



DIRECTORATE OF RESEARCH AND GRADUATE TRAINING

FACULTY OF ENGINEERING

**ANALYSING THE FACTORS AFFECTING THE PERFORMANCE OF
LOCAL CONSTRUCTION COMPANIES IN UGANDA.**

BY

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**A DISSERTATION SUBMITTED TO DIRECTORATE OF RESEARCH AND
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REQUIREMENTS FOR THE AWARD OF MASTER OF SCIENCE IN
CONSTRUCTION TECHNOLOGY AND MANAGEMENT
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JULY, 2024

DECLARATION

I, **Mutekanga Zadock**, affirm that this dissertation I am submitting is entirely unique with no prior submissions to academic institutions (colleges, universities). I want to make it clear that no material has been used in this study effort without proper credit.

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APPROVAL

This is to attest that I have read and hereby recommend this dissertation titled “*Analyzing the Factors Affecting the Performance of Local Construction Companies in Uganda*” for acceptance by Kyambogo University in fulfillment of Kyambogo University's prerequisites for the award of a degree in Master of Science in Construction Technology and Management.

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DEDICATION

I dedicate this dissertation to my family in appreciation of their spiritual and financial support during my study of this course.

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LIST OF ABBREVIATIONS

BIM:	Building Information Modelling
CIDB:	Construction Industry Development Board of Malaysia
CIPD:	Chartered Institute of Personnel and Development.
CoST:	Construction Sector Transparency Initiative
CWE:	Water & Electric Corporation
DRC:	Democratic Republic of Congo
GDP:	Gross Domestic Product
GNP:	Gross National Product
ICED:	International Conference on Engineering Design
ILO:	International Labour Organization
KCCA:	Kampala Capital City Authority
KPIs:	Key Performance Indicators
LCC:	Local Construction Company
LCI:	Local Construction Industry
MDAS:	Ministries, Departments and Agencies
NCC:	National Construction Council
NIP:	Network Implementation Plan
OECD:	The Organization for Economic Cooperation and Development
PPDA:	Public Procurement and Disposal of Public Assets Authority
R&D:	Research and development
RII:	Relative Importance Index
RP&L:	Resource Planning and Leveling
SCM:	Supply Chain Management

SPSS:	Statistical Package for Social Scientists
UACE:	Uganda Association of Consulting Engineers
UBOS:	Uganda Bureau of Statistics
UGX:	Uganda Shillings
UK:	United Kingdom
UMA:	Uganda Manufacturer's Association
UNABCEC:	Uganda National Association of Building and Civil Engineering Contractors
UPDF:	Uganda People's Defense Force
URA:	Uganda revenue authority
USA:	United States of America
USD:	United States Dollar

ABSTRACT

Even though the local construction business is rapidly growing, poor performance has hurt the industry's reputation, therefore the study analyzed the factors affecting the performance of local construction companies, specifically looking at challenges faced, characteristics of local construction companies and establishing ways of improving their performance. Data was gathered using a cross-sectional study design that combined qualitative and quantitative methods with semi-structured questionnaires and interview guides. The study's target sample was 132 heads of departments and directors, however only 119 of them responded (a response rate of 90.2% for the questionnaire and 85.7% for the interviews). The respondents were selected by purposive and stratified random sampling. The data was presented and analyzed using percentages, frequencies, tables, and charts. The relative importance index (RII) was used to rate the difficulties experienced by local construction enterprises, their characteristics, and the steps taken to increase their productivity and competitiveness. The findings showed that the primary difficulties faced by local construction enterprises are insufficient funding and restricted capability, inadequate skilled man power, high interest rates, political and donor directives and limited advanced technology. Some characteristics of local construction companies are; being too many and small in size, labour intensive techniques and that has led to low quality output of the projects, abandoned projects, time and cost overruns. The measures to improve the performance of local construction companies majorly are continuous benchmarking, aligning national and international standards, merging and pooling resources together as well as further training in advanced technology. The study therefore, recommended that local construction companies need to pool resources together in order to have sufficient working capital, foster the development of workforce skills through instruction in cutting-edge and sophisticated technology.

Key Words: Local Construction Companies, Challenges, characteristics and Relative Importance Index.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

Instead of gradually developing local capacity in the construction industry, Uganda has continued to see large construction projects turned over to foreign contractors and consultants (Ocen *et al.*, 2018). The background, problem statement, objectives, research question, scope, justification, and conceptual framework of the study are thus described in this chapter.

1.1 Background to the Study

The construction industry is the area of the economy responsible for the development, maintenance, and demolition of buildings and other civil engineering structures around the globe (Nyangwara and Datche, 2015). A significant part of how a society develops and achieves its goals is played by the construction sector and in developed nations, one of the greatest industries and a contributor to GNP of roughly 10% is construction (Eshtehardiana and Khodaverdib, 2016).

Construction companies are divided into general construction firms that construct homes, commercial buildings, and related structures, heavy and civil engineering construction companies that operate on projects like sewers, roads, highways, bridges, and tunnels, Construction firms that specialize in specific tasks including carpentry, painting, plumbing, tiling, mechanical, and electrical work as well as those that rent heavy machinery, plant, and equipment for construction projects are known as specialty trade firms (Olufemi, 2016).

According to Ahmad and Yan (2019), China's construction sector is made up of vast, globally dispersed corporations, and the country as a whole is described as one massive construction site. China's construction market generates over US \$ 93 billion annually, employs almost 24 million people, or more than 5% of the labor force, accounts for more than 6% of GDP, and since 1979, it has been expanding at a rate of about 10% on average annually (Ahmad and Yan, 2019). Inadequate infrastructure and available building space is blamed for the high growth rate of the construction industry, and this growth rate is expected to continue in the future (Kirchberger, 2020).

According to Bert *et al.* (2020), the UK's construction sector includes work on civil engineering projects, the design and construction of homes and other buildings, as well as specialized construction duties (such as plumbing and electrical installation). They further stated that activities like project management and architectural services, which regularly accompany construction projects, are not included in the industry.

In general, the pace of construction is picking up quickly to keep up with both global development and the population's expanding needs and construction industry is inherently complex because it involves a wide range of parties, including customers, contractors, consultants, suppliers, and regulators (Kwaku *et al.*, 2014). These parties have an impact on the industry's ability to meet project deadlines, finish projects within specified budgets while maintaining quality standards, satisfying customers, being productive, and maintaining safety standards. As a result, numerous local construction companies have emerged to take advantage of the expanding market, but they fail to do so for a variety of reasons such as inadequate infrastructure, political issues, cultural

issues, insufficient motivation, insufficient control, monitoring, and decision-making procedures, and poor management (Alias *et al.*, 2017).

Construction companies in Uganda can be classified according to the size, area of specialization, scope of work, origin and ownership, size of the company and for the purposes of this study, general local construction companies were considered in this study (Adeleke *et al.*, 2017). Local general construction companies considered in the study were classified according Annual Contracts sum (UNABCEC, 2019)

When trying to compete with foreign construction firms in Uganda's present infrastructure development, local construction companies still struggle with lack of technical capacity and capital investment (Ocen *et al.*, 2018). UNABCEC (2019) noted that construction companies can only survive when there is employment. Any construction company that cannot count on future work cannot be able to survive, due to the fact that they will not be able to cover their regular expenses, keep their knowledgeable staff, or pay back the pricey loans they took out to finance their initial investment (Seninde *et al.*, 2021). The government must support the construction industry by developing the long-term capabilities of domestic contractors and fostering collaboration between them and foreign contractors, which will lessen the number of resources that would be for the country's transformation instead of being taken by foreign companies (UNABCEC, 2019).

There are numerous causes and influences that determine how well local construction companies operate and manifest in various ways, including project financing, risk occurrence factors, communication and other aspects (Adeleke *et al.*, 2017). Seninde *et al.* (2021) noted that a number of factors that include poor estimating and

management changes, social and technological problems, inept designers and contractors, lack of capital investment, inadequate technology, and limited advanced machines limit the performance of local construction companies in large construction projects.

Many local construction companies are still performing and growing at a very slow rate, which has hurt their ability to compete in the construction sector (UNABCEC, 2019). At this point, they are unable to compete effectively or evenly manage the risk involved on a global basis. Constraints facing the LCI itself continue to prevent it from expanding (Ocen *et al.*, 2018). If this keeps happening for a long time, Uganda might not be able to build and maintain all of its infrastructure without continuing to rely on foreign corporations since she won't have a sustainable civil works contracting capacity in place (Seninde *et al.*, 2021).

According to UNABCEC (2019), local construction companies are classified into different classes basing on Annual Contracts sum that is Class A-1 to A-5. In this research study, the selected local construction companies include class A-1 that usually have annual contracts above UGX 15 billion. Class A-2 that usually get annual contracts in between UGX 10-15billion, Class A-3 that usually get annual contracts in between UGX 5-10billion, Class A-4 that usually get annual contracts in between UGX 1-5billion, and Class A-5 get annual contracts less than 1 billion. It is against this background that the following local construction companies were considered: A-1: Babcon Uganda Limited, Excel Construction Ltd. A-2: Muma Construction Ltd, Kiru General Services Ltd, A-3: Muga Services Limited and NATO Engineering Ltd,

A-4 Ars Construction Company and Build Base Associates (U) Ltd. A-5 Dacosi Limited and Mani Engineering Services Ltd

1.2 Problem Statement

Several Ugandan construction firms continue to perform and expand at relatively low levels, which reduces their ability to compete in the sector thereby limiting their ability to win lucrative projects (ILO, 2019). Performance of local construction companies is measured by the ability to; meet daily operation costs, repay secured loans for initial investment, complete the projects on time, have projects completed within budget, complete the project in accordance with the original set quality standards, and ability to handle a number of different projects at the same time (Seninde *et al.*, 2021).

Most local construction companies in Uganda are not confident in their abilities to continue operating because most of them are unable to pay their daily expenses, keeping their skilled labor, or repaying loans secured for initial investments which become very expensive thus forcing Uganda to rely on foreign companies to build and maintain all major infrastructure (UNABCEC, 2019). This is manifested by awarding several capital-intensive construction projects to foreign companies due to inability of local construction companies and donor conditions attached as noted by Ministry of Works and Transport, such projects include Kampala flyover by Shimizu Konoike JV, Northern bypass by Mota Engil Engenharia E Construcao SA, Karuma dam by Sinohydro Corporation Limited, Jinja cable bridge by Zenitaka – Hyundai E&C JV, Isimba dam by China International Water & Electric Corporation (CWE) and Kampala- Entebbe Express by China Communications Construction Company Ltd (MOFPED,2021).

Even those construction projects awarded to local contractors as noted by Seninde *et al.* (2021) are completed less to specifications, rarely done on time and not within the budget, clearly indicating low and unsustainable performance and the government would continue to lose billions of dollars through failing projects and through profit repatriation by foreign construction corporations if the factors affecting the performance of the local construction companies in Uganda are not documented, that is why the study was done.

1.3 Objectives of the Study

1.3.1 Main Objective

To analyse the factors affecting the performance of local construction companies.

1.3.2 Specific Objectives

- i) To establish the challenges faced by local construction companies in Uganda
- ii) To establish the characteristics of local construction companies in Uganda
- iii) To establish possible measures of improving performance of local construction companies in Uganda.
- iv) To develop a framework for improving the performance and competitiveness of local construction companies in Uganda

1.4 Research Questions

- i) What are the challenges faced by local construction companies in Uganda?
- ii) What are the characteristics of local construction companies in Uganda?
- iii) What can Ugandan construction companies do to improve their performance?
- iv) What framework can improve the performance and competitiveness of local construction companies in Uganda?

1.5 Research Justification

This research would be of great importance due to its ability to analyze the difficulties that local construction companies encounter and how they affect their performance in the execution of infrastructural projects to avert project cost overruns, time overruns, out of scope and quality standards and the study also aimed at providing ways to improve performance of local building contractors in Uganda.

Seninde *et al.* (2021) noted that construction projects done by local construction companies in Uganda are completed less to specifications, rarely done on time and not within the budget, such as the four basement floors of the NSSF Pension Tower were built by the Ugandan engineering and construction firm ROKO Construction Company between 2008 and 2012, however the company was not approved for same project work after that and this clearly indicated low and unsustainable performance and if the factors affecting the performance of the local construction companies in Uganda are not addressed, government will continue to lose billions of dollars in form of failed projects and profit repatriation by foreign construction companies.

In light of these circumstances, the researcher conducted this investigation into the factors affecting the performance of local construction companies in Uganda particularly looking at selected local construction companies.

1.6 Significance

The Uganda's construction sector has the fastest growth rate with a significant contribution to the GDP (UBOS, 2021). As the country strives to join middle income status and the global market, demand for construction services will significantly increase. Therefore, this study was timely and significant.

The results of this research project will advance knowledge of the variables influencing local construction companies' performance in Uganda's construction industry.

The study's findings would be crucial to other academicians who will get involved in the creation of policies and contribute to the literature by providing more information on the variables affecting the effectiveness of local construction enterprises in Uganda's construction industry.

As a way to promote global investigation on the ways to increase performance of construction projects, this study can be combined with other studies carried out in different nations/regions for comparison of elements affecting the performance of local construction companies.

1.7 Scope of the Study

1.7.1 Content Scope

Analysis of the factors influencing the performance of local construction companies in Uganda was the study's primary goal, it focused mainly on the challenges faced by local construction companies, examination of local construction companies' characteristics and measures of improving performance of local construction companies in Uganda. Construction companies are divided into general construction firms that construct homes, commercial buildings, and related structures, heavy and civil engineering construction companies that operate on projects like sewers, roads, highways, bridges, and tunnels, Construction firms that specialize in specific tasks including carpentry, painting, plumbing, tiling, mechanical, and electrical work as well as those that rent heavy machinery, plant, and equipment for construction projects are known as specialty trade firms . Therefore, the study considered general construction

companies as they are classified according to UNABCEC (2019) basing on Annual Contracts sum.

1.7.2 Geographic Scope

The research was carried out at local construction companies head offices that were randomly selected. These local construction companies were from each class because the research required to include all of the elements affecting local construction firms.

Class A-1

Babcon Uganda Limited. It is located on Plot 30 Kome Crescent Luzira Kampala. Its fully fledged Engineering Procurement and Construction Company incorporated in 1984

Excel Construction Ltd. In 1992, Muljibhai Madhvani and Company and Gomba Construction Ltd. founded Excel Construction Ltd. as a joint venture. It is one of the major companies in the construction sector in Uganda. Works across the country from its central office at Plot 43-45 Eng. Zikusoka Way, Jinja. Excel Construction Ltd began primarily as a building contractor and over time, they positioned itself as a provider of infrastructure and civil works for Uganda's oil industry.

