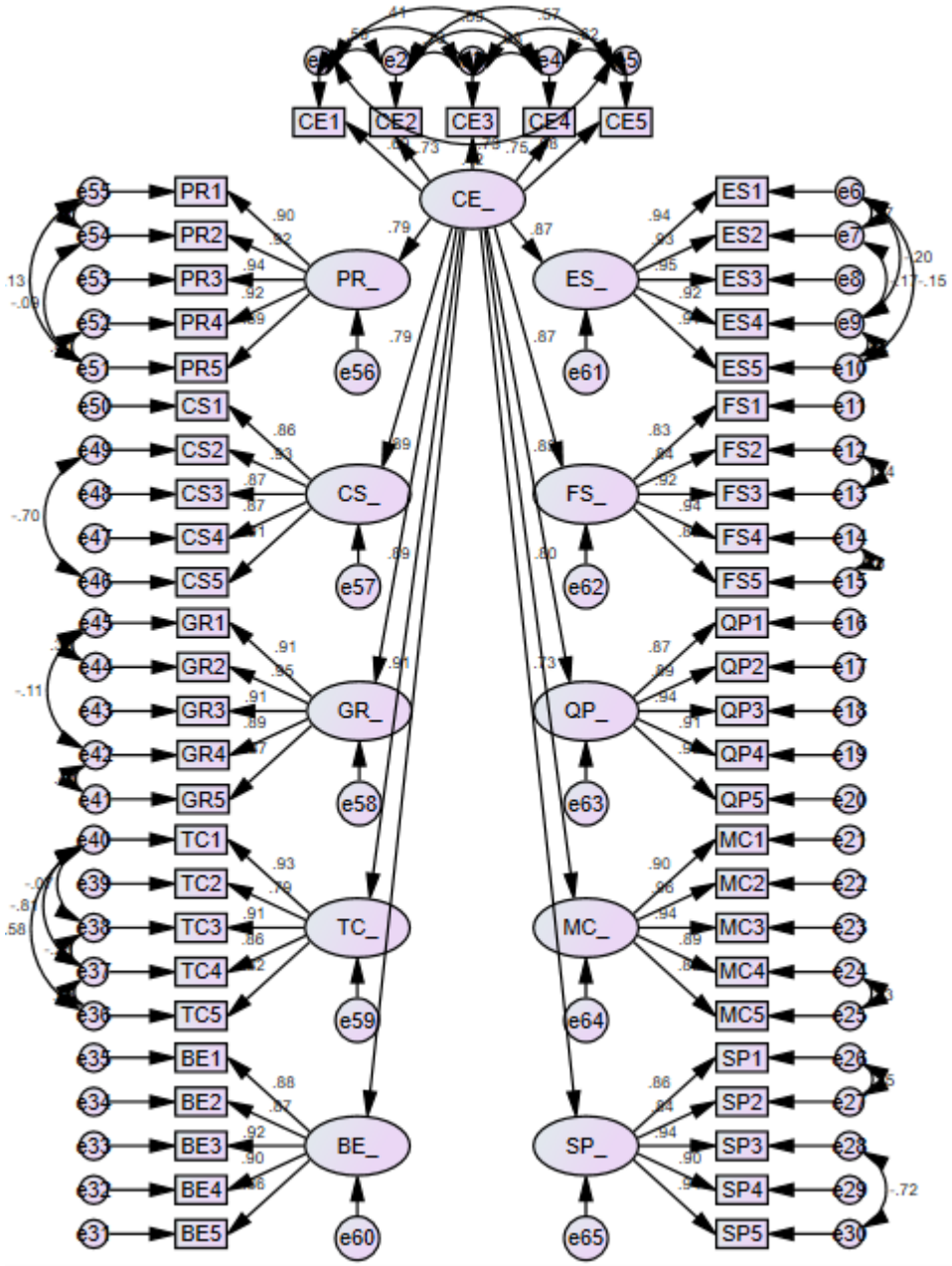

Figure 4.46: Modified Path Diagram for Clients' Effectiveness versus Dimensions of organizational performance (Calibration sample)
Source: (Author, 2021)

The goodness-of-fit indices presented on Table 4.53a showed CMIN/df=2.33, RMSEA=0.08, SRMR=0.06, TLI=0.89, CFI=0.90, and IFI= 0.90 for the modified calibration sample. These results, therefore, showed a reasonably good overall GoF.

Table 4.53a: GoF indices; Clients' Effectiveness versus Dimensions of Organizational Performance

No.	Fit Index	Hypothesized model			Modified model			Threshold	Remarks
		C	V	F	C	V	F		
1	CMIN/Df	3.00	2.63	4.0	2.33	2.12	2.71	≤5	Acceptable
2	RMSEA	0.09	0.10	0.1	0.08	0.09	0.07	<.10	Acceptable
3	SRMR	0.07	0.09	0.1	0.06	0.08	0.06	<.10	Acceptable
4	TLI	0.84	0.77	0.8	0.89	0.84	0.91	>.90	Acceptable
5	CFI	0.84	0.78	0.8	0.90	0.85	0.91	>.90	Acceptable
6	IFI	0.84	0.78	0.8	0.90	0.85	0.91	>.90	Acceptable

C= Calibration Sample (n=235), V=Validation (n=143) and F= Full Sample (n=378)

Source: (Author, 2021)

This path diagram tested the hypothesis that 'clients' effectiveness' is significantly related to each of the dimensions of organizational performance. As seen on Table 4.53b, all the relationships were found to be significant, strong and positive indicating that all the sub-hypotheses were supported. The three dimensions of organizational performance which are most influenced by 'clients' effectiveness' are business efficiency (0.914), technical capability (0.891) and growth (0.891). The three dimensions which are least influenced are safety performance (0.731), client satisfaction (0.792), and profitability (0.794).

Table 4.53b: H7; Influence of Clients' Effectiveness on Organizational Performance

Hyp	Structural path	Estimate		R^2	S.E	C.R	P	Remark
H7a	CE -> PR	1.160	.794	0.630	.090	12.823	.000	Supported
H7b	CE -> CS	1.000	.792	0.627				Supported
H7c	CE -> GR	1.510	.891	0.794	.104	14.459	.000	Supported
H7d	CE -> TC	1.179	.891	0.794	.090	13.149	.000	Supported
H7e	CE -> BE	1.180	.914	0.835	.080	14.787	.000	Supported
H7f	CE -> ES	1.458	.868	0.753	.095	15.352	.000	Supported
H7g	CE -> FS	1.090	.870	0.757	.082	13.278	.000	Supported
H7h	CE -> QP	.989	.827	0.684	.075	13.262	.000	Supported
H7i	CE -> MC	1.009	.796	0.634	.077	13.138	.000	Supported
H7j	CE -> SP	.940	.731	0.534	.083	11.339	.000	Supported

Source: (Author, 2021)

h) Path Diagram 8: Suppliers' Effectiveness versus Dimensions of organizational performance

The hypothesized and modified path diagrams for establishing the influence of suppliers' effectiveness on each of the dimensions of organizational performance have been presented in Figures 4.47 and 4.48.

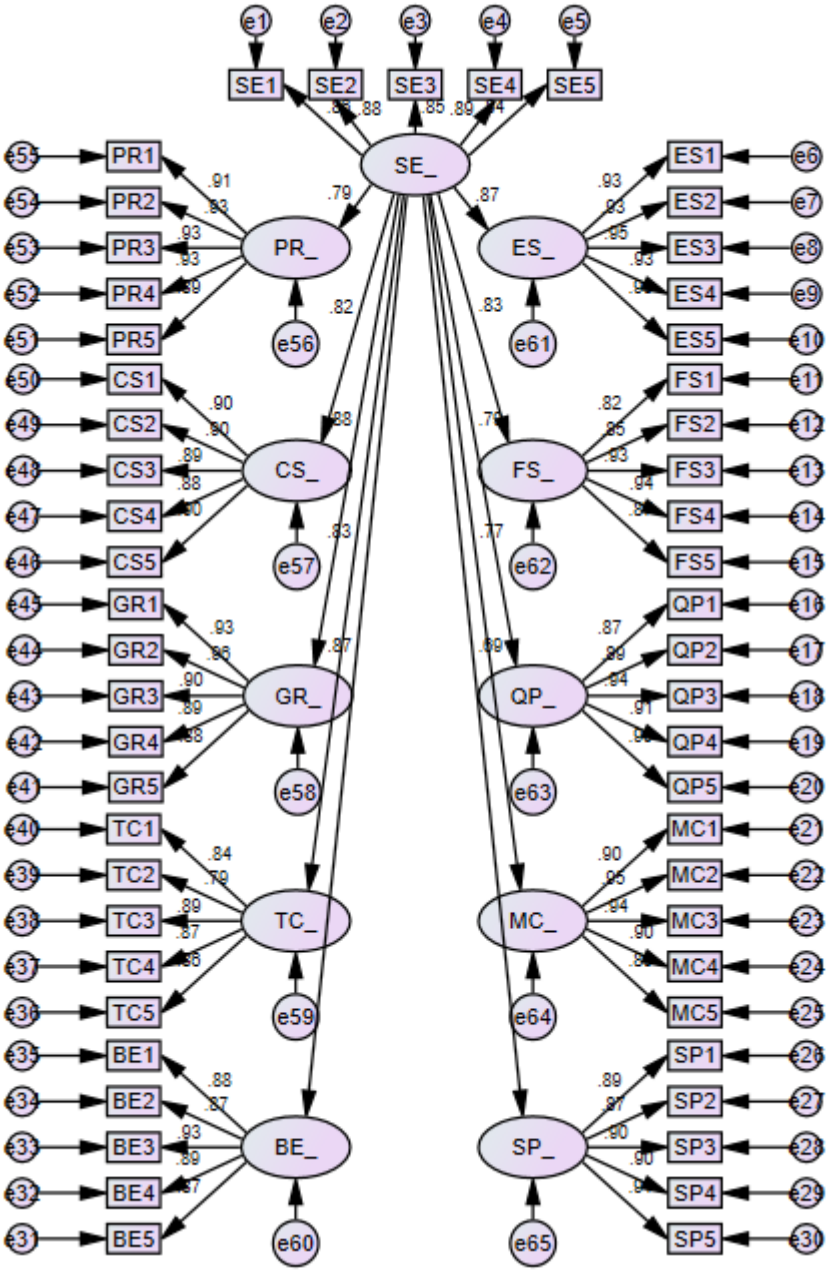

Figure 4.47: Hypothesized Path Diagram for Suppliers' Effectiveness versus Dimensions of organizational performance (Calibration sample)
Source: (Author, 2021)

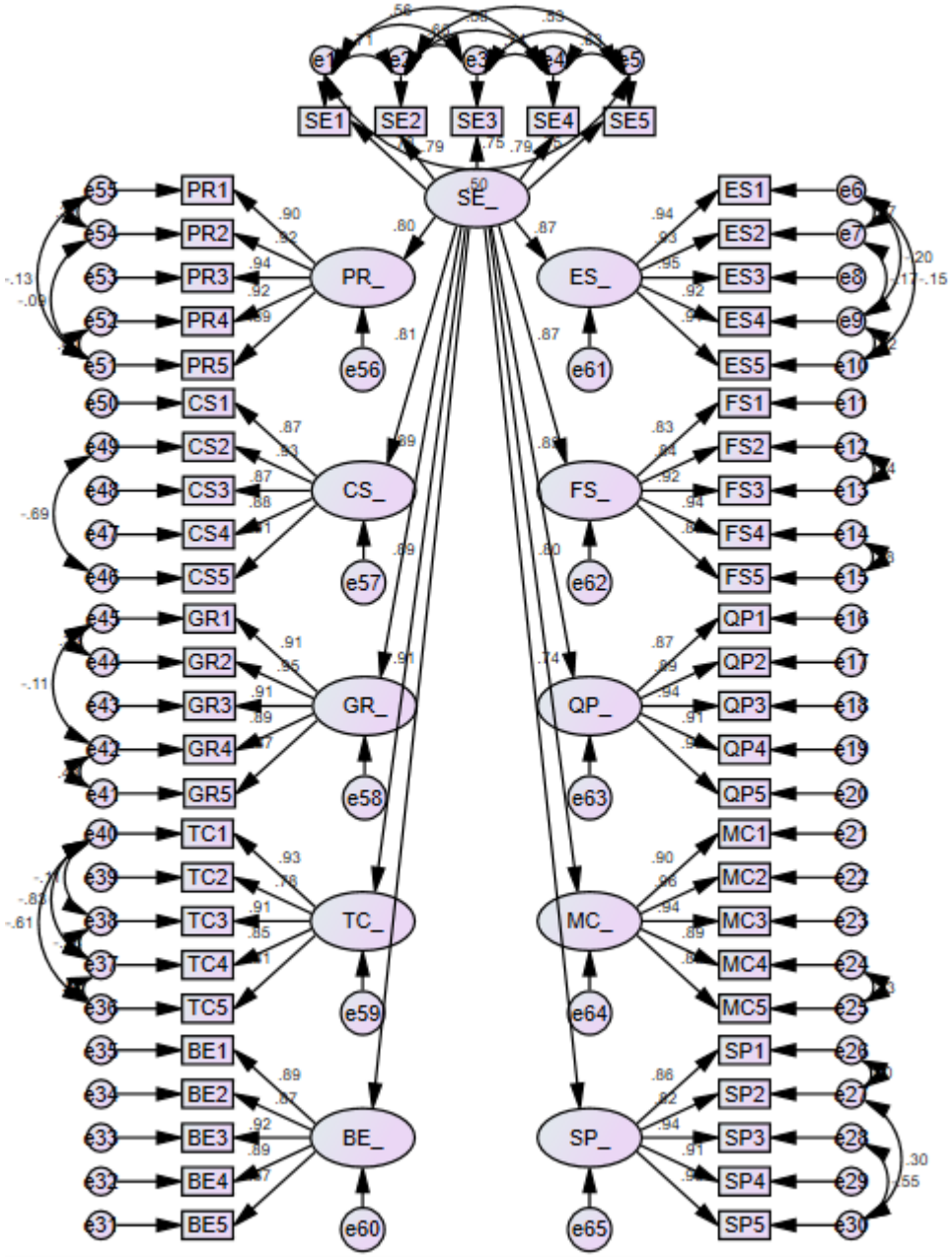

Figure 4.48: Modified Path Diagram for Suppliers' Effectiveness versus Dimensions of organizational performance
Source: (Author, 2021)

The goodness-of-fit indices presented on Table 4.54a showed CMIN/df=2.27, RMSEA=0.07, SRMR=0.06, TLI=0.90, CFI=0.90, and IFI= 0.90 for the modified calibration sample. These results demonstrated a reasonably good overall GoF. Based on the results of the other two samples, the model is generalizable.

Table 4.54a: GoF indices; Suppliers' Effectiveness versus Dimensions of Organizational Performance

No.	Fit Index	Hypothesized model			Modified model			Threshold	Remarks
		C	V	F	C	V	F		
1	CMIN/Df	2.95	2.53	3.71	2.27	2.11	2.69	≤5	Acceptable
2	RMSEA	0.09	0.10	0.09	0.07	0.09	0.07	<.10	Acceptable
3	SRMR	0.07	0.08	0.07	0.06	0.07	0.06	<.10	Acceptable
4	TLI	0.84	0.79	0.86	0.90	0.85	0.91	>.90	Acceptable
5	CFI	0.85	0.80	0.86	0.90	0.86	0.92	>.90	Acceptable
6	IFI	0.85	0.80	0.86	0.90	0.86	0.92	>.90	Acceptable

C= Calibration Sample (n=235), V=Validation (n=143) and F= Full Sample (n=378)

Source: (Author, 2021)

This path diagram tested the hypothesis that 'Suppliers' effectiveness' is significantly related to each of the dimensions of organizational performance. As seen on Table 4.54b, all the relationships were found to be significant, strong and positive indicating that all the sub-hypotheses were supported. The three dimensions of organizational performance which are most influenced by 'suppliers' effectiveness' are business efficiency (0.910), growth (0.893), and technical stability (0.886). The three dimensions which were least influenced are safety performance (0.737), managerial capability (0.737), and profitability (0.837).

Table 4.54b: H8; Influence of Suppliers' Effectiveness on Organizational Performance

Hyp	Structural path	Estimate		R^2	S.E	C.R	P	Remark
H8a	SE -> PR	1.084	.797	0.635	.080	13.540	.000	Supported
H8b	SE -> CS	1.000	.813	0.661				Supported
H8c	SE -> GR	1.409	.893	0.797	.091	15.444	.000	Supported
H8d	SE -> TC	1.090	.886	0.785	.079	13.736	.000	Supported
H8e	SE -> BE	1.096	.910	0.828	.070	15.742	.000	Supported
H8f	SE -> ES	1.363	.872	0.760	.082	16.601	.000	Supported
H8g	SE -> FS	1.014	.869	0.755	.073	13.987	.000	Supported
H8h	SE -> QP	.922	.828	0.686	.066	14.001	.000	Supported
H8i	SE -> MC	.939	.795	0.632	.068	13.833	.000	Supported
H8j	SE -> SP	.889	.737	0.543	.075	11.934	.000	Supported

Source: (Author, 2021)

i) Path Diagram 9: Competition versus Dimensions of organizational performance

The hypothesized and modified path diagrams for establishing the influence of competition on each of the dimensions of organizational performance have been presented in Figures 4.49 and 4.50.

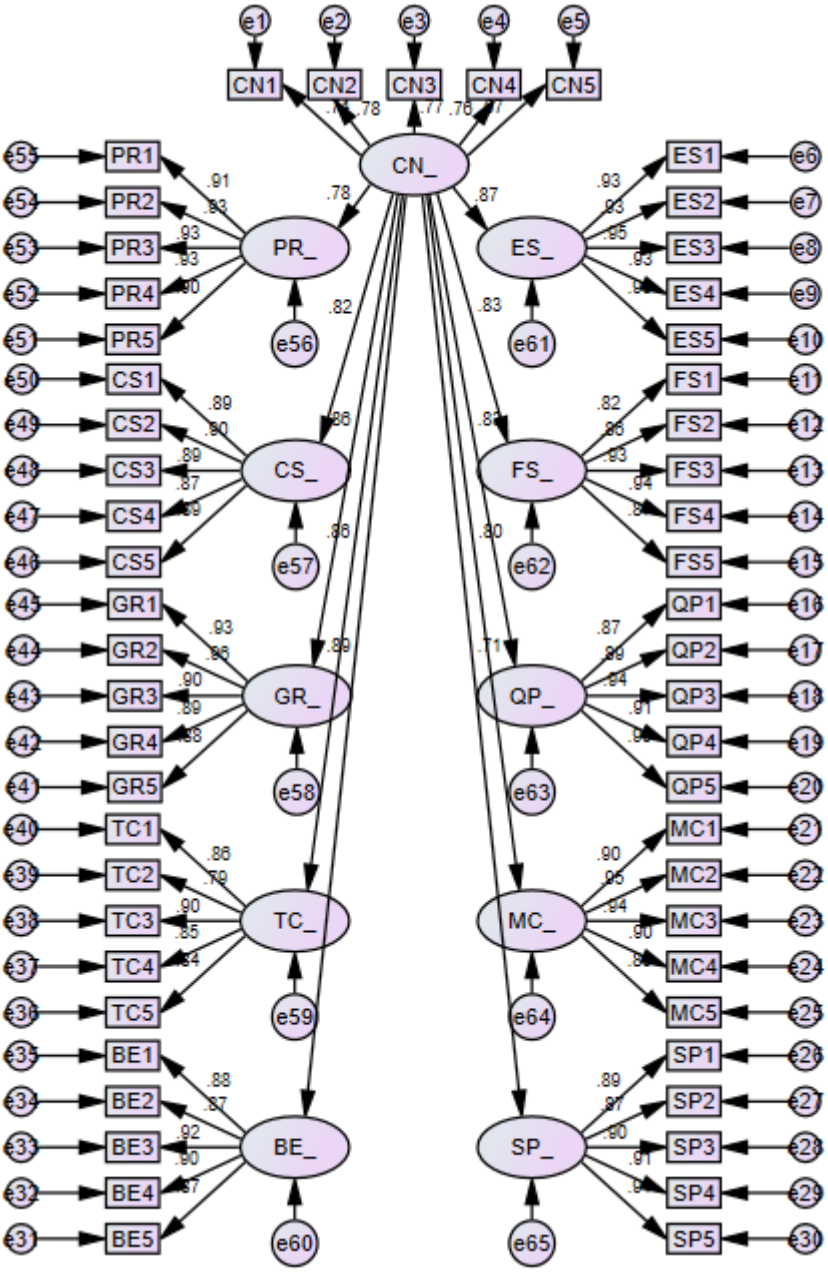

Figure 4.49: Hypothesized Path Diagram for Competition versus Dimensions of Organizational Performance (Calibration sample)
Source: (Author, 2021)

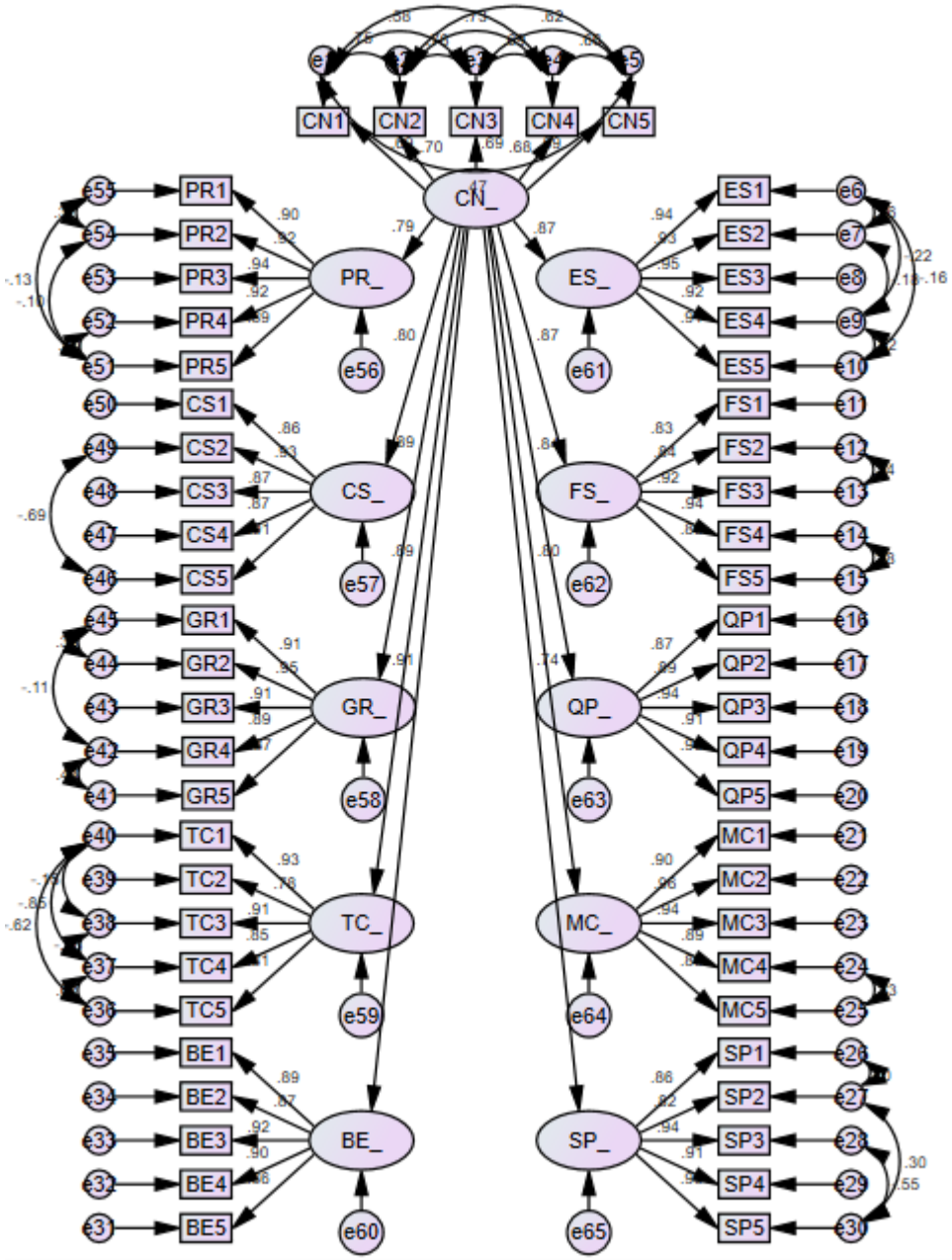

Figure 4.50: Modified Path Diagram for Competition versus Dimensions of Organizational Performance (Calibration sample)
Source: (Author, 2021)

The goodness-of-fit indices presented on Table 4.55a showed CMIN/df=2.30, RMSEA=0.08, SRMR=0.06, TLI=0.89, CFI=0.90, and IFI= 0.90 for the modified calibration sample. These results, therefore, showed a reasonably good overall GoF. Model fit was also observed in the other two samples.

Table 4.55a: GoF indices; Competition versus Dimensions of Organizational Performance

No.	Fit Index	Hypothesized model			Modified model			Threshold	Remarks
		C	V	F	C	V	F		
1	CMIN/Df	3.13	2.80	3.99	2.30	2.16	2.78	≤5	Acceptable
2	RMSEA	0.10	0.11	0.09	0.08	0.09	0.07	<.10	Acceptable
3	SRMR	0.07	0.09	0.07	0.06	0.08	0.06	<.10	Acceptable
4	TLI	0.83	0.76	0.84	0.89	0.84	0.90	>.90	Acceptable
5	CFI	0.83	0.76	0.85	0.90	0.85	0.91	>.90	Acceptable
6	IFI	0.83	0.76	0.85	0.90	0.85	0.91	>.90	Acceptable

C= Calibration Sample (n=235), V=Validation (n=143) and F= Full Sample (n=378)

Source: (Author, 2021)

This path diagram tested the hypothesis that 'competition' is significantly related to each of the dimensions of organizational performance. As seen on Table 4.55b, all the relationships were found to be significant, strong and positive indicating that all the sub-hypotheses were supported. The three dimensions of organizational performance which are most influenced by 'competition' are business efficiency (0.912), technical capability (0.889), and growth (0.886). The three dimensions which were least influenced by 'competition' are safety performance (0.739), profitability (0.791), and managerial capability (0.801).

Table 4.55b: H9; Influence of Competition on Organizational Performance

Hyp	Structural path	Estimate	R^2	S.E	C.R	P	Remark
H9a	CN -> PR	1.130	.791	.088	12.791	.000	Supported
H9b	CN -> CS	1.000	.802				Supported
H9c	CN -> GR	1.468	.886	.102	14.385	.000	Supported
H9d	CN -> TC	1.146	.889	.088	13.085	.000	Supported
H9e	CN -> BE	1.152	.912	.078	14.793	.000	Supported
H9f	CN -> ES	1.428	.868	.093	15.421	.000	Supported
H9g	CN -> FS	1.062	.866	.080	13.259	.000	Supported
H9h	CN -> QP	.977	.836	.073	13.455	.000	Supported
H9i	CN -> MC	.993	.801	.075	13.281	.000	Supported
H9j	CN -> SP	.937	.739	.081	11.531	.000	Supported

Source: (Author, 2021)

j) Path Diagram 10: Government Support versus Dimensions of organizational performance

The hypothesized and modified path diagrams for establishing the influence of government support on each of the dimensions of organizational performance have been presented in Figures 4.51 and 4.52.

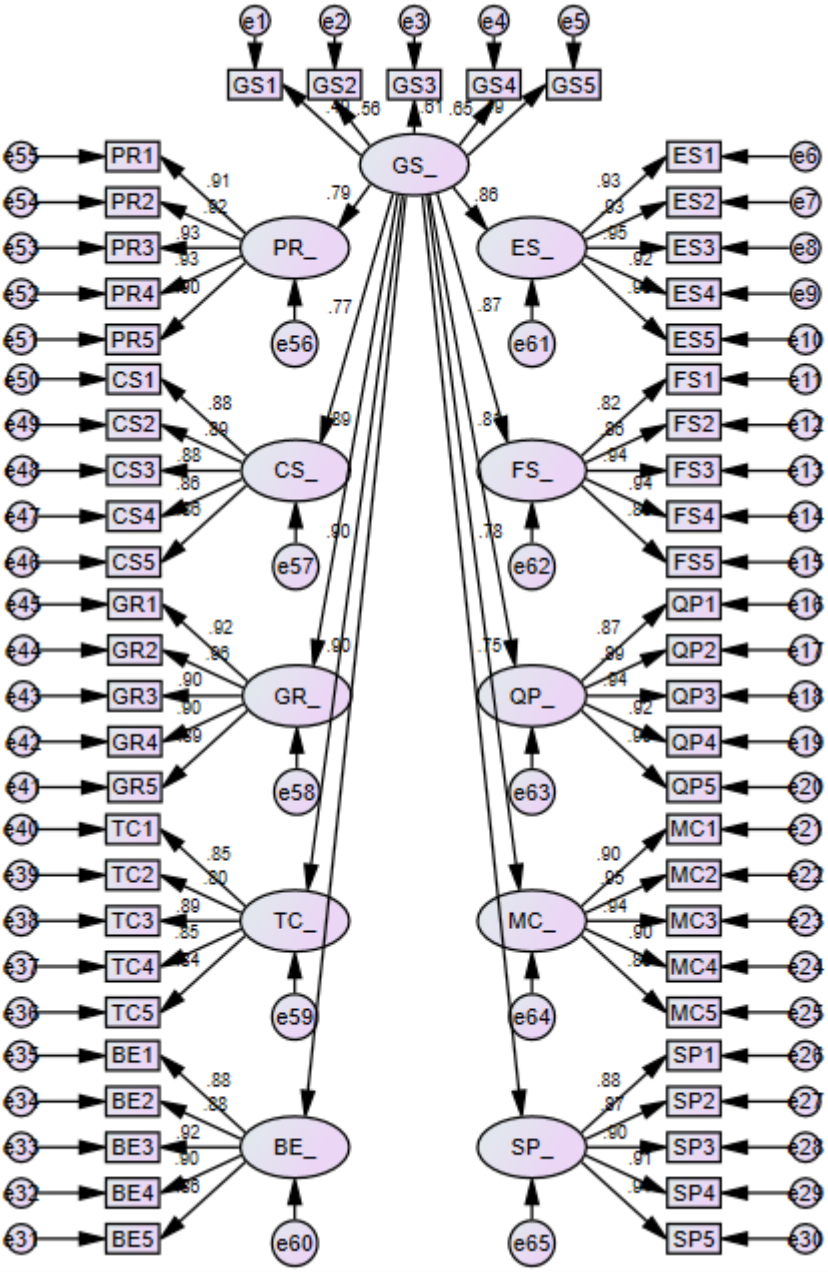

Figure 4.51: Hypothesized Path Diagram for Government Support versus Dimensions of Organizational Performance (Calibration sample)
Source: (Author, 2021)

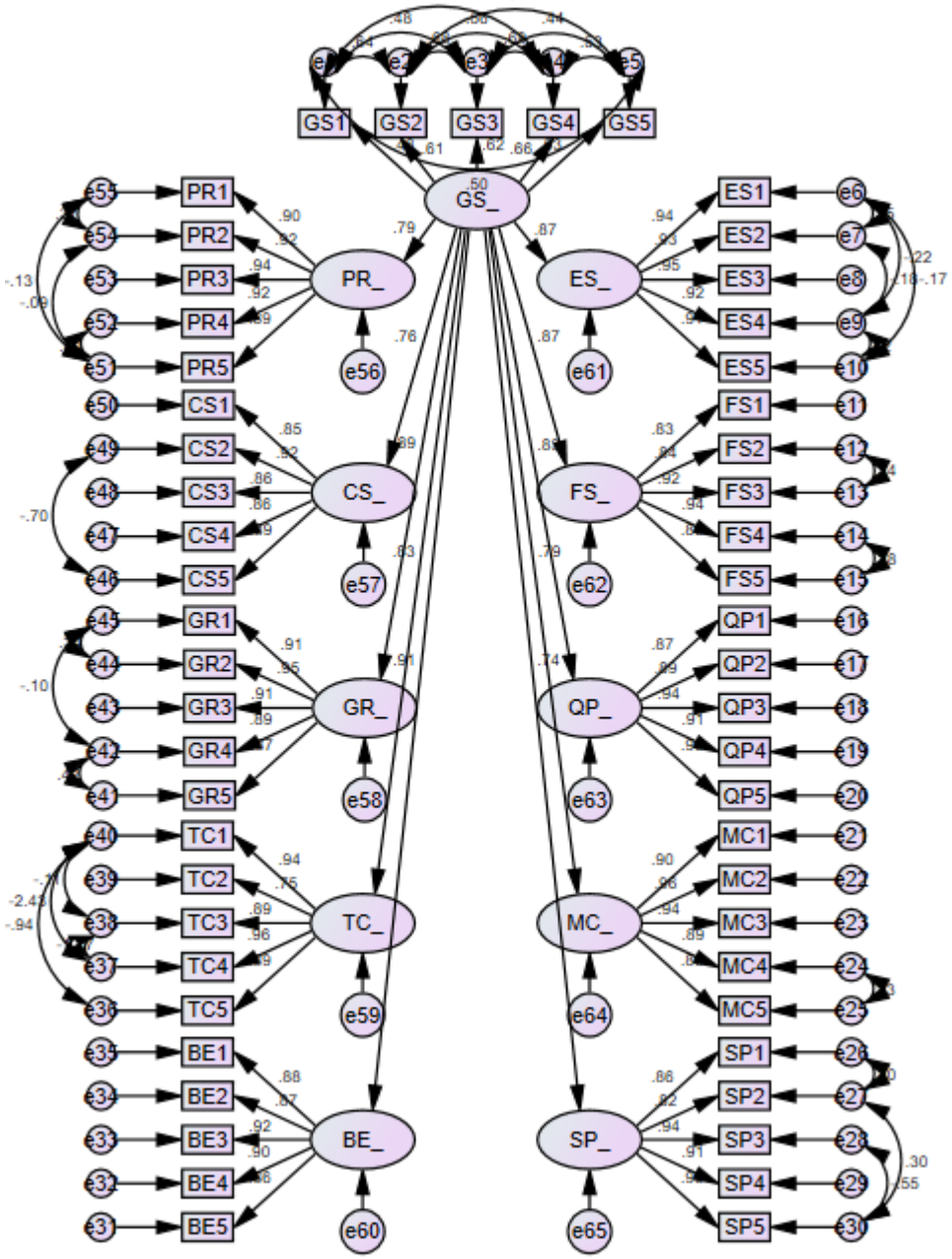

Figure 4.52: Modified Path Diagram for Government Support versus Dimensions of Organizational Performance (Calibration sample)
Source: (Author, 2021)

The goodness-of-fit indices presented on Table 4.56a showed CMIN/df=2.36, RMSEA=0.08, SRMR=0.08, TLI=0.89, CFI=0.89, and IFI= 0.89 for the modified calibration sample. These results, therefore, showed a reasonably good overall GoF. Model fit was also observed in the other two samples.