Class A-2

Muma Construction Ltd: Its head offices are located on Plot 2692, Block 216, Kulambiro- Ntinda, 3km from Ntinda Trading Centre, Ntinda, Kampala, P. O. Box 91, Ntinda, Kampala, Uganda, Nakawa division. MUMA construction limited Offers Civil Works, Designing and Planning, Architectural Building and Construction Services

Kiru General Services Ltd. It is located on Plot 2568 Nsubuga Kakembo Drive, Ntinda, Nakawa division. They are Providers of Civil, Water, Electrical and Mechanical Engineering Services.

Class A-3

Muga Services Limited. It is a Civil Engineering and Construction company located on Jinja Road Plot 29 Jinja Road, Kireka to Next Centenary Bank

NATO Engineering Ltd: It's a building contractor and consultants whose head office is located on Plot 56, Bombo Road, Kalmx Building, and Kampala, Uganda

Class A-4

Ars Construction Company. Ars Construction (U) Ltd is a Construction Company registered in Uganda since September 2012. It is located on Plot 1174 Jinja Road, Kampala. Born from the experience of the Italian sister company, Ars Aedificandi Spa. It is general construction company

Build Base Associates (U) Ltd. Its head office is located on Kampala Central Division on Civic Centre Christ the King Parliament Avenue Parliament on Eco Bank Plaza 4 37096 Kampala.

Class A-5

Dacosi Limited. Its head office is Located on Plot 2692, Kulambiro Ring Road and Mbarara office on. Plot 1/3, Makhansingh Street Mbarara – Uganda. DACOSI Limited is a duly registered Ugandan construction company which has extensive experience in engineering works and general supplies and provides services in structural, Architectural, Civil, and Water sectors.

Mani Engineering Services Ltd. Mani engineering services limited is civil construction company established and incorporated as the construction company in Uganda in 2004 by the Ugandan directors. Mani engineering services limited executed several construction projects in Uganda since it is incorporation.

1.7.3 Time scope

The study was carried out for a year, from May 2022 to April, 2023. The research examined 12 years' worth of related literature (2010- 2022). The study also considered data from the case study for the past 10 years.

1.8 Conceptual frame work of the study

Local construction companies have several factors that affect their performance such as project size, capital investment, technology and skilled manpower (independent variables) and these factors end up becoming challenges that hinder their performance. The performance of local construction companies is gauged by their capacity to accomplish projects on schedule, within budget, and in compliance with the original established quality standards (dependent variables).

There are intervening factors that have direct effect on the project such as government policies and regulations, political directives, inflation, corruption and weather conditions.

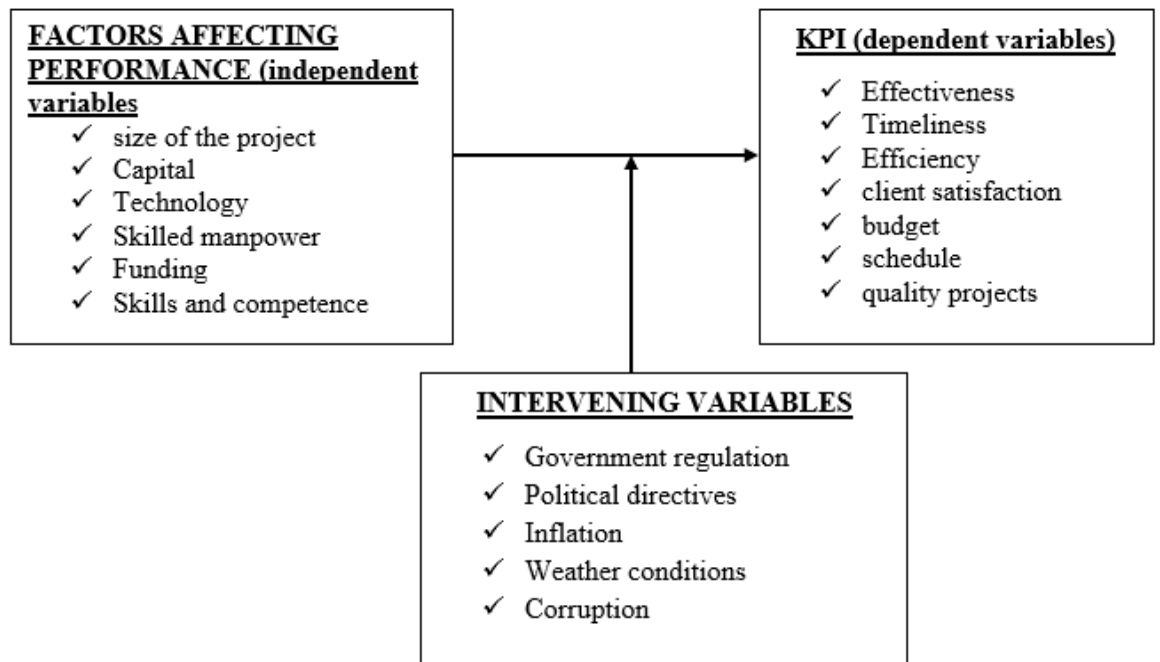


Figure 1.1: Conceptual framework

Adopted from Kasala (2012) modified by the researcher

1.9 Chapter Summary

This chapter focused on the study's introduction, which included a discussion of the background data related to the factors influencing the accomplishments of construction enterprises internationally, regionally, and specifically in Uganda.

The primary goals of the research project were to evaluate the challenges faced by local construction companies that affect their performance, examine local construction companies' characteristics and provide strategies for improving local construction companies' performance in Uganda.

The problem statement, study scope, significance, justification, and conceptual framework were all discussed in this chapter.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter provides an overview of literature on the factors affecting the performance of local construction companies, the characteristics of local construction firms and strategies of improving performance of local construction companies by different scholars and then the gaps left. To determine the contributing components, the literature study is conducted using books, engineering periodicals, conference papers, academic theses, the internet, and conversations with construction industry experts.

2.1 Construction industry in Uganda

The construction sector is extremely important to the economies of developing nations, greater than 50% of wealth is allocated to fixed assets, 10% of the gross domestic product (GDP), and almost 80% of all capital assets are provided by primary construction activities in many developing nations. Additionally, the sector is second to agriculture in providing job opportunities (Khaertdinova *et al.*, 2021).

According to UBOS (2021), the construction industry contributed UGX 2.270 trillion to Uganda's GDP in the first quarter of 2021. Like other developing nations, Uganda's growing construction industry lays the groundwork for the development of the nation's infrastructure, which in turn spurs economic growth (Katende *et al.*, 2016).

Over the previous five years, the inflow of foreign direct investments into the infrastructure sector fluctuated, totaling over two billion United States of America dollars in the fiscal year 2020 from UGX 2.1204 trillion in the first quarter of 2021 to

UGX 2.24704 trillion in the second quarter, Uganda's GDP from construction grew (UNCTAD,2022). The social and economic transformation of Uganda has been greatly aided by the construction sector (Buyanza, 2021).

According to Basheka and Tumutegyereize (2012), Uganda's economy has developed in all sectors as a result of economic liberalization during the 1990s and they further noted that in an effort to accelerate the nation's economic growth in accordance with the demands of the development partners, the government of Uganda improved its road subsector. The government's dedication to this endeavor was made clear where the budget allocations for the road sector grew from UGX 2.8976 trillion in 2015/16 to UGX 4.1405 trillion in 2018/2019. Over the past ten years, much emphasis has been placed on the creation and upkeep of the nation's road infrastructure (Ggoobi *et al*, 2020).

2.2 The challenges faced by local construction companies in Uganda

The performance of a construction industry is determined by individual construction project that is gauged by several variables including project completion time, budget, needed, quality standards, and client satisfaction (Abdelnaser and Akram, 2017). Project delays can be caused by a variety of variables such as capital, technology, skilled labour employed (Onur *et al*, 2022)

Foreign companies frequently win large building contracts in emerging nations over domestic competitors because they are viewed as more capable, technically accomplished, well-organized, and management in their fund-acquisition processes (Akalia and Sakaja,2018). Muhwezi *et al* (2013) noted that in contrast to this, local construction companies have faced difficulties linked over the years to insufficient

working capital, subpar project performance in terms of meeting completion deadlines, capital management and the quality of the work frequently. Ali *et al.* (2017) also noted that local construction companies operating in developing economies have noted that a variety of factors make it challenging for contractors to execute projects.

2.2.1 Technical Capacity and Competence

Chartered Institute of Personnel and Development (CIPD) (2021) notes that competence is the ability to carry out a task properly. Competencies are clearly identified actions that are useful as a systematic framework for the identification, assessment, and development of certain employee behaviors. According to Opuch (2016), competencies encompass all relevant information, skills, abilities, and characteristics that go into the creation of a person's work. This set of context-specific traits can be used as a benchmark to assist individuals in developing, attracting, and obtaining employment as well as assessing their level of performance at the workplace (Opuch, 2016).

A construction company can stand out from the competition because of its strengths in hiring competent man power in all departments that enhance performance management, training, development, and incentive strategies to reinforce crucial behaviors for future competitiveness (Dubois and Rothwell, 2016)

Technical capacity and competence can indeed be a challenge for local construction companies in Uganda, as they face various obstacles in acquiring and maintaining the necessary skills and expertise for example Local construction companies struggle to find skilled labor, including trained craftsmen, engineers, and project managers, which can hinder project execution and access to quality technical education and training

programs may be limited in Uganda, making it difficult for individuals to acquire the necessary skills and qualifications (CIPD, 2021, OECD/ILO, 2017)

2.2.2 Funding method

The process of providing money, which can be in the form of cash or other values like time or effort and is frequently done by businesses or governments, to support needs, programs, and projects is referred to as "funding" (Opuch, 2016). This word is often used when a construction company uses its own cash reserves to meet its financial demands, as opposed to the term "financing," which is used when corporations seek funding from other sources (Gyula, 2008). In this way, the funding strategy affects how the regional contractor manages performance on construction projects (Opuch, 2016).

According to International Conference on Engineering Design (ICED) (2018), a major obstacle impeding local contractors' efforts to develop their capacities and compete with foreign contractors for construction contracts is access to capital. The cost of obtaining credit is expensive due to guarantee requirements, performance and bid bonds, and the lending rate of interest of 22–24%. MoFPED (2021) observed that the Cross Roads Guarantee Fund, which had a \$3 million budget, helped the local construction industry by facilitating credit availability.

Access to adequate financing is essential for the successful execution of construction projects, but various factors can make it difficult for these companies to secure the necessary funds (Ofori, 2017). This is witnessed in situations where many local construction companies in Uganda have limited access to capital, making it challenging to finance the acquisition of equipment, materials, and labor for their

projects (Stables *et al.*, 2018). Interest rates in Uganda are relatively high, and construction companies often need to borrow money to fund their projects (Ocen *et al.*, 2018).

Ocen *et al.*, (2018) further noted that high borrowing costs can increase the financial burden on these companies, affecting their profitability as well as financial institutions in Uganda require substantial collateral for construction companies to secure loans, which can be difficult for smaller firms to provide. Muhwezi *et al.* (2017) noted that the loan approval process in Uganda is time-consuming and bureaucratic, causing delays in accessing funds for construction projects. Uganda's currency, the Ugandan Shilling (UGX), is always subject to fluctuations, which impacts construction companies' ability to manage foreign exchange risk, especially when dealing with international projects or suppliers (Buhamizo *et al.*, 2022).

2.2.3 Selection criteria

Opuch (2016) highlighted that as construction projects get more sophisticated, the contractors that carry them out must meet particular requirements. As is the case in Uganda, price is currently the most significant consideration for tendering in the construction sector. This indicates that the innovation or job quality is not raised or improved by using the lowest pricing criterion in the construction sector and that the contractor with the lowest offer wins the contract (Opuch, 2016)

The selection criteria used by clients, whether they are government agencies, private organizations, or individuals, greatly influence a company's ability to win contracts (OECD, 2016). In situations where clients lack transparent selection processes, making it difficult for construction companies to understand how they are being

evaluated and what criteria are being used, selection criteria are complex and include a wide range of technical, financial, and legal requirements (MoFPED, 2013). Smaller or less experienced construction companies struggle to meet these requirements (ILO, 2020). Clients often require proof of financial stability and capacity, such as financial statements, bank guarantees, or performance bonds. Meeting these requirements can be challenging for smaller or newer companies (International Monetary Fund, IMF, 2019).

2.2.4 Project Duration

Customers frequently request expedited work in order to control the market and get an edge over competitors (Kasala, 2012). Improved client satisfaction and a competitive advantage for contractors result from faster construction times (Chike *et al.*, 2017). When delays occur, it may be necessary to work longer hours, more shifts, hire more people, and provide more equipment to make up for the lost time, all of which incur significant additional costs (Chike *et al.*, 2017). Local construction firms frequently lack cutting-edge machinery to complete projects in a timely manner, and when they do, they consistently produce low quality work (Kasala, 2012).

2.2.5 Skilled Manpower

Skilled manpower is defined as people who have knowledge of particular construction abilities either via education or from actual construction experience (Abdulquadri *et al.*, 2015). Mungu (2021) emphasized that trained labor in the construction industry plays a very vital and crucial role in the survival and expansion of the sector since they are directly involved in the construction process. Despite government efforts to emphasize the importance of universities and technical institutions for the teaching and training

of engineers and related scientists, there is a severe shortage of skilled labor in Uganda (Alinaitwe *et al.*, 2007). Those that are available are hired by either government or foreign construction companies that pay them highly, making them too expensive for local and small construction companies (Ocen *et al.*, 2018).

According to Faizul *et al.*, (2021) construction firms all across the world struggle with labor shortage and because the end user's purchasing power dictates the quality of the job in the construction business, there will always be a need for more trained laborers. Onana (2018) discovered that if highly competent staff is employed, the impact of skilled labor in the construction company is particularly visible in its finished products. This is due to the fact that they manage the technical phase of such contracts, making them directly involved in the early achievement of building project completion (Wiley *et al.*, 2017). Where trained skilled manpower is involved, there is a large decrease in subpar performance, low quality, project completion delays, cost overruns, and time overruns (Ocen *et al.*, 2018). Most often, rework of flawed or subpar work is linked to poor quality of workmanship, which often stems from the utilization of inexperienced labor (Mungu, 2021; Onana, 2018)

According to Dantong *et al.* (2011) rather than lack of people, skilled manpower shortage is lack of individuals who are highly qualified, skilled, and motivated to perform a certain sort of work. According to Attar *et al.* (2012), the major reasons for the shortage of competent personnel in the construction sector are the aging labor force, lack of advanced education and retraining and failure to recruit young people as potential employees.