Table 4.56a: GoF indices; Government Support versus Dimensions of Organizational Performance

No.	Fit Index	Hypothesized model			Modified model			Threshold	Remarks
		C	V	F	C	V	F		
1	CMIN/Df	3.02	2.55	3.99	2.36	2.15	2.76	≤5	Acceptable
2	RMSEA	0.09	0.10	0.09	0.08	0.09	0.07	<.10	Acceptable
3	SRMR	0.08	0.09	0.07	0.08	0.09	0.08	<.10	Acceptable
4	TLI	0.83	0.77	0.84	0.89	0.83	0.90	≥.90	Acceptable
5	CFI	0.84	0.78	0.85	0.89	0.84	0.91	≥.90	Acceptable
6	IFI	0.84	0.78	0.85	0.89	0.84	0.91	≥.90	Acceptable

C= Calibration Sample (n=235), V=Validation (n=143) and F= Full Sample (n=378)

Source: (Author, 2021)

This path diagram tested the hypothesis that 'government support' is significantly related to each of the dimensions of organizational performance. As seen on Table 4.56b, all the relationships were found to be significant, strong and positive indicating that all the sub-hypotheses were supported. The three dimensions of organizational performance which are most influenced by 'government support' are business efficiency (0.910), growth (0.890), and financial stability (0.873). The three dimensions which are least influenced by 'government support' are safety performance (0.744), client satisfaction (0.761), and profitability (0.791).

Table 4.56b: H10; Influence of Government Support on Organizational Performance

Hyp	Structural path	Estimate		R^2	S.E	C.R	P	Remark
H10a	GS -> PR	1.273	.791	0.626	.110	11.536	.000	Supported
H10b	GS -> CS	1.000	.761	0.579	.131	12.771	.000	Supported
H10c	GS -> GR	1.667	.890	0.792				Supported
H10d	GS -> TC	1.332	.832	0.692	.109	12.196	.000	Supported
H10e	GS -> BE	1.297	.910	0.828	.100	12.936	.000	Supported
H10f	GS -> ES	1.614	.870	0.757	.120	13.408	.000	Supported
H10g	GS -> FS	1.206	.873	0.762	.101	11.957	.000	Supported
H10h	GS -> QP	1.088	.826	0.682	.092	11.884	.000	Supported
H10i	GS -> MC	1.109	.793	0.629	.094	11.782	.000	Supported
H10j	GS -> SP	1.063	.744	0.554	.100	10.656	.000	Supported

Source: (Author, 2021)

4.9.2.3 Summary of the Relationships between Determinants and Dimensions of Organizational Performance

Table 4.57 below presents a summary of the results of the ten path diagrams. The values are the standardized path estimates between each of the determinants and the various dimensions. As seen, the dimension of organizational performance which is highly influenced by all the determinants is business efficiency while safety performance is the least influenced.

Table 4.57: Influence of Determinants on Organizational Performance of LCs

	ST	PM	QS	OS	CI	EP	CE	SE	CN	GS
PR	.780	.784	.779	.786	.793	.774	.794	.797	.791	.791
CS	.832	.806	.816	.806	.829	.782	.792	.813	.802	.761
GR	.871	.875	.874	.882	.894	.877	.891	.893	.886	.890
TC	.896	.877	.887	.888	.895	.886	.891	.886	.889	.832
BE	.900	.900	.905	.910	.910	.907	.914	.910	.912	.910
ES	.864	.871	.862	.868	.870	.863	.868	.872	.868	.870
FS	.862	.873	.869	.865	.868	.868	.870	.869	.866	.873
QP	.842	.843	.848	.837	.826	.844	.827	.828	.836	.826
MC	.818	.821	.815	.809	.793	.809	.796	.795	.801	.793
SP	.753	.747	.747	.745	.743	.749	.731	.737	.739	.744

NB. All the standardized path estimates are significant at the 0.01 level.

Source: (Author, 2021)

4.9.2.4 Overall Effect of Determinants on Organizational Performance

After establishing that all the ten determinants had a positive influence across all the dimensions of organizational performance in the preceding analysis, two second order latent constructs were created; one representing the determinants (DT) and the other organizational performance (OP). The extent to which the combined determinants influenced overall organizational performance was then established using structural equation modeling. While the previous path diagrams tested the research sub-hypothesis, this analysis tested the main research hypothesis. Figures 4.53 and 4.54 below represent the hypothesized and modified structural models for evaluating the overall effect of the determinants on organizational performance among local contractors in Kenya.

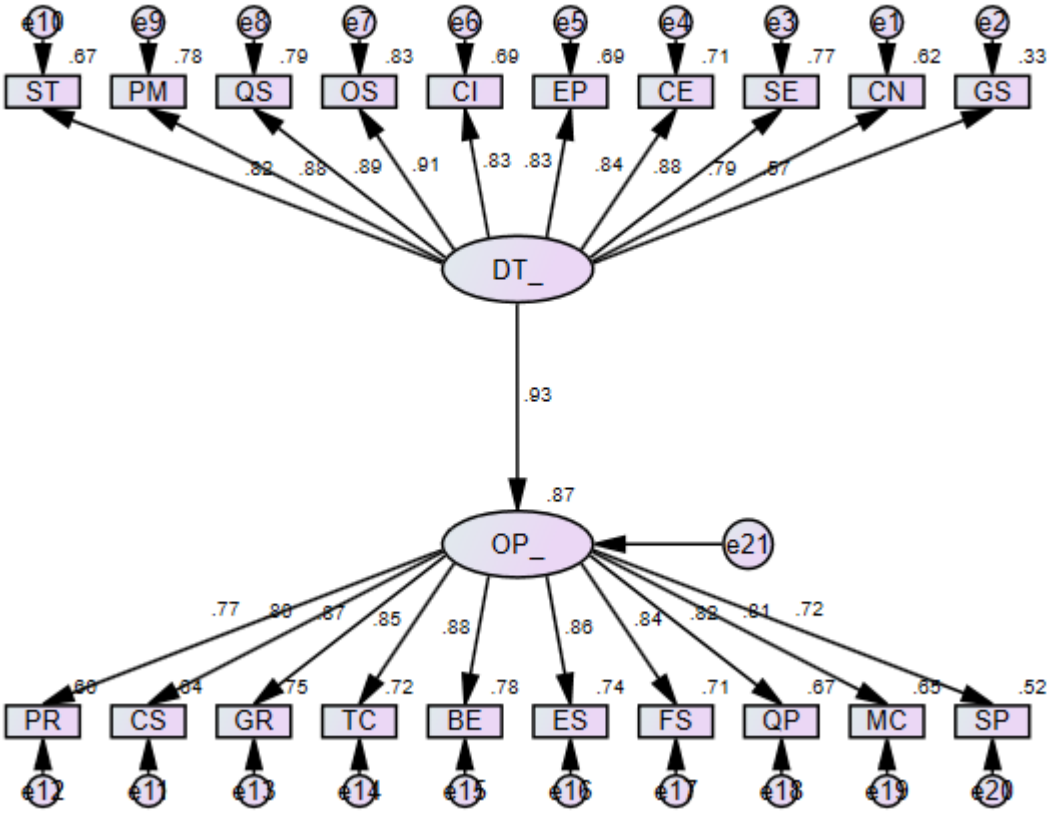

Figure 4.53: Overall Effect of Determinants on Organizational Performance (Hypothesized)
Source: (Author, 2021)

Based on the modified model, all the determinants were found to have high loadings ranging from 0.57 (government support) to 0.91 (organizational structure of the firm). Similarly, all the ten dimensions had high loadings ranging from 0.73 (safety performance) to 0.88 (growth). These high loadings are an indication that in both sets of variables, the determinants and dimensions converge at the two respective latent constructs. This means 'OP' and 'DT' are a true representation of organizational performance and its determinants respectively. The four most important determinants are organizational structure of the firm (0.91), quality of service (0.89), performance measurement practices (0.88) and supplier effectiveness (0.88). On the other hand, the four most important dimensions are growth (0.88), business efficiency (0.87), employee satisfaction (0.86) and managerial capability (0.86).

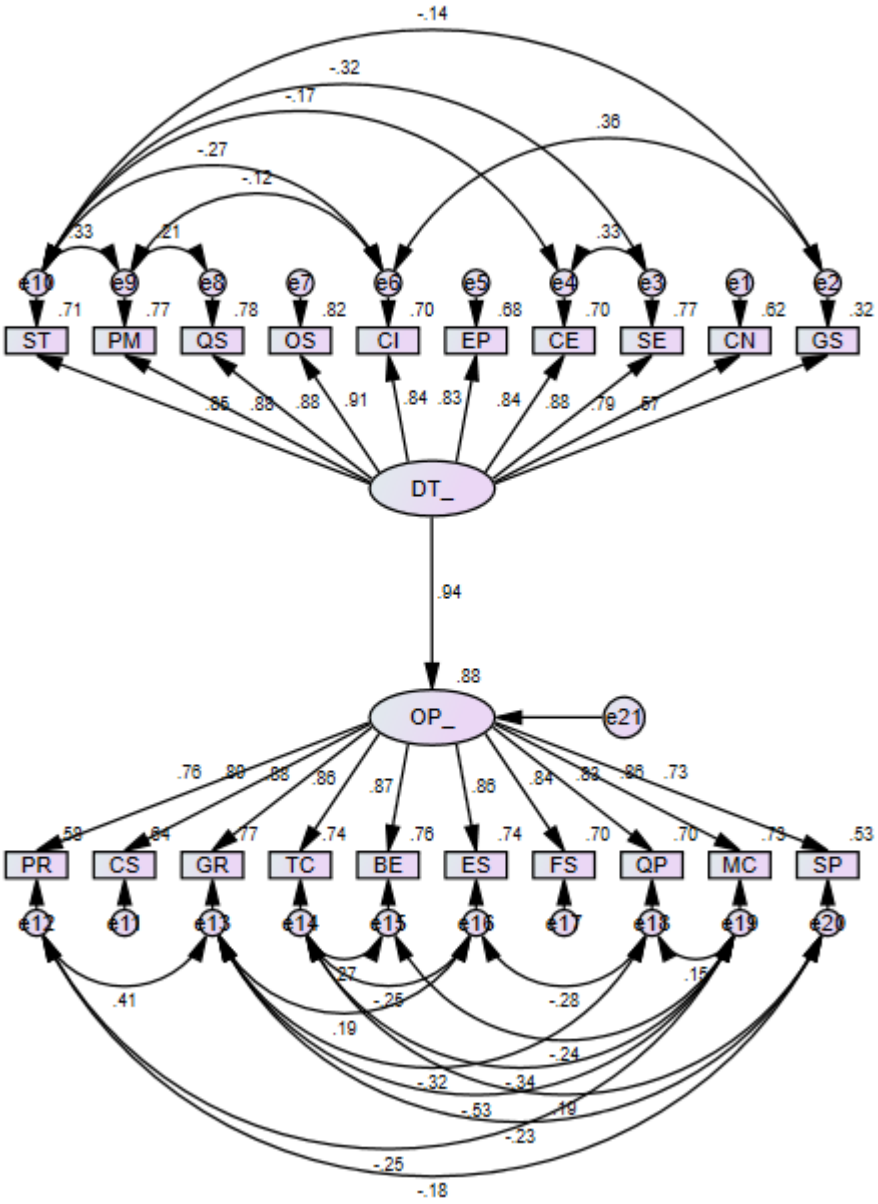

Figure 4.54: Overall effect of Determinants on Organizational Performance (Hypothesized Model)
Source: (Author, 2021)

As seen in the model, the level of influence of the combined study determinants on the organizational performance was established to be very high at 0.94. This estimate was found to be statistically significant. Based on this value, the amount of shared variance between organizational performance and its determinants is 0.88 which is the square of the extent of influence of the latter on the former. The results for assessing GoF have been presented on Table 4.58. The GoF indices showed CMIN/df=2.72, RMSEA=0.08, SRMR=0.03, TLI=0.94, CFI=0.95, and IFI= 0.95 for

the modified calibration sample. These results therefore showed a reasonably good overall GoF.

Table 4.58: GoF indices; Structural Model for Enhancing Organizational Performance of Local Contractors

No.	Fit Index	Hypothesized model			Modified model			Threshold	Remarks
		C	V	F	C	V	F		
1	CMIN/Df	4.71	3.76	6.63	2.72	2.82	4.23	≤5	Acceptable
2	RMSEA	0.12	0.14	0.12	0.08	0.11	0.09	<.10	Acceptable
3	SRMR	0.05	0.06	0.05	0.03	0.05	0.04	<.10	Acceptable
4	TLI	0.86	0.83	0.86	0.94	0.89	0.92	≥.90	Acceptable
5	CFI	0.88	0.84	0.88	0.95	0.91	0.94	≥.90	Acceptable
6	IFI	0.88	0.85	0.88	0.95	0.91	0.94	≥.90	Acceptable

C= Calibration Sample (n=235), V=Validation (n=143) and F= Full Sample (n=378)

Source: (Author, 2021)

The structural equation model was able to achieve two objectives; (i) test the main research hypothesis, and (ii) establish the strength of the relationship between organizational performance and its determinants collectively. It however failed to explain the extent to which the determinants predicted the organizational performance of local contractors. This necessitated the need for a predictive model.

4.10 Model for Predicting the Level of Organizational Performance of Local Contractors

A regression model was chosen because of its ability to not only explain but also predict future behavior. In the development of the model, a 'super-criterion-variable' representing all the dimensions of organizational performance was created. This was achieved by integrating the ten dimensions through the computation of the mean. This meant that organizational performance was regressed on the study's ten determinants. Two approaches were used in the regression analysis namely; confirmatory regression model, and sequential/stepwise regression model. This was based on the assertion by Hair Jr et al. (2010) that a prudent researcher employs both approaches to address the strengths and weaknesses of each.

4.10.1 Confirmatory Regression Model

This regression technique was chosen due to the researcher's ability to retain control over the choice of predictor variables to include in the model. A regression analysis of organizational performance against its determinants yielded the results shown on Tables 4.59a, 4.59b, and 4.59c.

Table 4.59a: Confirmatory Regression Analysis; Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.916[a]	.840	.833	.6757

a. Predictors: (Constant), GS, ST, CN, EP, CE, CI, QS, SE, OS, PM

Source: (Author, 2021)

A multiple correlation coefficient (R) of 0.916 indicated a good level of prediction for organizational performance using its determinants. A coefficient of determination (R^2) of 0.840 meant that 84.0% of the variance in organizational performance can be explained by the ten determinants. The standard error of estimate is the approximate standard deviation of the actual predictor values around the regression line (Hair Jr et al., 2010). It can be used to estimate the accuracy of the prediction model. Based on the approach suggested by Palmer and O'Connell (2009) where the standard error of the estimate is divided by the mean of the criterion variable (6.37), the percentage error for this model was established to be 10.6%. This meant that the predictive accuracy of the model was 89.4%.

Table 4.59b: Confirmatory Regression Analysis; ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	536.469	10	53.647	117.489	.000[b]
	Residual	102.281	224	.457		
	Total	638.750	234			

a. Dependent Variable: OP

b. Predictors: (Constant), GS, ST, CN, EP, CE, CI, QS, SE, OS, PM

Source: (Author, 2021)

The ANOVA analysis presented on Table 4.59b provides the statistical test of gauging the overall model fitness using the F ratio. The total sum of squares of 638.75 is the squared error that would have occurred if we predicted organizational performance using only its mean. Using the values of the determinants reduced this error by 83.99%

(536.469÷638.75). This reduction was deemed statistically significant with an F (10, 224) ratio of 117.489 and a significance level of 0.000. Given that the predictor variables statistically significantly (p=0.000) predict the criterion variable, this means the regression model is a good fit for the data.

Table 4.59c: Confirmatory Regression Analysis; Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.277	.243		1.141	.255		
	ST	.281	.046	.312	6.071	.000	.270	3.701
	PM	-.015	.057	-.016	-.257	.797	.185	5.397
	QS	.133	.057	.135	2.325	.021	.211	4.746
	OS	.102	.054	.114	1.880	.061	.196	5.100
	CI	.147	.035	.214	4.224	.000	.279	3.580
	EP	.017	.051	.016	.330	.742	.312	3.208
	CE	.005	.051	.005	.092	.926	.269	3.716
	SE	.202	.054	.214	3.707	.000	.215	4.643
	CN	.010	.042	.010	.231	.818	.376	2.661
	GS	.053	.031	.061	1.717	.087	.565	1.769

a. Dependent Variable: OP

Source: (Author, 2021)

The following regression model of explaining and predicting 'Organizational Performance' (OP) was formulated using the estimated coefficients.

$$OP = 0.28 + 0.28ST - 0.02PM + 0.13QS + 0.10OS + 0.15CI + 0.02EP + 0.01CE + 0.20SE + 0.01CN + 0.05GS$$

(Where; OP=organizational performance, ST=strategic planning practices, PM=performance measurement practices, QS=quality of service, OS=organizational structure of the firm, CI=contractor's innovativeness, EP=employee performance, CE=clients' effectiveness, SE=suppliers' effectiveness, CN=competition, and GS=government support).

However, it is important to note that out of the ten predictor variables, only four had a statistically significant influence on organizational performance namely; strategic planning practices, quality of service, contractor's innovativeness, and suppliers'

effectiveness. Additionally, one of the variables (performance measurement practices) was noted to have a negative influence on organizational performance.

4.10.2 Stepwise Regression Model

This is a sequential technique that maximizes the incremental variance explained at every step of model building (Hair Jr et al., 2010). It was chosen because of its ability to produce better prediction and explanation using fewer predictor variables, therefore, ensuring parsimony. A regression analysis of organizational performance against its determinants yielded the results presented on Tables 4.60a, 4.60b, and 4.60c.

Table 4.60a: Sequential/Stepwise Regression Analysis; Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.828[a]	.686	.685	.9272	.686	510.001	1	233	.000
2	.870[b]	.756	.754	.8189	.070	66.688	1	232	.000
3	.899[c]	.809	.807	.7267	.053	63.624	1	231	.000
4	.912[d]	.833	.830	.6820	.024	32.297	1	230	.000
5	.915[e]	.837	.834	.6733	.005	6.937	1	229	.009

a. Predictors: (Constant), OS
b. Predictors: (Constant), OS, SE
c. Predictors: (Constant), OS, SE, ST
d. Predictors: (Constant), OS, SE, ST, CI
e. Predictors: (Constant), OS, SE, ST, CI, QS

Source: (Author, 2021)

In the first model, organizational structure of the firm was used to calculate the regression equation since it had the highest correlation (0.828) with organizational performance. As seen on Table 4.60a, a coefficient of determination (R^2) of 0.686 meant that 68.6% of the variance in organizational performance can be explained by the organizational structure of the firm. Inclusion of supplier effectiveness in the second model increased the multiple correlation coefficient (R) to 0.870 and the R^2 to 0.756 meaning that the additional predictor variable accounted for an increase of 7.0% of the explained variation in organizational performance. Three extra steps led to the final model which had five predictors namely; organizational structure of the firm, supplier effectiveness, strategic planning practices, contractor's innovativeness, and quality of service. This model had a multiple correlation coefficient (R) of 0.915 and

an R^2 of 0.837 meaning that the five predictor variables accounted for 83.7% of the explained variation in organizational performance. The inclusion of additional predictor variables reduced the standard error of estimate from 0.9272 to 0.6733 thereby increasing the accuracy of the model. In other words, the predictive accuracy improved from 85.5% to 89.5%.

Table 4.60b: Sequential/Stepwise Regression Analysis; ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	438.443	1	438.443	510.001	.000[b]
	Residual	200.308	233	.860		
	Total	638.750	234			
2	Regression	483.165	2	241.583	360.234	.000[c]
	Residual	155.585	232	.671		
	Total	638.750	234			
3	Regression	516.764	3	172.255	326.190	.000[d]
	Residual	121.987	231	.528		
	Total	638.750	234			
4	Regression	531.784	4	132.946	285.862	.000[e]
	Residual	106.966	230	.465		
	Total	638.750	234			
5	Regression	534.929	5	106.986	235.980	.000[f]
	Residual	103.821	229	.453		
	Total	638.750	234			

a. Dependent Variable: OP
b. Predictors: (Constant), OS
c. Predictors: (Constant), OS, SE
d. Predictors: (Constant), OS, SE, ST
e. Predictors: (Constant), OS, SE, ST, CI
f. Predictors: (Constant), OS, SE, ST, CI, QS

Source: (Author, 2021)

The ANOVA analysis presented on Table 4.60b provides the statistical test of gauging the overall model fitness using the F ratio. In the first model, the total sum of squares of 638.75 is the squared error that would have occurred if we predicted organizational performance using only its mean. Using the values of the first extracted predictor variable (organizational structure of the firm) reduced this error by 68.64% (438.443÷638.75). This reduction was deemed statistically significant with an F (1, 233) ratio of 510.001 and a significance level of 0.000. In the second, third, and fourth

models, the percentages were 75.64%, 80.90%, and 83.25%. In the final model where five determinants were selected, the percentage reduction was 83.74%. Given that the predictor variables statistically significantly ($p=0.000^{f}$) predict the criterion variable, this means the regression model is a good fit for the data.

Table 4.60c: Sequential/Stepwise Regression Analysis; Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.283	.235		5.463	.000		
	OS	.746	.033	.828	22.583	.000	1.000	1.000
2	(Constant)	.587	.224		2.618	.009		
	OS	.448	.047	.498	9.594	.000	.390	2.563
	SE	.401	.049	.424	8.166	.000	.390	2.563
3	(Constant)	.201	.205		.981	.328		
	OS	.222	.050	.247	4.433	.000	.266	3.757
	SE	.370	.044	.391	8.471	.000	.387	2.583
	ST	.324	.041	.359	7.976	.000	.408	2.453
4	(Constant)	.595	.204		2.912	.004		
	OS	.140	.049	.156	2.851	.005	.243	4.110
	SE	.251	.046	.266	5.453	.000	.307	3.257
	ST	.318	.038	.353	8.338	.000	.407	2.455
	CI	.179	.032	.260	5.683	.000	.348	2.876
5	(Constant)	.410	.214		1.920	.056		
	OS	.101	.051	.112	1.985	.048	.222	4.500
	SE	.222	.047	.234	4.730	.000	.289	3.456
	ST	.275	.041	.305	6.711	.000	.343	2.912
	CI	.173	.031	.250	5.525	.000	.345	2.894
	QS	.135	.051	.138	2.634	.009	.259	3.863

a. Dependent Variable: OP

Source: (Author, 2021)

The following regression model of explaining and predicting 'Organizational Performance' (OP) was formulated using the estimated coefficients.

$$OP = 0.41 + 0.28ST + 0.14QS + 0.10OS + 0.17CI + 0.22SE$$

(Where; OP=organizational performance, ST=strategic planning practices, QS=quality of service, OS=organizational structure of the firm, CI=contractor's innovativeness, and SE=suppliers' effectiveness).

All the predictors included in the model were statistically significant. As seen in the regression equation, all the determinants were positively related to organizational performance.

4.11 Suggested ways of Enhancing the Level of Organizational Performance of Local Contractors

This section describes the suggested ways of enhancing the level of organizational performance of local contractors as indicated by the respondents. Two hundred and sixty seven (267) ideas were provided by both contractors (132) and consultants (135). The results have been analyzed thematically using QSR NVivo 11 software.

Seventeen (17) themes were identified from the respondents' suggestions namely; Strategic planning practices, Performance measurement practices, Quality of service, Organizational structure of the firm, Contractor's innovativeness, Employee performance, Clients' effectiveness, Suppliers' effectiveness, Competition, Government support, Client satisfaction, Technical capability, Employee satisfaction, Quality of products, Managerial capability, Safety Performance, and Communication. An extra category (others) was created for all suggestions which did not fall under any of the identified themes. These themes have been presented in Figures 4.55 and 4.56. Frequencies for each of the themes have been presented on Table 4.61 and Figure 4.57 while the sorted raw data has been presented in Appendix 17. The highest frequencies were recorded in government support (99), technical capability (52), and contractor's innovativeness (24). Other themes with notable frequencies were; managerial capability (17), clients' effectiveness (16), and employee satisfaction (12). The high number of suggestions for government support is reflective of the low levels of government support seen earlier.

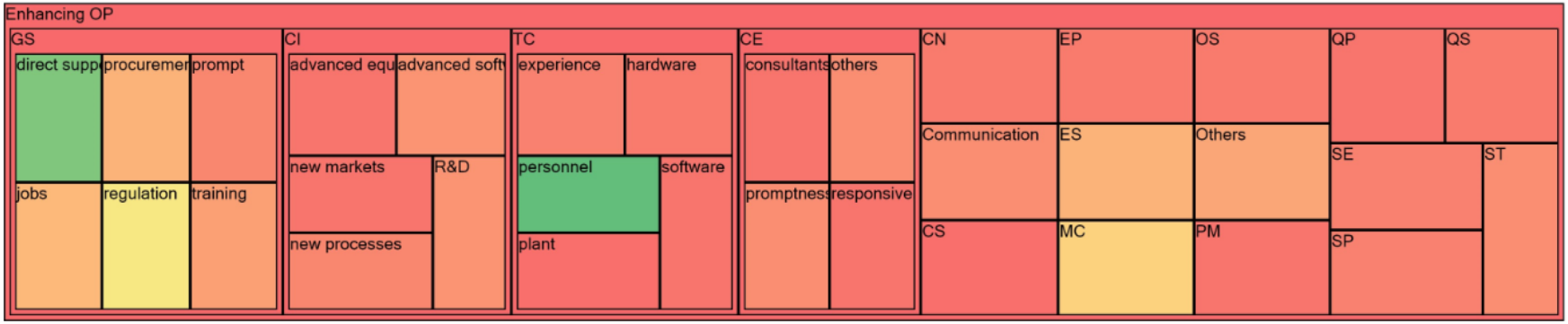

Figure 4.55: Suggested ways of enhancing the Level of Organizational Performance

Source: (Author, 2021)

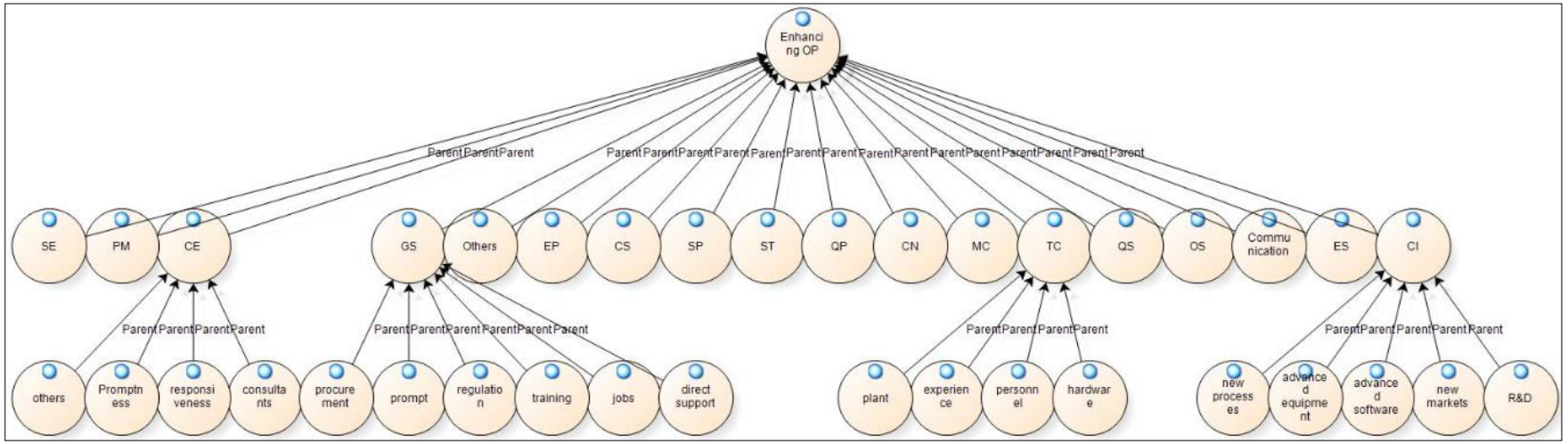

Figure 4.56: Suggested ways of enhancing the Level of Organizational Performance (Tree diagram)

Source: (Author, 2021)

Table 4.61: Qualitative Analysis of suggested ways of enhancing the Level of Organizational Performance

No	Theme	Sub-theme	Frequency
1	Strategic planning practices	*None*	6
2	Performance measurement practices	*None*	2
3	Quality of service	*None*	3
4	Organizational structure of the firm	*None*	3
5	Contractor's innovativeness	*Adoption of new processes*	5
		Advancement of construction equipment	2
		Entry into new markets	2
		Advancement in software technology	7
		Research and development endeavour	8
6	Employee performance		3
7	Clients' effectiveness	*Promptness in payment*	6
		Selection of competent project consultants	2
		Responsiveness to information requests and decisions	2
		Others	6
8	Suppliers' effectiveness	*None*	4
9	Competition	*None*	3
10	Government support	*Provision of construction jobs*	14
		Prompt payment	5
		Regulation of the industry	22
		Training	9
		Efficiency of procurement practices	11
		Direct support	38
11	Client satisfaction	*None*	1
12	Technical capability	*Experience (previous works)*	4
		Adequacy of plant & equipment	1
		Qualification of personnel	42
		Advancement of electronic hardware used	5
13	Employee satisfaction	*None*	12
14	Quality of products	*None*	2
15	Managerial capability	*None*	17
16	Safety performance	*None*	4
17	Communication	*None*	6
18	Others	*None*	10

Source: (Author, 2021)

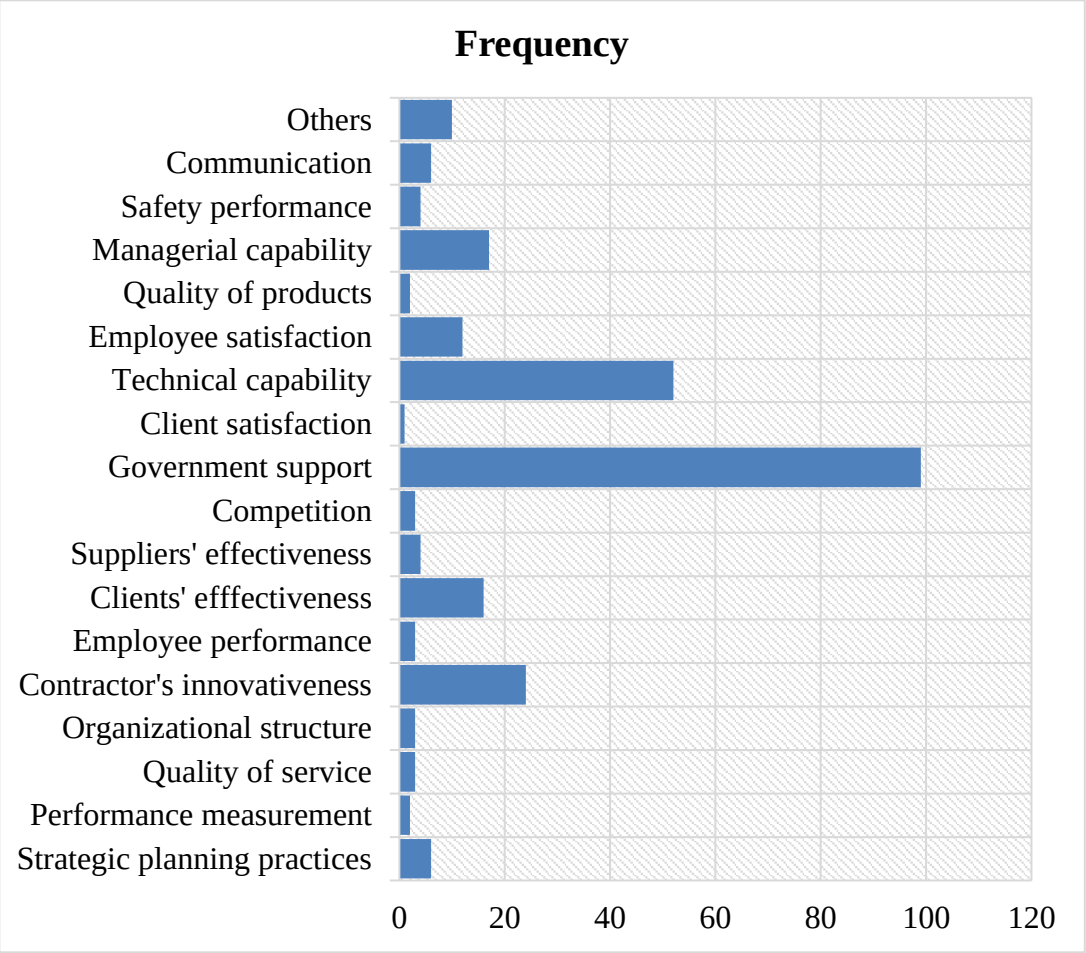

Figure 4.57: Qualitative Analysis of suggested ways of enhancing the Level of Organizational Performance

Source: (Author, 2021)

4.12 Chapter Summary

This chapter began by reporting the response rates of the survey. The yielded sample size was found to be adequate. The reliability of the collected data was checked through Cronbach values and was found to be adequate. Four major statistical assumptions were checked and remedies were applied where violations were reported. The level of organizational performance among local contractors was found to have a mean of 6.374. The overall RII for the determinants of organizational performance was found to be 0.6468. A statistically significant strong positive relationship was found to exist between organizational performance and its determinants. A regression model demonstrating the high predictive ability of the determinants on organizational

performance was presented. The discussion for these results has been presented in the next chapter.