Training for capacity building in a construction firm is extremely required to maintain economic expansion and growth because human capital is any construction company's most precious asset (Long *et al.*, 2012). Most construction companies prioritize financial gains while neglecting those factors that actually contribute to the creation of work and profit. Adeyemi and Aigbabvoa (2018) noted that skilling man power is just one of the many issues with personnel training because most construction businesses in Nigeria rarely think about educating their employees in the construction sector.

Onuka *et al.* (2012) asserted that construction enterprises frequently suffer from lack of competence, productivity, and effectiveness due to lack of manpower training and re-training programs. Therefore, these issues will become urgent without a company-provided training policy (Long *et al.*, 2012). In that study, it is suggested that manpower development and worker upskilling be viewed as crucial elements in the transformation of the construction sector from its antiquated state into a modern one (Alinaitwe *et al.*, 2017).

In contrast to wealthy nations, labor is a large component of the building sector in developing countries, unlike Germany, the United States of America, and the United Kingdom which have highly automated construction site processes (Boadu *et al.*, 2020). According to Alinaitwe *et al.* (2007) the two main factors contributing to the low productivity of construction workers in developing nations are incompetent supervisors and lack of worker expertise. Construction work is still labor-intensive in these countries.

2.2.6 Capital investment

Construction companies require significant capital investments to grow their capacity since they require expensive equipment, cutting-edge technology, skilled engineers, and consultants (KPMG, 2016). Due to the tiny amount of capital invested, the majority of local investors' construction companies have stayed small and are unable to take on challenging projects (Yadav, 2019). Due to this, multinational construction companies continue to dominate the construction sector in developing nations (Pheng and Hou, 2019). According to Crompton et al. (2014), local construction enterprises may not have easy access to heavy investment needed for construction development and procurement procedures in the construction industry.

According to Pheng and Hou (2019) buildings and civil engineering projects require significant amounts of capital, labor, and time to complete. Pheng and Hou (2019) noted that delays are frequently unavoidable and are as result of unplanned natural disasters, technical, financial, legal, and contractual issues, requiring significant capital investment.

2.2.7 Working Capital

According to Akali and Sakaja (2018), the resource needed to facilitate the implementation of the construction activity on site is the company's working capital or financing. This sum consists of available cash, bank credit, an overdraft, credit purchases, and unfinished projects, and the amount billed (Mwangi, 2016). Additionally, working money consists of the materials required to support the construction company's everyday operations (Asana, 2022).

The difference between current assets and current liabilities is known as working capital, this is according to Mwangi (2016). The amount, kind, and use of working capital changes as building projects advance (ACCA, 2018). Working capital management includes all aspects of planning, obtaining, and observing the usage of working capital throughout construction and the necessary funding and composition must always be in place during construction if working capital is to be sufficient (Hagberg *et al.*, 2014). Onana (2018) noted that as poor management can lower production and profit levels, it demands a determined positive effort from the contractor and working capital management is crucial.

According to Taher (2012), determining the proper amount of working capital requirements for a project is crucial to ensuring that maintaining a sufficient level of working capital and having enough cash at hand to finance existing assets will allow projects to be completed on budget and on time. In order to ensure that the restrictions are not exceeded, it is also crucial that the many components that make up working capital are constantly checked for quantity (ACCA, 2018).

2.2.8 Political directives

The president of the Republic of Uganda instructed the Ministries of Education and Sports and Health to begin awarding all construction projects to the UPDF Construction Brigade / National enterprise cooperation (NEC) due to corruption in the procurement process, delays by Ministries, Departments and Agencies (MDAS), and PPDA, among other issues, delays in government construction projects (UNABCEC, 2021).

UNABCEC (2019) noted that organization committed to promoting growth and sustainability, enhancing job site safety, increasing the use of cutting-edge technologies and techniques, and fortifying relationships within the construction industry, stated that the goal of the president's directive is to better serve the nation and engage the UPDF Construction Brigade more, but they are worried that his orders pose “serious implications to the private construction sector. UNABCEC(2019) further noted that directives will result in a loss of capital invested by contractors, a rise in unemployment, a decline in the construction industry's competitiveness, a drop in URA revenue collections, and an increase in the UPDF's capital investment burden on the Consolidated Fund. Besides the economic implications, Members of UNABCEC contend that the presidential directive has negative technical consequences, including an increased risk of subpar workmanship due to inadequate supervision, the destruction of the value and supply chain of the construction industry, and higher project costs as a result of the UPDF's limited technical capability for some types of civil works.

Colonnelli (2018) noted that the contractors also emphasized to the president how important the construction sector serves as the cornerstone for the development of infrastructure, a multiplier and driver for all other economic sectors that rely on it, and a significant source of revenue for the country. They add that "the directive does not uphold and safeguard the PPDA laws."

2.2.9 Technology

According to the Construction Industry Institute, "construction technology" refers to a number of cutting-edge tools, software, modifications, and other devices utilized in the construction process to advance the sector (Mahmoud *et al*, 2021).

Improved performance within the industry is possible due to the application of technology in building. According to Mahmoud et al. (2021), using tried technologies can boost construction sector efficiency by 30% to 45% while also delivering predictability and dependability. However, the effect of insufficient advanced technologies among local construction companies in developing countries has resulted in many construction challenges (Kendall, 2020).

According Mahmoud *et al*, (2021) the new technology is crucial to the construction sector because delays occur when demand for construction increases without productivity keeping pace. As there is no one-size-fits-all standard for construction procedures because every project is diverse and unique, it is frequently thought to be difficult for local construction enterprises to raise production quickly (Mahmoud *et al*, 2021).

2.2.10 Corruption

On public construction projects, there have been allegations of corruption, and Uganda is currently ranked 151/176 globally for corruption, for example, the 2012 embezzlement scandal involving USD 12 million at the Uganda National Roads Authority (UNRA) led to the withdrawal of funding from various international donors (Kakumba,2021). According to the Report of the Fourth Assurance Process in Uganda (2021), "there is still some corruption, but it has been greatly decreased" since the

crisis. The government-run multi-stakeholder Construction Sector Transparency Program (CoST)(2015) is now in existence in Uganda. It concentrates on the actions of a few procurement entities with the aim of reducing corruption and bad project management, but with more broad acceptance and industry support, it may make a more significant impact.

2.2.11 Payment Default

Kenyatta (2015) conducted a study in the Kenyan construction business entitled “*the impact of payment default on contractors, underpayment, late payment, and late payment of one or more certificates or irregular payments*” and observed that nonpayment has caused issues with contractors' cash flow which led to projects' delays, construction disagreements and even bankruptcy. According Ansah (2011) and Kenyatta (2015), industry participants should think about legislating a payment-specific framework, as has been done in other nations. According to Kantianis (2018) other issues that have been reducing working capital during construction, as identified by numerous studies, include: credit availability, contract payments being diverted away from the project, inadequate project planning and management, volatility in foreign exchange rates, and high financing costs.

2.3 Characteristics of local construction companies in Uganda

According to Ocen *et al.* (2018), in addition to gradually increasing local capacity in the construction industry, the LCI continues to turn over significant construction projects to multinational construction companies and consultants. Local construction companies are characterized by several features such as reliance on labour intensive,

temporary labour force and large number of small companies (Guloba *et al*, 2021, Tesema, 2022, Guloba *et al*, 2021, Sakaja, 2018, Ocen *et al.*, 2018, Dresch, 2018).

2.3.1 Reliance on Labour Intensive Methods

Like many other developing nations, Uganda's construction industry makes use of labor-intensive techniques (Guloba *et al.*, 2021). Some infrastructure such as feeder roads, modest irrigation systems, buildings, and tiny dams, among others are built utilizing labor-intensive techniques and due to the availability of cheap human labour in Uganda, most construction companies rely on using the cheap labour input as noted by Boadu *et al.* (2020) . Given the difficulties they have in obtaining credit for such purchases, it was noted that the capital cost of acquiring equipment and/or machinery is high for local building businesses in Uganda. As a result, particularly the smaller construction companies choose to specialize in labor-based construction methods (Muhwezi *et al.*,2013).

According to Boadu *et al.* (2020), construction employs more individuals on the job site per activity in developing countries like Uganda, often 2-10 times more workers per activity than in wealthy countries.

2.3.2 Limited Skilled and Educated Workforce

Guloba *et al.* (2021) stated that the supply of competent, educated, and experienced laborers is insufficient in emerging nations like Uganda. In Uganda, the demand for building skills is only partially satisfied, especially for artisans and tradespeople, despite the abundance of low-cost labor at their disposal. According to a survey conducted within the country's construction industry, 67.2% of the workforce is unskilled, 24.8% is semi-skilled, and 8% is highly skilled (Tesema, 2022). Due to their

limited capacity, workshops, small class sizes, lack of administrative and teaching staff, and outdated curricula, the existing technical and vocational training institutes have been blamed for this. The fact that occasionally the master artisans who oversee the training may themselves be inept is another reason why the informal apprenticeship system is insufficient for training highly skilled individuals. As a result, it is widely recognized that having a trained workforce is necessary for emerging nations' building sectors.

The construction sector is praised for being a place to hire untrained labor, which has helped to tarnish its reputation as having a terrible record when it comes to health and safety (Boadu *et al.*, 2020). According to Cooper and Cotton (2016), the lack of knowledge and training among construction workers is one of the leading causes of accidents on building sites. Similar to this, local construction firms that struggle to hire individuals with higher levels of education and training suffer from lack of training for these personnel on health and safety issues.

2.3.3 Reliance on temporary labour force

Due to rising industry rivalry, dropping workloads, and/or onerous employment laws, it is common for construction companies to replace their permanent labor force with temporary and casual workers, which lowers their ability to compete (Tesema, 2022). Like many other businesses across the world, local construction firms in Ghana often hire the majority of their field staff on a temporary or casual basis. They also have a small core of regular employees (Boadu *et al.*, 2020).

According to a study by Kipngeno (2018), cheap labor is abundant in developing nations, which allows construction companies to quickly fire employees who perform

below expectations and hire new employees in their place and as a result, workers have come to accept working in hazardous conditions without demanding that their employers implement safety precautions, which has resulted in numerous accidents on construction sites.

According to Muhwezi *et al.* (2013) to meet the immediate and future needs of the contracting business, they should be able to carry out tasks efficiently while growing and improving their performance. To handle the technical intricacy and unprecedented extent of works brought on by the sophistication and complexity of construction projects, better organization and management structure are required. According to Petersen (2021) competitiveness is becoming a crucial component in today's competitive environment due to increased globalization.

2.3.4 Large Number of Small Companies

Since there are few entry hurdles in the construction industry, which permits even people and business organizations without the necessary money, employees, or certifications to register as construction companies, Uganda is known for its abundance of small construction businesses (Alinaitwe, *et al.*, 2010). Alinaitwe, *et al.*, (2010) further added that 90% of Uganda's registered construction firms are tiny construction companies that focus on less difficult construction projects. These construction companies complete between 10% and 20% of the overall construction output, but they are unable to compete with international construction companies since they are far better suited to seize a significant portion of the local building industry, particularly for more challenging projects (Pheng and Hou, 2019). It has been noted that most

domestic building companies run by families make up small and medium-sized construction organizations.

2.3.5 Reliance of outdated designs

Uganda's construction industry has problems that other nations also face. Alinaitwe et al. (2010) claimed that Uganda's construction sector experiences problems with efficiency, innovation, slipping timelines, disputes, high production costs, and rework. The performance and capabilities of Uganda's construction industry have greatly increased in recent years, especially in the roads sector (Stables *et al.*, 2018).

2.3.5 Project delays

According to Muhwezi *et al.* (2013), the construction sector wastes labor, time, money, and machinery. Ssemwogerere (2011) adds that project delays are a significant problem not only in the worldwide building industry as well as in Uganda. Delays have an immediate negative impact on both contractors and clients since they force both parties to incur additional costs, which raise project costs. Also, because the tasks are not completed on schedule, the client will lose money. Thus, it's crucial to find strategies to shorten delays and prevent stakeholders from incurring unnecessary expenses.

2.3.6 Underdeveloped and less Competitive

Several of the LCC have been in the construction sector for more than 10 to 25 years yet because of the reality of global competition have stayed underdeveloped and less competitive. Many LCC are currently being investigated for breaching their agreements (Ssemwogerere, 2011). In an effort to ascertain the worth of the contracts they handled; a number of parties had questioned their work. Companies frequently

don't provide technical and financial proposals that satisfy contract award requirements. The rate of LCC expansion in Uganda is still relatively slow. This has regularly given the foreign contractors tremendous chances in the LCI by grabbing practically all of the big building contracts (Muhwezi, et al., 2013).

According to Makarfi (2017) the findings of a survey on foreign enterprises' involvement in the nation's construction industry, their position in Nigeria's construction sector dates to the country's pro-independence phase. Major building projects were given to foreign firms because they were deemed to have better technical and managerial capabilities than local firms and to be more effective in obtaining funding and completing projects (Ugochukwu et al, 2014).

According to research done in Nigeria, between 1974 and 1978, when the country's building industry was at its height, the Federal Government granted 1133 projects totaling N11.25 billion (Ugochukwu, 2014). Despite receiving 77.2% of the 1133 projects, local building businesses lost out on 93.05% of the contract value to foreign construction businesses. This is not particularly surprising given that foreign enterprises and a small number of significant local corporations dominate the construction sector in the majority of emerging nations (Jaycox and Hardy, 2021).

Makarfi (2017) also pointed out that when foreign enterprises take on more employment, they tend to expand in their fields of specialization more than their local competitors. A large building project can be boiled down to a collection of smaller, simpler tasks, and experience can only be gained through risk-taking and trial-and-error a chance that Nigeria's indigenous construction companies have not been given (Ugochukwu *et al*, 2014).

Working capital needs to be sufficient for project execution to be successful. According to Rahman (2013), maintaining the planned pace of construction calls for the financial security of contractors and sufficient cash flow. Ameh (2011) asserts that while inadequate funding results in time overruns, optimal funding guarantees a reasonable cash flow.

Makarfi (2017) highlighted that because they are often small and medium in size, the majority of indigenous construction enterprises have been excluded from big construction projects. Even the large local construction businesses pale in comparison to the international construction companies that have dominated the sector. While foreign companies complete at least 85% of the combined civil and building work, local enterprises only complete roughly 5% of the civil engineering work and 25% of the construction work.

According to Makarfi (2017) and Idoro (2012) clients prefer to work with foreign contractors over their indigenous counterparts because of their ability and expertise to produce high-quality output in the required timeframe. The general public has been troubled by the preference for international construction companies over domestic companies and the propensity to grant contracts to foreign contractors (Makarfi, 2017).

Although charging more and being less prevalent than local contractors, foreign contractors are nonetheless able to complete more than 90% of the value of all construction projects in Nigeria (Idoro, 2012). According to the ministerial committee on causes of expensive government contracts from 1982, foreign contractors are still able to accomplish more than 90% of the value of all construction contracts in Nigeria, despite charging more and being less numerous than local contractors (Idoro, 2010).

Despite the fact that local material requirements exist, multinational contractors frequently do not use them, which leads to a significant number of materials being imported. By enhancing local material standards and incorporating them into designs, certain materials could be sourced locally rather than utilizing international standards (Industry Agenda, 2016). Currently, multinational contractors purchase specific materials since cement production outpaces demand and is exported to South Sudan and the DRC for road and dam projects and although the production of iron and steel might be enhanced, at the moment it is mainly imported from China, Kenya, and South Africa (Stables *et al*, 2018)

2.4 Measures to improve performance of local construction companies

The competitiveness of the construction industry has lately accelerated, and numerous solutions have been suggested by numerous scholars as one of the means of enhancing general performance in the construction sector, (Azeem *et al*, 2020 and Abarinda, *et al*, 2019)

Gimenez *et al*. (2019) asserted that understanding the variables that influence construction company success can help implementing strategies aimed at enhancing their resources and capabilities in order to enhance innovative activity and performance. Tekka and Kifanyi (2021) suggested that the development of a number of general techniques to facilitate resource coordination, enhance construction industry (CI) performance and practice, and lessen difficulties.

The establishment of long-term strategies at various degrees of development was a component of several industrialized measures taken by nations to assess the condition of CI. Supply chain integration, learning and skill development, and ongoing CI

benchmarking are necessary to stay competitive, investing in innovative research and development, setting regulation as the stimulus for better CI improvement, and aligning national and international construction standards are some of the suggested strategies. Other ideas include creating agencies and boards in various nations to oversee CI, establishing national advantages (Abarinda *et al*, 2019; Tekka and Kifanyi, 2021)

CI has developed and performed well in industrialized nations as a result of the techniques they have devised and Singapore is now recognized as the easiest country in the world to do construction business due to developed strategies (Pheng, 2019).

The performance of local construction has remained deficient despite the strategies developed, the governments of developed countries' willingness and facilitation to maximize better improved performance within CI, necessitating the need to identify effective strategies that can significantly increase the sustainable competitiveness of LCC to compete against foreign firms. (Kifanyi and Tekka, 2021)

2.4.1 Continuously benchmarking CI to maintain competitiveness

According to Abarinda *et al*. (2019), simply imitating practice-based strategies is insufficient. For instance, the creator of the framework of the Toyota Production System, Engineer Ohno, issued a warning against replicating earlier models without comprehending their significance and how they fit into the overall picture. Hence, methods must be usable and adapted to contemporary procedures. Lean construction should therefore be viewed as a method that is always being improved, with applications that are modified and updated to fit different contexts and cultures (Remon and Sherif, 2013).

Although the Ugandan construction sector shares many traits with that of other nations, there are distinctions in the delivery methods due to cultural and environmental factors. As a result, in order to successfully implement lean construction in Uganda, having a solid understanding of the procedures and processes followed when carrying out tasks is essential, but also take into account elements affecting the project environment (Al Balkhy *et al*, 2021).

2.4.2 Supply chain integration

Supply Chain Management (SCM) is a network of numerous businesses that are linked upstream and downstream in a supply chain with the aim of delivering high-quality services and goods to customers by integrating construction business operations (Al Balkhy *et al*, 2021). To attain the best level of supply chain integration, the industry has responded in a number of different ways (Felea and Albastroiu, 2013).

According to Akmal and Sofiah (2010) construction industry supply chain members who are involved in designing, constructing, and supplying various building projects collaborate in continuously shifting coalitions. Multiple bilateral contracts are negotiated between different parties in a traditional building context and these parties will then form a temporary coalition until the project is finished (Felea and Albastroiu, 2013). Alternatively, the parties may be seen as organizational units that, when opportune, combine to form a single production organization (Akmal and Sofiah, 2010).

It is important to take into account the unique characteristics of construction supply chains as well as their industrial and economic context, particularly the project-based multi-organizational construction supply chains' temporal and fragmented nature as

opposed to the industries' permanent production organizations (Akmal and Sofiah, 2010).

2.4.3 Increasing the knowledge and skills

According to Lindlöf et al, (2013), knowledge transmission within a construction organization should be facilitated by efficient quality management systems, systems for labor safety, time management, and cost estimation. The site's staff should have enough expertise to begin their work using the contract documentation, drawings, and specifications and to produce high-quality work (Olawumi, 2016). Additionally, they must have the backing of the site administration and the company's general management system, allowing them to benefit from lessons gained and acquired information.

Utilizing the appropriate subsystems, the purpose of the knowledge management system is to guide and improve, and coordinate knowledge growth inside the organization while guaranteeing that the knowledge required to complete the building process is easily accessible (Jawahar, 2017).

According to Nassazi (2013) the development of staff knowledge in a way that ensures that the terms of each and every contract are honored and that clients' needs are met in an efficient and professional manner is a clear purpose of the knowledge management system. However, attitudes are steadily changing the majority of construction organizations and lack an efficient method for gathering and retaining information within the organization (Errida, 2021). They also place minimal focus on employee competency development. The prevalence of construction-related errors and the near-

total lack of extra training are indicators that knowledge management, in whatever shape it may take, often performs poorly (Mats, 2013).

Construction firms are supposed to carry out their tasks at the job site in line with the established plans and specifications. Even though it isn't stated in the contract, the client still wants it to be done professionally (World Bank, 2018). Typically, national standard reference frameworks serve as the foundation for both the contract and the specifications. Basic craftsmanship and familiarity with the laws governing building and construction work are necessary prerequisites for carrying out the work in line with the contract (Hendrickson2008).

2.4.4 Investment in innovative research and development

With the emergence of the knowledge-based economy, innovation has been recognized as one of the main forces behind increased living standards, competitiveness, and national economic growth and it is widely acknowledged that innovation refers to the application of major new procedures, items, or management techniques to boost an organization's effectiveness (Mohamed *et al.*, 2003).

According to Toole *et al.* (2013) Construction research and development (R&D) refers to actions that enhance the project's management, productivity, efficiency, and quality. R&D is a method for forcing innovation on the market. The advancement of technology must also be taken into account in order to accommodate environmental concerns and legal obligations (Rundquist *et al.*, 2013). Construction Research and Development is advantageous in terms of time and final product quality. In the construction sector, research and development refers to making adjustments to the techniques and technology used not for financial gain (Toole *et al.*, 2013).

Syazwani *et al.* (2016) argued that the issue arose when the construction industry innovated, but how the innovation affected the industry and what the concerns of the parties involved were. The construction industry had many issues and unique needs, and there are some boards in developing nations like the Construction Industry Development Board of Malaysia (CIDB) and National Construction Council of Tanzania that address these issues. The innovation in today's sector, in the opinion of Malaysia's Minister of Public Works, is highly difficult and requires teamwork to overcome. According to United Nations conference on trade and development, UNCTAD, (2022), the building business in Malaysia has undergone tremendous changes that are difficult for us to comprehend. As a result, more innovations from the local public and commercial sectors are required.

2.4.5 Setting regulation as the stimulus for better CI improvement

According to NIP (2019), the Government has made a variety of investments in associated policies, regulations, and institutional changes in an effort to solve issues that prevent investment and intended development outcomes. Considerable investment outcomes from these reforms include continued economic growth and the decrease of poverty, growth in savings and investments, a significant alteration in the trade structure, and a notable rise in the percentage of the development budget (World Bank, 2018).

UNABCEC (2021) noted that, in accordance with Ugandan government policy, a foreign construction company that wins a large-scale project in Uganda is required to subcontract 30% of its total work to locally registered companies in Uganda in order

to build those companies' capacity and enable them to compete for similar projects once they have gained the necessary expertise and experience.

According to Makarfi (2017), government indigenization initiatives have led to the indigenization of foreign enterprises in Nigeria, with Nigerians now owning between 40 and 60% of the equity. Nevertheless, foreign nationals continue to hold positions in top management and technical positions.

2.4.5 Aligning national and international construction standards

Companies should lead the industry transformation, according to Industry Agenda (2016). When new technology, materials, and equipment are used, there are enormous opportunities. In addition to reducing project delays and boosting productivity, new digital technology, for example, can enhance building quality, safety, working conditions, and environmental compatibility. Building information modeling (BIM) is significant because it serves as the main enabler and facilitator for numerous other technologies. A bridge can be built much more quickly, for instance, by combining robots and 3D printing with a parametrically produced 3D model. Another extremely powerful tool for innovation is building materials, which have a wide range of solutions linked with them, from radical inventions with whole new possibilities to gradual improvements of existing materials and qualities.

2.5 Research gaps and conclusion

The researcher did a literature review in accordance with the specific study objectives. This was done to determine the fundamental ideas in the field as well as what other academics had discovered in earlier study. The challenges faced by local construction companies that in turn affect their performance, Performance of local construction

companies, and initiatives aimed at improving the performance of local construction companies were all covered in this chapter. The Ugandan construction environment was only briefly discussed in the reviewed literature on the performance of local construction companies and ways to enhance performance of local companies with emphasis on urban areas and neglect rural regions, leading to an incomplete understanding of the industry across the country. Secondly, over-reliance on quantitative methods in conducting the studies that overlooked qualitative factors such as management practices, organizational culture, and stakeholder relationships was identified. In order to comprehend the phenomena in the context of Uganda, the researcher incorporated insights from economics, sociology, and other disciplines to better understand the broader context of construction performance as well as using both quantitative and qualitative approaches to provide a comprehensive analysis.

2.6 Summary of the literature

Table 2.1: Summary of the literature

Variable	Key dimension of the variable	Author(s)
Construction industry in Uganda	The nature of the uganda construction industry	Khaertdinova et al. (2021). UBOS (2021), Katende et al. (2016), UNCTAD (2022). Buyanza (2021). Basheka and Tumutegyereize (2012), Ggoobi et al, (2020).
The challenges faced by local construction companies in Uganda	Introduction	Abdelnaser and Akram (2017), Onur et al, (2022) Akalia and Sakaja (2018), Muhwezi et al (2013), Ali et al. (2017)
	Technical Capacity and Competence	Chartered Institute of Personnel and Development (CIPD), 2021), Opuch (2016), Dubois and Rothwell (2016), CIPD (2021), OECD/ILO (2017)
	Funding method	Gyula (2008). International Conference on Engineering Design (ICED) (2018), Opuch (2016). (Stables et al, 2018). Ocen et al, (2018). MoFPED (2021), Ofori (2017). Muhwezi et al. (2017)
	Selection criteria	Opuch (2016), OECD (2016) MoFPED (2013), ILO (2020), International Monetary Fund, IMF (2019).
	Project Duration	Kasala (2012), Chike et al. (2017). Fagan et al, (2018). Chike et al. (2017).
	Skilled Manpower	Abdulquadri et al, (2015). Mungu (2021) Alinaitwe et al. (2007). Ocen et al. (2018). Faizul et al., (2021) Onana (2018), Wiley et al., 2017). Dantong et al. (2011), Attar et al. (2012), Adeyemi and Aigbabvoa (2018)
	Capital investment	KPMG (2016), Yadav (2019). Pheng and Hou, (2019), Crompton et al. (2014).
	Working Capital	Mwangi (2016), Akali and Sakaja (2018), Asana (2022), ACCA (2018). Hagberg et al., (2014). Onana (2018), Taher (2012)
	Political directives	UNABCEC (2021), UNABCEC (2019) Colonnelli (2018)
	Technology	Kendall (2020) Mahmoud et al, (2021).
	Corruption	Kakumba (2021). Construction Sector Transparency Program (CoST)(2015), Kenyatta (2015) Ansah (2011). Kantianis (2018)
Characteristics of local construction companies in Uganda	Introduction	Guloba et al (2021), Tesema (2022), Guloba et al, (2021), Sakaja (2018), Ocen et al. (2018), Dresch (2018).
	Reliance on Labour Intensive Methods	Guloba et al. (2021). Boadu et al. (2020) Muhwezi et al. (2013).

	Limited Skilled and Educated Workforce	Guloba et al. (2021), Tesema (2022). Cooper and Cotton (2016), Boadu et al., (2020)
	Reliance on temporary labour force	Tesema (2022), Boadu et al (2020). Kipngeno (2018), Muhwezi et al. (2013), Petersen (2021)
	Large Number of Small Companies	Alinaitwe, et al., (2010), Pheng and Hou, 2019).
	Reliance of outdated designs	Alinaitwe et al. (2010), Stables et al. (2018).
	Project delays	Muhwezi et al. (2013), Ssemwogerere (2011)
	Underdeveloped and less Competitive	Ssemwogerere (2011) Muhwezi, et al. (2013). Makarfi (2017), Ugochukwu (2014). Rahman (2013), (Idoro, 2012).
Measures to improve performance of local construction companies	Introduction	Gimenez et al. (2019) Tekka and Kifanyi (2021), Azeem et al (2020) and Abarinda, et al (2019)
	Continuously benchmarking CI to maintain competitiveness	Abarinda et al. (2019), (Remon and Sherif, 2013). Al Balkhy et al (2021).
	Supply chain integration	Al Balkhy et al (2021), Felea and Albastroiu, (2013). Akmal and Sofiah (2010)
	Increasing the knowledge and skills	Lindlöf et al, (2013), Olawumi (2016). Jawahar (2017), Nassazi (2013), Errida, (2021), Mats (2013), World Bank (2018).
	Investment in innovative research and development	Mohamed et al (2003). Toole et al. (2013) Rundquist et al. (2013). Syazwani et al. (2016), UNCTAD (2022),
	Setting regulation as the stimulus for better CI improvement	NIP (2019), (World Bank, 2018). UNABCEC (2021) Makarfi (2017),
	Aligning national and international construction standards	Industry Agenda (2016).