CHAPTER FIVE
DISCUSSION OF FINDINGS

5.1 Introduction

This section provides a discussion of the results presented in the preceding chapter. This has been done based on the study objectives. The first objective was concerned with establishing the level of organizational performance of local contractors in Kenya. The second objective sought to establish the determinants of organizational performance. The third objective aimed at determining the relationships between these two. The fourth objective was to formulate a framework for predicting the organizational performance of Kenyan contractors.

5.2 Level of Organizational Performance of Local Contractors in Kenya

5.2.1 Profitability

The level of profitability was earlier reported as 5.41 and ranked as last among the ten measured dimensions. The study by Chonge (2017) reported an almost similar level of 6.14. The poor performance observed could be attributed to several reasons. First, irrespective of the procurement systems adopted in the selection of contractors locally, the ultimate choice in almost all cases is based on the lowest bid. Due to stiff competition, most contractors have no choice but to lower their bids to win tenders. This is achieved by reducing the anticipated profit margins.

Secondly, delayed payment of interim and final certificates has been the norm rather than the exception, especially in government-funded projects. It was reported by Okweto (2012) that the main cause of time overruns in local projects was the failure to honor payment certificates. According to Kenyatta et al., (2015), underpayment, late payment, intermittent payment, and nonpayment of certificates are the main causes of cash flow challenges experienced by Kenyan local contractors. Simiyu (2018) also attributed poor financial performance by local contractors to late payments by clients. As established previously in this research, most contractors finance their projects through loans. Due to interests and penalties paid by contractors to financial institutions, the level of profit margins in these projects are bound to further decrease. Penalties are incurred as a result of delayed honoring of payment certificates by

project clients. Indeed, NESC (2014) reported that Kenyan contractors had suffered penalties from financial institutions due to late payments by clients especially those from public sector.

Further, local contractors in developing countries have been reported to demonstrate poor financial management skills. They have indeed been reported to tend to diverge project funds to unrelated financial commitments (M. W. Chonge, 2017). This has also been reported by Simiyu (2018). In addition, local contractors have been slow in adopting new efficient methods of delivering projects. This research established the level of contractor's innovativeness to be low (mean=5.64, ranked at 9th out of the ten measured determinants). The use of outdated methods and techniques leads to increased operational costs thereby reducing the profit margins. Lastly, corruption is rampant in the award and execution of construction projects here in Kenya. Indeed, Simiyu (2018) observed that unethical practices are commonplace in the delivery of projects. There are only two outcomes as a result of this; failure of the projects to meet set criteria and/or reduced profit margins for the contractors. Indeed Jin (2018) pointed out that corruption is a highly important factor in determining local contractors' growth here in Kenya.

5.2.2 Client satisfaction

Among the indicators used to measure client satisfaction, the highest performer was adherence to quality (mean=7.13). The overall mean for the indicators used to measure a different dimension of organizational performance, quality of products, was found to be the highest performer among the ten dimensions with an overall mean of 7.31. This is a demonstration that the results obtained have consistency and are therefore provide further evidence of reliability.

The overall level of client satisfaction was found to be 6.92 and ranked second among the ten measured dimensions. Though using a single indicator, the study by Chonge (2017) established the level of client satisfaction to be comparatively 7.54. Another study by Kihoro (2020) established the level of client satisfaction among NCA5-NCA8 contractors to be 6.60 and the ability to gain repeat projects from similar clients at 7.94. The same study established the overall reputation of local contractors to have

a comparative mean of 7.44. Nevertheless, these findings seem to contradict other previous studies by Mwangi (2016) and Simiyu (2018) which have reported worrying schedule and cost overruns in local projects. The high levels of client satisfaction despite reported schedule and cost overruns are an indication that causes of such project inefficacies are not attributed to the contractors. Indeed a study by Waihenya (2011) established the leading cause of cost overruns in Kenyan construction projects to be changes in design and specification. Other studies by Kimemia (2015) and Mbijiwe (2017) attributed the main cause of time overruns to delayed payments by clients.

5.2.3 Growth

The level of growth was found to be 5.81 and ranked eighth among the ten measured dimensions. Growth was measured across five aspects namely; profitability, annual turnover/volume of work, client retention, number of employees, and equipment/assets. Despite a steady growth of the Kenyan construction industry occasioned by increased expenditure by the government on infrastructure over the last 20 years, the reported levels of growth across the five indicators were seen to be low. This could be attributed to the increased globalization of the Kenyan construction industry. It is in the public domain that there has been an increase in the number of foreign contractors operating locally for the last 20 years. Nguku (2015) reported that the award of major construction contracts by both the government and private sector has been skewed in favor of foreign contractors due to their relatively superior expertise and financial capacity. This has led to a reduced volume of work undertaken by local contractors, therefore, affecting the growth of other aspects such as profitability, number of employees, and equipment inventory. Amongst the five indicators, growth in client retention was the best performer. This could be related to the high levels of quality and client satisfaction reported in this study as well.

Interestingly, Kihoro (2020) found the ability of local contractors to maintain profit growth to have a mean of 7.72. However, the study was based on small to medium-scale contractors (NCA5-NCA8). This is an indication that smaller contractors' activities have not been significantly affected by the entry of foreign contractors into

the local construction industry. It is probably for the same reason that NCA3 contractors (44%) were found to be more profitable compared to NCA1 contractors (43%) in this research.

5.2.4 Technical capability

The level of technical capability was found to have a mean of 6.43 and ranked fifth among the ten measured dimensions. This was considered to be moderate and contradicted with previous studies which had reported inadequate levels. Okweto (2012) reported that construction project leaders here in Kenya are well endowed with technical skills. Simiyu (2018) on the other hand established the technical capacity of Kenyan road contractors to be moderately low with a comparative mean of 5.54. A different study by Mwangi (2016) found the availability of skilled manpower in the road sector to be inadequate. Elsewhere in Nigeria, poor workmanship in road projects and inefficiency among contractors have been attributed to the inadequate technical management of staff (Medugu et al., 2011). The relatively higher levels of technical capability reported in this study could be attributed to the fact that only the top three categories of NCA-registered contractors were studied in this research. The difference may also be a result of the variation of indicators used to measure technical capability.

5.2.5 Business efficiency

The level of business efficiency was found to be 6.29 and ranked sixth among the ten measured dimensions. No previous studies were identified to have measured the extent of business efficiency of contractors locally and therefore comparisons could not be achieved. The indicators used to measure business efficiency in this study were labor productivity, return on investment in equipment, energy efficiency, revenue per employee, and marketing efficiency. The best performing indicator was labor productivity. This is related to the level of employee performance also reported amongst the determinants of organizational performance. The least performing indicator of business efficiency was revenue per employee. This could be attributed to the heavy reliance on borrowed funding and low levels of profitability recorded. It could also be a result of operational inefficiencies. Nguku (2015) listed high overhead costs as one of the challenges facing local contractors in their survival and growth.

5.2.6 Employee satisfaction

The level of employee satisfaction was found to be 5.68 and ranked ninth among the ten measured dimensions. All the five indicators used to measure employee satisfaction namely remuneration/salary, reward for excellence in job performance, favourability of working conditions, professional growth, and training and development recorded poor results. Late payment of employees' salaries by local contractors has previously been reported here in Kenya (Simiyu, 2018). Though based on the banking industry, the study by Kamweti (2011) also reported that the leading causes of employee dissatisfaction were inadequate remuneration and too much pressure at workstations. Mwebia (2018) on the other hand established that working conditions and employee empowerment were the least performing aspects in the telecommunication industry. The author also pointed out that well-paid employees can meet their expected goals because money not only attracts and retains competent employees but also encourages them towards improved performance.

5.2.7 Financial stability

The level of financial stability was found to be 6.24 and ranked seventh among the ten measured dimensions. This was considered to be moderately low. Insufficient working capital was found to be the main factor hampering the growth of Kenyan road contractors by Mwangi (2016). Simiyu (2018) established that poor financial capacity among local contractors here in Kenya was mostly caused by late payment by clients and had the following consequences; shortage of operational cash, lack of collateral to secure loans, denial of bank overdraft, late payment of salaries, non-payment of subcontractors, and late payment of suppliers. Nguku (2015) reported that the main threat to a local contractor's survival and growth was a low financial base and access to credit finance. Poor financial stability among local contractors is not evident only here in Kenya as other developing countries such as Nigeria seem to have a similar problem (Olusanya, 2018). Similar experiences have been previously reported in the Ghanaian construction industry (Badu et al., 2012). Malaysia is no exception as contractors have been reported to experience cash flow challenges (Rahman, 2013)

5.2.8 Quality of products

There have been mixed reports regarding the quality of work in the Kenyan construction industry. Githenya and Ngugi (2014) reported that the Kenyan construction sector faces a myriad of challenges in the attempt to meet the expected quality standards as evidenced by the collapse of construction projects. Muiruri and Were (2016) also attributed the building collapses to inadequate quality management. Asinza et al. (2016) further opined that achievement of acceptable levels of quality in Kenyan construction projects has always been a challenge. The level of quality of products in this research was however found to be 7.31 and ranked first among the ten measured dimensions. Comparatively, studies by Simiyu (2018) and Chonge (2017) also found the level of quality of works executed by local contractors to be high with means of 7.66 and 8.04 respectively. The study by Njenga (2017) reported a comparative mean of 7.40 with regard to continuous quality control of construction processes. Therefore it could be argued that the notion that there is poor quality of work amongst local contractors maybe based on anecdotal rather than empirical evidence. The cases of collapsed buildings may be isolated cases. They could also be instances of failure to engage proper professionals and duly registered contractors in such projects, a position also taken by Shirandula et al. (2018).

5.2.9 Managerial capability

The level of managerial capability was found to have a mean of 6.91 and ranked third among the ten measured dimensions. This was considered to be relatively high. Previous studies have reported similar results. In what he termed as ‘organizational capacity’, Simiyu (2018) established the level of managerial capability to be moderately high with a comparative mean of 6.26. His research established the level of ‘controlling the costs of operations’ to be 6.88 while this study established the level of ‘prudence in financial management’ to be 6.92. These results demonstrate some similarities. The ability of the management to recruit competent personnel plays an important role in the firm’s productivity and by extension its organizational performance. This is because recruitment practices have been associated with the quality of workers employed (Gatewood et al., 2010). High-performing employees have been associated with high levels of organizational performance in this research.

It can therefore be asserted that the contractor's managerial capability influences its organizational performance.

5.2.10 Safety Performance

The level of safety performance in this study was found to have a mean of 6.74 and ranked fourth among the ten measured dimensions. Chonge (2017) and Kihoro (2020) reported comparative means of 7.50 and 6.98 respectively. The study by Simiyu (2018) also established a similarly high level of safety performance among local contractors. Another study by Ogetii (2019) reported that 74.5% of construction sites provided their employees with PPE including reflectors, helmets, and safety boots while 70.6% had fire safety measures in place. This trend could be attributed to the regulatory requirements associated with safety performance. Contractors who fail to adhere to the laid down health and safety measures face the risk of their site operations being closed down. Indeed, Ogetii (2019) acknowledged that the construction industry is one of the sufficiently regulated sectors.

5.2.11 Overall Level of Organizational Performance

The overall level of organizational performance in this study was found to have a mean of 6.374 measured on a scale of 1 to 10. This translated to a percentage score of 63.74%. This illustrates a moderately high performance which means there is still plenty of room for improvement. Local contractors were found to perform poorly in financial aspects (mean=5.938) compared to non-financial aspects (mean=6.665).

No study has been conducted to substantially measure the level of organizational performance of local contractors here in Kenya. While Abonda (2017) purportedly established the level of organizational performance of construction firms in Kisumu county to be 7.032, the data collection instrument used did not provide the criteria used to measure such performance. Rather, the questionnaire measures the extent to which the use of various competitive strategies affected certain aspects of organizational performance. It would therefore be misleading to use the measured level for comparison with the results of this study.

5.3 Determinants of Organizational Performance of Local Contractors in Kenya

5.3.1 Strategic planning practices

The strategy of any firm determines the direction the firm intends to pursue. The strategy is a roadmap towards the organization's main goal. It guides the firm in the prioritization of resource allocation. Indeed a previous study by Jin (2018) established the importance of the following aspects of strategy towards the growth of local construction organizations; leadership and ownership (mean=4.27), goals and objectives of the organization (mean=4.07), and marketing strategies (mean=3.13). All these were measured on a scale of 1 to 5 in terms of their importance towards growth. These results demonstrate the significance of strategic planning practices towards organizational performance. This is because growth has been established in this research as one of the dimensions of organizational performance.

The extent of strategic planning practiced by local contractors in this study had a mean of 6.456. The overall level of organizational performance was evaluated at 6.374. Such a high level of correlation further demonstrates how the local contractor's strategic planning practices are important in the firm's quest for improved performance. Though the study by K'Obonyo and Arasa (2012) was not based on the construction industry, it did establish the extent of the practice of strategic planning to have a relative mean of 7.844. This is an indication that local contractors are outperformed by their peers outside the construction industry.

5.3.2 Performance measurement practices

Most of the studies conducted here in Kenya concerning performance measurement have been based on the public sector with a particular focus on parastatals and government ministries (Obong'o, 2009; Mbua & Sarisar, 2013; Cheche & Muathe, 2014; Gichini, 2015; Ndubai, 2016; Njoroge, 2017). While some of these studies attempt to establish a relationship between performance measurement and organizational performance, none of them measures the levels of either of the two variables. Ahmad et al. (2016) formulated key performance indicators which can be used in the construction industry but did not establish the extent to which performance measurement was carried out. While the study by Sonson et al. (2017) attempts to

develop a conceptual framework for performance measurement and management in construction, it also fails to provide results that can be used for comparison purposes. Though Takim et al. (2003), Ngacho and Das (2015), and Zamim (2021) provided discussions on performance measurement systems in the construction industry, their studies were project-based rather than at the firm level. Similarly, these studies also did not yield any comparable data.

The extent of performance measurement practiced by local contractors in this study was found to have a mean of 6.633 based on the following indicators; clarity and meaningfulness to all (6.47), harmony with organizational goals (6.52), reliability of data used (6.60), commitment by top management (6.91), and employee involvement (6.67). Using indicators such as the importance of performance measurement, influence on firm performance, existence of a system to measure employee performance, need for annual review, and top management commitment, Thuku (2014) reported a contradicting low overall mean of 4.296. Surprisingly, top management commitment scored a mean of 3.76 compared to 6.91 obtained in this study. This contrast could be attributed to the fact that the study by Thuku (2014) was based on small-scale road contractors in Kiambu county as opposed to the national large-scale contractors considered in this study.

5.3.3 Quality of service

Two aspects of quality were considered in this research, quality of products and quality of service, the former as a dimension (criterion) and the latter as a determinant (predictor). Quality of products was about the adherence to design and technical specifications while quality of service meant the overall performance of service offered by local contractors. In descending order, the quality of service was established to be; responsiveness to clients (mean=7.28), knowledge and courtesy of employees (mean=7.20), reliability (mean=7.15), empathy towards clients (mean=7.01), and appearance of physical facilities and personnel (mean=7.01). Though the study by Sunindijo et al. (2014) using four dimensions namely responsiveness, reliability, assurance and tangibility found the first two to be the most significant, it did not establish levels that could be used for corroboration. The study

aimed at evaluating the significance of service quality rather than its levels. No study has been found to have measured the level of quality of service of local contractors in Kenya or any other developing country. However, based on five indicators, Giao (2018) established the level of service quality of construction project management firms in Vietnam to have a comparative mean of 8.25. Other than measuring two different things and in varied economic and geographical settings, this level was found to be relatively higher than that reported in this study (mean=7.13). The indicators used were also different. These circumstances make it difficult to rely on such a comparison.

5.3.4 Organizational structure of the firm

The organizational structure of any firm plays an important role in the efficiency with which it executes its operations. Indeed, Maduenyi (2015) reported that a suitable organizational structure promotes improved performance through gains in effectiveness and efficiency. Clemmer (2013) asserted that tasks such as planning, organizing, directing, and controlling are best regulated if there is an organizational structure in place.

Based on the following aspects, clarity of line of authority, flexibility, adequacy of delegation of authority, provision of stability and continuity, and documentation of the structure, the organizational structure of local contractors were found to have an overall mean of 6.724. This was considered to be moderately high. The study by Thuku (2014) reported contradicting results with the comparative mean established to be 5.045. This was considered to be low compared to the results of this study. This could be attributed to the use of different indicators in the measurement of organizational structure. It could be also due to the previous study's focus on small-scale road contractors.

5.3.5 Contractor's innovativeness

When it comes to innovation especially in matters of information and communication technology (ICT,) Kenya has been in the headlines for the right reasons. Indeed Ndemo (2015) stated that Kenya is a leader in Africa in ICT innovations. The author pointed out that the country has been on a stunning innovation journey in the recent

past. During that year, Kenya was ranked 85th worldwide based on the Global Innovation Index (GII) (WIPO, 2015). In the latest GII report, Kenya alongside India, Vietnam, and Moldova holds the record for being innovation achievers for ten consecutive years (WIPO, 2020). Among the areas in which the country excelled included research and development (R&D), use of ICTs, and organizational model creation. The government recently formed the Kenya National Innovation Agency (KENIA) to undertake the development and management of a dynamic national innovation system (KENIA, 2018).

However, such milestones seem not to be reflected in the practice of local contractors. The level of contractors' innovativeness was found to have a mean of 5.64. This was considered to be low. This is not new. The Kenyan Construction industry was found to be unable to effectively utilize and adopt current innovative construction technologies (Sagini et al., 2016). Olembo and Moronge (2016) asserted that the implementation of technological innovation in Kenyan road construction projects has been inadequate.

Mwika (2017) argued that one of the main reasons why Kenyan contractors lost out tenders to foreign countries was their reluctance in embracing current construction technologies and innovations. The study by Simiyu (2018) found out that the uptake of new technology by local contractors here in Kenya was very poor. Similarly, the same study also established the adoption of new methods of construction was also poor. However, these studies did not establish the level of innovativeness among local contractors in order to make statistical comparisons.

Interestingly, Otiti (2019) established the level of innovativeness among construction professional firms with a comparative mean of 9.24. Though some of the indicators used to measure innovation by the author were basic items such as internet adoption, email technology, web-based support technology, and computer-related designs, it can be said that the level of innovation among consultants is higher than that of contractors.

5.3.6 Employee performance

Though several studies have been done in the context of employee performance here in Kenya, the majority of them explore relationships existing among underlying variables. Kuruga (2017) sought to establish the influence of labor types on project performance. Lamka (2015) Njururi (2016), Mbati (2019), and Kemunto (2019) sought to establish the determinants of employee performance. These studies were not able to determine levels of employee performance.

The level of employee performance was found to be relatively high with a mean of 7.10. In a different study, Chonge (2017) reported the level of labor productivity to be comparatively at 6.42. Though the two concepts cannot be used interchangeably, to some extent, they mean the same thing. All the five indicators used to measure employee performance namely work quality, the effectiveness of communication, creativity and taking initiative, cooperation (level of team play), and acceptance and learning from feedback reported relatively high means. We can therefore conclude that the level of employee performance among Kenyan contractors is above average.

5.3.7 Clients' effectiveness

Since most of the contractor's business is project-based, the client plays a vital role in the former's operations. The effectiveness of a client is a measure of how well they play their role in ensuring the successful delivery of construction projects. Over the years, the client's role has evolved from that of a passive financier to an active participant and front-line management especially in procurement arrangements (Alharthi et al., 2014). Gwaya et al. (2014) asserted that clients play an instrumental role especially during the early stages of projects and that their input is vital to successful project execution.

No study was found to have measured the effectiveness of clients in the Kenyan construction industry. Though Gwaya et al. (2014) acknowledged the need to identify key parameters and establish the performance of clients, their research failed to do so. The focus of the research by Alsolaiman (2014) was on the factors influencing client involvement. The study by Chigangacha and Haupt (2017) on the South African construction industry only managed to establish the importance of various aspects of

client involvement. They did however find out that private clients are more involved in construction projects compared to public ones.

In this study, the effectiveness of clients was measured across the following areas; promptness in payment, selection of competent project consultants, timeliness in the appointment of project consultants, responsiveness to information requests and decisions, and acquisition of local authority permissions. The level of clients' effectiveness was found to be moderate with a mean of 6.52. This means that there is still a need for improvement. There have been accusations of clients not fully cooperating in the execution of projects. Kaniaru (2014) reported that some clients were responsible for delayed approvals, late signing of contracts, and delayed site handover and that they were the largest sources of variations either directly or indirectly through their appointed consultants.

The least performed role in this study was found to be prompt payment to contractors with a mean of 6.18. This is in tandem with previous studies which have reported delayed payment of interim and final certificates here in Kenya (Kenyatta et al., 2015). Elsewhere in South Africa, Chigangacha and Haupt (2017) also established that delays by clients to make payments to contractors had negative project consequences. This confirms that the problem is not unique to Kenya but is also manifested in other developing countries.

5.3.8 Suppliers' effectiveness

Despite late payments as reported by Simiyu (2018), the level of supplier effectiveness in this research was considered to be moderately high with a mean of 6.73. the performance in descending order among the various indicators was as follows; adherence to quality specifications (6.87), technical support for their installations (6.76), timeliness of communication (6.69), consistency of improvement of services (6.68), and timeliness of delivery (6.62). No study has been found to have measured the effectiveness of suppliers in the Kenyan construction industry. Though the study by Baki (2021) based on the Turkish construction industry did not determine the level of supplier effectiveness, it did establish the following descending order of importance

of supplier selection; product cost, on-time delivery, quality control, logistics costs, management commitment, and flexibility.

Assessment of supplier performance is essential in enlightening construction companies regarding improvement possibilities (Noorizadeh et al., 2019). The authors however note that little has been done to understand the efficiency of suppliers in construction projects. Indeed, Papadopoulos et al. (2016) noted that there was a need for contractors to apply performance measurement systems in evaluating their suppliers. Safa et al. (2014) further stated that supplier performance using criteria such as lead-time, price, and cash rebate was critical for the contractor. In light of the above, it is therefore important for local contractors to evaluate the performance of suppliers and subcontractors before and during service delivery. This will enable them to make informed decisions regarding the appointment or retention of the best-qualified suppliers and subcontractors.

5.3.9 Competition

The influx of foreign contractors especially Chinese in the local construction industry has caused disquiet among local contractors. The Kenyan construction industry is dominated by foreign contractors (CAK, 2017). The Competitions Authority of Kenya (CAK) through the Africa Competition Forum (ACF) reported that Kenyan construction firms have continuously complained about Chinese contractors' competitive advantage in both smaller-scale private sector contracts and large public infrastructure projects (ACF, 2019). The level of competition in the local construction industry is very high across all sizes of projects (Adero, 2020). For every large project underbid, it is always inevitable that one or more foreign contractors are involved. Sometimes the top contenders are foreign contractors with the local companies having little chance of winning. As such, the local contractors perceive the foreign firms as a threat (CAK, 2017). The study done by Nguku (2015) established that two of the leading threats facing the growth of local contractors were globalization and low entry barriers into the Kenyan market by international contractors. This allows easy entry of better equipped and superior contractors as competitors from the global market. In that study, the researcher advocated for the protection of local contractors from the

threat posed by such entry. However, this has been reported to hurt rather than to help local companies as seen in Japanese companies in the 1990s when the government decided to enforce protection in some industries (OECD, 2020).

Due to the challenges of measuring competition directly, this study established the extent of positive influence that competition from foreign contractors had on local contractors. The aspects considered included efficiency, quality, client satisfaction, innovativeness, and industry linkages. An overall mean of 6.95 meant that local contractors acknowledged that entry of foreign contractors in the local market was beneficial to their organizational performance. It is an indication that local contractors have embraced the positive impact globalization has had on the local construction industry. These findings are supported by the OECD (2020) which reported the following macro and micro-economic benefits of competition; economic growth, optimal use of resources, increased productivity, increased business opportunities, more jobs, adoption of new technologies, increased innovation, enhanced quality, and growth. In addition, Khemani (2007) and Moss and Alexander (2020) argued that competition increases resilience among players.

5.3.10 Government support

The level of government support was found to be very low with a mean of 4.795. Other than being a client, the government plays other major roles such as regulation and training of skilled personnel and construction professionals. Although the role of regulation was found to be the best performed with a mean of 5.62, this was still considered to be low in this research. Local contractors have been reported to rely to a great extent on borrowed funding to finance their operations. Nguku (2015) argued that the government has not done enough in prevailing upon financial institutions to reduce the interest rates on credit finance. Access to cheaper finance enables local contractors to undertake large construction projects with ease. Increase in volume of work coupled with cheaper funding results in increased profitability which has a positive influence on other dimensions of organizational performance as well. This results in enhanced organizational performance. The level of efficiency of procurement practices by the government was reported to be very low with a mean of

4.88. This could be attributed to the rampant corruption reported in the industry by Simiyu (2018) and Jin (2018). The provision of construction jobs was also reported to be low. This could be due to the earlier reported skewed award of construction contracts to foreign contractors.

5.3.11 Overall Level of the Determinants of Organizational Performance in Local Contractors in Kenya

The overall level of the determinants of organizational performance of local contractors was established by calculating the mean of the ten determinants. The overall level of these practices was established to have an RII of 0.6468. This is an indication that the environment in which local contractors operate is not at its optimum condition of promoting highly effective and efficient organizations. A lot remains to be done to promote a conducive environment where local contractors can thrive and compete favorably with their foreign counterparts. Internal factors (RII=0.6615) were found to perform better compared to external factors (RII=0.6248). This means that though both environments need improvement, external parties such as clients, suppliers, subcontractors, and government need to do more to increase their performance which will in return influence that of local contractors.

5.4 Relationships among Dimensions and Determinants of Organizational Performance

5.4.1 Correlations among the Dimensions of Organizational Performance

It would be expected that the various dimensions of organizational performance, both financial and non-financial, be related to each other. This is because, from a practical point of view, increased performance in one dimension is coupled with similar performance across almost all other dimensions either directly or indirectly through a ripple effect. For example, an increase in profitability results in increased growth, more financial stability, improved technical capability, and enhanced managerial capability. Improvement in technical capability can result in enhanced quality of products which leads to increased client satisfaction. Improved managerial capability can also lead to enhanced business efficiency.

This research established positive correlations among all studied dimensions of organizational performance. This supports the argument that an improvement in one is an improvement in all studied aspects of organizational performance. Simiyu (2018) reported positive relationships among financial, technical, and managerial capacities. Another study by Jin (2018) established the level of importance of technology, financial management, and leadership towards contractors' growth to have means of 4.67, 4.53, and 4.27 respectively when measured on a scale of 1 to 5. This indicates a very strong relationship between growth, technical capacity, and managerial capability. It has also been established that the level of financial capacity influences project quality (Asinza et al., 2016). In addition, Kasaya and Munjuri (2018) found out that employee involvement which is an indicator of employee satisfaction had an impact on their performance and by extension that of the organization. Kihoro (2020) further established that safety management practices were positively correlated to overall firm performance. The study by Ruto (2018) concluded that a firm's technical capacity affects overall performance through enhanced operational productivity and efficiency. Sunindijo et al. (2014) also linked improved client satisfaction with an increase in levels of profitability and growth. Client satisfaction improves the client retention rate and therefore reducing the cost of marketing and thus improving business efficiency. Thuku (2014) also found reward systems, an indicator of employee satisfaction, to be positively related to the organization's growth. From the foregoing, it is therefore important for local contractors to work towards improving all aspects of their operation as this will have the highest impact on their organizational performance through ripple effects amongst various dimensions.

5.4.2 Strategic planning practices versus Organizational Performance

This study established a strong positive statistically significant influence of strategic planning practices across the ten dimensions of organizational performance with values ranging from 0.753 (safety performance) to 0.900 (business efficiency). Well executed strategic planning has been associated with enhanced firm performance both in recent and aged researches. A study done on 36 companies by Thune and House (1970) established that formal planners outperformed their informal counterparts on all performance measures. Greenley (1986) observed that strategic planning possesses

intrinsic values and potential advantages which translate into enhanced organizational performance. The study by K'Obonyo and Arasa (2012) revealed a positive significant relationship between strategic planning and organizational performance where Pearson's correlation coefficient was 0.616 at $p<0.01$. Thuku (2014) established a positive relationship between strategy implementation and the growth of the organization. It is therefore obvious that a local contractor who engages in deliberate and effective strategic planning is bound to enhance their organizational performance.

5.4.3 Performance measurement practices versus Organizational Performance

The adoption of performance measurement systems has also been tipped to improve organizational performance. This research established a strong positive relationship between performance measurement and all the dimensions of organizational performance. Indeed, according to Koufteros et al. (2014), there is sufficient evidence to conclude that the use of performance measurement systems leads to improved capabilities within an organization, which then impact performance. Ndubai (2016) opined that to spur organizational performance enhancement, performance measurement must be undertaken. Mbua and Sarisar (2013) and Cheche and Muathe (2014) also pointed out that performance measurement was fundamental towards improved organizational performance. Summers and Hyman (2005) associate employee participation during performance measurement with increased organizational performance. Performance measuring systems ensure that local contractors cannot only evaluate but also monitor performance levels over some time. To avoid stagnant or negative growth, the company has no option but to implement improvement strategies that lead to enhanced organizational performance. Therefore, performance measurement is a crucial contributor to enhanced organizational performance.

5.4.4 Quality of service versus Organizational Performance

Results presented earlier in the chapter demonstrated a positive relationship between quality of service and the ten dimensions of organizational performance. Near similar results have been reported in previous studies. Though based in the education sector,

Nteere (2021) associated high quality of service with enhanced customer satisfaction. In the construction sector, Sunindijo et al. (2014) and Forsythe (2016) established that service quality is an important factor that influences client satisfaction. Izogo and Ogba (2015) also found out that service quality dimensions were significant predictors of client satisfaction. Client satisfaction has been established to be a dimension of organizational performance in this study. Unlike these previous studies which considered only one indicator of organizational performance, this study managed to establish the effect of quality of service on multiple facets drawn from both financial and non-financial aspects of organizational performance.

5.4.5 Organizational structure of the firm versus Organizational Performance

The firm's organizational structure was found to have a strong statistically significant influence on organizational performance ranging from 0.745 (safety performance) to 0.910 (business efficiency). Several studies have been done regarding organizational structures of firms. Chen and Huang (2007) established that decentralized and informal structures were associated with high performance. Germain (2008) noted that in a stable environment, a formal organizational structure has a positive impact on performance while in a dynamic environment, the effect is negative. Haid et al. (2010) noted that complex organizational structures often lead to ineffective implementation of the business strategy. A study by Yesil and Kaya (2013) found no relationship between organizational culture dimensions and a firm's financial performance.