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This section explains the procedures for gathering and analyzing the data. Its primary emphasis was on the research design that was employed, the study population and area, sample size, the tools and procedures used in collecting data, and the presentation and data analysis approach to be used.

3.1 Research design

Urio (2020) defines research design as the framework, outline, or plan utilized to develop remedies for research problems. A study design can be thought of as a set of guidelines for collecting data and analysis that aims at balancing relevancy with an empirical inquiry that explores a current occurrence in its actual setting. The researcher utilized a cross-sectional research design. According to Lauren (2021), cross-sectional research design facilitates the collection of data from numerous persons at one time, and in cross-sectional research, variables are observed without being changed. This design facilitated data collection from many different individuals simultaneously, thus, multiple variables could be studied at a single point in time. The method is quick to conduct and therefore saves time and resources (Thomas, 2022). According to Kothari (2004), the design also provides appropriate defense against prejudice and improves dependability. In comparison, longitudinal studies that aim at establishing the cause-and-effect relationship is where over time, the same participants are repeatedly surveyed for data, concentrating most frequently on a smaller group of people who share a characteristic (Thomas, 2022). This study can take years or even decades.

Other designs include case studies that focus on gaining a holistic understanding of the case and descriptive studies that aim to illustrate how one or more variables are distributed without considering any causal relationship (Aggarwal and Ranganathan, 2019). Experimental studies are mainly used to test casual relationships (Bhandari, 2023). Thus, cross sectional research design best suites the investigation since it takes part of target population and draws its main conclusions on the opinions or actions among those coveted, the assumption that they represent the entire population.

3.2 Research approach

3.2.1 Quantitative research

According to Aliaga and Gunderson (2000), a quantitative study is a type of research in which numerical data are gathered and then statistical techniques are used to examine the data in order to explain a phenomenon. It is a method where the researcher uses inquiry techniques like surveys and experiments to gather data on preset instruments that provide statistical data (Creswell et al., 2003). The main advantage of quantitative research is that its techniques yield measurable, trustworthy data that may be used to a sizable population (Marshall, 1996). Furthermore, validating hypotheses developed before to data collection is a viable way to validate and test pre-existing beliefs about how and why occurrences occur.

3.3.2 Qualitative research

By interacting with study participants, qualitative research aims to give researchers a way to comprehend a phenomenon (Denzin & Lincoln, 2008).

Thus, the explanation of phenomena as they arise in the natural environment is of interest to qualitative researchers. Accordingly, qualitative researchers investigate

phenomena in their natural environments with the goal of explaining or interpreting events according to the meanings that individuals assign to them (Newman & Benz, 1998). The ability to produce detailed descriptions of participants' mental processes and their propensity to concentrate on the causes of phenomena is one of the main advantages of qualitative approaches (Creswell et al., 2003).

Both qualitative and quantitative methods were applied in this investigation. A quantitative technique was used to gather statistical information through questionnaires, and this helped the researcher to collect data from a wide range of respondents while a qualitative technique was employed to gather views, opinions, and feelings about the study through interviews. The rationale for selecting this research design was because it allowed a deeper understanding of practical part of the study (Teegavarapu and summers, 2008).

3.3 Study population

Borg and Gall (2009) asserted that the target population is a sizable group of individuals, events, or things to which an investigator wants to apply the results of their research. Mugenda and Mugenda (2003) assert that in order to generalize the study's findings, the target group must have characteristics that can be observed. All directors and department heads of the selected local construction enterprises in Uganda made up the study population. The vital information for the study was obtained by the researcher. This is because the study considered local construction companies with fully established organizational structure that allows departmental heads in decision making.

3.4 Sample size

Mugenda and Mugenda (2003) defined a sample as an accurate depiction of the population from which it was selected, using criteria that are pertinent to the research being done. With the use of Krejcie, and Morgan (1970) sampling tables, the study was based on a sample size of 132 respondents that were drawn from a target population of 200 directors and departmental heads of selected local construction companies in Uganda using the stratified random sampling and purposive sampling techniques. This is because the directors and departmental heads take part in decision making process. The researcher intended to collect data from 02 directors of each of the selected companies, 01 to 03 departmental heads. The sample size of 132 was sufficient and supported by Krejcie, and Morgan (1970).

With the use of the formula below, the researcher was able to determine the sample size per department

$$n = S/P * N$$

Where n =sample size

P =total population

N =Total sample size

S =Population per department.

Table 3. 1: The sample size

Department	Population(s)	Sample(n)	Sampling technique
Directors	20	14	Purposive
General managers	20	13	Stratified Random
Finance/ accounts	20	13	Stratified Random
Human resource	10	07	Stratified Random
Engineering	30	20	Stratified Random
Project managers	20	13	Stratified Random
Procurement and logistics	20	13	Stratified Random
Marketing	20	13	Stratified Random
Safety	20	13	Stratified Random
Surveying	20	13	Stratified Random
Total	200	132	

3.5 Sampling techniques

3.5.1 Purposive sampling technique

Tongco (2007) defines purposeful sampling as the intentional selection of an informant based on the traits the informant possesses. The study employed purposive sampling methods and the researcher gained a thorough grasp of the factors influencing the performance of local construction enterprises in Uganda by using the purposive technique while sampling the administrative wing specifically directors.

3.5.2 Stratified random sampling technique

The population is divided into smaller groups called strata in stratified random sampling according to the traits they share (Tongco, 2007). The researcher used stratified random sampling technique on heads of departments such as General Managers, Finance/ accounts, Human resource, Engineering, Project managers, Procurement and logistics, Marketing, Safety and Surveying. The researcher divided the population into strata and from each stratum was given number of key informants that were chosen randomly. This helped the researcher in obtaining data relevant to the study from different categories of informants.

3.6 Sources of data

3.6.1 Primary Sources

Interviews and questionnaires were used to gather information from the individuals and the researcher used sources to collect data which was vital for the study.

3.6.2 Secondary data

Data was gathered from articles in newspapers, periodicals, and journals as well as yearly reports of a few local construction companies in Uganda that deal with comparable subjects. Secondary methods provided the necessary quantitative data which was useful for description of contemporary attributes, comparative research, research design and methodological advancement (Hox and Boeije, 2005).

3.7 Data collection instruments

3.7.1 Interview guide

Interviews were employed because, according to McNamara (1999), they were especially useful for understanding the context of a participant's experiences, and the interviewer sought for in-depth knowledge on the topic. Qualitatively, the interview guide was employed to get information from the participants specifically directors. The interview guide was comprised of structured questions and this method enabled the interviewer to probe due to face-to-face interaction with the respondents, and it provided the researcher with a chance to go over some of the problems that were important to the investigation.

3.7.2 Questionnaires

A questionnaire is a list of questions that individuals must respond to in writing. For this study, the researcher used this quantitative method in collecting data (Mugenda &

Mugenda (2003). The well-designed semi- structured and structured questionnaires were issued in order to gather information from a variety of respondents in a comparatively short period of time. The questions were designed using rating of a 5-point Likert scale, with SA = STRONGLY AGREE (5 points), A = AGREE (4 points), NS = NOT SURE (3 points), D = DISAGREE (2), and SD = STRONGLY DISAGREE (1). The questionnaire was used by the researcher due to the demanding schedules and intricacy of the job carried out by the various types of respondents.

Questionnaires also provided a quick method of gathering information from lots of people. Furthermore, the data gathered through the use of closed-ended surveys was simple to code and examine

3.8 Area of Study

The study was conducted on Selected Local Construction Companies in Uganda putting into consideration of directors and departmental heads. The emphasis was on construction projects undertaken within the 12 years between 2010 and 2022 and challenges that were faced and how they affected their performance.

3.9 Piloting of the instruments and data collection procedures

3.9.1 Piloting of the instruments

To determine the anticipated difficulties, a preliminary evaluation of the data gathering tools and technique was conducted. Before the actual data collecting, the researcher conducted the appropriate action. Ten (10) respondents tested the questionnaires to determine their validity, reliability, and correctness in producing the required findings.

3.9.2 Data collection procedures

According to Donald and Tromp (2009), data collection is the process of acquiring precise information with the intention of confirming or disputing a set of facts. Therefore, The Director of the Kyambogo University Directorate of Research and Training provided an introduction letter. The introductory letter was presented to relevant authorities of selected local construction companies in Uganda to ensure that data was collected with ease.

3.10 Data presentation, processing and analysis

3.10.1 Data presentation and Data processing

The compilation of the quantitative and the qualitative data started immediately after the field work. The researcher compiled all the responses from interviews and questionnaires into tables for further processing.

The researcher used Statistical Package for Social Scientists (SPSS) for data analysis, generated percentages, frequencies and relative importance index (RII) that summarized the larger quantities of data into information that was beneficial for the study's objectives.

3.10.2 Data analysis

To avoid having to go back to the original questionnaires and interviews, data analysis involved sorting, editing, cleaning, and completing a last check on the data for accuracy, completeness, and consistency (Katebire, 2007). Statistical Packages for Social Sciences (SPSS) was used to code, input, and analyze the data where correlation was performed.

Descriptive statistics like absolute and relative (%) frequencies are among the main quantitative techniques. Tables, graphs, and charts were used to present quantitative data. The subject matter of the replies served as the basis for the analysis of qualitative data. Responses that exhibit recurring themes or patterns were organized into categories that make sense.

To provide a holistic overview of the significance of each of the variables, Relative Importance Index (RII) was computed as suggested by Gunduz *et. al.*, (2012)

$$RII = \frac{\sum W}{A \times N}$$

Where; W= weighting given to each factor by the respondents (ranging from 1 to 5),

A = highest weight (in this case, 5),

N = total number of respondents.

3.11 Validity and Reliability of data collection instruments

3.11.1 Validity

Amin, (2005) defined Validity as a measure's consistency (whether the results can be reproduced under the same conditions). Additionally, he pointed out that study instruments were only reliable if they gathered data accurately that reflected the respondent's viewpoint and measured the relevant variables. The supervisor, academic colleagues, and experts were given the draft questionnaires and interview guide in order to establish the validity of the tools/instruments. They were asked to comment on the formulation of the question, the breadth of the available resources, and the tool's

suitability for fulfilling the study's stated objectives. The feedback assisted in making the research tools better.

The questionnaires had a total of 50 questions and were given to 10 engineers in the construction industry. The results are shown below;

Out of the 10 engineers in the construction industry, 5 selected 45 questions as relevant and 5 as irrelevant.

Out of the 10 engineers in the construction industry, 5 selected 47 questions as relevant and 3 as irrelevant

Therefore, the Content validity index (CVI) was calculated as below:

$$CVI = (45+47) / 2 = 92/2 = 46, \text{ implying that } 46/50 = 0.92$$

$$CVI = \underline{\underline{0.92}}$$

CVI of 0.7 indicates that the device gathers reliable data, (Amin 2005). Consequently, CVI of 0.92 is sufficient to suggest that the questionnaires successfully collected reliable data for the study.

3.11.2 Reliability

Reliability is the extent to which a research tool yields consistent outcomes over

$$\alpha = \frac{N \cdot \bar{c}}{\bar{v} + (N-1) \cdot \bar{c}}$$

multiple trials (Mugenda and Mugenda, 2003). To establish the validity of the study instruments, the researcher employed simple tools that were appropriate for the respondents. The instructions were straightforward and clear. In order to maintain consistency in the participants' responses, questions were simply phrased. The instruments were pre-tested in the pilot study and the researcher re-tested the same

instruments to ascertain the consistency in the findings. Cronbach's alpha (α) was used as part of an internal consistency technique to gauge the dependability of data gathering tools. Cronbach's alpha is a reliability coefficient that provides a fair assessment of the generalizability of data.

Where:

N = the number of items.

\bar{c} = average covariance between item-pairs.

\bar{v} = average variance.

Table 3.2: Reliability index

Study variables	Reliability index
The challenges faced by local construction companies	0.779
The characteristic of local construction companies	0.872
Measures of improving the performance of local construction companies	0.962
Overall reliability	0.871

According to the findings, the table above demonstrated how highly dependable the study's conclusions are. In most social science study situations, a reliability coefficient of 0.70 or above is considered to be "acceptable." The Alpha value for the challenges faced by local construction companies was 0.779, the performance of local construction companies was 0.872 and Measures of improving the performance of local construction companies 0.962. The Cronbach Alpha for the entire study, according to the overall dependability result, was 0.871. This data shows that the questionnaire's items have strong, trustworthy internal consistency.

3.12 Ethical consideration

An introductory letter was obtained from Kyambogo University Directorate of Research and Training and was presented to selected local construction companies' offices. Data was collected with informed consent of the relevant respondents in the selected local construction companies. Any information that the researcher found compromising to the privacy of any respondents or other actors was treated as a confidential matter.

3.13 Measurements of Variables

Both nominal and ordinal scales were employed in the study to measure the variables. Demographic data, which included items with the same set of characteristics including education levels, local construction companies and gender, were mostly measured using the nominal scale of measurement. The other questions in the survey were evaluated using an ordinal scale, which compared the independent and dependent variables on a five-point Likert scale of 5 strongly agree, 4 agree, 3 disagree, 2 disagree, and 1 strongly disagree. Nominal scales should only be allocated for identification purposes; they should not permit comparison of the variables being measured, according to Mugenda & Mugenda (2003). The elements are not only classified using the ordinal scale, but they are also ranked in some order. With the use of the SPSS statistical analysis program, the response categories for each question were weighted and averaged in order to analyze the nominal and ordinal scores.

3.14 Achievement of specific objectives

In order to establish the challenges faced by local construction companies, a questionnaire was administered where respondents were required to indicate the extent

to which, in a 5 pointer Likert Scale, they agreed or disagreed with particular statements in regard to the challenges. The collected data was organized, coded, standardized and simplified through coding, and then fed into SPSS version 20. The study findings were presented using frequencies and percentages and Relative Importance Index (RII) where the higher Importance Index (RII) indicated that most respondents accepted that the identified challenges that hinder performance of local construction companies and the lower Importance Index (RII) means that the identified challenge had less impact on the performance of local construction companies.

The second objective was achieved by processing data collected through questionnaire to obtain statistical figures that helped to describe, correlate and establish characteristic of local construction companies in Uganda. The study findings were presented and analyzed using Relative Importance Index (RII) and conclusions were able to be drawn. To further quantitatively understand the performance of local construction companies

In order to achieve the third objective of the study, questionnaires with the likert scaling where: 1 indicates "Strongly Disagree," 2 "Disagree," 3 "Not sure," 4 "Agree," and 5 "Strongly Agree were used. The respondents showed their opinions on the measures of improving the performance of local Construction companies in Uganda. The study finding was presented with use of relative importance index (RII)

Therefore, basing on the study's first, second and third objectives results, study was successful where the researcher was able to understand the factors affecting the performance of local construction companies in the Ugandan context and came with

come up with the proposed framework aiming at improving the performance of local construction companies in Uganda.

3.15 Limitation of the study

During the course of carrying out the study, the researcher experienced hardships such as; Limited access to accurate and up-to-date data on construction projects, company financials, and general industry performance hindered the research efforts.

Many construction activities in Uganda occur within the informal sector, which was not adequately represented in research studies.

The researcher incurred more costs especially during data collection and analysis

Focusing primarily on the formal sector can overlook a significant portion of the industry. The absence of standardized performance metrics and benchmarks specific to the Ugandan construction industry hence making it challenging to assess and compare the performance of local construction companies accurately.

3.16 Summary of Methodology

This was primarily achieved through a cross-sectional research methodology that included both quantitative and qualitative data. Questionnaires and interviewing guidelines were utilized as data collection tools, and a purposeful and stratified random sample technique was adopted.

The data gathering instruments underwent a preliminary test as a means of piloting the instruments before being examined and measured to verify validity and reliability, respectively. The Statistical Package for Social Scientists (SPSS) was used for data

analysis, and percentages, frequencies and relative importance index (RII) were generated for holistic view.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION OF FINDINGS

4.0 Introduction

The analysis, interpretation, presentation, and discussion of the study's field research findings are presented in this chapter. The chapter presents response rate, the background information of the respondents, findings of the analysis based on the objectives of the study and frequencies, percentages, relative importance index was used to discuss the findings of the study.

4.1 Response rate

The study sampled 132 respondents in collecting data on factors influencing performance of local construction companies in Uganda. A total of 119 questionnaires were filled in and returned with relevant and meaningful information thus giving a response rate of 90.2%. The researcher intended to interview 14 directors of local construction companies selected to take part in the study but the researcher was able to interview 12 giving the response rate of 85.7%. The mean response rate was 87.95%

This rate was thought to be sufficiently representative to allow for acceptable study conclusions. A response rate of 50% is sufficient for analysis and reporting, a rate of 60% is good, and a rate of 70% or more is noteworthy making it possible to draw conclusions about the study with this level of response (Mugenda & Mugenda, 1999).

Table 4.1: The response rates

Data collection method	Response rate
Interviews	85.7%
Questionnaire	90.2%
Mean	87.95%

4.2 Bio data of the respondents

The presentation of respondents' bio data took into account their gender, age range, education, position within the Construction Company, and length of time they had worked in the sector.

4.2.1 Gender of the respondents

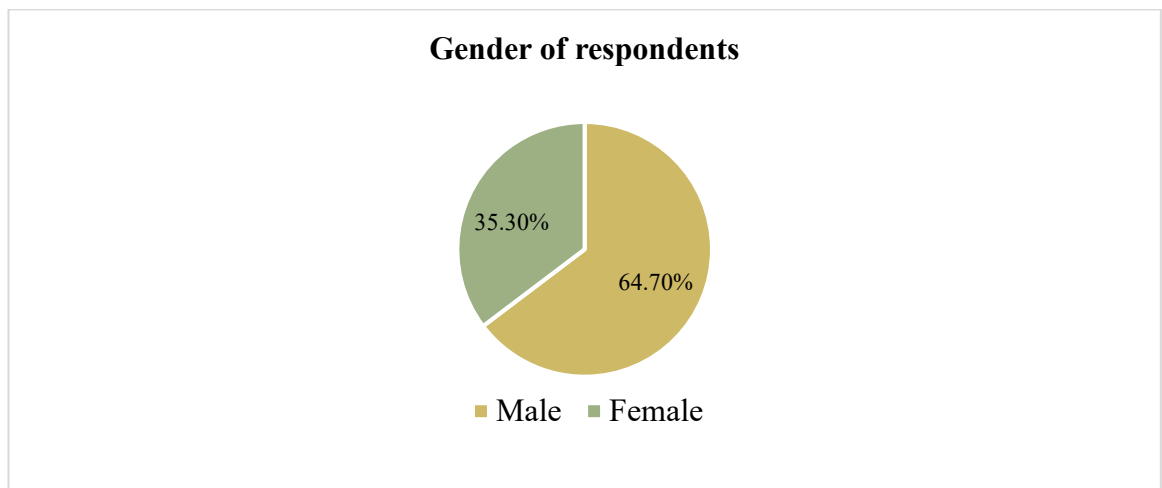


Figure 4. 1: Gender of the respondents

Figure 4:1 shows that 77(64.7%) of the respondents were male and 42(35.3%) were female. The findings imply that study findings were a reflection of both genders though with men contributing more responses/opinions. This suggests that men made more decisions in the construction business than women in the construction industry.

4.2.2 Age bracket of the respondent

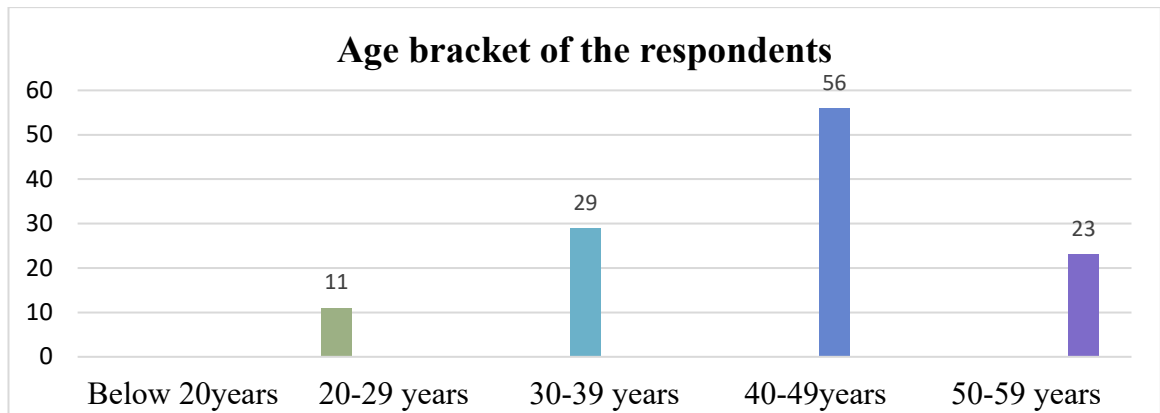


Figure 4. 2: Age bracket of the respondents

Figure 4.2 shows that 56(47%) of the respondents were in the age bracket of 40-49years, 29(24.4%) were in age bracket of 30-39years, 23(19.3%) in the age bracket of 50-59 years and 11(09.2%) in the age bracket of 20-29years while none was in the age bracket of below 20 years. The collection of data from the different age groups intended to establish the perception about the local construction industry. This suggests that the study was thorough because it included participants from a range of ages.

4.2.3 Education levels of the respondents

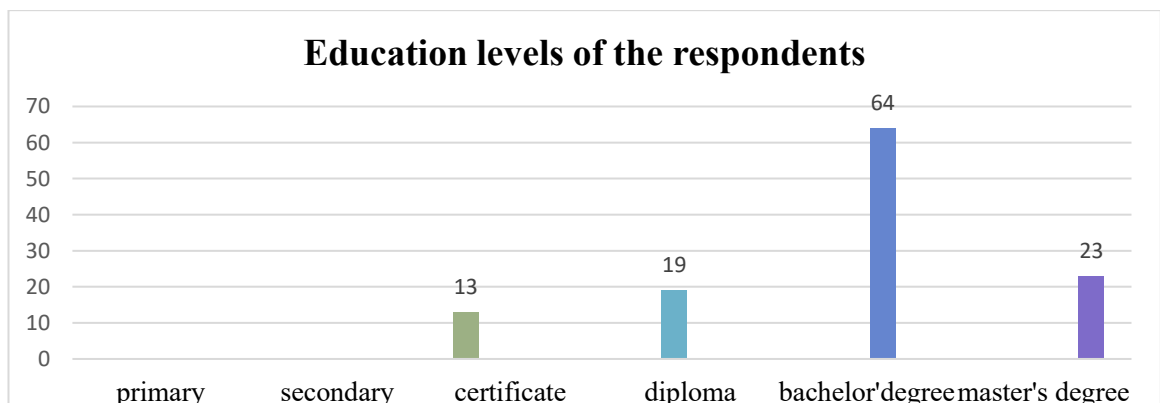


Figure 4.3: Education levels of the respondents

Figure 4.3 shows that 64 (53.8%) of the respondents were bachelor's degree holders, 23 (19.3%) were master's degree holders, 19 (16%) were diploma holders and 13 (10.9%) were certificate holders' level of education. All the respondents were able to read and write and able to fill the questionnaire on their own. The respondents' high level of education was mostly a result of the formal training requirements for the positions they held, which often required schooling beyond the primary level. The study findings are instructive partly because they captured the respondents' perspectives from a range of academic levels, as demonstrated by the varied levels of academic qualifications among those who participated in providing data for the study.

4.2.4 Years of experience in the construction industry

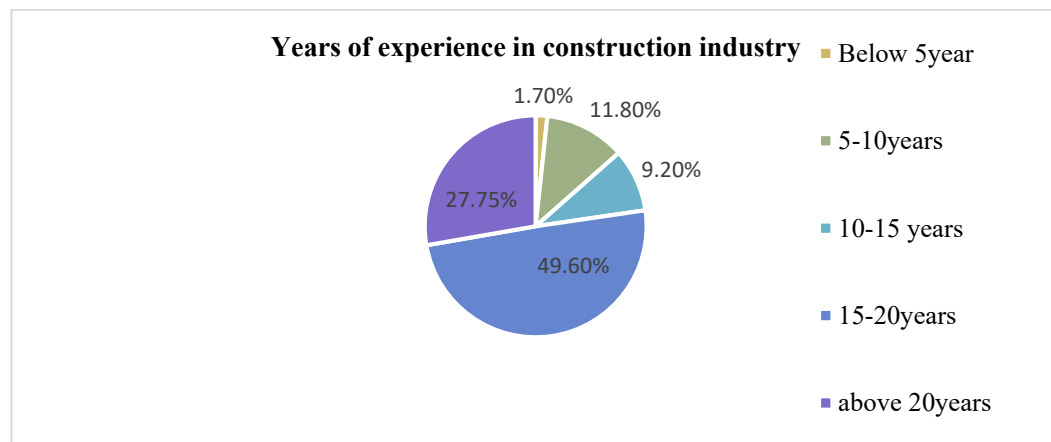


Figure 4.4: Years of experience in construction industry

Figure 4.4 shows that out of the 119 respondents involved in the study, 59(49.6%) had experience in construction industry of 15–20 years, 33(27.7%) had experience in construction industry of above 20 years, 14 (11.8%) had 5–10 years, 11(9.2%) had 10–15 years, and 02(01.7%) had experience of below 5 years. This suggests that the vast majority of those surveyed had experience in local construction industry. As a result, the study's conclusions are reliable since they accurately reflect the respondents'

degrees of experience. These were able to make comparisons and contrasts between the state of affairs today and in the past.

4.2.5 Local construction companies involved in the study

The identity of local construction companies involved in the study was needed and the results are shown below;

Table 4.2: Local construction companies involved in the study

Name	Frequency	Percentage (%)
Babcon Uganda Limited	14	11.8
Excel Construction Ltd	13	10.9
Muma Construction Ltd	08	06.7
Kiru General Services Ltd	11	09.2
Muga Services Limited	14	11.8
Nato Engineering Ltd	10	08.4
Ars Construction Company	12	10.1
Build Base Associates (U) Ltd	09	07.6
Dacosi Limited	14	11.8
Mani Engineering Services Ltd	12	10.1
Total	119	100

Table 4.2 above shows that Babcon Uganda Limited, Dacosi Limited and Muga Services Limited were represented by 14 (11.8%) of the respondents, 13 (10.9%) were from Excel Construction Limited, Mani Engineering Services Limited and Ars Construction Company were each represented by 12 (10.1%), 11 (09.2%) were from Kiru General Services Limited, 10 (08.4%) from Nato Engineering Limited, and 09 (07.6%) were from Build Base Associates Uganda limited. This means that the findings of the study are credible since they captured the views of respondents from all classes of local construction companies in Uganda. It was easier to compare and contrast the performance of local construction in different classes.

4.2.6 Position of respondents

The study also aimed at identifying the positions of the study's respondents, and the study's findings are displayed in table 4.3

Table 4.3: Position of respondents

Position	Frequency	Percentage (%)
Director	18	15.1
Architect	16	13.4
procurement officer	10	08.4
safety controller	10	08.4
Human resource	10	08.4
Finance controller	10	08.4
Surveyor	13	10.9
Marketers	06	05.0
Project manager	14	11.8
Site engineer	12	10.1
Total	119	100

Table 4.3 above indicates that 18 (15.1%) of the respondents were directors of construction companies, 16 (13.4%) were heads of Architectural departments, 13 (10.9%) were heads of surveying, 14 (11.8) were project managers 12 (10.1%) were site engineers and heads of procurement, safety controllers, human resource and finance controllers were represented each by 10 (08.4%). This suggests that the study's findings are views of respondents that face different challenges at different levels in the construction industry.