Another study by Maduenyi et al. (2015) found a relationship between organizational structure and organizational performance though they did not explore the nature of the relationship. This study established that organizational performance was positively related to the following features of organizational structures; clarity of line of authority, flexibility, adequacy of delegation of authority, provision of stability and continuity, and documentation of the structure. Wolf (2013) asserted that an efficient organizational structure positively influences a firm's productivity and performance. Thompson (2017) viewed organization structure as an administrative factor that influences the firm's overall execution of its primary corporate activities. Adjei et al. (2019) associated efficient organization structures with improved business efficiency.

Here in Kenya, several studies have attempted to associate organizational structure with the organization's performance. Thuku (2014) established a positive relationship between organization structure and its growth. Ruto (2018) found out that organizational structure has a significant influence on the overall performance of firms in the construction sector. Similarly, Mwangi (2016) also established that organizational structure had a very high influence on the performance of road contractors. This seems to have remained constant since an old study by Bucha (1992) reported similar findings in the case of local contractors in general. However, unlike this study, all these previous studies did not measure the influence of firm's organizational structure on various dimensions of organizational performance.

5.4.6 Contractor's innovativeness versus Organizational Performance

Innovativeness is an important ingredient to improved organizational performance due to the vast benefits associated with enhanced innovation. Jin (2018) found such importance to have a mean of 4.67 when measured on a scale of 1 to 5. Varis and Littunen (2010) asserted that the main reason why organizations engage in innovativeness is to enhance organization performance. Improvements in products and processes lead to more efficient and profitable firms (Atalay et al., 2013). A study by Calantone et al. (2002) established a positive correlation between innovativeness and firm performance. A longitudinal study focusing on different industries in the U.S.A established that an increased number of patents and product innovations had a significant influence on firm performance (Artz et al., 2010). In a different study, market and product innovation were also found to impact positively on firm performance (Therrien et al., 2011). Though these previous studies were not undertaken in the construction industry context, the findings of this research were not any different. Contractor's innovativeness was found to affect all the dimensions of organizational performance positively with values ranging from 0.743 (safety performance) to 0.910 (business efficiency). Local contractors therefore have no choice but to be innovative in their operations.

5.4.7 Employee performance versus Organizational Performance

It is expected that employee performance ought to be positively related to organizational performance. A study by Jones and Kato (2005) established that employee involvement produces improved enterprise performance through an improved discretionary effort by workers. Bakotić (2016) did extensive research on 40 Croatian companies involving 5806 employees in the process. The study found a stronger connection between job satisfaction and organizational performance than vice versa. The implication of this was that job satisfaction influences organizational performance and not vice versa. This relationship was found to be positive. Kuruga (2017) also associated high levels of employee performance with enhanced performance at the firm level. Adekunle and Akpa (2021) established that employee empowerment has a positive influence on the organization's profitability.

Here in Kenya, Jin (2018) found out that recruitment methods have an importance of 3.87 (on a scale of 1 to 5) towards a contractor's growth. Recruitment methods are crucial in identifying and hiring the best-qualified personnel. This in turn affects the performance of employees. Therefore, it can be argued that employee performance is a significant factor in determining the organizational performance of contractors locally. Hence it was no surprise that employee performance was found to have a highly strong and statistically significant influence on all the dimensions of organizational performance.

5.4.8 Clients' effectiveness versus Organizational Performance

Clients being the project initiators and financiers play a significant role in the delivery of projects executed by contractors. Their commitment is vital to the success of projects and by extension that of contractors. According to Knutsson and Thomasson (2014), the public client is a major procurer with the ability to influence markets. The findings of this research reported a positive relationship between client effectiveness and organizational performance. Kaniaru (2014) reported that client interference had a negative impact on efficient project delivery. Gwaya et al. (2014) pointed out that the type and extent of clients' cooperation plays an important role in the success or failure of projects. The researchers developed a model which estimated the

contribution of the client in the performance of construction projects to be at 18%; though this did not include the clients' contribution through project consultants. Alharthi et al. (2014) added that clients have a great influence on project delivery. Studies by Alsolaiman (2014) and Sivunen (2015) established that effective involvement by clients leads to project success. However, these previous studies were project-based rather than firm-based.

The study by Mwangi (2016) reported that insufficient client support resulted in disputes, litigation, cost overruns, and even project abandonment by road contractors in Kenya. They also established that delayed payments was the leading factor in the failure of contractors to deliver their road construction projects on time here in Kenya. This is an indication that indeed client effectiveness is directly related to organizational performance. Indeed the study by Jin (2018) established the level of importance of client financial ability towards contractors' growth to have a mean of 4.67 measured on a scale of 1 to 5. This demonstrates the significance of clients' effectiveness towards the organizational performance of local contractors here in Kenya.

5.4.9 Suppliers' effectiveness versus Organizational Performance

Suppliers including those of material and equipment, and subcontractors play an important role in the operations of contractors. Their performance is directly proportional to that of projects they supply to and by extension the contractors handling such projects. This was confirmed in this research. Zhao et al. (2019) and Meng (2012) asserted that supplier selection affects the performance of a project directly and that multiple criteria should be used in the selection process. Ho et al. (2010) and Cengiz et al. (2017) also supported the idea of a multi-criteria selection approach as opposed to the traditional cost-based approach. Taherdoost and Brard (2019) on the other hand observed that the supplier selection process plays a crucial role in the success of any organization. Arslan et al. (2008) also noted that the selection of the most qualified subcontractor is highly critical for overall project performance. Munene (2017) established that procurement management practices by contractors in kenya influences their organizational performance. Cristea and Cristea

(2017) highlighted the following benefits of suitable supplier selection to an organization; decreased purchasing costs, enhanced supply chain performance, improves end-user satisfaction, and improved market competitiveness. Mirawati et al. (2015) observed that the level of subcontracting in some projects was as high as 85% and therefore the success or failure of the projects relied heavily on the subcontractor performance. These statements shows criticality of the supplier and subcontractor selection process towards the success of the contractor.

During the project execution, some aspects are important in ensuring suppliers and subcontractors perform highly. Adoption of a long-term approach towards supplier relationships is beneficial for the contractor (Frödell, 2011). High-involvement relationships between contractors and suppliers have been also noted to lead to improved service delivery by the latter (Nikinosheri, 2016). Further, Bäckstrand and Fredriksson (2020) observed that suppliers who are continuously on site have an advantage when it comes to information-gathering which helps them enhance their performance towards contractors. This calls for suppliers to be active participants in projects where they are supplying their products. This ultimately leads to the enhanced organizational performance of local contractors due to the established positive relationship. It is therefore imperative that local contractors associate themselves with highly effective suppliers. As Noorizadeh et al. (2019) pointed out, augmenting the relationship and increasing the volume of transactions with high-performance suppliers helps contractors to move towards high-performance construction.

5.4.10 Competition versus Organizational Performance

As discussed earlier, local contractors in Kenya have embraced the aspect of globalization and are viewing foreign competition from a positive perspective. The presence of international contractors in the economy of a developing country has been reported to have its benefits. Gaur (2012) asserted that competitors are spurred to increase productivity, reduce costs, implement new organizational methods, adopt new technologies, and increase efficiency. Morton (2020) further underlined the importance of competition towards improved quality, choice, and innovation. Instead of seeing foreign contractors as business enemies and seeking protection from them,

local contractors should seek to learn new innovative ways of being effective and efficient. That way, they will be able to compete fairly with their foreign counterparts.

5.4.11 Government support versus Organizational Performance

Government's actions have been found to influence the organizational performance of local contractors positively. Increased provision of construction jobs, effective regulation of the industry, proper skill development, efficient procurement practices, and financial support leads to the enhanced organizational performance of local contractors. Though no previous studies were found to link government support with organizational performance, the study by Ogogo et al. (2019) showed a statistically significant positive relationship between government regulations and the performance of public projects in Kenya.

5.4.12 Overall Effect of Determinants on Organizational Performance

The structural model demonstrated without a doubt that there was a near-perfect-linear positive relationship between organizational performance and its determinants, and that most of the variation in the former is explained by the latter. However, it fell short in measuring the extent to which the determinants predict organizational performance.

5.5 Model for Predicting the Level of Organizational Performance of Local Contractors

Two approaches were employed in formulating the model, confirmatory and stepwise. In the former, all determinants were included while in the latter, only the statistically significant determinants were included in the model. Based on the confirmatory regression model, the ten determinants accounted for 84.0% of the variation in organizational performance. However, the stepwise regression model revealed that five determinants namely; organizational structure of the firm, supplier effectiveness, strategic planning practices, contractor's innovativeness, and quality of service accounted for 83.7% of the variation in organizational performance. This meant that the five excluded determinants only accounted for 0.3% of the variation in organizational performance. While the ten determinants in the confirmatory regression model had an adjusted R^2 of 83.3%, the five included determinants in the stepwise regression model had an adjusted R^2 of 83.4%. The confirmatory regression

model had a predictive accuracy of 89.4% compared to 89.5% of the stepwise regression. This indeed confirms the earlier assertion that the stepwise method provides a better prediction and explanation while achieving parsimony at the same time.

Though both models demonstrated a very high predictive capability of organizational performance by its determinants, therefore, underlining the importance of the factors included in the study, it is evident from the stepwise regression model that much of the prediction can only be attributed to five determinants.

5.6 Hypothesis Testing

In the first chapter, it was hypothesized that there was a statistically significant relationship between organizational performance and its determinants. Later in the second chapter, ten sets of sub-hypotheses were formulated from the main hypothesis. These ten sub-hypotheses were tested using the ten path diagrams used to evaluate the relationships between each of the determinants with organizational performance. The hypothesized relationships were found to be statistically significant. The main research hypothesis was tested using the structural equation model proposed for establishing the influence of the combined determinants on organizational performance. Similarly, organizational performance was found to be significantly (statistically) related to its determinants.

5.7 Chapter Summary

The level of organizational performance among local contractors was described as moderate. The internal and external environment in which local contractors operate was also found not to be optimal. A statistically significant strong positive relationship was found to exist between organizational performance and its determinants. A model demonstrating the high predictive ability of the determinants on organizational performance was presented. Having demonstrated that indeed the organizational performance of local contractors here in Kenya can be enhanced, the next chapter presents a framework of how such can be achieved.

CHAPTER SIX
A FRAMEWORK FOR ENHANCING ORGANIZATIONAL PERFORMANCE OF LOCAL CONTRACTORS

6.1 Introduction

The aim of this study was to create a holistic and multidimensional framework for enhancing the organizational performance of local contractors. This chapter presents the framework; its formulation, underlying principles, validation, benefits, and limitations. Before any improvement can be undertaken, it is important to first establish the current level of organizational performance and therefore the formulated framework has been presented in two parts. The first part of the framework is a detailed breakdown of assessing the current level of organizational performance, while the second part, which also incorporates a summarized version of the first part, is a set of processes to be undertaken to enhance the organizational performance.

6.2 Rationale of the Framework

A framework is a reusable design of a system (or part of it) that is represented by interactive abstract components in a skeletal form that can be customized by the user (Fayad et al., 1999). It is a structure or system used for the realization of a defined goal or result (Verbrugge, 2019). Paul and Jim (2005) define it as 'the active employment of particular sets of recommendations'. It is an abstraction of purposively arranged and interrelated concepts in which a system or structure providing generic functionality can be selectively modified by the addition of purposely developed constituents thereby providing application-specific features. It is a logically organized structure of ideas and concepts. Though the structure provides much of the processes required, it is not completely detailed and is somewhat loose in the sense that it leaves room for other tools and practices to be incorporated.

The formulated framework is anchored on three areas of management thought; scientific management, strategic management, and project management. These three aspects are derived from the theories discussed in chapter two.

6.2.1 Scientific Management

Scientific management is based on the idea of employing scientific methods in the workplace. Such methods stretch from recruitment through training to evaluation of performance in a bid to maximize effectiveness and efficiency. In the formulated framework, scientific management is demonstrated not only in the desire for improved organizational effectiveness and efficiency but also in the methods used to evaluate such performance. Well-laid procedures have been described to assess the performance of any given local contractor. Tools for measuring both financial and non-financial dimensions have not only been provided but also operationalized. Aspects of scientific management are seen in the first and last phases of the framework.

6.2.2 Strategic Management

This is the management of a firm's resources to achieve set goals and objectives. It not only involves analyzing both the organization's competitive environment and internal structures but also applicable strategies for achieving its goals. The concept of SWOT analysis has been employed in the formulated framework on the premise that through evaluating its strengths and weaknesses and adapting to the dynamic construction industry by exploiting opportunities and mitigating against threats, local contractors can be able to enhance their organizational performance. Strategic management is evident in the second and third phases of the framework.

6.2.3 Project Management

Project management is synonymous with the running of contracting companies. This is because contractors are Project-Oriented Companies (POCs) also known as Project-Based Organizations (PBOs). All their operations are based on temporary endeavors with a defined start and finish, most of the time handling multiple projects simultaneously. As such, the adopted corporate structure should support both management of single projects and the network of projects (Gareis, 1991).

However, in the formulated framework, a project is treated as the endeavor by a local contractor to enhance their organizational performance. Such is referred to as a *change project*. The change management process should be defined in terms of scope and

timelines, and resources allocated including personnel. A project manager should be appointed to plan and coordinate the entire process. The process is repeated every cycle of implementing the broader framework.

The framework seeks to answer the following nine (9) important questions;

(a) What to measure?
(b) How to measure?
(c) Who to carry out the measurement?
(d) Where to get the data from?
(e) When to measure?
(f) How to analyze?
(g) How to interpret?
(h) How to improve?
(i) What are the desired results?

6.3 Underlying Principles of the Framework

The proposed framework for enhancing organizational performance is anchored on the following underlying principles.

a) Organizational performance is a multidimensional concept that is capable of being measured using objective performance indicators.
b) The contractor's internal processes could be sources of strength or weaknesses. The former must be enhanced while the latter is resolved.
c) The contractor exists within an external environment consisting of opportunities to be exploited and threats to be avoided.
d) Evaluation and enhancement of organizational performance is a cyclic process that should never stop as long as the contractor is in business
e) The needs of the internal stakeholders (e.g. employees) are equally important as those of external stakeholders (e.g. clients)

6.4 Design and Development of the Framework

In this study, the framework developed starts with a baseline measurement of the organizational performance followed by a strategic plan. The model adopted for

strategic planning was the SWOT analysis. A change management plan is then effected followed by an evaluation to assess the achieved results. The framework adopts a holistic approach whereby all dimensions of organizational performance together with their determinants are included.

The process of enhancing the organizational performance of local contractors can be summarised in 4 phases which can be further broken down into 11 main steps as follows;

I. Phase I: Organizational performance measurement
    (1) Step 1: Evaluate the level of organizational performance
        (a) Step 1.1: Identification of tools
        (b) Step 1.2: Definition of the tools
        (c) Step 1.3: Appointment of performance evaluation and monitoring officer
        (d) Step 1.4: Establish frequency of evaluation
        (e) Step 1.5: Data collection
        (f) Step 1.6: Calculation and interpretation of measures
        (g) Step 1.7: Data analysis/Evaluate performance
        (h) Step 1.8: Presentation of results

II. Phase II: SWOT Analysis
    (2) Step 2: Establish strengths
    (3) Step 3: Understand weaknesses
    (4) Step 4: Establish opportunities
    (5) Step 5: Understand threats

III. Phase III: Organizational Change Management Action Plan
    (6) Step 6: Understand change
    (7) Step 7: Plan change
    (8) Step 8: Implement change
    (9) Step 9: Communicate change

IV. Phase IV: Effects
    (10) Step 10: Evaluate effects

(11) Step 11: Repeat the process

The four phases and 11 steps have been presented in Figures 6.1 and 6.2.

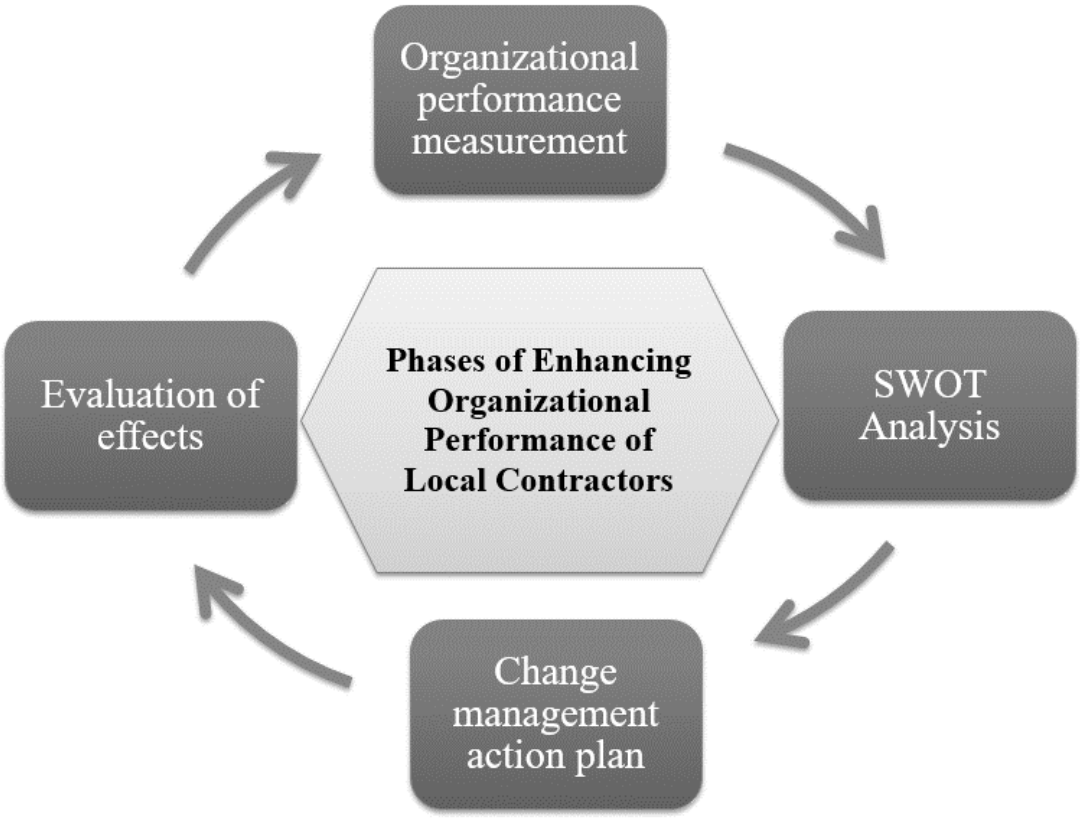

Figure 6.1: Phases for Enhancing the Organizational Performance of Local Contractors in Kenya
Source: (Author, 2021)

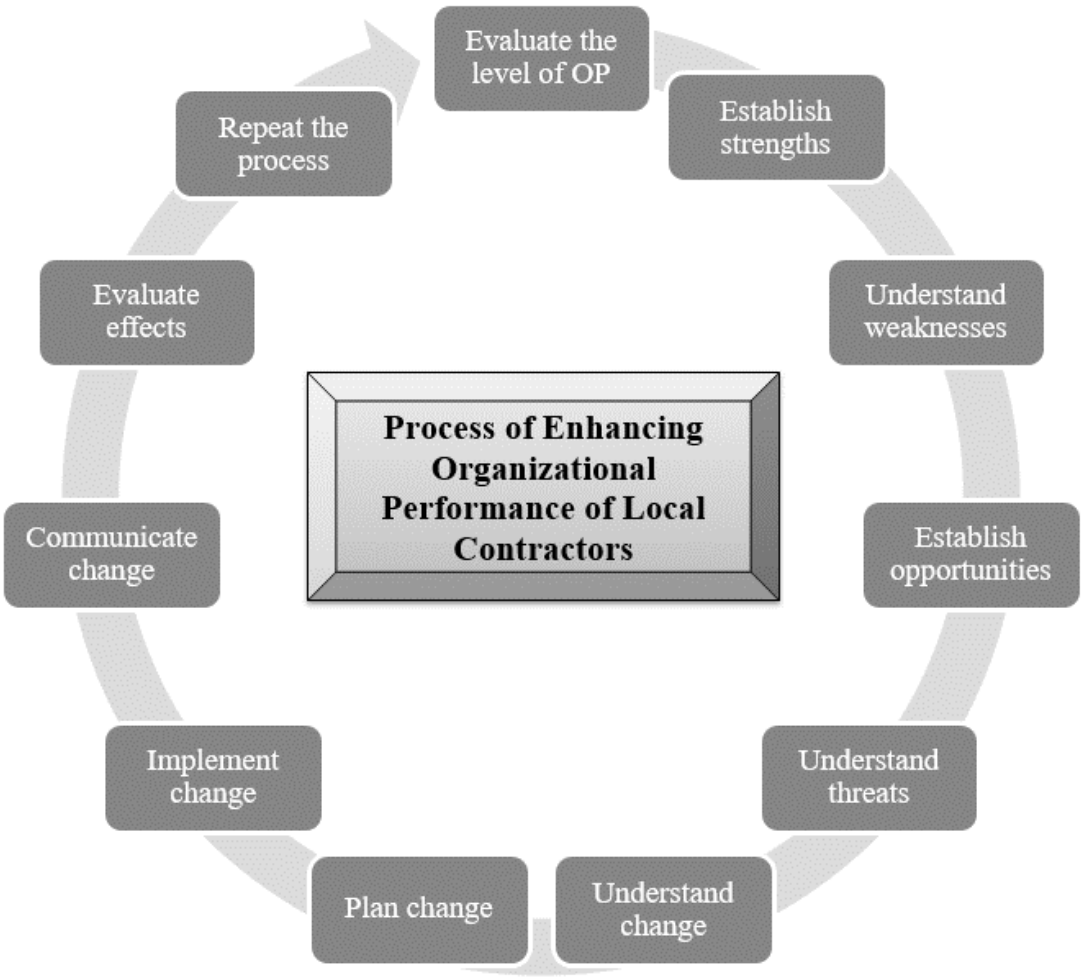

Figure 6.2: Steps towards Enhancing the Organizational Performance of Local Contractors in Kenya

Source: (Author, 2021)

6.4.1 Phase I: Evaluation of Organizational Performance

Improvement can only be achieved when current performance levels have been established. It is for this reason that the first step towards enhancing organizational performance in local contractors is the evaluation of the current level of performance. The process of measuring performance is very crucial to the company and can be justified as follows;

i) A reliable source in determining if the company's existing system is working effectively and efficiently
ii) Increasing demand for transparency from prospective clients
iii) Establish a baseline through which future performance can be gauged

iv) Enable decisions to be made based on tangible evidence
v) Allow comparison of performance across office branches
vi) Demonstrate that improvements can be brought about by changes
vii) Monitor and recognize enhanced performance

Objective measures are used in the evaluation of organizational performance. Since challenges such as confidentiality or data incompatibility issues are not encountered when the performance evaluation is within the company, subjective/perceptual measures are to be avoided due to their consistency and reliability concerns.

Though the first phase consists of only one major step, it comprises of eight minor steps which are involved in the process of evaluating the existing organizational performance of local contractors. These include;

6.4.1.1 Step 1.1: Identification of tools

Organizational performance is usually categorized into two major groups; financial and non-financial performance. Dimensions falling under the first category include profitability, business efficiency, financial stability, and growth as shown in Figure 6.3. Those falling under the non-financial category include managerial capability, employee satisfaction, client satisfaction, safety performance, technical capability, and quality of products as shown in figure 6.4. 50 objective measures (22 financial and 28 non-financial) have been proposed in this framework for evaluating the contractor's organizational performance.

Figure 6.3: Financial Performance of Local Contractors in Kenya
Source: (Author, 2021)

Figure 6.4: Non-financial Performance of Local Contractors in Kenya
Source: (Author, 2021)

The first step towards measurement is identifying the tools or measures to be used in the process. The following tools (Tables 6.1 and 6.2) have been proposed for evaluating each of the ten dimensions of organizational performance. Most of the measures have been identified from literature review while others have been formulated by the researcher as indicated. The company is free to include all or some

of the discussed measures. It may even formulate new measures outside the ones suggested.

Table 6.1: Measurement Tools for Evaluating Financial Performance of a Company

No.	Dimension	Measurement tools	Sources
1	Profitability:	(a) Net income; (b) Gross profit margin; (c) Operating profit margin; (d) Net profit margin; (e) Return on assets; (f) Return on capital employed	(Murphy et al., 1996), (Santos & Brito, 2012)
2	Business efficiency:	(a) Asset turnover; (b) Employee output per given time; (c) Client acquisition cost; (d) Gross revenue per employee; (e) Net profit per employee	(Carton, 2004), (Spacey, 2017)
3	Financial stability:	(a) Debt (leverage) ratio; (b) Working capital; (c) Quick ratio; (d) Current ratio; (e) Times-interest-earned ratio; (f) Cash ratio	(Ozili, 2020), (Myšková & Hájek, 2017)
4	Growth:	(a) Assets; (b) Profitability; (c) No. of clients; (d) Annual revenue; (e) No. of employees	(Murphy et al., 1996), (Davidsson et al., 2005)

Source: (Author, 2021)

Table 6.2: Measurement Tools for Evaluating Non-financial Performance of a Company

No.	Dimension	Measurement tools	Sources
1	Managerial capability:	(a) Academic qualification of directors; (b) Professional experience of directors (number of years in practice); (c) Percentage growth in assets during the current regime of directors; (d) Percentage growth in annual revenue in the current regime of directors; (e) Percentage growth in profitability during the current regime of directors	(Author, 2021), (Khatun et al., 2014), (DiTommaso et al., 2017)
2	Technical capability:	(a) Academic qualification of staff; (b) Professional experience of staff (number of years in practice); (c) Total no. of years staff have been with the firm; (d) Monetary value of plant and equipment	(Author, 2021), (Park & Shin, 2017), (R. Dave et al., 2017)
3	Quality of products:	(a) Number of defects (snag list); (b) Cost of rework during construction; (c) Rework factor; (d) Cost of repairs during defects liability period	(Author, 2021), (Hajjat & Hajjat, 2014)

No.	Dimension	Measurement tools	Sources
4	Safety performance:	(a) Number of accidents per number of employees; (b) Value of H&S equipment per employee; (c) Academic qualification of H&S officer; (d) Professional experience of H&S officer; (e) Average number of years H&S officer has been with the firm	(Author, 2021), (Hatush, 1996), (University of South Australia, 2017)
5	Client satisfaction:	(a) Client retention rate; (b) New client retention rate; (c) No. of complaints; (d) Average cost overrun; (e) Average time overrun	(Rahman & Alzubi, 2015), (Santos & Brito, 2012)
6	Employee satisfaction:	(a) Employee turnover; (b) Number of promotions per year; (c) Number of complaints by staff; (d) Average remuneration of the workforce; (e) Percentage increase in remuneration of the workforce	(Author, 2021), (Khatun et al., 2014), (Santos & Brito, 2012), (Mwebia, 2018)

Source: (Author, 2021)

6.4.1.2 Step 1.2: Definition of the tools

The second step in the evaluation of organizational performance is the operationalization of adopted measures. This involves the provision of both conceptual and operational definitions. Though different contractors may measure the indicators in a slightly different way, the following formulae provided on Tables 6.3-6.12 apply to all contractors irrespective of their category or class.

Table 6.3: Operationalization of Tools for Measuring Profitability

No.	Tool	Conceptual definition	Operational definition
(a)	Net income	Total revenue of the company minus all expenses including cost of production, general, administrative and operating expenses, taxes, interests and depreciation	$Net\ Income = Total\ Revenue - Total\ Expenditure$
(b)	Gross profit margin	Percentage of revenue which exceeds the cost of goods sold	$Gross\ Profit\ Margin = \frac{Revenue - Cost\ of\ Sales}{Revenue} \times 100$
(c)	Operating profit margin	It is a profitability ratio that determines the percentage of total revenues that is made up by operating income	$Operating\ Profit\ Margin = \frac{Operating\ Income}{Revenue} \times 100$
(d)	Net profit margin	It is the ratio of net profits to revenue expressed as a percentage	$Net\ Profit\ Margin = \frac{Net\ Income}{Revenue} \times 100$
(e)	Return on assets	It is a measure of the net income produced by the company's total assets in a given period	$Return\ on\ Assets = \frac{Net\ Income}{Assets}$
(f)	Return on capital employed	It is a measure of the company's efficiency in generating profits from its employed capital	$Return\ on\ Investment = \frac{Net\ Operating\ Profit}{Employed\ capital}$

Source: (Author, 2021)

Table 6.4: Operationalization of Tools for Measuring Business Efficiency

No.	Tool	Conceptual definition	Operational definition
(a)	Asset turnover	It is a measure of the company's ability to generate revenue from its assets	$Asset\ Turnover = \frac{Revenue}{Average\ Assets}$
(b)	Employee productivity	It is an employee's output per given time in a certain trade	$= \frac{Quantity\ of\ work\ done\ by\ employee}{Time\ taken\ to\ accomplish\ task}$
(c)	Client acquisition cost	It is the total expenditure incurred when a company acquires a new client	$= \sum All\ Expenses\ incurred\ in\ acquiring\ new\ client$

No.	Tool	Conceptual definition	Operational definition
(d)	Gross revenue per employee	It is a measure of the company's ability to generate revenue from its employees	$= \frac{Total\ Revenue}{Number\ of\ Employees}$
(e)	Net profit per employee	It is a measure of the company's ability to generate profits from its employees	$= \frac{Net\ profit}{Number\ of\ Employees}$

Source: (Author, 2021)

Table 6.5: Operationalization of Tools for Measuring Financial Stability

No.	Tool	Conceptual definition	Operational definition
(a)	Debt (leverage) ratio	It is the proportion of the company's assets which is financed by debt	$Debt\ ratio = \frac{Total\ debt}{Total\ assets}$
(b)	Working capital	It is the difference between the company's current assets and its current liabilities	$Working\ capital = Current\ Assets - Current\ Liabilities$
(c)	Quick ratio	ratio of readily available short-term financial resources which can be used to meet short term financial obligations	$= \frac{Cash + Accounts\ Receivable + Other\ Easily\ Liquidated\ Assets}{Current\ Liabilities}$
(d)	Current ratio	It is a liquidity ratio which measures the company's ability to pay short term obligations (within one year)	$Current\ Ratio = \frac{Total\ Current\ Assets}{Total\ Current\ Liabilities}$
(e)	Times-interest-earned ratio	It is a measure of the company's ability to meet its debt obligations based on its current income	$TIE\ Ratio = \frac{Earnings\ Before\ Interest\ and\ Taxes}{Interest\ Expense}$

No.	Tool	Conceptual definition	Operational definition
(f)	Cash ratio	It is a measure of a firm's ability to settle its current liabilities using only cash and cash equivalents.	$Cash\ Ratio = \frac{Cash + Cash\ Equivalents}{Total\ Current\ Liabilities}$

Source: (Author, 2021)

Table 6.6: Operationalization of Tools for Measuring Growth

No.	Tool	Conceptual definition	Operational definition
(a)	Assets	Percentage growth in the value of assets in a given period of time	$= \frac{New\ Assets - Old\ Assets}{Old\ Assets} \times 100$
(b)	Profitability	Percentage growth in profit in a given period of time	$= \frac{New\ Profit - Old\ Profit}{Old\ Profit} \times 100$
(c)	No. of clients	Percentage growth in the number of clients in a given period of time	$= \frac{New\ No.of\ Clients - Old\ No.of\ Clients}{Old\ No.of\ Clients} \times 100$
(d)	Revenue	Percentage growth in annual revenue in a given period of time	$= \frac{New\ Revenue - Old\ Revenue}{Old\ Revenue} \times 100$
(e)	Number of employees	Percentage growth in the number of employees in a given period of time	$= \frac{New\ No.of\ Employees - Old\ No.of\ Employees}{Old\ No.of\ Employees} \times 100$

Source: (Author, 2021)

Table 6.7: Operationalization of Tools for Measuring Managerial Capability

No.	Tool	Conceptual definition	Operational definition
(a)	Academic qualification of directors	Degree to which the top leadership is qualified academically	Total points for all directors based on the following criteria; PhD=5 points, Masters=4 points, Undergraduate Degree/HND=3 points, Diploma=2 points, and Certificate=1 point

No.	Tool	Conceptual definition	Operational definition
(b)	Professional experience of directors	Degree to which the top leadership is qualified professionally	$= \sum No. of\ years\ in\ practice\ amongst\ the\ directors$
(c)	% growth in assets during current regime	Rate of growth in assets during the period the current directors have been in charge	$= \frac{New\ Assets - Old\ Assets}{Old\ Assets} \times 100$
(d)	% growth in annual revenue during current regime	Rate of growth in annual revenue during the period the current directors have been in charge	$= \frac{New\ Revenue - Old\ Revenue}{Old\ Revenue} \times 100$
(e)	% growth in profitability during current regime	Rate of growth in profitability during the period the current directors have been in charge	$= \frac{New\ Profit - Old\ Profit}{Old\ Profit} \times 100$

Source: (Author, 2021)