4.2.7 The biggest construction project ever undertaken in terms of project cost

The study also thought to establish the biggest projects even done by the local construction companies in Uganda and the results are as follows;

Table 4.4: The biggest construction project ever undertaken in terms of project cost

Biggest project amount	Frequency	Percentage (%)
Below 500million	08	06.7
500-1billion	13	10.9
1-5billion	28	23.5
5-10billion	39	32.8
Above 10billion	31	26.1
Total	119	100

Table 4.4 indicates that out of the 119 respondents of the study, 39 (32.8%) projects were in the range of 5-10billion, 31 (26.1%) had undertaken bigger construction projects worth 10 billion and above, 28 (23.5%) had their bigger construction projects in the range of 1-5billion, 13 (10.9%) had taken projects in the range 500-1billion and 08 (06.7%) had projects below 500million. This implies that the study findings show the challenges faced by local construction companies in different projects of varying costs thus suitable for the study

4.3 The Challenges faced by Local Construction Companies in Uganda

In a bid to achieve the results of the first objective of the study which was to establish the Challenges Faced by Local Construction Companies in Uganda. Each respondent was requested to indicate their level of agreement by ticking their best alternative while using a Likert scale of 1 to 5, NS=NOT SURE (3), D=DISAGREE (2), SA=STRONGLY AGREE (5), A=AGREE (4), SD=STRONGLY DISAGREE (1). The results were presented and analyzed by the use of descriptive statistics and relative index

4.3.1 Descriptive statistics on the challenges faced by local construction companies

The descriptive statistics of frequency and percentage were used in presenting the study findings as shown in table 4.5

Table 4. 5: The challenges faced by local construction companies in Uganda

Challenges faced by local construction companies	SA (5)		A (4)		NS (3)		D (2)		SD (1)	
	f	%	f	%	f	%	f	%	f	%
Inadequate number of competent workers to facilitate high quality output	27	22.7	49	41.2	08	06.7	21	17.6	14	11.8
The cost of accessing credit is high	31	26.1	71	59.7	00	00	10	08.4	07	05.9
Lending interest rates are high	35	29.4	66	55.5	00	00	12	10.1	06	05.0
Guarantee requirements and bid bonds are expensive	41	34.5	77	64.7	00	00	01	0.8	00	00
Lowest price criterion does not favor quality of the work of local construction companies.	19	16.0	47	39.5	21	17.6	28	23.5	04	03.4
Clients prefer shorter project duration which is capital intensive	28	23.5	54	45.4	13	10.9	14	11.8	10	08.4
High shortages of skilled manpower	44	37.0	49	41.2	07	05.9	19	16.0	00	00
It is expensive to hire highly skilled manpower	41	34.5	56	47.1	11	09.2	14	11.8	03	02.5
Highly skilled manpower is hired by government and international companies	31	26.1	65	54.6	00	00	18	15.1	05	04.2
Ineffective professional education and training / retraining of man power	49	41.2	43	36.1	15	12.6	12	10.1	00	00
Local construction companies have remained small and are unable to take on complex projects because of the limited capital invested	18	15.1	61	51.3	09	07.6	16	13.4	15	12.6
Procurement approaches in a construction industry need heavy investment that may not be easily accessed by local construction companies	33	27.7	63	52.9	10	08.4	08	06.7	05	04.2
Durability and complexity are the main reasons why the construction of civil engineering works and buildings is capital-intensive.	23	19.3	44	37	19	16	17	14.3	16	13.4
Throughout construction, having enough working capital depends on having the right funding and composition.	08	06.7	15	12.6	69	58	17	14.3	10	08.4
Diversion of funds to other activities	13	10.9	31	26.1	40	33.6	24	20.2	11	09.2
Insufficient financing of present assets that enable projects to be completed within set budgets and timelines.	17	14.3	45	37.8	23	19.3	21	17.6	13	10.9
A directive to award all construction projects to a given construction company	29	24.4	39	32.8	12	10.1	22	18.5	17	14.3
Awarding a project to a construction company according to loan agreement.	28	23.5	77	64.7	03	02.5	05	04.2	06	05.0
Advanced and sophisticated technology is expensive to acquire	28	23.5	71	59.7	03	02.5	09	07.6	08	06.7
Advanced technology requires additional training that is expensive	34	28.6	52	43.7	11	09.2	15	12.6	07	05.9
Local companies need to pay bribes in order to get contracts	41	34.5	75	63.0	02	01.6	01	0.8	00	00
Corruption reduces working capital of a company	26	21.8	69	58.0	11	09.2	08	06.7	05	04.2
Underpaying, paying infrequently, or paying late Contractors now have trouble paying their bills because of nonpayment.	47	39.5	72	60.5	00	00	00	00	00	00

Likert scaling 1=Strongly Disagree, 2 =Disagree, 3=Not sure, 4=Agree and 5=strongly agree

f=frequency, %=percentage

Table 4.5 above shows that 41.2% of the respondents agreed that inadequate number of competent workers to facilitate high quality output is one of the challenges faced by local construction companies, 22.7% strongly agreed, 17.6% disagreed, 11.8% strongly disagreed while 06.7% were not sure. This means that local construction companies in all classes face the challenge of inadequate number of competent workers to facilitate high quality output and this is because they are hard to maintain in terms of their salaries and wages.

“Most engineers with advanced and sophisticated skills are employed by government and multinational/ foreign construction companies and this makes it hard for us to compete” one of the directors noted

The study findings in table 4.5 showed that 59.7% of the respondents agreed that one of the challenges faced by local construction companies is the high cost of accessing credit, 26.1% strongly agreed, 08.4% disagreed and 05.9% strongly disagreed while none were not sure. This means that the local construction companies in Uganda are faced with the challenge of high cost of accessing credit from financial institutions that seek big collateral securities before accessing credit facilities.

“Employees of banks usually make the processing of loans expensive and long and this hinders our performance on the projects” One of the directors noted during the interviews

Table 4.5 also showed that 55.5% of the respondents agreed that high lending interest rates of financial institutions affect the performance of local construction companies, 29.4% strongly agreed, 10.1% disagreed and 05.0% strongly disagreed while none was not sure. Apart from high costs in accessing credit, local construction companies are faced with high interest rate on credit facilities and this has hindered their growth and involvement in competitive bidding.

“Interest rates of 15% per annum and above is expensive and I cannot keep on getting loans of such interest rates thus hindering the acquisition of equipment”

One of the directors asserted during interviews

Table 4.5 above also revealed that 64.7% of the respondents agreed that guarantee requirements and bid bonds are expensive, 34.5% strongly agreed, and 0.8% disagreed while none was not sure or strongly disagreed. This means that local construction companies are restricted from participating in competitive bidding because of expensive guarantee requirements and bid bonds set by the clients especially government entities and ministries.

Furthermore, table 4.5 above, it can be inferred that 39.5% of the respondents agreed that lowest price criterion does not favor quality of the work of local construction companies, 23.5% disagreed, 17.6% were not sure, 16.0% strongly agreed while 03.4% strongly disagreed. This means that local construction companies are always out competed by the foreign companies because of the lowest price criterion that does not favor local construction companies’ output.

“This idea of the lowest price bidder wins the contracts is ambiguous and does not affect companies that may need to put emphasis on good quality product”

One of the directors noted during interview

The study findings in table 4.5 above showed that 45.4% of the respondents agreed that one of the challenges faced by local construction is that clients prefer shorter project duration which is capital intensive, 23.5% strongly agreed, 11.8% disagreed while 10.9% were not sure and 08.4% strongly disagreed. This means that local construction companies with clients that give shorter project duration are likely to miss

out because local construction companies' activities are labour intensive thus making them loose the projects to companies that are capital intensive.

“Shorter project's duration requires advanced machines such as excavators which are expensive to acquire and for us who use human being for some activities end up failing to win contracts” one of the directors noted during the interview

Additionally, 41.2% of the respondents agreed that high shortage of skilled manpower is one of the challenges faced by local construction companies, 37.0% strongly agreed, 16.0% disagreed and 05.9% were not sure and none disagreed. This means that local construction companies are left out in bidding for sophisticated projects that need specific skilled engineers who are scarce and expensive to maintain.

“Engineers with advanced skills who can do innovations and do complex projects are rare and this those available are expensive” one of the directors noted

Furthermore, table 4.5 also indicates that 47.1% of the respondents agreed that it is expensive to hire highly skilled manpower, 34.5% strongly agreed, 11.8% disagreed and 09.2% were not sure while 02.5% strongly disagreed. This means that specific skilled engineers are scarce and expensive to be maintained in terms of salaries because government and multinational construction companies offer high and enhanced salaries compared to local construction companies.

Table 4.5 above showed that 54.6% of the respondents agreed that one of the challenges faced by local construction companies is that highly skilled manpower is hired by government and international companies, 26.1% strongly agreed, 15.1% disagreed and 04.2% strongly disagreed while none was not sure. This means that local

construction companies in Uganda lose project contracts to foreign companies because highly skilled engineers are hired by government and multinational companies thus leaving local construction companies with semi and unskilled engineers.

“Most engineers with advanced and sophisticated skills are employed by government and multinational/ foreign construction companies and this makes it hard for us to compete” one of the directors noted

Table 4.5 above shows that 41.2% of the respondents strongly agreed that ineffective professional education and training / retraining of man power affects the performance of local construction companies, 36.1% agreed, 12.6% were not sure and 10.1% disagreed while none strongly disagreed. This means that most engineers that graduate from universities are not adequately equipped with practical skills thus the need to retrain them practical skills which is challenging for local construction companies.

“There are very few institutions of higher learning that train engineers with advanced technology in construction industry and training of engineers abroad is expensive which is a challenge to most local construction companies” one of the directors noted during the interviews

Table 4.5 above also showed that 51.3% of the respondents agreed that local construction companies have failed to expand and are unable to take on complex projects because of the limited capital invested, 15.1% strongly agreed, 13.4% disagreed, 12.6% strongly disagreed, and 07.6% were not sure. This means that most local construction companies cannot handle big projects because of being small in size and the little capital invested making them lack capacity to handle big projects.

Table 4.5 above showed that 52.9% of the respondents agreed that procurement approaches in the construction industry need heavy investment that may not be easily

accessed by local construction companies, 27.7% strongly agreed, 08.4% were not sure, 06.7% disagreed while 04.2% strongly disagreed. This means that local construction companies lose construction projects because of procurement requirements in the construction industry that are expensive to meet for local construction companies.

Table 4.5 above also shows that 37% of the respondents agreed that construction of civil engineering projects and buildings is capital-intensive for two primary reasons: durability and complexity, which is transforming local construction enterprises, 19.3% strongly agreed, 16% were not sure, 14.3% disagreed, 13.4% strongly disagreed. This means that local construction companies usually have time overruns, cost overruns and low-quality output because of their labor-intensive nature and most projects are complex.

Table 4.5 above also shows that 58% of the respondents were not sure whether the correct composition and finance at all times during construction determine the level of working capital., 14.3% disagreed, 12.6% agreed, 08.4% strongly disagreed while 06.7% strongly agreed. This implies that the local construction companies are not affected with the availability of working capital is contingent on the proper finance and composition at all times during construction.

More so, Table 4.5 above also reveals that 33.6% of the respondents were not sure that diversion of funds to other activities affects the performance of local construction companies, 26.1% agreed, 20.2% disagreed, 10.9% strongly agreed while none 09.2% strongly disagreed. This implies that diversion of fund in local construction companies does not affect their performances however, this is not the case because some

construction projects by local constructor's stall because of lacking funds to cater for daily expenses of the project which is as a result of diversion of funds to personal activities.

“Some directors of local construction companies usually divert project funds to do their own activities and this is a challenge in a way that funds to complete projects will be lacking”, one of the directors noted during the interviews

Table 4.5 above also shows that 37.8% of the respondents agreed that insufficient provision of funds to finance current assets which facilitate projects' completion within cost and time frames affects the performance of local construction companies, 14.3% strongly agreed, 19.3% were not sure, 17.6% disagreed while 10.9% strongly disagreed. This implies that local construction companies lack sufficient funds to run the daily activities of the companies such as machinery maintenance, employees' salaries and wages.

In addition to the above, Table 4.5 above shows that 32.8% of the respondents agreed that a directive to award all construction projects to a given construction company either by funders or government affects the performance of construction companies in Uganda, 24.4% strongly agreed, 18.5% disagreed, 14.3% strongly disagreed and 10.1% were not sure. This implies that local construction companies lose construction projects because of the directives by either government or funders of the projects.

“Political directives where some political figures like president directing the awarding of contracts to certain contractor Like UPDF engineering brigade”

Table 4.5 above also shows that 64.7% of the respondents agreed that awarding a project to Construction Company according to loan agreement affects the performance of local companies in the construction industry, 23.5% strongly agreed, 02.5% were

not sure, 04.2% disagreed while 05% strongly disagreed. This means that local construction companies are not awarded contracts because the loan agreements for those projects usually determine the contractor and most local construction companies are not known globally and lack capacity to be trusted with such big sums of money.

Table 4.5 also revealed that 59.7% of the respondents agreed that advanced and sophisticated technology is expensive to acquire thus affecting the performance of local construction companies, 23.5% strongly agreed, 07.6% disagreed, 06.7% strongly disagreed and 02.5% were not sure. This means that local construction companies faced the challenge of expensive advanced and sophisticated technology thus making them lose complex projects to multinational companies.

“The cost of acquiring engineering software, equipment and machinery is expensive which requires a lot of money that may not be available to us local contractors” one of the directors noted during the interviews

Table 4.5 further revealed that 43.7% of the respondents agreed that advanced technology requires additional training that is expensive hence affecting the performance of local companies in construction industry, 28.7% strongly disagreed, 12.6% disagreed, 09.2% were not sure and 05.9% strongly disagreed. This means that local construction companies are faced with the challenge of expensive additional training in advanced technology thus reducing on the working capital.

Table 4.5 above further shows that 63.0% of the respondents agreed that one of the challenges faced by local construction companies is that local companies need to pay bribes in order to get contracts, 34.5% strongly agreed, 01.6% were not sure, and 0.8% disagreed while none strongly disagreed. This means that local construction companies

are always forced to pay bribes during the bidding process and this leads them to have less working capital which may result into low quality works.

Table 4.5 above also reveals that 58.0% of the respondents agreed that corruption reduces working capital of a company thus affecting the performance of local construction companies, 21.8% agreed, 09.2% were not sure, 06.7% disagreed while 04.2% strongly disagreed. This implies that due to corruption tendencies, local construction companies tend to lose projects working capital which results into low quality project output.

Table 4.5 above shows that 60.5% of the respondents agreed that contractors have experienced difficulties with cash flow, particularly with government projects, as a result of late payment, underpayment, intermittent payment, and nonpayment thus affecting the performance of local construction companies and 39.5% strongly agreed while none either was not sure, disagreed or strongly disagreed. This means that local construction companies receive payments for complete projects especially from government late thus making the continuous activities local construction hard.