Table 6.8: Operationalization of Tools for Measuring Technical Capability

No.	Tool	Conceptual definition	Operational definition
(a)	Academic qualification of staff	Degree to which the staff are qualified academically	Total points for all directors based on the following criteria; PhD=5 points, Masters=4 points, Undergraduate Degree/HND=3 points, Diploma=2 points, and Certificate=1 point
(b)	Professional experience of staff	Degree to which the staff are qualified professionally	$= \sum No. of\ years\ in\ practice\ amongst\ the\ staff$
(c)	Total no. of years staff have been with the firm	Total duration of time during which the staff have been with the contractor	$= \sum No. of\ years\ the\ staff\ have\ been\ with\ the\ contractor$

No.	Tool	Conceptual definition	Operational definition
(d)	Monetary value of plant and equipment	Total monetary value of all the plant and equipment owned by the contractor	$= \sum Monetary\ value\ of\ Plant\ and\ Equipment$

Source: (Author, 2021)

Table 6.9: Operationalization of Tools for Measuring Quality of Products

No.	Tool	Conceptual definition	Operational definition
(a)	No. of defects	Degree of lack of compliance towards design specifications	$= \sum No.\ of\ defects\ identified\ in\ a\ given\ time$
(b)	Cost of rework during construction	Costs associated with lack of compliance towards design specifications during the period of construction	$= \sum Costs\ associated\ with\ rework$
(c)	Rework factor	Ratio of cost of rework to the cost of construction	$= \frac{Total\ direct\ cost\ of\ field\ rework}{Actual\ construction\ phase\ cost}$
(d)	Cost of repairs during defects liability period	Costs associated with lack of compliance towards design specifications during defects liability period	$= \sum Costs\ associated\ with\ repairs$

Source: (Author, 2021)

Table 6.10: Operationalization of Tools for Measuring Safety Performance

No.	Tool	Conceptual definition	Operational definition
(a)	No. of accidents per no. of employees	Degree of lack of compliance towards safety regulations and standards	$= \frac{Number\ of\ accidents\ in\ a\ given\ time}{Number\ of\ workers\ in\ that\ given\ time}$
(b)	Monetary value of H&S equipment per employee	Level of financial support by the top management towards safety compliance	$= \frac{Cost\ of\ H\&S\ equipment\ in\ a\ given\ time}{Number\ of\ workers\ in\ that\ given\ time}$

No.	Tool	Conceptual definition	Operational definition
(c)	Academic qualification of H&S officer(s)	Degree to which the H&S officer is qualified academically	Total points for the H&S officers based on the following criteria; PhD=5 points, Masters=4 points, Undergraduate Degree/HND=3 points, Diploma=2 points, and Certificate=1 point
(d)	Professional experience of H&S officer(s)	Degree to which the H&S officer is qualified professionally	$= \sum No. of\ years\ in\ practice\ amongst\ the\ H\&S\ staff$
(e)	No. of years H&S officer(s) has been with the firm	Total duration of time during which the H&S officer has been with the contractor	$= \sum No. of\ years\ the\ H\&S\ staff\ have\ been\ with\ the\ contractor$

Source: (Author, 2021)

Table 6.11: Operationalization of Tools for Measuring Client Satisfaction

No.	Tool	Conceptual definition	Operational definition
(a)	Client retention rate	Rate at which the contractor retains clients	$= \frac{Number\ of\ repeated\ clients}{Total\ number\ of\ clients} \times 100$
(b)	New client retention rate	Rate at which the contractor retains new clients	$= \frac{Number\ of\ new\ repeated\ clients}{Total\ number\ of\ clients} \times 100$
(c)	No. of complaints	Level of dissatisfaction of clients towards the contractor's services	$= \sum No. of\ complaints\ in\ a\ given\ time$
(d)	Average cost overrun	Extent to which the actual cost of the contractor's projects exceed their budget	$= \frac{Actual\ cost - Projected\ cost}{Projected\ cost} \times 100$
(e)	Average time overrun	Extent to which the actual duration of the contractor's projects exceed their schedule	$= \frac{Actual\ \ duration - Projected\ \ duration}{Projected\ duration} \times 100$

Source: (Author, 2021)

Table 6.12: Operationalization of Tools for Measuring Employee Satisfaction

No.	Tool	Conceptual definition	Operational definition
(a)	Employee turnover	Rate at which employees leave the company in a given period of time	$= \frac{No.\,of\ employees\ who\ left}{Average\ no.\,of\ employees} \times 100$
(b)	No. of promotions per year	Level of employee satisfaction/Rate at which employees are promoted in a given period	$= \sum No.\,of\ employees\ promoted\ in\ a\ year$
(c)	No. of complaints by staff	Level of employee dissatisfaction (preferably evaluated by external HR company)	$= \sum No.\,of\ complaints\ raised\ by\ staff\ in\ a\ given\ time$
(d)	Average remuneration of the workforce	Level of financial gain by the staff	$= \frac{Total\ remuneration}{No.\,of\ employees}$
(e)	% increase in remuneration of the workforce	Rate at which staff remuneration grows in a given period of time	$= \frac{New\ \ remuneration - Old\ \ remuneration}{Old\ remuneration} \times 100$

Source: (Author, 2021)

6.4.1.3 Step 1.3: Appointment of performance evaluation and monitoring officer

The contractor needs to appoint a competent person to undertake performance evaluation, monitoring, and reporting. While their responsibility should be separated from other duties, it is still possible for this role to be assigned to an existing staff who is not heavily loaded with other responsibilities.

6.4.1.4 Step 1.4: Establish frequency of evaluation

While it is generally recommended that performance evaluation is conducted at short intervals, it is sometimes impractical and costly to do so. Therefore this research would recommend the shortest possible interval which can yield meaningful data. Since most contractors report their financial position annually, it is only reasonable to measure the overall organizational performance yearly. However, the process of improvement should be undertaken daily.

6.4.1.5 Step 1.5: Data collection

Sources of data need to be identified. Sources of data are supposed to be not only reliable but also consistent if performance is to be compared over time. This means that data should be obtained from similar sources every time evaluation of performance is repeated.

Data for the following financial measures can be obtained from the company's *financial reports* and *staff records*: Net income; Gross profit margin; Operating profit margin; Net profit margin; Return on assets; Return on capital employed; Asset turnover; Employee productivity; Client acquisition cost; Gross revenue per employee; Net profit per employee; Debt (leverage) ratio; Working capital; Quick ratio; Current ratio; Times-interest-earned ratio; Cash ratio; Growth in Assets; Growth in Profitability; Growth in Number of clients; Growth in Revenue; and Growth in Number of employees.

The following data for measuring managerial capability may be obtained from *staff records* and *financial reports*: Academic qualification of directors; Professional experience of directors; Percentage growth in assets during current regime; Percentage growth in annual revenue during current regime; and Percentage growth in profitability during the current regime. The following data for measuring technical

capability may be obtained from *financial reports* and *asset inventory*: Academic qualification of staff; Professional experience of staff; Total number of years staff have been with the firm; and Monetary value of plant and equipment.

Data for the following quality of products measures can be obtained from *project financial records*, *defects register*, and *snag lists*: Number of defects; Cost of rework during construction; Rework factor; and Cost of repairs during defects liability period. The following data for measuring safety performance may be obtained from *accidents register*, *staff records,* and *assets inventory*: Number of accidents per number of employees; monetary value of H&S equipment per employee; Academic qualification of H&S officer(s); Professional experience of H&S officer(s); and No. of years H&S officer(s) has been with the firm

The following data for measuring client satisfaction may be obtained from *clients' inventory, complaints' register,* and *project financial records*: Client retention rate; New client retention rate; Number of complaints; Average cost overrun; and Average time overrun. The following data for measuring employee satisfaction may be obtained from *staff records,* and *complaints register*: Employee turnover; Number of promotions per year; Number of complaints by staff; Average remuneration of the workforce; and Percentage increase in remuneration of the workforce.

6.4.1.6 Step 1.6: Calculation and interpretation of measures

Performance measures mustn't be just calculated but also interpreted accurately. Calculations are based on the formulae provided earlier while the interpretation of results has been presented in Appendices 18a and 18b. Interpretation of the results should be done in such a way that the implications for the company are well understood.

6.4.1.7 Step 1.7: Data analysis/Evaluate performance

It is during the first attempt of evaluation of the company's organizational performance that baseline data is generated. Since there is no company history for comparing results, the company may opt to benchmark with perceivably well-performing contractors. This will allow them to highlight the areas of improvement. However, since many companies would not be willing to share such confidential

information, the contractor may just decide to use the results as the baseline through which future performances can be compared. It is in these future evaluations that the contractor's progress can be further evaluated.

6.4.1.8 Step 1.8: Presentation of Results

Presentation of the results should be done to all the internal stakeholders. This means that the results are not meant just for directors but also managers and other staff. Employee involvement is crucial since they are an important part of the enhancement process. Presentation of results should be done as soon as they are ready and can be done using tables, graphs, and charts.

6.4.2 Phase II: SWOT Analysis

This involves understanding the environment in which the company exists and operates. There are two types of business environment; internal and external. It is these environmental factors that determine the success of the organization. These factors were discussed in this research as 'determinants of organizational performance'. The internal environment factors include; ***strategic planning practices, performance measurement practices, quality of service, organizational structure of the firm, contractor's innovativeness, and employee performance***. The external environment factors include; ***clients' effectiveness, suppliers' effectiveness, competition, and government support***. The factors have been demonstrated in Figures 6.5 and 6.6. The following four steps relate to the positive and negative aspects of both internal and external environments.

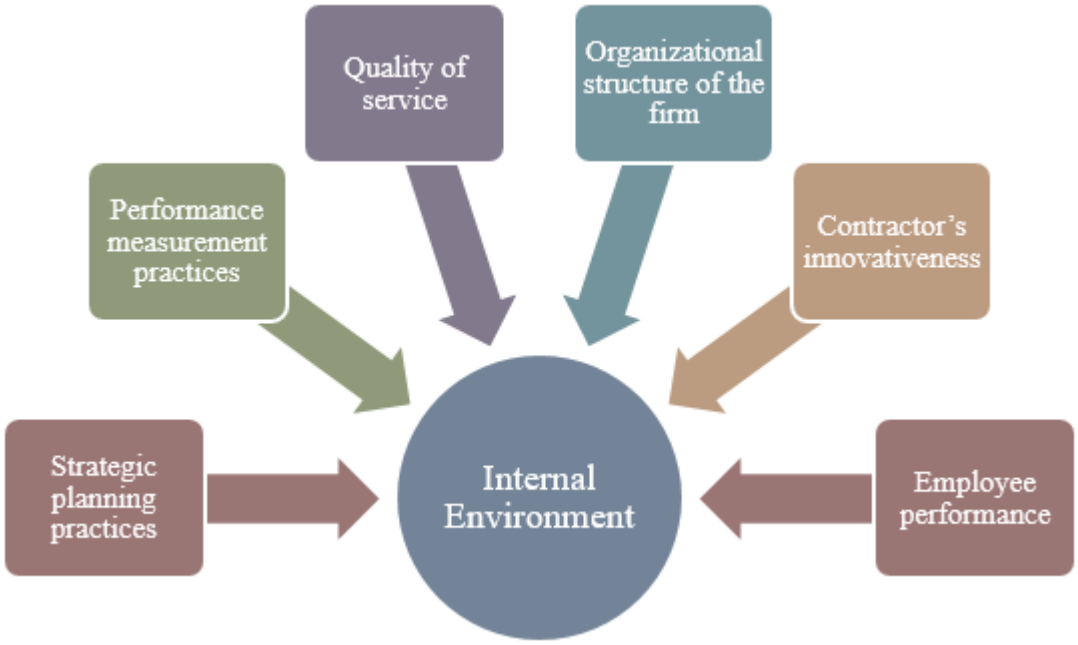

Figure 6.5: Internal Environment of Local Contractors in Kenya
Source: (Author, 2021)

Figure 6.6: External Environment of Local Contractors in Kenya
Source: (Author, 2021)

Step 2: Establish strengths

Strengths are the things that the contractor does well. They are the qualities that separate the contractor from their competitors. They could be in the form of internal resources such as competent staff or tangible assets such as advanced equipment.

Table 6.13 below presents some of the strengths which the company may seek to maximize on.

Table 6.13: Identifiable Strengths within Local Contractors

Determinant	Strengths
Strategic planning practices	(ii) well defined firm's purpose and goals; (ii) well developed mission and vision; (iii) effective assessment of business environment; (iv) ability to identify and analyze firm's strategic issues; (v) well implemented evaluation and control systems
Performance measurement practices	(i) good clarity and meaningfulness to all; (ii) good harmony with organizational goals; (iii) reliable data used; (iv) presence of commitment by top management; (v) employee involvement
Quality of service	(i) reliable; (ii) responsive to clients; (iii) notable knowledge and courtesy of employees; (iv) presence of empathy towards clients; (v) good appearance of physical facilities and personnel
Organizational structure of the firm	(i) clarity in of line of authority; (ii) flexible; (iii) adequate delegation of authority; (iv) presence of stability and continuity; (v) well documented structure
Contractor's innovativeness	(i) adoption of new processes; (ii) advanced construction equipment; (iii) entry into new markets; (iv) advanced software technology; (v) undertakes research and development
Employee performance	(i) good work quality; (ii) effective communication; (iii) presence of creativity and taking initiative; (iv) effective cooperation (level of team play); (v) willing to accept and learn from feedback

Source: (Author, 2021)

Step 3: Understand weaknesses

Weaknesses are the things in which the company performs poorly. They are areas where the contractor is inferior compared to their competitors. They could be in form of resource limitations or ineffective internal processes. Table 6.14 below presents some of the weaknesses which the company may seek to eliminate.

Table 6.14: Identifiable Weaknesses within Local Contractors

Determinant	Weaknesses
Strategic planning practices	(ii) poorly defined firm's purpose and goals; (ii) poorly developed mission and vision; (iii) ineffective assessment of business environment; (iv) inability to identify and analyze firm's strategic issues; (v) poorly implemented evaluation and control systems
Performance measurement practices	(i) poor clarity and meaningfulness to all; (ii) poor harmony with organizational goals; (iii) unreliable data used; (iv) absence of commitment by top management; (v) lack of employee involvement

Quality of service	(i) unreliable; (ii) unresponsive to clients; (iii) poor knowledge and courtesy of employees; (iv) absence of empathy towards clients; (v) poor appearance of physical facilities and personnel
Organizational structure of the firm	(i) lack of clarity in of line of authority; (ii) rigid; (iii) inadequate delegation of authority; (iv) absence of stability and continuity; (v) poorly documented structure
Contractor's innovativeness	(i) lack of adoption of new processes; (ii) outdated construction equipment; (iii) no entry into new markets; (iv) outdated software technology; (v) lack of research and development
Employee performance	(i) poor work quality; (ii) ineffective communication; (iii) absence of creativity and taking initiative; (iv) ineffective cooperation (level of team play); (v) unwillingness to accept and learn from feedback

Source: (Author, 2021)

Step 4: Establish opportunities

Opportunities refer to favorable external factors which can give the organization a competitive advantage. Table 6.15 below presents some of the weaknesses which the company may seek to eliminate.

Table 6.15: Identifiable Opportunities for Local Contractors

Determinant	Opportunities
Clients' effectiveness	(i) prompt payment; (ii) selection of competent project consultants; (iii) timely appointment of project consultants; (iv) responsive to information requests and decisions; (v) timely acquisition of local authority permissions
Suppliers' effectiveness	(i) timely delivery; (ii) adherence to quality specifications; (iii) timely communication; (iv) consistent improvement of services; (v) provision of technical support for their installations
Competition	(i) increased efficiency; (ii) improved quality; (iii) enhanced client satisfaction; (iv) increased innovativeness; (v) improved industry linkages
Government support	(i) provision of construction jobs; (ii) well regulated industry; (iii) effective skills development through formal training e.g. NITA, NCA; (iv) efficient procurement practices; (v) provision of direct support e.g. financial

Source: (Author, 2021)

Step 5: Understand threats

These are external factors that have the potential of harming the company. Table 6.16 below presents some of the weaknesses which the company may seek to eliminate.

Table 6.16: Identifiable Threats facing Local Contractors

Determinant	Threats
Clients' effectiveness	(i) delayed payment; (ii) selection of incompetent project consultants; (iii) late appointment of project consultants; (iv) unresponsive to information requests and decisions; (v) delayed acquisition of local authority permissions
Suppliers' effectiveness	(i) late delivery; (ii) lack of adherence to quality specifications; (iii) untimely communication; (iv) inconsistent improvement of services; (v) lack of technical support for their installations
Competition	(i) decreased efficiency; (ii) degraded quality; (iii) reduced client satisfaction; (iv) decreased innovativeness; (v) low industry linkages
Government support	(i) lack of provision of construction jobs; (ii) poorly regulated industry; (iii) ineffective skills development through formal training e.g. NITA, NCA; (iv) inefficient procurement practices; (v) lack of direct support e.g. financial

Source: (Author, 2021)

6.4.3 Phase III: Organizational Change Management Action Plan

For the local contractors to match their international counterparts, organizational change is inevitable. This section describes the measures taken by the company towards improving its current level of organizational performance. It is during this phase that an improvement plan is developed and implemented. This endeavor can be referred to as a *change project* and is unique to each local contractor.

Step 6: Understand change

This involves the company understanding the kind of change targeted. The local contractor should have a clear picture of where they want to be once the change management plan is implemented. This can be achieved through benchmarking and learning from best practices within the industry.

Step 7: Plan change

Effective change can only be achieved if it is intentional rather than accidental. All the participants of the change project should be involved in the planning either directly or indirectly. The success criteria of the sought change are described at this point. A ***change project manager*** must be appointed to plan, organize, lead, and control the processes involved in organizational change management. It is probably best that this role is executed by the same person suggested in step 1.3.

Step 8: Implement change

Actionable strategies for implementation are created based on the information obtained from the four quadrants of the SWOT analysis. These include; improve on existing strengths, minimizing the effects of weaknesses, exploiting opportunities, and mitigating threats. The company must build on the existing strengths to achieve even higher levels of organizational performance. Strengths can be used not only in taking advantage of opportunities, but also in minimizing threats.

Weaknesses will always try to pull the performance of the company down and should therefore be reduced or resolved. This can be achieved by taking advantage of existing opportunities. The effect of this is that the company will be able to avoid threats that hurt its organizational performance.

Opportunities present themselves within the external environment in which the contractor operates. It is crucial that the company exploits and expands such opportunities using its internal strengths to improve its weaknesses.

Threats are inevitable in any type of business. Contractors are no exception. The contractor should use their strengths to avoid threats or mitigate their effects. By taking advantage of existing opportunities, the contractor can eliminate weaknesses and therefore thwart threats. Though the company is supposed to formulate its customized ways of implementing the four strategies, some suggestions have been provided in Appendix 17. These suggestions have been adopted from those given by respondents in the main survey.

Step 9: Communicate change

Once the change project is fully executed, it is important to communicate the new status to stakeholders, both internally and externally. Such communication should be made even when the desired results have not been fully achieved. Review of individual performance should be based on such communication.

6.4.4 Phase IV: Effects

Once the improvement plan has been formulated and implemented, the consequences of such actions must be evaluated.

Step 10: Evaluation

It is expected that the implementation of the strategies will bring the intended consequences. Though the following list is not exhaustive, it represents some of the expected features of a contractor with enhanced organizational performance; strong leadership, high employee retention, healthy work environment, high client retention, less marketing costs, strong industry linkages, effective processes, adoption of advanced technology, efficient processes, new projects/business, and high annual turnover

Step 11: Repeat the process

It is important to understand that evaluation and enhancement of organizational performance is not an event but rather a process that should be repeated over and over again. Once actions have been taken towards enhancing organizational performance and the effects have been evaluated, it is important that the new level of organizational performance is established and the entire process repeated. If the new organizational performance is lower than the previously measured levels, there is need for the company to establish reasons and provide justification for the negative growth in organizational performance.

The formulated framework has been presented in two parts. The first part (Figure 6.7) presents the criteria for evaluating the organizational performance of local contractors. This framework is flexible in such a way that each local contractor using it to evaluate themselves can adopt their weighting for the measurement tools. The second part (Figure 6.8) is the formulated SSP-Framework for enhancing the organizational performance of local contractors. This framework is anchored on principles of scientific, strategic, and project management hence the name 'SSP-Framework'. The initial framework presented to stakeholders for validation is presented in Appendix 20.

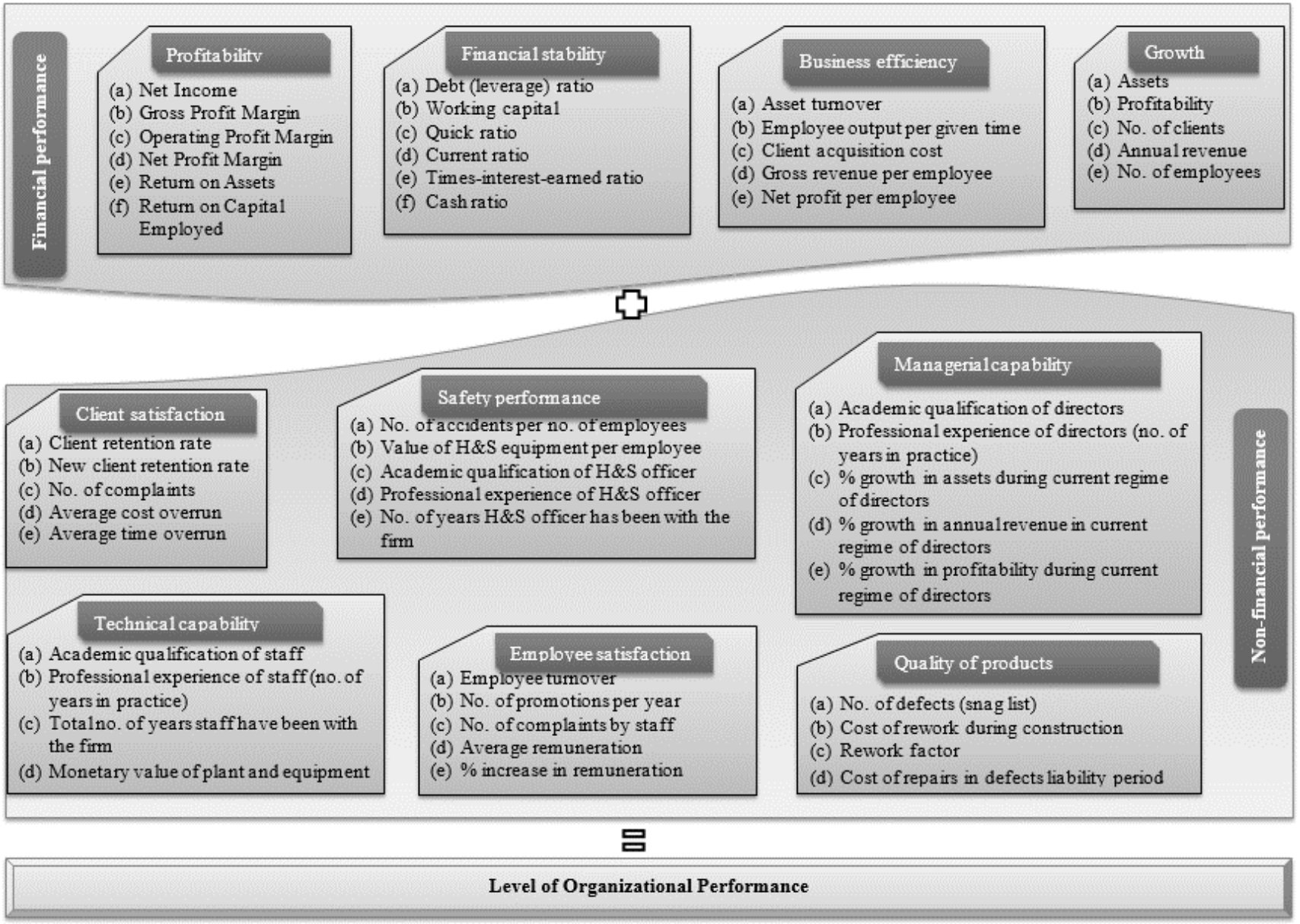

Figure 6.7: A Framework for Evaluating the Organizational Performance of Local Contractors in Kenya
Source: (Author, 2021)

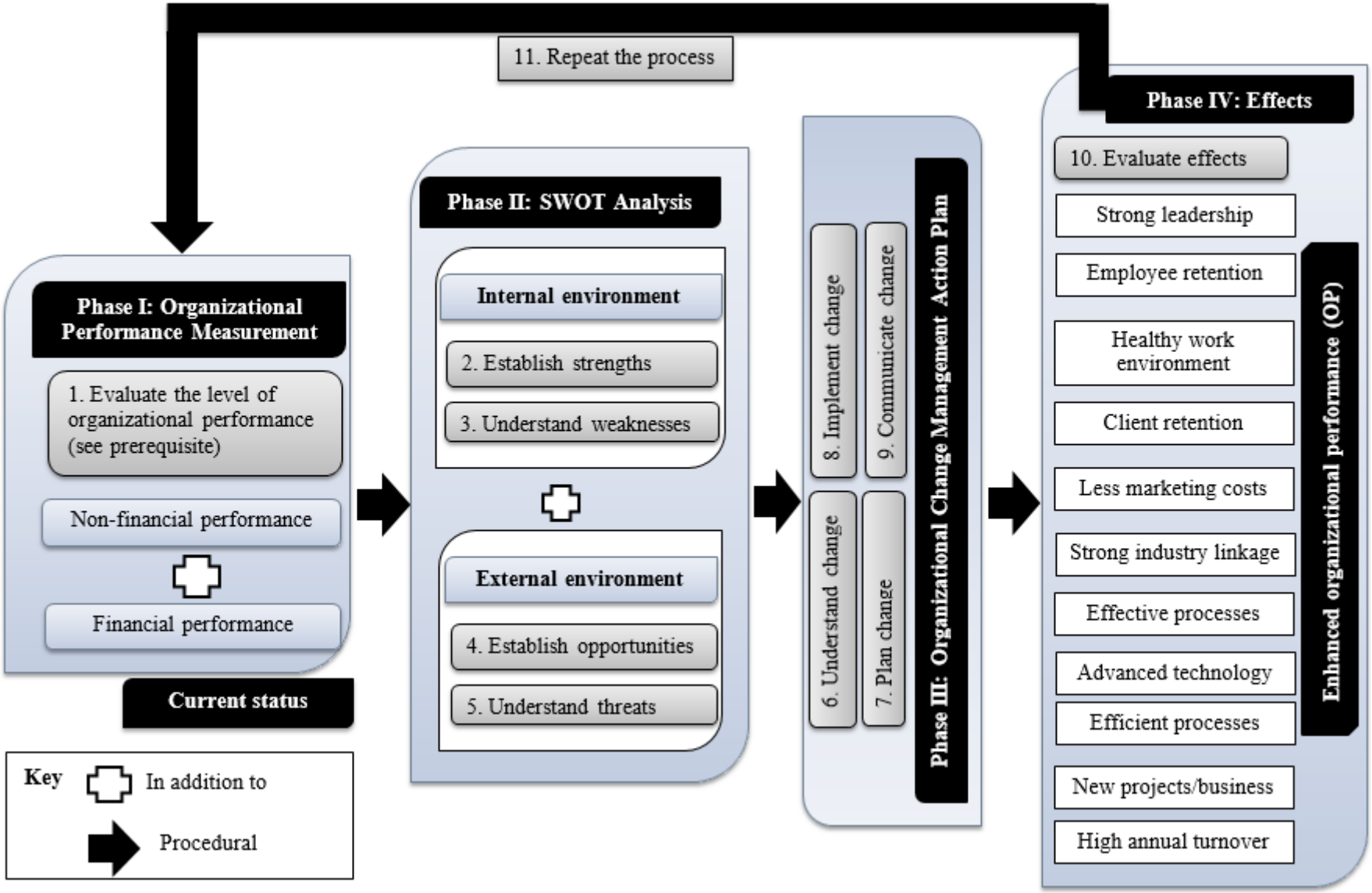

Figure 6.8: SSP-Framework for Enhancing the Organizational Performance of Local Contractors in Kenya
Source: (Author, 2021)

6.5 Validation of the Framework

Validation is the process of determining the framework's accuracy, practicality, validity, applicability, comprehensiveness, simplicity, and appropriateness in its implementation. According to Pidd (2009), the formulated formwork should not only be effective but also realistic. In most cases, experts in the subject field are used to assess the framework based on the said criteria.

6.5.1 Aim of the Framework Validation

The main aim of validating the framework was to establish the acceptance level among contractors and consultants regarding its ability to enhance the organizational performance of the former.

6.5.2 Validation Approach

A survey approach was used in selecting participants of the framework validation process. The participants were picked from respondents who had participated in the main survey. 25 contractors and 15 consultants representing approximately 10% of each group were randomly picked. A questionnaire (Appendix 19) structured as follows was used to collect data.

Section A: category (contractor or consultant)

Section B: accuracy, practicality, validity, applicability, comprehensiveness, simplicity, and appropriateness

Section C: suggestion for improvement

6.5.3 Findings

22 contractors and 15 consultants responded representing 88% and 100% response rates respectively. This was deemed adequate. Table 6.17 below presents the findings of the framework validation process. The acceptance rate of the proposed framework was found to be 74.5% and 72.9% among contractors and consultants respectively. The overall agreement rate of 73.7% exceeded the limit set by Luu et al. (2008) of 50%. The framework was therefore sufficiently accurate, practical, valid, applicable, comprehensive, simple, and appropriate. Two main suggestions were made towards improving the framework; (i) modifying the third phase to accommodate a change

management plan for enhancing organizational performance, and (iii) the model was noted to be complex and there was a need for simplification. Both suggestions were taken into account and the final model was adjusted.

Table 6.17: Framework Validation Findings

	Contractors		Consultants		Combined	
Criteria	**Mean**	**Std. Dev**	**Mean**	**Std. Dev**	**Mean**	**Std. Dev**
accuracy	7.41	0.908	7.20	0.676	7.30	0.79
practicality	7.45	0.963	7.60	0.986	7.53	0.97
validity	7.68	1.086	7.60	1.121	7.64	1.10
applicability	7.68	0.894	7.53	1.060	7.61	0.98
comprehensiveness	7.32	0.839	6.73	1.335	7.03	1.09
simplicity	7.27	0.985	7.27	0.961	7.27	0.97
appropriateness	7.36	0.953	7.07	0.704	7.22	0.83
Overall Mean	**7.45**	**0.95**	**7.29**	**0.98**	**7.37**	**0.96**

Source: (Author, 2021)

6.6 Benefits of the Framework

The proposed framework enhances the level of organizational performance in local contractors through the following ways;

1) It provides a systematic integration of components useful in evaluating the company's organizational performance
2) It is a standardized process of performance measurement.
3) It provides a baseline through which the initial level of the company's organizational performance can be evaluated
4) Future levels of performance can be monitored and controlled based on the results established from the baseline.
5) Provides a guideline through which local contractors can enhance their organizational performance.
6) Though the framework was formulated using data from NCA1, NCA2, and NCA3 contractors, it is applicable and useful to all contractors.
7) It provides documentation through which generated reports can be used by both internal and external stakeholders in assessing the company's growth.

6.7 Conclusion

In this chapter, a framework for enhancing the organizational performance of local contractors was presented. The framework was based on three aspects of management thought; scientific, strategic, and project management. The framework presented a detailed methodology for evaluating the existing level of organizational performance and a change management plan based on an assessment of the operating environment of local contractors. The desired effects of an enhanced local contractor were also shown in the framework. The formulated framework is an endless cycle that should go on as long as the company exists.

CHAPTER SEVEN
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

7.1 Introduction

This chapter takes a reflection of the research journey from the start to the end by providing a summary of the entire research. The conclusions made from this study have also been presented. The contribution of the research has been discussed in five parts; philosophical contribution, contribution to knowledge, theoretical implications, methodological implications, and practical implications. Also presented in this chapter are; limitations of the study, recommendations of the study, and areas of further research.

7.2 Summary of the Research

7.2.1 The Need to Enhance the Organizational Performance of Local Contractors

Based on reported shortcomings such as managerial incompetence, poor staffing, lack of access to finance, poor planning, inadequate supervision, internal and external inefficiencies, reduced profitability and growth, minimal usage of technology, lack of cohesion and fluidity in organizational teams, lack of strategic roadmaps, and poor engagement with regulatory stakeholders, the organizational performance of local contractors in Kenya was described as insufficient. This was seen to result in consequences such as; reduced local construction capacity, continued dominance of the local construction industry by foreign entities, a negative growth of local contractors, increased repatriation of funds by foreign contractors to their countries of origin, and poor project performance. It was because of these reasons that a need for enhanced organizational performance of local contractors here in Kenya was deemed necessary.

7.2.2 A Conceptual Model of Organizational Performance and Its Determinants

Organizational performance is multidimensional. A review of literature established that most researches undertaken in the field of organizational performance within the construction industry did not adopt a holistic approach. Such researches considered the dimensions of organizational performance in isolation. Most of them ignored the other aspect of organizational performance, its determinants. Others only considered

the financial aspect of organizational performance. It was for this reason that this research sought to approach the subject from a multidimensional approach.

Reviewed literature established that organizational performance could be evaluated based on; profitability, client satisfaction, growth, technical capability, business efficiency, employee satisfaction, financial stability, quality of products, managerial capability, and safety performance. The ten dimensions of organizational performance are comprised of both financial and non-financial measures. The following factors were found to be the major determinants of organizational performance; strategic planning practices, performance measurement practices, quality of service, organizational structure of the firm, contractor's innovativeness, employee performance, clients' effectiveness, suppliers' effectiveness, competition, and government support. The ten determinants of organizational performance were drawn from both the internal and external environments of the contractor. It was hypothesized that the identified determinants had a significant influence on organizational performance across all its dimensions.

7.2.3 A Methodology for Investigating Organizational Performance and its Determinants

Philosophically, this research is grounded on positivism. While a quantitative research strategy was adopted, a survey research design was selected. Questionnaires were chosen as the data collection instruments. While the unit of analysis was stated as the local contractor, the units of observation were the local contractors and consultants. The sampling frame consisted of all NCA1, NCA2, and NCA3 local contractors and registered consultants who had worked with these contractors in current or previous projects. A combination of stratified and simple random sampling was used to select the sample from the population.

7.2.4 Level of Organizational Performance of Local Contractors in Kenya

The level of organizational performance in local contractors was established at three levels. First, fifty (50) measurable indicators were used to measure the level of organizational performance. The three highest performing indicators were found to be durability (mean=7.52), fitness for the purpose (mean=7.47), and freeness from

defects (7.20). All these three aspects were describing the quality of projects executed by local contractors. The three lowest indicators were established to be net profit margin (mean=5.34), asset turnover (mean=5.28), and return on assets (mean=5.26). These three indicators were describing the local contractor's profitability.

The second level involved establishing the level of organizational performance based on the ten dimensions identified from the literature review. This was achieved by calculating the means of the respective indicators. The best-performing dimensions of organizational performance were found to be quality of products (mean=7.308), client satisfaction (mean=6.923), and managerial capability (mean=6.907). The least performing dimensions were found to be profitability (mean=5.406), employee satisfaction (mean=5.683), and growth (mean=5.808).

The final level involved establishing the overall organizational performance of local contractors. This was achieved by calculating the mean of the ten dimensions. The organizational performance of local contractors was established to have a mean of 6.374. Expressed as a percentage, local contractors were found to have a score of 63.74%. This was found to be moderately high meaning there was still plenty of room for improvement. Local contractors were found to perform poorly in financial aspects compared to non-financial aspects. If the local contractors stood any chance to compete favorably with their international counterparts, then their organizational performance needed to be enhanced. It was for this reason that the need for the proposed framework was indeed confirmed empirically.

7.2.5 Determinants of Organizational Performance of Local Contractors in Kenya

Determinants of organizational performance could be described as the practices within and without the firm which influence how well (or poor), the contractor performs across all its dimensions of organizational performance. These are the activities within the internal and external environment of the contractor which affect the contractor's business operations. Again, the performance across these practices was established at three levels.

First, fifty (50) measurable attributes were used to measure the level of these practices. The three highest performing attributes were found to be responsiveness to clients (mean=7.28), work quality (mean=7.21), and knowledge and courtesy of employees (7.20). The first and third attributes were describing the quality of service offered by local contractors while the second attribute was describing the level of performance by employee working for local contractors. The three lowest attributes were established to be the efficiency of procurement practices (mean=4.88), provision of construction jobs (mean=4.87), and direct support e.g. financial (mean=3.21). These three attributes were describing the level of government support offered to local contractors.

The second level involved establishing the level of the determinants of organizational performance based on the ten variables identified from literature review. This was achieved by calculating the means of the respective attributes. The best performing determinants of organizational performance were found to be quality of service (mean=7.129), employee performance (mean=7.104), and competition (mean=6.951). The least performing determinants of organizational performance in local contractors were found to be government support (mean=4.795), contractor's innovativeness (mean=5.642), and strategic planning practices (mean=6.456).

The final level involved establishing the overall level of the determinants of organizational performance of local contractors. This was achieved by calculating the mean of the ten determinants. The overall level of these practices was established to have a mean of 6.468. Expressed as a percentage, the determinants of organizational performance of local contractors were found to have a score of 64.68%. This was also found to be moderately high meaning there was still plenty of room for improvement. Internal factors (mean=6.615) were found to perform slightly better compared to external factors (mean=6.248). This meant that there was a need for the enhancement of both the internal and external environment in which the local contractors operate. Such improvement in the internal and external factors affecting contractor operations could be achieved if the proposed framework was implemented by the contracting firms.

7.2.6 Relationships among Dimensions and Determinants of Organizational Performance of Local Contractors in Kenya

Relationships among dimensions and determinants of organizational performance were analyzed thoroughly at three levels; bivariate correlations among the dimensions of organizational performance, confirmatory factor analysis to test the measurement theory in both sets of variables, and structural path diagrams to measure the influence of determinants on dimensions of organizational performance. Positive correlations were established among the dimensions of organizational performance. High factor loadings confirmed that the adopted indicators were true representations of the study variables. The determinants were found to have a positive influence on organizational performance across its dimensions. The three dimensions of organizational performance which are most influenced by the majority of the determinants are business efficiency, technical capability, and growth while the least influenced are safety performance, profitability, and managerial capability.

7.2.7 Hypothesis Testing

In the first chapter, it was hypothesized that there was a statistically significant relationship between organizational performance and its determinants. Due to the multidimensional approach used to evaluate organizational performance, ten sub-hypotheses were formulated. The ten path diagrams in chapter four demonstrated the existence of statistically significant relationships between determinants and dimensions of organizational performance. The main research hypothesis was also confirmed using an overall structural model.

7.2.8 A Model for Predicting the Level of Organizational Performance of Local Contractors

Though all determinants were found to have statistically significant relationships with each of the dimensions of organizational performance in the hypothesis testing, the predictive model demonstrated that only five out of the ten determinants were statistically significant in predicting the organizational performance of local contractors. These included; organizational structure of the firm, supplier

effectiveness, strategic planning practices, contractor's innovativeness, and quality of service.

It was established that the level of organizational performance almost entirely depends on that of selected determinants. There is a very high predictive ability of organizational performance by its determinants which were found to account for 83.7% of the variation in organizational performance. This further underlines the importance of the chosen factors in predicting the organizational performance of local contractors. The regression model was found to have an approximate predictive accuracy of 90%.

7.2.9 SSP-Framework for Enhancing the Level of Organizational Performance of Local Contractors

The formulated formwork is an integrated approach anchored on three areas of management thought namely; scientific management, strategic management, and project management. It enables data collection and its analysis, a collaboration of all the contractor's internal stakeholders, and provides valuable information which can be used by prospective clients and other external stakeholders to assess the contractor's organizational performance. based on this framework, the endeavor to effect change within the organization is a project by itself and resources should be assigned to it including the appointment of a *change project manager*.

7.3 Conclusions of the Study

The following main conclusions were made from the research;

1) The organizational performance of local contractors can be evaluated based on ten dimensions namely; profitability, client satisfaction, growth, technical capability, business efficiency, employee satisfaction, financial stability, quality of products, managerial capability, and safety performance.
2) The financial performance of local contractors here in Kenya is lower compared to non-financial performance.
3) The organizational performance of local contractors is influenced by ten major factors namely; strategic planning practices, performance measurement practices, quality of service, organizational structure of the firm, contractor's

innovativeness, employee performance, clients' effectiveness, suppliers' effectiveness, competition, and government support.

4) There is a need for improvement in the organizational performance of local contractors in Kenya.
5) The organizational performance of local contractors can be improved by enhancing the internal and external environment in which they operate.

7.4 Recommendations of the Study

The difference between research implications and recommendations is that while the former signifies the impact of the research, the latter indicates the concrete steps or specific actions proposed by the research. The study's main recommendation is the adoption of the developed framework by local contractors as it will enhance their organizational performance and therefore enable them compete favorably with their foreign counterparts. The framework provides objective measures which local contractors can use to evaluate themselves at any given time.

Local contractors need to have a dedicated employee in charge of organizational performance evaluation and change management. The ***Change Project Manager*** will be responsible for ensuring a continuous cycle of measuring the current level of organizational performance, instituting processes for improvement, and evaluating the outcomes. Importantly, local contractors should not only pay attention to financial performance but non-financial performance as well. Both aspects complement each other and are equally significant in the overall organizational performance.

There is a need for local contractors to constantly evaluate their organizational performance regularly. New targets should be set every time the evaluation process is undertaken. Local contractors should also seek to continuously improve their internal business environment while at the same time adapting to the prevailing external business environment. Lastly, rather than call for protection by the government, local contractors need to embrace competition posed by their foreign counterparts. They need to engage in collaborations and joint ventures which will ensure the transfer of knowledge, skills, and technology.

7.5 Contribution of the Research

This section demonstrates two types of contributions; philosophical and contributions to knowledge. It also presents the theoretical, methodological and practical implications of the study.

7.5.1 Philosophical Contribution

The study's philosophical contribution is the underlying principle for the entire research. It is the concept which not only guided the study but was also the basis of the framework formulation. The entire research process was guided by the following philosophy;

The ability of local contractors in Kenya to evaluate themselves holistically while at the same time understanding and adapting to both their internal and external environment enables them to take necessary actions towards enhancing their organizational performance

7.5.2 Contribution to Knowledge

The study's contributions to knowledge sought to address the research gaps which were identified as follows;

(1) Focus of research studies on improving projects rather than the entities executing the projects
(2) Organizational performance studies have been focused outside the context of the construction industry
(3) Lack of a holistic approach which not only considers the dimensions of organizational performance but their determinants as well

This study contributed to existing knowledge by;

(1) Identifying distinct dimensions of organizational performance and their measures which can be able to distinguish between low and high-performing contractors.
(2) Evaluating the level of organizational performance of local contractors here in Kenya.

(3) Evaluating both the internal and external environment of local contractors here in Kenya.
(4) Developing a multi-dimensional framework for establishing the organizational performance of local contractors using a balanced approach.
(5) Applying multivariate analysis to correlate the various dimensions of organizational performance with their determinants in the Kenyan construction industry. The application of univariate statistical analysis has its limitations in exploring relationships among the many variables relating to the subject of organizational performance.
(6) Application of a multi-approach in the statistical analysis of the existing relationships among dimensions and determinants of organizational performance.

The discussion on how these aims were achieved has been presented in two sections; theoretical and methodological implications. The former addresses the first four aims while the latter addresses the last two.

7.5.3 Theoretical Implications

This study established four ***financial*** and six ***non-financial*** dimensions of organizational performance together with both subjective and objective measures of evaluating the organizational performance of local contractors. Past studies on organizational performance have only concentrated on the financial aspect.

For the first time, the organizational performance of local contractors in Kenya was measured, not just subjectively but also objectively. This not only provides a reference point for policy formulations but also acts as a baseline through which future organizational performance levels may be compared.

The environment in which local contractors operate was evaluated holistically taking into account both internal and external aspects. A total of fifty indicators were used to achieve this. Most of the previous studies have been narrow-focused and others have not assessed both internal and external environmental aspects.

No framework has been formulated in the past to enhance the organizational performance of Kenyan contractors. The developed framework is not only

multidimensional but also takes into account the two types of environment. It is anchored on multiple areas of management thought and incorporates an organizational change management plan.

7.5.4 Methodological Implications

For the first time, multivariate statistical analyses were employed to describe the organizational performance of local contractors here in Kenya. Locally, previous studies have not only focused on the performance of individual projects but have also only utilized multivariable statistical analysis rather than multivariate. It is therefore evident that this research is of paramount importance towards the development and progression of future research in the Kenyan construction industry context.

In the context of the triangulation approach, a multi-approach statistical analysis was adopted in establishing existing relationships among the study variables. It is for this reason that two multiple regression models, two measurement models (CFA), ten path diagrams, and one structural model (SEM) were used to evaluate the relationships among dimensions and determinants of organizational performance.

7.5.5 Practical Implications

This research sought to contribute to practice by:

1) Demonstrating how local contractors can evaluate their organizational performance using a multi-dimensional approach
2) Developing a multi-dimensional model for enhancing the organizational performance of local contractors by adopting an integrated approach.

These aims were achieved in the following ways;

Based on the earlier provided framework in Figure 6.5, local contractors can now be able to evaluate their organizational performance holistically. This research has not only provided perceptual measures but also objective tools that can be used by local contractors to assess their organizational performance. It is widely said that ‘you cannot improve what you can’t measure’ and therefore through this, they will be able to identify areas in which they have deficiencies and improvise actions for improvement.

This research provided an elaborate framework (Figure 6.6) for enhancing the organizational performance of local contractors. In today's increased globalization, it is practically impossible for any developing country to bar foreign contractors from entering local markets. Due to their competitive advantage, foreign contractors have continued to dominate the local construction industry. Therefore the only solution lies in the enhanced organizational performance of local contractors in such a way that they can maximize their strengths and exploit available opportunities while at the same time resolving weaknesses and thwarting threats so that they can compete fairly with their foreign counterparts.

7.6 Limitations of the Study

This section presents some of the aspects of the research which could be viewed as potential weaknesses. While both perceptual and objective measures were used to measure the study variables, more emphasis was put on the former during data analysis. Due to confidentiality issues regarding collection of sensitive information such as contractors' financial data, perceptual measures were predominant in establishing the level of organizational performance. The objective measures were used to provide complementary information. However, the predominant use of perceptual measures was adequately justified in chapter three. Moreover, in the proposed framework for evaluating organizational performance, only objective measures have been incorporated.

Another potential limitation is in the use of indicators to represent theoretical concepts. While this is a generally agreed practice, Babbie (1990) observes that theoretical concepts rarely have perfect indicators and that every empirical indicator has some defects. Further, Ankrah (2007) pointed out that while any given theoretical concept can be measured using several possible indicators, and while theory and empirical evidence usually facilitate the selection of the most applicable indicators, they do not give guarantees that such indicators are indeed the best. This research adopted indicators as proxies for measuring both determinants and dimensions of organizational performance. This means that there is a possibility that the selected measures may not have been the perfect indicators. However, adequate theoretical and

empirical background was used to enable the selection of the best indicators for the latent concepts.

Bias due to self-reporting of performance levels by contractors was another potential weakness of this research. However, this was mitigated by obtaining a second external perspective from consultants. Similar measures of evaluating the organizational performance of local contractors were presented to both local contractors and consultants. Statistical comparison of the two sets of results however revealed that the amount of bias was negligible.

The formulated framework for evaluating the organizational performance of local contractors did not incorporate weights for the measurement tools. However, this was done in an attempt to provide flexibility to the framework such that each local contractor could establish their weights. However, if the framework is to be used to compare the organizational performance of multiple contractors, similar weights should be adopted.

7.7 Areas of Further Research

This research proposes the following areas of further research;

(1) Evaluation and enhancement of organizational performance of construction project consultants and subcontractors. Consultants and subcontractors play a crucial role in the execution of construction projects and therefore have an impact on the organizational performance of contractors. Indeed, they have been identified in this study as some of the external factors influencing the organizational performance of contractors. An improvement in their organizational performance would not only be beneficial for them but to contractors, clients, and the construction industry in general as well.

(2) The influence of and contibution by local construction industry professionals on the performance of local and/or foreign contractors in Kenya.

(3) The role of the client in enhancing effective organizational performance of contractors in dynamic construction industry. This study found limited literature regarding client role in the successful execution of projects.

Particularly, research on the adaptation of the client to the ever-changing construction industry was found lacking.

(4) A supplier selection model in the Kenyan construction industry. Suppliers have been seen to affect the organizational performance of contractors to a great extent. However, literature regarding scientific criteria for their selection seems to be lacking.

(5) Possible competitive strategies which may be employed by Kenyan contractors to compete favorably with foreign contractors.

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Appendix 1: Contractors' Introductory Letter

JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY (JKUAT)
SCHOOL OF ARCHITECTURE AND BUILDING SCIENCES (SABS)
DEPARTMENT OF CONSTRUCTION MANAGEMENT

30th October, 2020

TO WHOM IT MAY CONCERN

RE: REQUEST TO ADMINISTER QUESTIONNAIRE IN YOUR FIRM

Dear Respondent,

I am a postgraduate student from JKUAT pursuing a degree of Doctor of Philosophy (PhD) in Construction Project Management. I'm currently undertaking my research thesis titled *"**Development of a Framework for Enhancing the Organizational Performance of Local Contractors in Kenya**"* as a course requirement. The research aims at contributing to improved company performance for the benefit of all stakeholders within the industry.

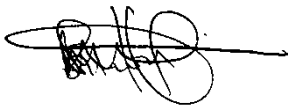
This questionnaire is intended to help me collect information which is essential and will enable me successfully complete my study. You have been selected for this study on the basis of being an NCA1 contractor here in Kenya. Your input in this study would be most valuable.

Kindly respond to the attached questionnaire as honestly and precisely as possible, to the best of your knowledge and understanding.

Please note that as a respondent, you are guaranteed of confidentiality. Additionally, this questionnaire will be used for academic purposes only. This survey takes only fifteen (15) minutes of your time.

Thanks in advance.

Yours faithfully,



Shadrack Mutungi Simon,
Student, PhD in Construction Project Management.
(Cell Phone: 0735 659 232 or 0723 819 874; Email: smutungi@jkuat.ac.ke)

Appendix 2: Consultants' Introductory Letter

JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY (JKUAT)
SCHOOL OF ARCHITECTURE AND BUILDING SCIENCES (SABS)
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This questionnaire is intended to help me collect information which is essential and will enable me successfully complete my study. You have been suggested by one of the local contractors you have worked with recently. Your input in this study would be most valuable.

Kindly respond to the attached questionnaire as honestly and precisely as possible, to the best of your knowledge and understanding.

Please note that as a respondent, you are guaranteed of confidentiality. Additionally, this questionnaire will be used for academic purposes only. This survey takes only fifteen (15) minutes of your time.

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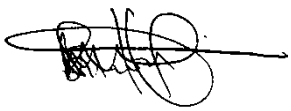

Shadrack Mutungi Simon,
Student, PhD in Construction Project Management.
(Cell Phone: 0735 659 232 or 0723 819 874; Email: smutungi@jkuat.ac.ke)

Appendix 3: Questionnaire I:- Contractor's Self-Assessment

SECTION A: BACKGROUND INFORMATION

1) Kindly indicate your NCA category?
☐NCA1 ☐ NCA2 ☐NCA3

2) Kindly indicate the number of permanent employees in your firm
☐Less than 10 ☐ 11 – 20 ☐ 21 – 30 ☐ 31 – 40 ☐ 41 – 50
☐ 51 – 60 ☐ 61 – 70 ☐ 71 – 80 ☐ 81 – 90 ☐ More than 90

3) For how many years has your firm been in existence?
☐Less than 5 ☐ 6 – 10 ☐ 11 – 15 ☐ 16 – 20 ☐ 21 – 25
☐ 26 – 30 ☐ 31 – 35 ☐ 36 – 40 ☐ 41 – 45 ☐ More than 45

4) Kindly indicate the average (mean) size of your organization in terms of **annual turnover/revenue** (Kshs.) for the last **five years**
☐Less than 200 million ☐ 201 – 400 million ☐ 401 – 600 million
☐601 – 800 million ☐801 million – 1.000 billion ☐1.001 – 1.200 billion
☐1.201 – 1.400 billion ☐1.401 – 1.600 billion ☐1.601 – 1.800 billion
☐More than 1.8 billion

5) Kindly indicate the average (mean) **total expenditure** for your organization in the same period (Kshs.)
☐Less than 100 million ☐ 101 – 200 million ☐ 201 – 300 million
☐301 – 400 million ☐401 – 500 million ☐501 – 600 million
☐601 – 700 million ☐701 – 800 million ☐801 – 900 million
☐More than 900 million

6) Over the last **ten (10)** years, what proportion of your projects were worth more than Ksh 1 billion? (**for NCA1 contractors only**)
☐ 0-10% ☐ 11-20% ☐ 21-30% ☐ 31-40% ☐ 41-50%
☐ 51-60% ☐ 61-70% ☐ 71-80% ☐ 81-90% ☐ 91-100%

7) Over the last **ten (10)** years, how would you describe the employee turnover in your firm?
☐ 0-10% ☐ 11-20% ☐ 21-30% ☐ 31-40% ☐ 41-50%
☐ 51-60% ☐ 61-70% ☐ 71-80% ☐ 81-90% ☐ 91-100%

8) Over the last **ten (10)** years, how much of your working capital has been funded through loans?
☐ 0-10% ☐ 11-20% ☐ 21-30% ☐ 31-40% ☐ 41-50%
☐ 51-60% ☐ 61-70% ☐ 71-80% ☐ 81-90% ☐ 91-100%

9) Based on a **five year period**, how would you rate your **growth** in the following aspects?
   a. Size of the workforce (both permanent and casual)

☐ 0-10% ☐ 11-20% ☐ 21-30% ☐ 31-40% ☐ 41-50%
☐ 51-60% ☐ 61-70% ☐ 71-80% ☐ 81-90% ☐ 91-100%

b. Volume of construction work

☐ 0-10% ☐ 11-20% ☐ 21-30% ☐ 31-40% ☐ 41-50%
☐ 51-60% ☐ 61-70% ☐ 71-80% ☐ 81-90% ☐ 91-100%

c. Value of owned equipment

☐ 0-10% ☐ 11-20% ☐ 21-30% ☐ 31-40% ☐ 41-50%
☐ 51-60% ☐ 61-70% ☐ 71-80% ☐ 81-90% ☐ 91-100%

SECTION B: INDICATORS OF ORGANIZATIONAL PERFORMANCE

10) How would you assess the level of your company's overall performance in respect of the following criteria?

Very Low ⟶ **Very High**									
1	2	3	4	5	6	7	8	9	10

No.	**Profitability**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	gross profit margin	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	operating profit margin	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	net profit margin	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	return on assets	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	asset turnover	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

No.	**Client satisfaction**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	service quality	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	adherence to schedule	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	adherence to budget	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	communication skills	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	personnel skills	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

No.	**Growth**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	profitability	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	annual turnover/volume of work	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	client retention	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	number of employees	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	equipment/assets	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

No.	**Technical capability**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	experience (previous works)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	adequacy of plant & equipment	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	qualification of personnel	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

No.	Technical capability	1	2	3	4	5	6	7	8	9	10
4	advancement of electronic hardware used	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	advancement of electronic software used	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

No.	Business efficiency	1	2	3	4	5	6	7	8	9	10
1	labour productivity	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	return on investment in equipment	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	energy efficiency	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	revenue per employee	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	marketing efficiency	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

No.	Employee satisfaction	1	2	3	4	5	6	7	8	9	10
1	remuneration/salary	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	reward for excellence in job performance	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	favourability of working conditions	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	professional growth	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	training and development	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

No.	Financial stability	1	2	3	4	5	6	7	8	9	10
1	credit ratings	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	net value of current assets	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	adequacy of working capital	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	net cash flow from projects	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	access to overdraft facilities	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

No.	Quality of products	1	2	3	4	5	6	7	8	9	10
1	aesthetics	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	freeness from defects on completion	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	fitness for the purpose	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	support by worthwhile guarantees	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	durability	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

No.	Managerial capability	1	2	3	4	5	6	7	8	9	10
1	effectiveness of strategic management	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

No.	Managerial capability	1	2	3	4	5	6	7	8	9	10
2	consistency in decision making	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	promptness in decision making	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	prudence in financial management	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	efficiency in human resource management	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

No.	Safety & health performance	1	2	3	4	5	6	7	8	9	10
1	soundness of health and safety policies	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	availability of health and safety officer	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	use of personal protective equipment	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	use of warning signage, barriers etc.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	induction of workers on OHS	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

11) Other than the criteria outlined above, how else would you describe the level of organizational performance of your firm?

_____

_____

_____

_____

_____

_____

_____

SECTION C: DETERMINANTS OF ORGANIZATIONAL PERFORMANCE

This section assesses levels of the factors influencing organizational performance in your company. Kindly check only one box per attribute based on the following scale; (***for questions 12 – 21***)

Very Low ⟶ **Very High**									
1	2	3	4	5	6	7	8	9	10

12) To what extent are the following strategic planning processes practiced by the contractor?

No	Strategic planning practices	1	2	3	4	5	6	7	8	9	10
1	definition of the firm's purpose and goals	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	development of a mission and vision	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	assessment of business environment	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	identification and analysis of firm's strategic issues	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	implementation, evaluation and control systems	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

13) Describe the nature of the contractor's performance measurement practices based on the following features?

No	Performance measurement practices	1	2	3	4	5	6	7	8	9	10
1	clarity and meaningfulness to all	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	harmony with organizational goals	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	reliability of data used	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	commitment by top management	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	employee involvement	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

14) Kindly rate the contractor's general quality of service based on the following.

No	Quality of service	1	2	3	4	5	6	7	8	9	10
1	reliability	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	responsiveness to clients	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	knowledge and courtesy of employees	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	empathy towards clients	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	appearance of physical facilities and personnel	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

15) To what extent does the contractor's organizational structure conform to the following standards?

No	Organizational structure of the firm	1	2	3	4	5	6	7	8	9	10
1	clarity of line of authority	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	flexibility	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	adequacy of delegation of authority	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	provision of stability and continuity	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	documentation of the structure	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

16) How would you describe the contractor's innovativeness based on the following criteria?

No	Contractor's innovativeness	1	2	3	4	5	6	7	8	9	10
1	adoption of new processes	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	advancement of construction equipment	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	entry into new markets	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	advancement in software technology	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	research and development endeavour	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

17) How would you describe the level of employee performance in the contractor's firm?

No	Employee performance	1	2	3	4	5	6	7	8	9	10
1	work quality	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	effectiveness of communication	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	creativity and taking initiative	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	cooperation (level of team play)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	acceptance and learning from feedback	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

18) Based on the following aspects, to what extent did the project client execute their responsibilities towards the contractor effectively?

No	Clients' effectiveness	1	2	3	4	5	6	7	8	9	10
1	promptness in payment	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	selection of competent project consultants	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	timeliness in appointment of project consultants	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	responsiveness to information requests and decisions	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	acquisition of local authority permissions	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

19) How would you describe the effectiveness of suppliers and subcontractors engaged by the contractor?

No	Suppliers' effectiveness	1	2	3	4	5	6	7	8	9	10
1	timeliness of delivery	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	adherence to quality specifications	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	timeliness of communication	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

No	Suppliers' effectiveness	1	2	3	4	5	6	7	8	9	10
4	consistency of improvement of services	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	technical support for their installations	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

20) To what extent has competition for construction services affected the contractor's operations?

No	Competition	1	2	3	4	5	6	7	8	9	10
1	increased efficiency	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	improved quality	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	enhanced client satisfaction	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	increased innovativeness	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	improved industry linkages	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

21) To what extent has the government influenced the contractor's operations in the following ways?

No	Government support	1	2	3	4	5	6	7	8	9	10
1	provision of construction jobs	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	regulation of the industry	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	skills development through formal training e.g. NITA, NCA	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	efficiency of procurement practices	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	direct support e.g. financial	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

22) Other than the above listed factors, kindly highlight other factors which you consider to affect or determine the level of organizational performance in your company.

_____

_____

_____

_____

_____

SECTION D: SUGGESTIONS ON ENHANCING THE ORGANIZATIONAL PERFORMANCE OF YOUR COMPANY

23) Kindly suggest ways in which the organizational (or firm) performance of local contractors can be enhanced.

_____

_____

_____

_____

_____

_____

_____

SECTION E: ADDITIONAL GENERAL INFORMATION

24) Kindly provide the name of your company_____

25) We are interested in repeating the assessment but from a consultant's perspective. Based on the current or recently completed major project, kindly provide the following details for one of the client-appointed consultants;

   a. Name of firm_____

   b. Role of the firm

      ☐ Project Managers ☐ Quantity surveyors ☐ Civil & Structural Engineers

      ☐ Architect ☐ Others (state please)……

   c. Name of contact person at the consultant's firm (**optional**) _____

   d. Contact details (**optional**) _____

Appendix 4: Questionnaire II: - Consultant's Assessment of a Selected Contractor

You were recently engaged in one of the projects being executed by M/S _____ (name of contractor)

NB: All the information provided in sections B, C & D should be in respect of the above contractor.

SECTION A: BACKGROUND INFORMATION

1) Kindly indicate your professional background

☐ Construction Management ☐ Quantity surveying ☐ Civil & Structural Engineering

☐ Architecture ☐ Land surveying ☐ Others (state please)……

2) For how many years have you been practising?

☐Less than 5 ☐ 6 – 10 ☐ 11 – 15 ☐ 16 – 20 ☐ 21 – 25 ☐ 26 – 30 ☐ 31 – 35 ☐ 36 – 40 ☐ 41 – 45 ☐ More than 45

SECTION B: INDICATORS OF ORGANIZATIONAL PERFORMANCE

This section is meant to establish the level of organizational performance of the mentioned contractor.

3) How would you describe the level of the contractor's overall performance based on the following criteria?

Very Low ⟶ **Very High**									
1	2	3	4	5	6	7	8	9	10

No.	**Profitability**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	gross profit margin	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	operating profit margin	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	net profit margin	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	return on assets	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	asset turnover	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

No.	**Client satisfaction**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	service quality	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	adherence to schedule	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	adherence to budget	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	communication skills	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

No.	Client satisfaction	1	2	3	4	5	6	7	8	9	10
5	personnel skills	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

No.	Growth	1	2	3	4	5	6	7	8	9	10
1	profitability	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	annual turnover/volume of work	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	client retention	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	number of employees	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	equipment/assets	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

No.	Technical capability	1	2	3	4	5	6	7	8	9	10
1	experience (previous works)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	adequacy of plant & equipment	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	qualification of personnel	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	advancement of electronic hardware used	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	advancement of electronic software used	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

No.	Business efficiency	1	2	3	4	5	6	7	8	9	10
1	labour productivity	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	return on investment in equipment	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	energy efficiency	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	revenue per employee	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	marketing efficiency	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

No.	Employee satisfaction	1	2	3	4	5	6	7	8	9	10
1	remuneration/salary	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	reward for excellence in job performance	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	favourability of working conditions	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	professional growth	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	training and development	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

No.	Financial stability	1	2	3	4	5	6	7	8	9	10
1	credit ratings	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	net value of current assets	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	adequacy of working capital	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	net cash flow from projects	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

5	access to overdraft facilities	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

No.	**Quality of products**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	aesthetics	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	freeness from defects on completion	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	fitness for the purpose	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	support by worthwhile guarantees	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	durability	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

No.	**Managerial capability**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	effectiveness of strategic management	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	consistency in decision making	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	promptness in decision making	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	prudence in financial management	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	efficiency in human resource management	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

No.	**Safety & health performance**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	soundness of health and safety policies	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	availability of health and safety officer	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	use of personal protective equipment	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	use of warning signage, barriers etc.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	induction of workers on OHS	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

4) Other than the criteria outlined above, how else would you describe the level of organizational performance of the select contractor?

_____

_____

_____

_____

SECTION C: DETERMINANTS OF ORGANIZATIONAL PERFORMANCE

This section covers the factors influencing organizational performance of the select contractor. Kindly check only one box per attribute based on the following scale; **(*for questions 5 – 14*)**

Very Low ⟶ **Very High**									
1	2	3	4	5	6	7	8	9	10

5) To what extent are the following strategic planning processes practiced by the contractor?

No	**Strategic planning practices**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	definition of the firm's purpose and goals	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	development of a mission and vision	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	assessment of business environment	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	identification and analysis of firm's strategic issues	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	implementation, evaluation and control systems	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

6) Describe the nature of the contractor's performance measurement practices based on the following features?

No	**Performance measurement practices**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	clarity and meaningfulness to all	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	harmony with organizational goals	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	reliability of data used	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	commitment by top management	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	employee involvement	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

7) Kindly rate the contractor's general quality of service based on the following.

No	**Quality of service**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	reliability	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	responsiveness to clients	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	knowledge and courtesy of employees	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	empathy towards clients	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	appearance of physical facilities and personnel	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

8) To what extent does the contractor's organizational structure conform to the following standards?

No	Organizational structure of the firm	1	2	3	4	5	6	7	8	9	10
1	clarity of line of authority	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	flexibility	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	adequacy of delegation of authority	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	provision of stability and continuity	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	documentation of the structure	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

9) How would you describe the contractor's innovativeness based on the following criteria?

No	Contractor's innovativeness	1	2	3	4	5	6	7	8	9	10
1	adoption of new processes	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	advancement of construction equipment	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	entry into new markets	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	advancement in software technology	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	research and development endeavour	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

10) How would you describe the level of employee performance in the contractor's firm?

No	Employee performance	1	2	3	4	5	6	7	8	9	10
1	work quality	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	effectiveness of communication	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	creativity and taking initiative	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	cooperation (level of team play)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	acceptance and learning from feedback	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

11) Based on the following aspects, to what extent did the project client execute their responsibilities towards the contractor effectively?

No	Clients' effectiveness	1	2	3	4	5	6	7	8	9	10
1	promptness in payment	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	selection of competent project consultants	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	timeliness in appointment of project consultants	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	responsiveness to information requests and decisions	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	acquisition of local authority permissions	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

12) How would you describe the effectiveness of suppliers and subcontractors engaged by the contractor?

No	Suppliers' effectiveness	1	2	3	4	5	6	7	8	9	10
1	timeliness of delivery	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	adherence to quality specifications	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	timeliness of communication	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	consistency of improvement of services	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	technical support for their installations	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

13) To what extent has competition for construction services affected the contractor's operations?

No	Competition	1	2	3	4	5	6	7	8	9	10
1	increased efficiency	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	improved quality	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	enhanced client satisfaction	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	increased innovativeness	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	improved industry linkages	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

14) To what extent has the government influenced the contractor's operations in the following ways?

No	Government support	1	2	3	4	5	6	7	8	9	10
1	provision of construction jobs	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	regulation of the industry	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	skills development through formal training e.g. NITA, NCA	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	efficiency of procurement practices	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	direct support e.g. financial	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

15) Other than the above listed factors, kindly highlight other factors which you consider to affect or determine the level of organizational performance in the select contractor's company.

_____

_____

_____

_____

_____

SECTION D: SUGGESTIONS ON ENHANCING THE ORGANIZATIONAL PERFORMANCE OF THE SELECT CONTRACTOR

16) Kindly suggest ways in which the organizational performance of the select contractor can be enhanced.

_____

_____

_____

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Appendix 5: NACOSTI Research Permit

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Appendix 6: Glossary

1) **Foreign Contractors (FCs)**: firms incorporated outside Kenya; or firms incorporated in Kenya in which 5l% of the shares are held by non-Kenyans (CAK, 2017). Other terms which have been taken to mean the same are; international contractors, international construction companies and non-citizen contractors.
2) **Local Contractor (LC):** firms incorporated in Kenya; or firms incorporated in Kenya in which 5l% of the shares are held by Kenyans (CAK, 2017). In most cases however specific reference shall be made to NCA1, NCA2 and NCA3 contractors rather than all categories. Other terms which have been taken to mean the same are; indigenous contractors, citizen contractors, local construction firms/companies, indigenous construction firms/companies
3) **Mega project:** based on the NCA (2014) classification of NCA 1 Contractors, a major/mega construction project will be deemed as that which exceeds Kshs 500,000,000 in the building works class, Kshs 250,000,000 in the specialist works class and Kshs 750,000,000 in the roads/civil works class.
4) **Organizational performance:** extent to which an organization achieves its objectives or goals using a minimum amount of resources (Gavrea et al., 2011). Other terms which have been used to mean the same thing include firm performance, company performance, organizational effectiveness,

Appendix 7: Organizational Performance Indicators from Previous Research

	Indicator	Researcher
1	Profitability	(DETR, 2000); (Yu et al., 2007); (Wang et al., 2010); (Horta et al., 2010); (El-Mashaleh, 2003); (El-Mashaleh et al., 2007); (Adhiprasangga et al., 2016); (Schermerhorn et al., 2004); (Byremo, 2015)
2	Return on capital employed	(DETR, 2000); (Wang et al., 2010); (Byremo, 2015)
3	Return on value added	(DETR, 2000)
4	Interest cover	(DETR, 2000)
5	Ratio of value added	(DETR, 2000)
6	Repeat business	(DETR, 2000)
7	Customer/Client satisfaction	(Department of Trade and Industry, 2002); (El-Mashaleh, 2003); (El-Mashaleh et al., 2007); (Yu et al., 2007); (Nudurupati et al., 2007); (Wang et al., 2010); (Horta et al., 2010); (Adhiprasangga et al., 2016); (Byremo, 2015); (Draghici et al., 2014)
8	People	(Department of Trade and Industry, 2002);
9	Environment	(Department of Trade and Industry, 2002);
10	Schedule performance	(El-Mashaleh, 2003); (El-Mashaleh et al., 2007); (Ramirez et al., 2004); (Alarcon et al., 2001); (Nudurupati et al., 2007)
11	Cost performance	(El-Mashaleh, 2003); (El-Mashaleh et al., 2007); (Ramirez et al., 2004); (Alarcon et al., 2001); (Nudurupati et al., 2007)
12	Safety	(El-Mashaleh, 2003); (El-Mashaleh et al., 2007); (Ramirez et al., 2004); (Alarcon et al., 2001); (Nudurupati et al., 2007); (Horta et al., 2010)
13	Labour efficiency	(Ramirez et al., 2004); (Alarcon et al., 2001);
14	Rework	(Ramirez et al., 2004); (Alarcon et al., 2001);
15	Training	(Ramirez et al., 2004); (Alarcon et al., 2001);
16	Planning effectiveness	(Ramirez et al., 2004); (Alarcon et al., 2001);
17	Growth	(Yu et al., 2007); (Horta et al., 2010); (Pounder, 1999)
18	Stability	(Yu et al., 2007)
19	Market share	(Yu et al., 2007); (Wang et al., 2010); (Byremo, 2015)
20	Development	(Yu et al., 2007)
21	Technological capability	(Yu et al., 2007)
22	Business efficiency	(Yu et al., 2007)
23	Informatization	(Yu et al., 2007); (Pounder, 1999)

24	Organization competency	(Yu et al., 2007)
25	Employee satisfaction	(Nudurupati et al., 2007); (Byremo, 2015)
26	Environment impact	(Nudurupati et al., 2007); (Wang et al., 2010)
27	Cash flow	(Wang et al., 2010)
28	Reliability	(Wang et al., 2010)
29	Internal business	(Wang et al., 2010)
30	Financial stability	(Puri & Tiwari, 2014);
31	Financial status	(Puri & Tiwari, 2014);
32	Credit rating	(Puri & Tiwari, 2014);
33	Quality	(Haddadi & Yaghoobi, 2014); (Ramirez et al., 2004); (Alarcon et al., 2001); (Nudurupati et al., 2007); (Wang et al., 2010); (Adhiprasangga et al., 2016); (Schermerhorn et al., 2004); (Pounder, 1999); (Byremo, 2015)
34	Technical ability	(Puri & Tiwari, 2014);
35	Management capability	(Puri & Tiwari, 2014);
36	Health and safety	(Puri & Tiwari, 2014);
37	Reputation	(Puri & Tiwari, 2014);
38	Innovation	(Draghici et al., 2014); (Wang et al., 2010); (Schermerhorn et al., 2004); (Byremo, 2015)
39	Efficiency	(Draghici et al., 2014); (Haddadi & Yaghoobi, 2014); (Pounder, 1999)
40	Effectiveness	(Draghici et al., 2014);
41	Productivity	(Draghici et al., 2014); (DETR, 2000); (Ramirez et al., 2004); (Alarcon et al., 2001); (Horta et al., 2010); (Byremo, 2015)
42	Employee efficiency	(Kaganski et al., 2017); (Byremo, 2015)

Appendix 8: Determinants of Organizational Performance from Previous Research

	Determinant	Researcher
1	Strategy/strategic planning	(K'Obonyo & Arasa, 2012); (Gavrea et al., 2011); (Draghici et al., 2014)
2	Innovation/information technology	(Atalay et al., 2013); (Kemp et al., 2015); (Gavrea et al., 2011);
3	Firm resources	(Ghi, 2017);
4	Dynamic capabilities	(Ghi, 2017);
5	Corporate governance	(Gårdängen et al., 2016); (Gavrea et al., 2011);
6	Firm size	(Gårdängen et al., 2016); (Hansen & Wernerfelt, 1989);
7	Leadership	(Khatun et al., 2014); (Almatrooshi et al., 2016); (Draghici et al., 2014); (Koech & Namusonge, 2012)
8	Employee turnover	(Khatun et al., 2014);
9	Employee performance	(Almatrooshi et al., 2016); (Gavrea et al., 2011);
10	Organizational structure	(Hansen & Wernerfelt, 1989); (Gavrea et al., 2011);
11	Quality	(Gavrea et al., 2011);
12	Performance measurement	(Gavrea et al., 2011);
13	Clients	(Gavrea et al., 2011);
14	Suppliers	(Gavrea et al., 2011);
15	Competitors	(Gavrea et al., 2011);
16	Business uncertainty	(Gavrea et al., 2011);
17	Government support	(Gavrea et al., 2011);

Appendix 9: Measurement of Organizational Performance Dimensions from Previous Research

Dimensions	Indicators	Source
Profitability	net profit margin, net profit level, return on sales, pretax profit, earnings per share, gross profit margin, net profit from operations, stock price appreciation, respondent assessment, average return on sales, clients' estimate of incremental profits, average net profit margin, price to earnings, and market to book value.	Murphy, Trailer and Hill (1996)
	return on investment, net income/revenues, return on assets, economic value added, return on equity, EBTIDA margin.	Santos and Brito (2012)
Client satisfaction	service quality, adherence to schedule, safety performance, adherence to budget, communication skills, personnel skills, and management capabilities	Rahman and Alzubi (2015)
	number of complaints, mix of products, repurchase rate, general customers' satisfaction, new customer retention, and number of new products launched.	Santos and Brito (2012)
Growth	profitability, annual turnover/volume of work/sales, equipment/assets, personnel/employment, market share client retention, innovation (integration of new technologies)	(Davidsson et al., 2005)
	market-share, asset, net revenue, net income, and number of employees.	Santos and Brito (2012)
	change in sales, market share growth, job generation, change in CEO compensation, company births, change in employees, number of acquisitions, loan growth, change in labor expense to revenue, change in present value, change in pretax profit, and change in net income margin.	Murphy et al. (1996)
Technical capability	experience, plant & equipment, personnel, ability to deliver	Hatush (1996)
Business efficiency	return on investment, return on assets, return on equity, gross revenue per employee, relative product costs, net sales to total capital, and return on net worth.	Murphy et al. (1996)
	receivables turnover, asset turnover, inventory turnover, net profit per employee, net profit per square foot, sales per employee,	Carton (2004)

Dimensions	Indicators	Source
	sales per square foot, and fixed asset turnover.	
Employee satisfaction	chances for promotion, recognition for good performance, compensation, professional growth and incentive schemes.	Dash, Drabman, Spitalnik and Spitalnik (2008)
	high job satisfaction, low employee turnover, favourable workload and reward programs.	Khatun, Islam and Tehseen (2014)
	investments in employees development and training, turn-over, wages and rewards policies, organizational climate, career plans, and general employees' satisfaction	Santos and Brito (2012)
Financial stability	assets i.e. buildings, equipment etc., financial liquidity, access to credit lines, turnover, credit rating by suppliers and subcontractors	(Myšková & Hájek, 2017)
	current asset liability ratio analyses, bank references, turnover history and credit reference.	(Ozili, 2020)
	credit ratings, financial statements, bank arrangements and bonding capacity	(Hatush, 1996)
Management capability	past performance and quality, project management organization, experience of technical personnel, management knowledge	Hatush (1996)
	conflict management skills, consistency in decision making process, clarity in goals and objectives	(Khatun et al., 2014)

Appendix 10: Measurement of Organizational Performance Determinants from Previous Research

Determinant	Attribute	Source
Contractor's strategic planning	setting the direction of the company in terms of vision, mission and goals, generation, evaluation and selection of appropriate strategy, actualization of the plan where appropriate policies and frameworks are put in place	Wendy (1997)
	defining the firm's purpose and goals, appraisal of business environment, identification and analysis of firm's strategic issues, choice of strategy, and implementation, evaluation and control systems.	K'Obonyo and Arasa (2012)
	differentiation strategies, market selection strategies, project selection strategies, client selection strategies, partner selection strategies, project management strategies, investment strategies, and organizational management strategies.	Isik, Arditi, Dikmen and Birgonul, (2009)
Performance measurement	meaningful, clear and widely understood; appropriate employee involvement; based on a high degree of data integrity; data collection embedded within normal procedures; ability to drive improvement; synced with critical goals of the organization, commitment by top leadership, and simple measurement and evaluation	Sandt (2005)
	relevant (the measure relates to the activity being measured in a clear way); understandable (clear, concise and easily understood by non-specialists); timely (information comes at right time to make decisions); comparable (allow the level of performance to be compared over time); reliable (data is accurate, free from bias and can be verified); cost effective (must justify time, cost and effort of collecting, recording and analyzing the data)	Office of Financial Management (2009)
	specific, measurable, achievable, reasonable, and time-bound (SMART)	Kazan and Gumus (2013)
	objective, incapable of mall usage, clear and easy to understand, provide fast feedback, simple to use, purpose of every performance criterion must be clear, linked with organizational strategy and objectives, stimulate continuous improvement rather than	Beijer (2012)

Determinant	Attribute	Source
	simply monitoring, comprise a balanced combination of qualitative and quantitative criteria, dynamic over time, and should match the existing reward system	
Quality of service	performance (primary operating characteristics); features (special supplements to the performance of the product); conformance (extent to which the product's design and performance meet predetermined standards); aesthetics (look, texture, smell, sound and taste of the product); durability (life span of the product); serviceability (ease of repair of the product and courtesy, speed and competence of the service people); reliability (probability of the product to fail in a specified time period); and perceived quality or value (quality as viewed by the customer)	Hajjat and Hajjat (2014)
	Value for money, Fit for purpose, pleasing to look, free from defects on completion, delivered on time, fit for the purpose, supported by worthwhile guarantees, reasonable running costs and satisfactory durability	(Rad & Khosrowshahi, 1998)
Organizational structure of the firm	clear line of authority, adequate delegation of authority, lesser managerial levels, proper span of control, and simple and flexible.	Chand (2020)
	Simplicity, flexibility and continuity, clear line of authority, application of ultimate authority, proper delegation of authority, unity of command and direction, minimum possible managerial levels, proper emphasis on staff, provision for top management.	Sharma (2020)
	well expressed in writing, dynamic, flexible, contains stability and continuity, reflect the nature of work, and reflect the communication flows	Bucha (1992)
Contractor's innovativeness	new products, (covering both hard and soft), new production processes, (including but not limited to ICT usage, construction equipment, methodologies of construction), new inputs and resources, new markets, and new organizational forms	
	creation of new products, qualitative improvements of existing products, new processes, new markets, new sources or inputs, and new organizational structures	Schumpeter (1934)

Determinant	Attribute	Source
	product innovation, process innovation, organizational innovation and marketing innovation	Atalay et al. (2013)
Employee performance	work quality, planning and organizing work, being result-oriented, prioritizing, working efficiently, taking initiative, accepting and learning from feedback, cooperating with others, communicating effectively, showing responsibility, being customer-oriented, being creative, taking on challenging work tasks, showing resiliency/working under pressure, keeping job skills and knowledge up-to-date, dealing with uncertain and unpredictable work situations, and adjusting work goals when necessary	Koopmans, Bernaards, Hildebrandt, De Vet and Van Der Beek (2013)
	attendance and time management	(Bika, 2020
Clients' support	prompt payment, appointment of consultants on time, responsiveness to information requests	
	financing of projects, project definition, planning and design, and project management	Kometa, Olomolaiye and Harris (1995)
	selection of team players, securing relevant permissions, site handover, ensuring suitable management arrangements, and provision of information to designers and contractors	
Suppliers' effectiveness	quality, on-time delivery, service, price, total cost, contract compliance, lead times, responsiveness and technical support	Minahan and Vigoroso (2002)
	financial health (sales, profitability, and liquidity), operational performance metrics (quality, on-time delivery, lead times, inventory turns, responsiveness, and customer service call response time), business processes and practices, enabling behaviors or cultural factors (customer focus, continuous improvement, agility, and teamwork), and risk factors (associated with the four previous criteria)	Gordon (2005)
	on-time delivery; price variance; lead time management; percentage of overage, shortage and damaged; and invoice accuracy	IADC Supply Chain Committee (2015)
Government support	regulation, formulation of procurement policy, skills formation through formal training, direct	(Aniekwu, 2003)

Determinant	Attribute	Source
	support (including financial support), and institutional support	
	regulation and recipient of services	(Jin, 2018)

Appendix 11: Summary of concepts extracted from related theories

				Theory	**Concepts and constructs**
1	Organization theory	Classical organization theory	1	Scientific management theory	labour productivity; efficiency; scientific methods; scientific selection of workers; scientific training of workers; team work; cooperation; division of work
			2	Bureaucratic management theory	formal hierarchical structures; demarcation of roles; division of labour; management by rules; impersonality; written documentation; rigidity; firm and orderly discipline; scientific selection of workers; set salaries paid in monetary; merit-based promotions; fixed and official jurisdictional areas; efficiency
			3	Administrative management theory	division of work; authority and responsibility; discipline; supervision; organizational goals; unity of direction; fair pay; organizational hierarchy; equity; team work; tenure stability; employee involvement
			4	Neoclassical organization theory	social welfare; effectiveness; interpersonal relationships; informality; social needs; communication; collaboration; employee involvement
			5	Contingency theory	productivity; adaptation; flexibility; dynamism; organizational strategies, organizational structure; performance; technology; external environmental; information system
		Systems Theory	6	General Systems Theory	interrelationships; interdependence; synergy; environment; dynamism; feedback systems; goal setting; survival; universalism; closed systems; open systems;
			7	Complex-Adaptive Systems	interrelationships; interdependence; synergy; environment; dynamism; feedback systems; goal setting; adaptation; survival; hierarchy; complexity; networks; unpredictability; communication; cooperation; specialization; reproduction
			8	Chaos Theory	interrelationships; interdependence; synergy; environment; dynamism; feedback systems; goal setting; survival; order; change; progress; unpredictability; predictability
			9	Integral Theory	interrelationships; interdependence; synergy; environment; dynamism; feedback systems; goal setting; survival; sub-systems; interior environment; exterior environment; individual responsibility, collective responsibility

				Theory	**Concepts and constructs**
			10	Management by Objectives (MBO)	employee commitment; employee motivation; employee involvement; employee performance; job satisfaction; goal setting; positive superiors-inferior relationship; team work; feedback; joint participation; self-management; performance appraisal
2			11	Theory of performance	performance; quality; cost; capability; capacity; knowledge; skills; identity and motivation; task performance; contextual performance; individual's behaviour; training and developing subordinates; efficient communication.
3			12	Evolutionary Theory	struggle for existence, growth/desire to increase in numbers, climate, natural selection and the threat of extinction
4			13	Theory of the firm	growth; resources; competition; performance; protection; efficiency; market share; organizational structure; managerial constraints; financial constraints; organizational capacity
5		Theories on competitive advantage	14	Market-Based View (MBV)	performance; competition; external market orientation; profitability; suppliers; customers; strategy
			15	Resource-Based View (RBV)	performance; competition; internal environment; internal structure; resources; capabilities; internal processes; technology
			16	Knowledge-Based View	performance; competition; competency; knowledge; innovation
			17	Capability-Based View	performance; competition; capability; environment; dynamism; adaptation
			18	Relational View of Strategy	performance; competition; inter-firm linkages; synergy; resources, capabilities; management efficiencies; political, economic, social, technological, environmental and legal factors

Appendix 12: Sample size determination (Local contractors)

Three options were considered in the sample size calculations

Option 1

The following formula was developed by Cochran (1963) to generate samples for proportions. The same formula has also been adopted by Mugenda and Mugenda (1999). This formula is applicable when the population ranges from 10,000 to infinity.

$$n_0 = \frac{Z^2 pq}{e^2}$$

Where:

n_0 = sample size

Z^2 = abscissa of a normal curve cutting off an area α at the tails (1 - α is the desired confidence level, e.g., 95%)

p = estimated proportion of an attribute that is present in the population (50% commonly adopted)

q = 1-p

e = desired level of precision (usually set at 0.05)

Therefore;

$$n_0 = \frac{1.96^2 \text{x } 0.5(1-0.5)}{0.05^2}$$

$$n_0 = 384$$

The following formula has been proposed by Israel (1992) to adjust the estimated sample size from an infinite population to a finite one;

$$n = \frac{n_0}{1 + \frac{n_0 - 1}{N}}$$

Where;

n = New sample size

n_0 = sample size = 384

N = population size = 1,427 (local contractors)

NB: 1,427 is the number of local contractors obtained by subtracting multiple registrations in various categories (1,735), foreign contractors (138), and those whose core business is not construction (217) from the total number of NCA1 registrations (3,517)

Therefore;

$$New\ n = \frac{384}{1 + \frac{384 - 1}{1{,}427}} = \frac{384}{1.268} = 302\ contractors$$

Option 2

Based on the following formula extracted from Kothari (2004):

$$n = \frac{z^2.p.q.N}{e^2(N-1) + (z^2.p.q)}$$

Where:

n = size of sample

N = size of population

z = standard variate at a given confidence level (standard normal deviate usually set at 1.96 which corresponds to 95% confidence level).

e = acceptable error (5%)

p = Proportion of the target population estimated to have a particular characteristic. (If there is no reasonable estimate, 50% or 0.5 is used.)

q = Proportion of the target population estimated not to have a particular characteristic (1 – p)

$$n = \frac{1.96^2 \times 0.5 \times 0.5 \times 1{,}427}{0.05^2(1{,}427 - 1) + (1.96^2 \times 0.5 \times 0.5)}$$

NB: 1,427 is the number of local contractors obtained by subtracting multiple registrations in various categories (1,735), foreign contractors (138), and those whose core business is not construction (217) from the total number of NCA1 registrations (3,517)

$$n = \frac{1{,}370.49}{(3.565) + (0.9604)} = \frac{1{,}370.49}{4.52} = 302.84 = 302\ contractors$$

Option 3

Yamane (1967) as cited in Israel (1992) provides a simplified formula which can be used in calculating the sample size;

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

Where;

(n) is the sample size,

(N) is the population size and

(*e)* is the level of precision (confidence level, usually set at 0.05)

Therefore;

$$n = \frac{1{,}427}{1 + 1{,}427(0.05)^2} = \frac{1{,}427}{4.5675} = 312\ contractors$$

Appendix 13a: Analysis of Missing Values and Outliers in Contractors' Data

	N	Mean	Std. Deviation	Missing		No. of Extremes[a]	
				Count	Percent	Low	High
nca	235	1.83	.842	0	.0	0	0
permanent	233	3.04	2.391	2	.9	0	18
age	233	3.46	2.282	2	.9	0	23
revenue	226	2.89	2.148	9	3.8	0	5
expenditure	225	3.23	2.620	10	4.3	0	0
megaproj	157	1.87	1.645	2	.9	0	19
empturn	210	3.23	2.067	25	10.6	0	20
loans	215	3.22	1.933	20	8.5	0	14
workforce	217	3.35	2.097	18	7.7	0	22
volume	216	3.94	2.382	19	8.1	0	0
equipment	216	3.55	2.551	19	8.1	0	0
PR1	235	5.46	1.996	0	.0	0	0
PR2	235	5.19	1.933	0	.0	0	0
PR3	235	5.10	2.033	0	.0	0	0
PR4	235	4.97	2.086	0	.0	0	0
PR5	235	5.11	2.250	0	.0	0	0
CS1	235	7.17	2.037	0	.0	0	0
CS2	235	6.96	2.079	0	.0	20	0
CS3	235	7.01	2.017	0	.0	1	0
CS4	235	7.01	2.104	0	.0	0	0
CS5	235	7.16	1.980	0	.0	0	0
GR1	235	5.66	2.371	0	.0	0	0
GR2	235	5.54	2.365	0	.0	0	0
GR3	235	6.04	2.580	0	.0	0	0
GR4	235	5.45	2.512	0	.0	0	0
GR5	235	5.24	2.669	0	.0	0	0
TC1	235	6.95	1.976	0	.0	0	0
TC2	235	6.30	2.189	0	.0	0	0
TC3	235	6.86	1.900	0	.0	0	0
TC4	235	6.19	2.184	0	.0	0	0
TC5	235	6.14	2.226	0	.0	0	0
BE1	235	6.83	2.025	0	.0	0	0
BE2	235	6.28	2.035	0	.0	0	0
BE3	235	6.33	1.972	0	.0	0	0
BE4	235	6.27	1.933	0	.0	0	0
BE5	235	6.33	2.051	0	.0	0	0

	N	Mean	Std. Deviation	Missing		No. of Extremes[a]	
				Count	Percent	Low	High
ES1	235	5.69	2.455	0	.0	0	0
ES2	235	5.45	2.589	0	.0	0	0
ES3	235	5.96	2.655	0	.0	0	0
ES4	235	5.86	2.599	0	.0	0	0
ES5	235	5.73	2.701	0	.0	0	0
FS1	235	6.50	2.066	0	.0	0	0
FS2	235	6.21	1.989	0	.0	0	0
FS3	235	6.17	1.997	0	.0	0	0
FS4	235	6.20	1.961	0	.0	0	0
FS5	235	6.21	2.117	0	.0	0	0
QP1	235	7.31	1.883	0	.0	0	0
QP2	235	7.41	1.896	0	.0	2	0
QP3	235	7.60	1.718	0	.0	0	0
QP4	235	7.29	1.790	0	.0	0	0
QP5	235	7.60	1.760	0	.0	0	0
MC1	235	7.09	1.926	0	.0	2	0
MC2	235	7.07	1.964	0	.0	2	0
MC3	235	7.06	1.944	0	.0	3	0
MC4	235	7.01	2.061	0	.0	4	0
MC5	235	6.89	2.011	0	.0	0	0
SP1	235	7.00	2.064	0	.0	3	0
SP2	235	6.64	2.352	0	.0	0	0
SP3	234	7.22	1.977	1	.4	2	0
SP4	235	6.95	2.218	0	.0	0	0
SP5	235	6.76	2.392	0	.0	0	0
ST1	235	6.47	2.024	0	.0	0	0
ST2	235	6.59	1.995	0	.0	0	0
ST3	235	6.79	1.934	0	.0	0	0
ST4	235	6.70	1.997	0	.0	0	0
ST5	235	6.60	2.061	0	.0	0	0
PM1	235	6.57	1.885	0	.0	0	0
PM2	235	6.71	1.959	0	.0	0	0
PM3	235	6.77	1.945	0	.0	0	0
PM4	235	7.03	1.972	0	.0	2	0
PM5	235	6.77	2.056	0	.0	0	0
QS1	235	7.25	1.878	0	.0	0	0
QS2	235	7.31	1.838	0	.0	1	0

	N	Mean	Std. Deviation	Missing		No. of Extremes[a]	
				Count	Percent	Low	High
QS3	235	7.27	1.793	0	.0	0	0
QS4	235	7.24	1.832	0	.0	0	0
QS5	235	7.21	1.907	0	.0	1	0
OS1	235	6.99	2.011	0	.0	0	0
OS2	235	6.91	1.951	0	.0	0	0
OS3	235	6.89	2.015	0	.0	0	0
OS4	235	6.74	2.049	0	.0	0	0
OS5	235	6.82	2.125	0	.0	0	0
CI1	235	5.96	2.491	0	.0	0	0
CI2	235	5.80	2.664	0	.0	0	0
CI3	235	5.68	2.539	0	.0	0	0
CI4	235	5.69	2.610	0	.0	0	0
CI5	235	5.45	2.678	0	.0	0	0
EP1	235	7.40	1.651	0	.0	0	0
EP2	235	7.32	1.706	0	.0	1	0
EP3	235	7.25	1.664	0	.0	7	0
EP4	235	7.34	1.704	0	.0	0	0
EP5	235	7.35	1.811	0	.0	1	0
CE1	235	6.16	1.900	0	.0	7	8
CE2	235	6.60	1.847	0	.0	0	0
CE3	235	6.54	1.793	0	.0	0	0
CE4	235	6.43	1.828	0	.0	0	0
CE5	235	6.60	1.886	0	.0	0	0
SE1	235	6.71	1.891	0	.0	0	0
SE2	235	6.94	1.840	0	.0	9	0
SE3	235	6.85	1.904	0	.0	0	0
SE4	235	6.84	1.826	0	.0	0	0
SE5	235	6.88	1.916	0	.0	0	0
CN1	235	6.73	1.975	0	.0	0	0
CN2	235	6.97	1.929	0	.0	0	0
CN3	235	7.01	1.922	0	.0	11	0
CN4	235	6.98	1.810	0	.0	6	0
CN5	235	6.85	1.814	0	.0	6	0
GS1	235	4.94	2.235	0	.0	15	20
GS2	235	5.71	2.063	0	.0	0	0
GS3	235	5.44	2.211	0	.0	0	0
GS4	235	4.91	2.350	0	.0	0	0

	N	Mean	Std. Deviation	Missing		No. of Extremes[a]	
				Count	Percent	Low	High
GS5	235	3.09	2.523	0	.0	0	0
a. Number of cases outside the range (Q1 - 1.5*IQR, Q3 + 1.5*IQR).							

Appendix 13b: Analysis of Missing Values and Outliers in Consultants' Data

	N	Mean	Std. Deviation	Missing		No. of Extremes[a,b]	
				Count	Percent	Low	High
background	143	2.22	.982	0	.0	.	.
experience	143	2.35	1.365	0	.0	0	6
PR1	129	6.04	1.800	14	9.8	5	1
PR2	129	5.74	1.730	14	9.8	5	2
PR3	129	5.66	1.734	14	9.8	4	1
PR4	128	5.56	1.935	15	10.5	0	0
PR5	128	5.43	1.868	15	10.5	0	0
CS1	143	7.07	1.949	0	.0	0	0
CS2	143	6.20	2.219	0	.0	0	0
CS3	143	6.38	2.165	0	.0	0	0
CS4	143	6.82	2.118	0	.0	0	0
CS5	143	7.02	2.108	0	.0	0	0
GR1	133	6.09	1.956	10	7.0	0	0
GR2	131	5.92	1.916	12	8.4	0	0
GR3	131	6.36	2.301	12	8.4	0	0
GR4	131	5.97	2.075	12	8.4	0	0
GR5	131	6.04	2.164	12	8.4	0	0
TC1	141	7.01	2.009	2	1.4	8	0
TC2	143	6.40	2.133	0	.0	0	0
TC3	143	6.85	1.980	0	.0	0	0
TC4	143	5.77	2.072	0	.0	0	0
TC5	143	5.64	2.259	0	.0	0	0
BE1	129	6.40	1.813	14	9.8	0	0
BE2	129	5.89	1.724	14	9.8	4	3
BE3	129	5.96	1.910	14	9.8	4	3
BE4	129	5.71	1.852	14	9.8	5	3
BE5	129	5.85	2.051	14	9.8	0	0
ES1	143	5.60	1.808	0	.0	0	0
ES2	143	5.28	2.131	0	.0	0	0
ES3	143	5.87	2.107	0	.0	0	0
ES4	143	5.76	2.252	0	.0	0	0
ES5	143	5.47	2.486	0	.0	0	0
FS1	137	6.28	2.118	6	4.2	0	0
FS2	137	6.22	2.003	6	4.2	0	0
FS3	137	6.02	2.049	6	4.2	0	0
FS4	137	6.07	2.017	6	4.2	0	0

	N	Mean	Std. Deviation	Missing		No. of Extremes[a,b]	
				Count	Percent	Low	High
FS5	137	6.45	2.007	6	4.2	0	0
QP1	143	7.01	1.926	0	.0	10	0
QP2	143	6.85	2.079	0	.0	0	0
QP3	143	7.27	1.880	0	.0	0	0
QP4	143	6.95	1.881	0	.0	8	0
QP5	143	7.38	1.869	0	.0	0	0
MC1	143	6.77	1.971	0	.0	0	0
MC2	143	6.79	2.038	0	.0	0	0
MC3	143	6.57	2.144	0	.0	0	0
MC4	143	6.78	2.009	0	.0	0	0
MC5	143	6.69	2.046	0	.0	0	0
SP1	143	6.66	1.968	0	.0	0	0
SP2	143	5.93	2.517	0	.0	0	0
SP3	143	6.88	2.012	0	.0	0	0
SP4	143	6.48	2.175	0	.0	0	0
SP5	143	6.30	2.185	0	.0	0	0
ST1	143	5.97	2.060	0	.0	0	0
ST2	143	6.05	2.084	0	.0	0	0
ST3	143	6.27	2.046	0	.0	0	0
ST4	143	6.24	2.214	0	.0	0	0
ST5	143	6.33	2.254	0	.0	0	0
PM1	143	6.31	2.060	0	.0	0	0
PM2	143	6.20	2.068	0	.0	0	0
PM3	143	6.30	2.204	0	.0	0	0
PM4	143	6.71	2.306	0	.0	0	0
PM5	143	6.50	2.461	0	.0	0	0
QS1	143	6.99	1.928	0	.0	0	0
QS2	143	7.22	1.801	0	.0	0	0
QS3	143	7.09	1.982	0	.0	1	0
QS4	143	6.63	1.849	0	.0	0	0
QS5	143	6.67	1.811	0	.0	0	0
OS1	143	6.76	1.888	0	.0	7	0
OS2	143	6.45	1.802	0	.0	0	0
OS3	143	6.50	1.744	0	.0	0	0
OS4	143	6.31	2.080	0	.0	0	0
OS5	143	6.40	2.150	0	.0	0	0
CI1	140	5.52	2.127	3	2.1	0	0

	N	Mean	Std. Deviation	Missing		No. of Extremes[a,b]	
				Count	Percent	Low	High
CI2	140	5.76	2.074	3	2.1	0	0
CI3	140	5.68	2.219	3	2.1	0	0
CI4	140	5.21	2.410	3	2.1	0	0
CI5	140	5.04	2.541	3	2.1	0	0
EP1	143	6.90	1.875	0	.0	7	0
EP2	143	6.72	1.984	0	.0	11	0
EP3	143	6.42	2.094	0	.0	0	0
EP4	143	6.89	1.954	0	.0	9	0
EP5	143	6.73	2.087	0	.0	0	0
CE1	143	6.21	1.883	0	.0	0	0
CE2	143	6.85	2.116	0	.0	0	0
CE3	143	6.76	2.116	0	.0	0	0
CE4	143	6.47	2.181	0	.0	0	0
CE5	143	6.74	2.171	0	.0	0	0
SE1	143	6.48	1.846	0	.0	0	0
SE2	143	6.76	1.870	0	.0	0	0
SE3	143	6.43	1.927	0	.0	0	0
SE4	143	6.43	1.955	0	.0	0	0
SE5	143	6.56	1.886	0	.0	0	0
CN1	141	6.91	1.969	2	1.4	0	0
CN2	141	7.02	1.892	2	1.4	5	0
CN3	141	7.19	1.912	2	1.4	1	0
CN4	141	6.96	2.030	2	1.4	0	0
CN5	141	6.93	2.009	2	1.4	0	0
GS1	142	4.72	2.558	1	.7	0	0
GS2	142	5.46	2.195	1	.7	0	0
GS3	142	5.30	2.250	1	.7	0	0
GS4	142	4.80	2.301	1	.7	0	0
GS5	142	3.38	2.649	1	.7	0	0
a. Number of cases outside the range (Q1 - 1.5*IQR, Q3 + 1.5*IQR).							
b. . indicates that the inter-quartile range (IQR) is zero.							

Appendix 14: Additional Criteria for Describing the Organizational Performance of Local Contractors (Qualitative Data)

Theme	Sub-theme	Criteria
Profitability		1) Return to shareholders is high.
Client satisfaction		2)Number of current and projected clients; 3) Feedback from clients
Technical capability	***Experience (previous works)***	4) Organizational performance is based on project complexity; 5) Subletting part of works to labour subcontractors enhances proper labour management which in turn reduces labour cost thus increased turnover; 6) 30-40 year old family run contractor, highly efficient in mobilizing to site, repairing equipment, and adapting to changes on site.
	Qualification of personnel	7) Teamwork commitment; 8) Aggressiveness of the personnel; 9) Our hierarchical organization structure enhances the firm's performance overall since top tier staff performance is directly influenced by mid and lower tier staff
	Advancement of electronic software used	10) Use of construction management software/platforms
Business efficiency		11) They are very well organized and efficient in their work ensuring timely completion
Employee satisfaction		12) Good interrelation among employees
Quality of products		13) Quality Management. For the local contractors I have worked with, approximately 40% of them have a quality management policy that they strictly adhere to; 14) Regular inspection of work
Managerial capability	***Effectiveness of strategic management***	15) We work under clearly defined standard operating procedures outlined for each department and this helps us deliver our services well; 16) Most of them don't really prioritize on planning
	Promptness in decision making	17) Timely decision making
	Prudence in financial management	18) Lack of detailed accounting procedures -Very low
	Efficiency in human	19) Contractors are keen on matters of resource management, labour management and quality management. However there is still need for better

Theme	Sub-theme	Criteria
	resource management	change management, Health & Safety, and managing costs where changes and variations are involved.
	Others	20) Very low diversity within management levels; 21) Employee involvement in decision making processes; 22) Litigation history. The management endeavors to ensure no disputes internally and externally; 23) Management knowledge and organizational culture
Level		24) Moderate; 25) Average; 26) Good; 27) Average; 28) Good; 29) Average but requiring improvement; 30) Good; 31) Very High; 32) Above average; 33) Moderate; 34) Overall average; 35) Above average; 36) Average; 37) Average; 38) Better than average; 39) Above average; 40) Below average, has to be pushed to comply; 41) Great organizational performance; 42) It is perfect and promising; 43) Fair; 44) The company has been performing greatly for the past 3 years; 45) Can do better; 46) Fair - there was an organizational structure, but not very articulate) There's room for enhancing the organizational performance,. For Quality, Timely, Cost effective construction projects that will be delivered within schedule; 47) The organizational performance is above the threshold of efficiency but there is great room for improvement.
Effectiveness		48) Effective and quality; 49) The organizational performance is effective; 50) Its meets the new normal in the construction industry; 51) Most of them do not take their work seriously and prefer shortcuts to efficient and effective project delivery
Others		52) High Integrity index; 53) Project Management Unit/Office; 54) Still setting up systems to full streamline the organizational performance; 55) It is easier to manage since it is a sole proprietorship; 56) The organization runs well in many departments; 57) Waste Management. Majority of the local contractors have no effective waste management policy; 58) Organizational culture; 59) Time management; 60) Competent; 61) organizational team's commitment to successful project completion; 62) Highly organized; 63) Frequency of claims; 64) Ethical behaviour

Appendix 15: Additional Determinants of Organizational Performance of Local Contractors (Qualitative Data)

Theme	Determinants
Quality of service	1) Sub-letting parts of works to specialists has really enabled us to tap quality services from a variety of experienced specialists for example on Waterproofing; 2) Sticking to the predetermined time, cost and quality is our utmost key which has enhanced our service delivery.
Organizational structure of the firm	3) Reporting lines; 4) Top level management direct involvement on sites; 5) Succession structures
Contractor's innovativeness	6) Current trends in construction industry; 7) Dynamic nature of the industry; 8) Exposure to modern techniques that have proven effective and their adoption
Employee performance	9) Involvement of workers in making of policies; 10) The communication channels used to communicate with the employees; 11) Effectiveness of workers/experts on project sites; 12) Incompetently trained professionals; 13) Staff motivation; 14) Working environment; 15) Employee remuneration; 16) check about Village Polytechnics-technician without Certificate
Clients' effectiveness	17) Delay of payments in government projects; 18) Delayed payments by clients; 19) Relationships with clients; 20) Delayed payment from clients affects productivity and delivery of works; 21) Efficiency of consultants/design team; 22) Harmony between consultants and contractor; 23) Client criteria; 24) Inter-relational aspects between the contractor, client and the consultants
Suppliers' effectiveness	25) Poor quality construction materials; 26) Subcontracting tender procedures; 27) Availability of material and labour resource
Competition	28) Foreign contractors in the country; 29) Competiveness for construction projects
Government support	30) Contractor has developed a strict policy not to undertake any government contracts due to experience of biased tendering and very poor payment schedules; 31) Political and administrative factors (external); 32) Political environment; 33) Prolonged procedures and requirements by the government; 34) Fluctuations; 35) Nepotism and discrimination
Size of company	36) The size of the company; 37) Size of company; 38) Number of directors; 39) Size of the firm(NCA registration category)
Communication	40) Poor communication and coordination between managers and staff; 41) Site to office communication channels; 42)

	Organizational breakdown of information; 43) Onsite supervision and reporting
Project characteristics	44) Complexity of the project; 45) Location and remoteness of sites; 46) Complexity of projects; 47) Projects delivery period; 48) Projects delivery turnover; 49) Period of time spent in construction
Others	50) Working capital in that local contractors engage in diversion of contract funds for other uses other than the project. This brings about a negative effect; 51) Post occupancy evaluation; 52) Organizational culture; 53) Reliability of financial assistance (loans) from banks; 54) Most Contractors are simply business men, not really professionally qualified in the industry; 55) Proper documentation

Appendix 16a: CFA; Factor loadings in Dimensions of Organizational Performance

Construct	Code	Indicator	Factor loading	R^2>.25
Profitability	PR1	gross profit margin	.901	.812
	PR2	operating profit margin	.919	.845
	PR3	net profit margin	.934	.872
	PR4	return on assets	.919	.845
	PR5	asset turnover	.892	.795
Client satisfaction	CS1	service quality	.869	.755
	CS2	adherence to schedule	.927	.860
	CS3	adherence to budget	.874	.764
	CS4	communication skills	.878	.770
	CS5	personnel skills	.913	.834
Growth	GR1	profitability	.910	.828
	GR2	annual turnover/volume of work	.942	.887
	GR3	client retention	.915	.837
	GR4	number of employees	.889	.790
	GR5	equipment/assets	.893	.797
Technical capability	TC1	experience (previous works)	.894	.800
	TC2	adequacy of plant & equipment	.784	.615
	TC3	qualification of personnel	.901	.812
	TC4	advancement of electronic hardware used	.804	.647
	TC5	advancement of electronic software used	.773	.597
Business efficiency	BE1	labour productivity	.888	.789
	BE2	return on investment in equipment	.880	.774
	BE3	energy efficiency	.918	.843
	BE4	revenue per employee	.894	.799
	BE5	marketing efficiency	.861	.741
Employee satisfaction	ES1	remuneration/salary	.934	.872
	ES2	reward for excellence in job performance	.932	.869
	ES3	favourability of working conditions	.954	.910
	ES4	professional growth	.904	.817
	ES5	training and development	.907	.823
Financial stability	FS1	credit ratings	.823	.677
	FS2	net value of current assets	.855	.731
	FS3	adequacy of working capital	.934	.873
	FS4	net cash flow from projects	.939	.883
	FS5	access to overdraft facilities	.867	.752
	QP1	aesthetics	.872	.761

Construct	**Code**	**Indicator**	**Factor loading**	**R^2**>.25
Quality of products	QP2	freeness from defects on completion	.891	.795
	QP3	fitness for the purpose	.934	.872
	QP4	support by worthwhile guarantees	.916	.839
	QP5	durability	.900	.811
Managerial capability	MC1	effectiveness of strategic management	.902	.814
	MC2	consistency in decision making	.956	.914
	MC3	promptness in decision making	.945	.892
	MC4	prudence in financial management	.895	.801
	MC5	efficiency in human resource management	.884	.781
Safety performance	SP1	soundness of health and safety policies	.858	.736
	SP2	availability of health and safety officer	.846	.715
	SP3	use of personal protective equipment	.932	.868
	SP4	use of warning signage, barriers etc.	.906	.820
	SP5	induction of workers on OHS	.940	.884

Appendix 16b: CFA; Factor loadings in Determinants of Organizational Performance

Construct	Code	Indicator	Factor loading	R^2>.25
Strategic planning practices	ST1	definition of the firm's purpose and goals	.853	.728
	ST2	development of a mission and vision	.919	.844
	ST3	assessment of business environment	.878	.771
	ST4	identification and analysis of firm's strategic issues	.931	.866
	ST5	implementation, evaluation and control systems	.918	.843
Performance measurement practices	PM1	clarity and meaningfulness to all	.906	.821
	PM2	harmony with organizational goals	.939	.881
	PM3	reliability of data used	.892	.795
	PM4	commitment by top management	.866	.751
	PM5	employee involvement	.871	.758
Quality of service	QS1	reliability	.893	.798
	QS2	responsiveness to clients	.909	.827
	QS3	knowledge and courtesy of employees	.876	.767
	QS4	empathy towards clients	.889	.791
	QS5	appearance of physical facilities and personnel	.873	.762
Organizational structure of the firm	OS1	clarity of line of authority	.852	.727
	OS2	flexibility	.924	.853
	OS3	adequacy of delegation of authority	.908	.825
	OS4	provision of stability and continuity	.898	.806
	OS5	documentation of the structure	.852	.726
Contractor's innovativeness	CI1	adoption of new processes	.893	.798
	CI2	advancement of construction equipment	.919	.845
	CI3	entry into new markets	.927	.859
	CI4	advancement in software technology	.921	.848
	CI5	research and development endeavour	.884	.782
Employee performance	EP1	work quality	.871	.758
	EP2	effectiveness of communication	.897	.805
	EP3	creativity and taking initiative	.932	.868
	EP4	cooperation (level of team play)	.867	.751
	EP5	acceptance and learning from feedback	.856	.733
Clients' effectiveness	CE1	promptness in payment	.793	.629
	CE2	selection of competent project consultants	.863	.745

Construct	Code	Indicator	Factor loading	R^2>.25
	CE3	timeliness in appointment of project consultants	.888	.789
	CE4	responsiveness to information requests and decisions	.933	.871
	CE5	acquisition of local authority permissions	.859	.737
Suppliers' effectiveness	SE1	timeliness of delivery	.887	.786
	SE2	adherence to quality specifications	.923	.853
	SE3	timeliness of communication	.912	.831
	SE4	consistency of improvement of services	.932	.869
	SE5	technical support for their installations	.892	.795
Competition	CN1	increased efficiency	.842	.709
	CN2	improved quality	.943	.890
	CN3	enhanced client satisfaction	.929	.863
	CN4	increased innovativeness	.898	.807
	CN5	improved industry linkages	.803	.645
Government support	GS1	provision of construction jobs	.547	.299
	GS2	regulation of the industry	.818	.670
	GS3	skills development through formal training e.g. NITA, NCA	.915	.837
	GS4	efficiency of procurement practices	.862	.743
	GS5	direct support e.g. financial	.625	.390

Appendix 17: Suggested ways of enhancing the Level of Organizational Performance of Local Contractors (Qualitative Data)

Theme	Sub-theme	Ways of enhancing the Level of OP
Strategic planning practices		1) Strategic Management utilizing organizational resources to enhance performance of local contractors; 2) Directors and top level managers need to continuously monitor how well the organization is meeting its mission; 3) Allocating resources for strategic planning; 4) Allow involvement of employees in policy formation and implementation to prevent turnover; 5) Strategy implementation; 6) Developing strategies to enhance more engagements with the clients and focus mostly on the clients' needs with regards to what is being constructed.
Performance measurement practices		7) Measure performance against other projects; 8) Performance appraisals
Quality of service		9) Work well on quality services or products; 10) Quality management practices; 11) Proper quality management planning and monitoring structures
Organizational structure of the firm		12) Proper channels of communication; 13) Enhanced organizational structure through elaborate responsibilities of individuals, departments and teams; 14) Improved organogram
Contractor's innovativeness	***Adoption of new processes***	15) Be open to new methods of construction; 16) Improved methodology in execution of works; 17) Flexibility of the contractors in adoption of emerging trends in the construction industry; 18) By being more innovative, paying attention to details and improving on communication with other consultants; 19) By adopting efficient technologies and project execution processes that improve project quality, value and timelines as well as helping them achieve their desired profit margins.
	Advancement of construction equipment	20) Use of new technology; 21) Adopt modern technology
	Entry into new markets	22) Adopting innovative processes and expanding to new markets; 23) Embracing new technology both in construction and software
	Advancement in software technology	24) Adoption of new technology; 25) Embrace use of new technology; 26) Use of modern technology; 27) Adoption of latest software; 28) Adoption of new software tools that improve in-house processes;

Theme	Sub-theme	Ways of enhancing the Level of OP
		29) Innovation by the contractor and use of advanced technology; 30) By embracing emerging technological trends
	Research and development endeavour	31) Advanced technology; 32) Continuous training of employees to embrace technology; 33) Incorporating new technology; 34) Creating linkages to potential clients through online platforms; 35) Through collaboration and teamwork with full adoption of technology e.g. BIM; 36) Research and Innovation; 37) Encouraging research and innovation on the subject matter; 38) More research
Employee performance		39) Enhanced teamwork; 40) Hiring some a few technical staff members to help them become more competitive in the site engineering side of construction; 41) Enhance teamwork in projects
Clients' effectiveness	***Promptness in payment***	42) Prompt payment; 43) Improved mode of payment to contractors; 44) Advance payment to contractors; 45) Provision of adequate advance payment; 46) Timely payments to local contractors; 47) Provision of advance payment to all projects;
	Selection of competent project consultants	48) Competent consultants for the project; 49) Use of efficient project consultants
	Responsiveness to information requests and decisions	50) Timely provision of details by consultants; 51) Enhanced communication with project consultants
	Others	52) Prompt issuance of practicing certificates upon inspection and payment; 53) Preference by clients; 54) Good clients; 55) Regular meetings with all stakeholders; 56) Regular site coordination meetings between contractors and subcontractors; 57) Good working relationship among the stakeholders of projects
Suppliers' effectiveness		58) Access to quality construction materials; 59) Linkages with international partners such as manufacturers; 60) Timely delivery of materials; 61) Proper site coordination between contractor and subcontractor

Theme	Sub-theme	Ways of enhancing the Level of OP
Competition		62) Provide platforms for benchmarking with other contractors; 63) Benchmarking among contractors as opposed to viewing them as competitors; 64) Partnerships with foreign firms
Government support	***Provision of construction jobs***	65) Preference of local contractors by government; 66) Giving works to local contractors; 67) Government to set aside a certain percentage of construction works to local contractors; 68) Giving more job opportunities and projects to local contractors especially in tendering process of public entities; 69) Government to provide more job opportunities to local contractors; 70) Awarding more contracts to local contractors; 71) Local contractors to be given priority in procurement; 72) Offering mega projects to local contractors instead of importing such services; 73) More opportunities to local contractors; 74) Offering mega projects to enable them acquire more skills; 75) Improved recognition by the government; 76) Preferring local contractors for major projects; 77) Preference for mega projects; 78) Local contractors to be engaged in mega projects
	Prompt payment	79) Prompt payment in government jobs; 80) Prompt payment for work done especially by government; 81) Government should pay contractors on time; 82) Prompt payment by government since delayed payments result to extended project period or reduced profits; 83) Ease channels of payments especially in government projects
	Regulation of the industry	84) Regulation through government or legislation act; 85) Government to create an enabling environment for small scale and large scale contractors to thrive. A regulation ought to be enhanced in addition to those in existence to protect our local firms. For example provision of financial support and tax holidays; 86) Moderation of entry of foreign contractors; 87) Easy access to regulatory bodies; 88) Proper regulation of the construction environment is required; 89) Curb against influx of foreign firms; 90) Reduce outsourcing of contractors from other countries; 91) Regulate registration of foreign contractors; 92) Discussion with the NCA on how to help contractors. They are out of reach in most of the times; 93) Regulating the registration of foreign contractors; 94) Stricter registration regime to weed out briefcase contractors; 95) Government support through policies; 96) Making regulatory bodies more accessible; 97) Favourable government policies towards local contractors; 98) Proper control of contractor registration; 99) Regulation of NCA registration of contractors; 100) Eliminate unregistered contractors; 101) Easy access to regulatory bodies; 102) Improving subcontracting tender laws to ensure payment efficiency; 103) Improve on regulation of industry and training technical

Theme	Sub-theme	Ways of enhancing the Level of OP
		personnel; 104) The local contractors' performance can be enhanced through government support and adherence to regulations; 105) Create links between contractors and government
	Training	106) Free government sponsored trainings; 107) More government trainings through the NCA and other related bodies; 108) Providing training seminars to local contractors; 109) Provision of more training opportunities; 110) NCA should ensure that Directors and senior personnel of construction companies get continuous professional development and training. They usually send junior officers to the training merely to obtain the CPD points; 111) Holding professional trainings and seminars more often by the regulators of the industry; 112) Contractor empowerment programmes; 113) Through trainings and regulations; 114) Readjustment of tertiary education curriculum to provide relevant skills
	Efficiency of procurement practices	115) Integrity management system; 116) Proper procurement channels; 117) Fairness to tender evaluation; 118) Tender awarding process should be free, fair and open. There should be high level of integrity; 119) Free and fair tender awards; 120) Improved procurement systems; 121) Tendering laws which are friendly to local contractors; 122) Reduction in procurement bureaucracy; 123) Proper channels for awarding contracts; 124) Integrity in award of tenders; 125) Regularization of construction procedures such as bidding, procurement and training on best practices. This should be undertaken by the government
	Direct support	126) Government incentives; 127) Tax reliefs; 128) The government should create an enabling environment for the local firms to thrive. This can be done by provision of funds, increasing technical capacity of contractors and access to credit facilities. The government also needs to remove barriers that hinder local companies competing favourably with the foreign contractors; 129) The government to finance contractor and reduce loan interest; 130) Tax relief; 131) Tax relief; 132) Tax reliefs; 133) Increased capital supply by government and lending institutions at affordable interest rates; 134) Access to affordable loans; 135) Local contractors should be supported by the government through tax rebates which can help them grow; 136) Direct financial support of local contractors by the government; 137) Tax reliefs; 138) Government incentives; 139) Reducing the tax burden of local contractors; 140) Increased government support; 141) Getting credit (financial assistance) from government; 142) Through government incentives such as tax relief; 143) Financial assistance through loans from the government; 144) Increased support by the government; 145) Establishment of finance

Theme	Sub-theme	Ways of enhancing the Level of OP
		facilities by the government; 146) Tax reliefs; 147) Increased government support; 148) More government support; 149) Government support through tax holidays and tax reliefs; 150) Through government support by abolishing or reducing taxes; 151) Government incentives; 152) Favourable tax regimes; 153) Credit facility to contractors; 154) Access to financial assistance should be effective; 155) Easy acquisition of loans; 156) Reduced taxes; 157) Tax reliefs; 158) Increased government support; 159) Incentives for local contractors; 160) Easier acquisition of local authority permissions; 161) Access to cheaper credit facilities for competitive advantage; 162) Access to cheap credit facilities is essential in improving cash flow; 163) Recognizing and awarding contractors every year
Client satisfaction		164) Focus on clients' needs
Technical capability	***Experience (previous works)***	165) Joint ventures can pull resources and share experiences; 166) Mergers with more experienced contractors; 167) Local contractors should humble themselves and liaise/do case studies/learn from international contractors who are advanced in performance of massive construction projects so they can effectively organize their firms; 168) Benchmarking
	Adequacy of plant & equipment	169) Use of modern equipment and techniques which save on labour and time
	Qualification of personnel	170) Training and Development; 171) Have employees retrain with industry experts in the built environment every number of years; 172) Training of the employees; 173) Training of personnel; 174) More training; 175) Through training and benchmarking with experienced contractors; 176) More training of contractors; 177) Conduct more training and team building activities; 178) Increased training; 179) More staff training; 180) Improved teamwork; 181) Trainings; 182) Additional training; 183) Training and development of all participants to support delivery process; 184) Training through seminars; 185) Training; 186) Training; 187) Training; 188) Professional training; 189) Continuous training for the key staff in the current technologies; 190) Attending industry workshops and trainings offered by bodies such as NITA and NCA; 191) Training of employees on the emerging trends in the industry; 192) Proper Training of the human resource involved in the projects; 193) Training on upcoming construction methods and attaining project efficiency; 194) Regular training of employees and leadership and proper apprenticeship; 195) Training of employees; 196) Use of quantity surveyors

Theme	Sub-theme	Ways of enhancing the Level of OP
		to manage financial aspects of projects; 197) Hire skilled workers to achieve good progress and avoid poor quality of work; 198) Fully utilize the construction team; 199) Local contractors should have a good system of absorbing employees and offering training to all so that their teams of labour in different projects are on the same page; 200) Ensuring that all the employees are conversant with the clauses in the standard contract used in a specific project so as to avoid conflicts with other team players in the project; 201) Through investing in training, plants and adoption of new systems; 202) Employment of competent employees at all levels; 203) Expanding quality skilled labour force; 204) Continuous learning and training, as well as clear communication channels; 205) Teamwork; 206) More resources; 207) Ensuring professional competency of the contractor's work force; 208) Improved teamwork; 209) Employment of highly skilled technicians; 210) Intensive industrial training for new graduates and standardization of the same is key. There's a missing link between training institutions and the industry; 211) Stop operating without controls, employ only qualified and competent workers, value and reward their workforce, stop employing to hurt feelings of the existing workers i.e. unqualified person is employed and you are told to be reporting to them, stop gambling when looking for projects i.e. a lot of money is used to bribe jobs in, thus profitability is quite affected
	Advancement of electronic hardware used	212) Advancement of new technology; 213) Adoption of latest technologies on construction sites; 214) Enhancement of using technology/embracing technological advancements for efficiency and speed Advancement of electronic software used; 215) Adopting of new technologies in the market; 216) Use of new technology
Employee satisfaction		217) By increasing working condition for skilled and unskilled labourers; 218) Motivation; 219) Professional growth through training; 220) Motivation of employees; 221) Improvement of industrial relations where even the employees are allowed to participate in decision making which will thus act as an incentive for them to perform better; 222) Improved job security; 223) Employee motivation; 224) Enhanced remuneration of workers; 225) Improved communication and inclusiveness with construction workers; 226) Keep learning and updating; 227) Staff training; 228) Motivational incentives

Theme	Sub-theme	Ways of enhancing the Level of OP
Quality of products		229) Close and continuous monitoring to set the required quality system in the different activities of the project; 230) Close monitoring
Managerial capability		231) Setting employee goals together; 232) Proper planning; 233) Make proper use of human resources; 234) Committed leadership and management; 235) Consultation and exchange of ideas; 236) Ensure proper utilization of human resources; 237) Diversification of management levels in the organization; 238) Provision of management training including soft skills and also basic technical trainings for firm artisans; 239) Committed leadership and management to provide a motivating force; 240) Better resource management for efficient project delivery; 241) Financial empowerment realized through sustained involvement in business; 242) Direct involvement of top level management; 243) Proper management; 244) Timely procurement of materials; 245) Risk management initiatives; 246) Proper leadership and communication channels; 247) Use of ex-gratia methods in case of disputes
Safety performance		248) Improved Health and Safety Systems; 249) Health Safety & Environment; 250) Improve safety of workers by providing the safety equipment and tools; 251) Improved safety of work by adopting steel formwork
Communication		252) Good communication skills; 253) Clear channel of communication; 254) Good communication skills; 255) Improvement in communication and responsiveness to clients and consultant's needs; 256) Improvement in communication between head office and sites; 257) Faster communication channels
Others		258) Creating a Project Management Unit/Office; 259) Lab tests review; 260) Constant monitoring and evaluation; 261) Entrenching a culture of professionalism is key to improving the organizational performance of the contractor; 262) Incorporating a unique firm's culture of working; 263) Commissioning & Handover processes; 264) Due diligence in contractors account statements; 265) All stakeholders to follow the set budget; 266) Improvement in efficiency in construction sites; 267) Proper planning and thereafter strict adherence to work schedule

Appendix 18a: Interpretation of Financial Measures of Organizational Performance

No.	Tool	Interpretation
1) Profitability		
(a)	Net income	The higher the net income, the higher the company's efficiency at generating profit from its sales
(b)	Gross profit margin	The higher the gross profit margin, the better the company is managing its cost of sales.
(c)	Operating profit margin	The higher the operating profit margin, the higher the contractor's efficiency in controlling the costs associated with business operations.
(d)	Net profit margin	A high net profit margin is means that the contractor is more efficient at converting revenue into actual profit.
(e)	Return on assets	The higher the net income, the higher the company's efficiency at generating profits from its assets
(f)	Return on capital employed	The higher the net income, the higher the company's efficiency at generating profits from its capital employed
2) Business efficiency		
(a)	Asset turnover	The higher the net income, the higher the company's efficiency at generating revenue from its assets
(b)	Employee productivity	High employee productivity is associated with high employee efficiency which is a good indication of high organizational performance
(c)	Client acquisition cost	High client acquisition cost is associated with increased business expenditure which in turn lowers profitability
(d)	Gross revenue per employee	The higher the gross revenue per employee, the higher the company's efficiency at generating revenue from its workforce
(e)	Net profit per employee	The higher the net profit per employee, the higher the company's efficiency at generating profits from its workforce
3) Financial stability		
(a)	Debt (leverage) ratio	The higher the debt ratio, the less financially stable the company is. A debt ratio greater than 1 means that the contractor has more debt than assets.
(b)	Working capital	The higher the working capital, the higher the company's liquidity which translates to high financial stability
(c)	Quick ratio	The higher the quick ratio, the better the company's liquidity and financial stability. A lower ratio is an indication of a company struggling to repay its debts

No.	Tool	Interpretation
(d)	Current ratio	The higher the current ratio, the more financially stable the company is. A ratio less than 1 indicate that the company's liabilities are greater than its assets
(e)	Times-interest-earned ratio	The ratio measures how many times the contractor could pay interest with its 'before tax' income. Larger ratios are therefore more favorable than smaller ratios.
(f)	Cash ratio	The higher the cash ratio, the higher the contractor's ability to settle liabilities using cash or its equivalents
4) Growth		
(a)	Assets	The higher the rate of growth in assets, the higher the company's organizational performance
(b)	Profitability	The higher the rate of growth in profitability, the higher the company's organizational performance
(c)	No. of clients	The higher the rate of growth in number of clients, the higher the company's organizational performance
(d)	Revenue	The higher the rate of growth in revenue, the higher the company's organizational performance
(e)	Number of employees	The higher the rate of growth in number of employees, the higher the company's organizational performance

Appendix 18b: Interpretation of Non-Financial Measures of Organizational Performance

No.	Tool	Interpretation
1) Managerial capability		
(a)	Academic qualification of directors	Higher academic qualifications of directors are associated with higher managerial competencies which translates to higher organizational performance
(b)	Professional experience of directors	Higher professional qualifications of directors are associated with higher managerial competencies which translates to higher organizational performance
(c)	% growth in assets during current regime	The higher the percentage growth in of directors assets is generated by the directors, the higher their managerial capability, and the higher the organizational performance
(d)	% growth in annual revenue during current regime	The higher the percentage growth in annual revenue is generated by the directors, the higher their managerial capability, and the higher the organizational performance
(e)	% growth in profitability during current regime	The higher the percentage growth in profitability is generated by the directors, the higher their managerial capability, and the higher the organizational performance
2) Technical capability		
(a)	Academic qualification of staff	Higher academic qualifications of staff are associated with higher technical capability which translates to higher organizational performance
(b)	Professional experience of staff	Increased professional experience of staff is associated with higher technical capability which translates to higher organizational performance
(c)	Total no. of years staff have been with the firm	The higher the total number of years the staff have been with the firm, the higher their productivity which translates to higher organizational performance
(d)	Monetary value of plant and equipment	The higher the monetary value of plant and equipment, the more efficient the contractor is in projects execution which in turn results to improved organizational performance
3) Quality of products		
(a)	No. of defects	The higher the number of defects, the lower the quality of products therefore the lower the organizational performance
(b)	Cost of rework during construction	The higher the cost of rework during construction, the lower the quality of products therefore the lower the organizational performance

No.	Tool	Interpretation
(c)	Rework factor	The higher the rework factor, the lower the quality of products therefore the lower the organizational performance
(d)	Cost of repairs during defects liability period	The higher the cost of repairs during defects liability period, the lower the quality of products therefore the lower the organizational performance
4) Safety performance		
(a)	No. of accidents per no. of employees	The higher the number of accidents per employee, the lower the safety performance therefore the lower the organizational performance
(b)	Monetary value of H&S equipment per employee	The higher the monetary value of H&S equipment, the higher the safety performance therefore the higher the organizational performance
(c)	Academic qualification of H&S officer(s)	Higher academic qualifications of H&S officer(s) are associated with higher safety performance which translates to higher organizational performance
(d)	Professional experience of H&S officer(s)	Increased professional experience of H&S officer(s) is associated with higher safety performance which translates to higher organizational performance
(e)	No. of years H&S officer(s) has been with the firm	The higher the total number of years the H&S officer(s) have been with the firm, the higher safety performance which translates to higher organizational performance
5) Client satisfaction		
(a)	Client retention rate	The higher the client retention rate, the higher the client satisfaction, therefore the higher the organizational performance
(b)	New client retention rate	The higher the retention rate of new clients, the higher the client satisfaction, therefore the higher the organizational performance
(c)	No. of complaints	The higher the number of complaints raised by clients, the lower the client satisfaction, therefore the lower the organizational performance.
(d)	Average cost overrun	The higher the average cost overrun, the lower the client satisfaction, therefore the lower the organizational performance.
(e)	Average time overrun	The higher the average time overrun, the lower the client satisfaction, therefore the lower the organizational performance.
Employee satisfaction		
(a)	Employee turnover	The higher the employee turnover, the lower the employee satisfaction, therefore the lower the organizational performance

No.	Tool	Interpretation
(b)	No. of promotions per year	The higher the number of staff promotions, the higher the employee satisfaction, therefore the higher the organizational performance
(c)	No. of complaints by staff	The higher the number of complaints raised by staff, the lower the employee satisfaction, therefore the lower the organizational performance.
(d)	Average remuneration of the workforce	The higher the average staff remuneration, the higher the employee satisfaction, therefore the higher the organizational performance
(e)	% increase in remuneration of the workforce	The higher the percentage increase in staff remuneration, the higher the employee satisfaction, therefore the higher the organizational performance

Appendix 19: Questionnaire; Framework Validation

SECTION A: ROLE OF THE RESPONDENT

1) Kindly indicate your role?

☐Contractor ☐ Consultant

SECTION B: FRAMEWORK ACCEPTANCE LEVEL

2) How would you rate the proposed (appended) framework for enhancing the organizational performance of local contractors based on the following criteria?

Very Low ⟶ **Very High**									
1	2	3	4	5	6	7	8	9	10

No.	**Criteria**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1	accuracy	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	practicality	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	validity	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4	applicability	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5	comprehensiveness	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6	simplicity	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
7	appropriateness	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

SECTION C: SUGGESTIONS FOR IMPROVEMENT

3) Kindly suggest ways in which the proposed framework may be improved.

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Appendix 20: Initial SSP-Framework for Enhancing the Organizational Performance of Local Contractors in Kenya