4.3.2 Relative importance index and ranking of the challenges faced by local construction companies in Uganda

The challenges faced by local construction companies are ranked according to the relative importance index (RII) and the results are shown below;

Table 4.6: The Ranking of the challenges faced by local construction companies in Uganda

<i>Challenges Faced</i>	<i>RII</i>	<i>RANK</i>
Underpaying, paying infrequently, or paying late Contractors now have trouble paying their bills because of nonpayment.	0.88	1 ST
Guarantee requirements and bid bonds are expensive	0.87	2 ND
Local companies need to pay bribes in order to get contracts	0.86	3 RD
It is expensive to hire highly skilled manpower	0.83	4 TH
Ineffective professional education and training / retraining of man power	0.82	5 TH
High shortages of skilled manpower	0.80	6 TH
Awarding a project to a construction company according to loan agreement.	0.79	7 TH
Lending interest rates are high	0.79	8 TH
Procurement approaches in a construction industry need heavy investment that may not be easily accessed by local construction companies	0.79	9 TH
The cost of accessing credit is high	0.78	10 TH
Corruption reduces working capital of a company	0.77	11 TH
Advanced and sophisticated technology is expensive to acquire	0.77	12 TH
Highly skilled manpower is hired by government and international companies	0.77	13 TH
Advanced technology requires additional training that is expensive	0.75	14 TH
Clients prefer shorter project duration which is capital intensive	0.73	15 TH
Inadequate number of competent workers to facilitate high quality output	0.69	16 TH
Local construction companies have remained small and are unable to take on complex projects because of the limited capital invested	0.69	17 TH
Lowest price criterion does not favor quality of the work of local construction companies.	0.68	18 TH
A directive to award all construction projects to a given construction company	0.67	19 TH
Durability and complexity are the main reasons why the construction of civil engineering works and buildings is capital-intensive.	0.67	20 TH
Insufficient financing of present assets that enable projects to be completed within set budgets and timelines.	0.65	21 ST
Diversion of funds to other activities	0.62	22 ND
Throughout construction, having enough working capital depends on having the right funding and composition.	0.59	23 RD

Table 4.6 above presents the questionnaire findings on the challenges faced by local construction companies in Uganda that hinder their performance and competitiveness basing on relative Importance Index (RII). The higher Importance Index (RII) indicates that most respondents accepted that the identified challenge hinder the performance and competitiveness of local construction companies and the lower Relative Importance Index (RII) means that the identified factor/challenge has less impact on the performance and competitiveness of local construction companies.

The study findings indicated that all respondents (RII=0.88) accepted the fact that late payment, underpayment or paying intermittently and nonpayment have led to cash flow hardships to contractors especially government affects the performance of local construction companies. This means that local construction companies receive payments for complete projects especially from government late thus making the continuous activities of local construction companies hard. This is in line with Kenyatta (2015) who conducted a study on the effects of payment default on contractors in the Kenyan construction industry and discovered that late payment of one or more certificates, underpayment or intermittent payment, and nonpayment have all caused contractors to experience difficulties with cash flow.

Majority of the respondents agreed that guarantee requirements and bid bonds are expensive (RII=0.87). This means that local construction companies are restricted from participating in competitive bidding because of expensive guarantee requirements and bid bonds set by the clients especially government entities and ministries. Bid bonds and other guarantees are required by clients or project owners to mitigate the risk of non-performance or default by the winning bidder. The cost is

typically a percentage of the contract value, and it serves as a financial assurance that the bidder will fulfill the contract if awarded. Also, Companies need to deposit a certain amount with a financial institution to obtain a bid bond or guarantee. This can be a significant upfront cost hence a challenge to most local construction companies.

Findings further showed that majority of the respondents (RII=0.86) agreed that one of the challenges faced by local construction companies is that local companies need to pay bribes in order to get contracts. This means that local construction companies are always forced to pay bribes during the bidding process and this leads them to have less working capital which may result into local quality works. While it may seem like paying bribes could help local companies secure contracts initially, engaging in such unethical practices can have significant negative consequences for their long-term performance and sustainability and thus when contracts are secured through bribery rather than merit, companies may not have the necessary skills, expertise, or motivation to deliver high-quality work. This can result in subpar performance, project delays, and cost overruns. This concurs with by the reports of corruption on public construction projects, and Uganda is currently ranked 151/176 in the world for corruption.

Most respondents (RII=0.83 and RII=0.80) agreed that it is expensive to hire highly skilled manpower and there are high shortage levels of skilled manpower. This means that local construction companies in Uganda lose project contracts to foreign companies because highly skilled engineers are hired by government and multinational companies thus leaving local construction companies with semi and unskilled engineers. This concurs with Dantong *et al.* (2011) who asserted that rather than lack

of people, skilled manpower shortage is lack of individuals who are highly qualified, skilled, and motivated to perform a certain sort of work. According to Attar *et al.* (2012), the major reasons for the shortage of competent personnel in the construction sector are the aging labor force, lack of advanced education and retraining and failure to recruit young people as potential employees. Local contractors may face stiffer competition from larger firms, which could result in thinner profit margins for them, especially if they struggle to match the resources and scale of larger companies.

The study findings showed that majority of the respondents (RII=0.69) agreed that inadequate number of competent workers to facilitate high quality output is one of the challenges faced by local construction companies. This means that local construction companies in all classes face the challenge of inadequate number of competent workers to facilitate high quality output and this is because they are hard to maintain in terms of their salaries and enumerations. This is in line with Ocen *et al.*, (2018) who noted that despite government efforts to emphasize the importance of universities and technical institutions for the teaching and training of engineers and related scientists, there is a severe shortage of skilled labor in Uganda and those that are available are hired by either government or foreign construction companies that pay them highly, making them too expensive for local and small construction companies.

The study findings showed that majority of the respondents (RII=0.77) accepted that corruption and bribery reduce working capital of a company thus affecting the performance of local construction companies. This implies that due to corruption tendencies, local construction companies tend to lose projects' working capital which results into low quality project output. This is supported by the reports of corruption

on public construction projects, and Uganda is currently ranked 151/176 in the world for corruption.

The study reported that majority of the respondents (RII=0.67) accepted the fact that a directive to award all construction projects to a given construction company either by funders or government affects the performance of construction companies in Uganda. This implies that local construction companies lose construction projects because of the directives by either government or funders of the projects. This is supported by UNABCEC (2021) who noted that the president of the republic of Uganda instructed the ministries of education and sports and Health to begin awarding all construction projects to the UPDF engineering Brigade due to delays in government construction projects as a result of procurement process corruption, delays by Ministries, Departments and Agencies (MDAS), and PPDA.

Conclusion

Basing on the study finding above, local construction companies in Uganda face several challenges that affect their performance and competitiveness. The major challenges highlighted by the respondents (directors and departmental heads) are limited capital investment manifested in form expensive guarantee requirements and bid bonds, the high cost of accessing credit, high Lending interest rates underpaying, paying infrequently, or paying late Contractors advanced technology requires additional training that is expensive, bribes in selection and contract awarding, limited skilled man power, loan agreements, capital intensive advanced and supplicated technology. This has forced government to award expensive and complex projects to foreign or multinational construction companies and those big projects awarded to

local construction companies are not completed on schedule with local quality output. This is concurring with MoWT which noted that most local construction companies lack capacity in form of equipment that results into the delaying of the construction projects. For example, the extension of parliamentary chambers by ROKO that was supposed to be completed in 2018 but it still on going. The construction of the roads in Kabale and Mbarara city by Multiplex Construction Company that is behind schedule and this is attributed to lack of equipment and skilled man power.

4.4 Characteristics of local construction companies in Uganda

The establishing the characteristics of local construction companies in Uganda was at the center of the study. Therefore, the respondents were requested show their opinion by ticking their best alternative by using a scale from 1 – 5 where SA= STRONGLY AGREE (5), A=AGREE (4), NS=NOT SURE (3), D=DISAGREE (2) AND SD STRONGLY DISAGREE (1). The results are presented and analyzed as follows;

4.4.1 Descriptive statistics on the characteristics of local construction companies in Uganda

The descriptive statistics of frequency and percentage were used in present the study findings as shown below

Table 4.7: The characteristics of Local Construction Companies in Uganda

Characteristics of Local Construction Companies	<i>SA (5)</i>		<i>A (4)</i>		<i>NS (3)</i>		<i>D (2)</i>		<i>SD (1)</i>	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Most local construction companies rely on Labour Intensive Methods that lead to delays in project completion.	16	13.4	42	35.3	17	14.3	21	17.6	23	19.3
Most local construction companies lack skilled and educated workforce thus unable to handle complex projects.	34	28.6	52	43.7	11	09.2	15	12.6	07	05.9
Most local companies use and rely on temporary labour force that in most cases do low quality work.	28	23.5	71	59.7	03	02.5	09	07.6	08	06.7
Local companies are small in capacity and many in number to take on big and complex projects.	13	10.9	61	51.3	00	00	31	26.1	14	11.8
Sophisticated construction contracts are not awarded to local construction because of lacking advanced sophisticated technology.	31	26.1	88	73.9	00	00	09	07.6	00	00
Local construction companies tend not to expand expertise of their employees.	25	21.0	27	22.7	19	16.0	41	34.5	07	05.9
Local contractors work on one project at time because of limited resources such as capital, technology and skilled man power	37	31.1	51	42.9	08	06.7	17	14.3	06	05.0
Due to limited man power and technology, projects are not completed on schedule	29	24.4	39	32.8	12	10.1	22	18.5	17	14.3
Due to relying on temporary labour, there is a lot of cost overruns	41	34.5	75	63.0	02	01.6	01	0.8	00	00

Likert scaling 1=Strongly Disagree, 2 =Disagree, 3=Not sure, 4=Agree and 5=strongly agree, f=frequency, %=percentage

Table 4.7 above indicates that 35.3% of the respondents agreed that the local construction industry is characterized by most local construction companies relying on labour intensive methods that lead to delays in project completion, 19.3% strongly disagreed, 17.6% disagreed, 13.4% strongly agreed and 14.3% were not sure. This implies that most local construction companies rely on labour intensive method that that cannot be used to work on complex projects.

“We use human beings in doing works that would be done by machines and this usually affects the project’s completion time and delays” One of the directors noted during interviews

Table 4.7 above also reveals that 43.7% of the respondents agreed that the most local construction companies lack skilled and educated workforce thus unable to handle complex projects, 28.6% strongly agreed, 12.6% disagreed, 09.2% were not sure and 05.9% strongly disagreed. This implies that local construction companies do not develop new designs, work on complex projects due to inadequate skilled and educated engineers.

“We do not bid for complex and big project because we lack more skilled engineers to perform such projects” one of the directors noted during the interviews

The findings in table 4.7 above show that 59.7% of the respondents agreed that most local companies use and rely on temporary labour force that in most cases do low quality work, 23.5% strongly agreed, 07.6% disagreed, 06.7% strongly agreed, and 02.5% were not sure. This implies that most local construction companies rely on temporary labour force who are not reliable all the time in producing good quality work.

“We call builders and other workers only when we have projects and money” one of the directors noted during the interviews

The findings in table 4.7 above also reveal that 51.3% of the respondents agreed that Local companies are small in capacity and many in number to take on big and complex projects, 10.9% strongly agreed, 26.1% disagreed and 11.8% strongly disagreed while none was not sure. This means that local construction companies are many in number with no capacity in form of less or no equipment, small working capital, few employees hence making them unable to handle certain construction projects.

“You see, there are many small local construction companies and you cannot subcontract to them because they lack capacity”, one of the directors noted during the interviews

Table 4.7 above shows that 73.9% of the respondents agreed that sophisticated construction contracts are not awarded to local construction companies because of lacking advanced sophisticated technology, 26.1% strongly agreed, 07.6% disagreed while none either was not sure or strongly disagreed. This implies that most local construction companies lack advanced sophisticated technology thus leading to awarding of such projects to multinational companies.

Table 4.7 above also shows that 34.5% of the respondents disagreed that local construction companies tend not to expand expertise of their employees, 22.7% agreed, 21.0% strongly agreed, 16.0% were not sure and 05.9% strongly disagreed. This implies that since local construction companies rely on temporary labour force and this has made these companies not to expand expertise of their employees.

“It is expensive to train engineers with advanced technology and this usually affects expansion of expertise since its expensive” one of the directors noted during interviews

Table 4.7 shows that 43.9% of the respondents agreed that local contractors work on one project at time because of limited resources such as capital, technology and skilled

man power, 31.1% strongly agreed, 14.3% disagreed, 05.0% strongly disagreed and 076.7% were not sure. This means that due to limited capital, equipment, and manpower, local construction companies do one project at a time thus making them lose projects that may arise during the course of another projects.

The study findings in Table 4.7 further showed that 32.8% of the respondents agreed that due to limited man power and technology, projects are not completed on schedule, 24.4% strongly agreed, 10.1% were not sure, 18.5% disagreed and 14.3% strongly disagreed. This implies that construction projects done by local contractors are mostly completed past schedule and this is attributed to limited skilled manpower and advanced technology of local contractors.

“Our construction projects are usually not completed planned schedule because of having fewer skilled engineers and limited advanced machines” one of the respondents noted during interviews

Lastly, study findings in table 4.7 showed that 63.0% of the respondents agreed that due to relying on temporary labour, there is a lot of cost overruns, 34.5% strongly agreed, 01.6% were not sure and 0.8% disagreed while none strongly disagreed. This implies that cost overruns are always incurred due to relying on labour intensive techniques which in most cases are on temporary basis.

4.4.2 Relative Importance and Ranking of the characteristics of local construction companies

The study thought to analyze the performance of local construction companies in Uganda and the respondents were requested show their opinion and results are shown below as per the ranking according to the relative importance index (RII).

Table 4. 8: Relative Importance and Ranking of the characteristics of local construction companies

<i>Characteristics of Local Construction Companies</i>	<i>RII</i>	<i>RANK</i>
Sophisticated construction contracts are not awarded to local construction because of lacking advanced sophisticated technology.	0.88	1 ST
Due to relying on temporary labour, there is a lot of cost overruns	0.86	2 ND
Most local companies use and rely on temporary labour force that in most cases do low quality work.	0.77	3 RD
Local contractors work on one project at time because of limited resources such as capital, technology and skilled man power	0.76	4 TH
Most local construction companies lack skilled and educated workforce thus unable to handle complex projects.	0.75	5 TH
Local companies are small in capacity and many in number to take on big and complex projects.	0.65	6 TH
Local construction companies tend not to expand expertise of their employees.	0.64	7 TH
Due to limited man power and technology, projects are not completed on schedule	0.61	8 TH
Most local construction companies rely on Labour Intensive Methods that lead to delays in project completion.	0.61	8 TH

The study findings in Table 4.8 above showed that majority of the respondents (RII=0.88) agreed that sophisticated construction contracts are not awarded to local construction because of lacking advanced sophisticated technology. This implies that most local construction companies lack advanced sophisticated technology thus leading to awarding of such projects to multinational companies. Sophisticated technology usually used in the construction of complex projects such as dams, bridges and tall buildings is expensive to acquire and operate hence making it difficult for most local construction companies. This is in line with Mahmoud *et al* (2021) who noted that as there is no one-size-fits-all standard for construction procedures because every project is diverse and unique, it is frequently thought to be difficult for local construction enterprises to raise production quickly

The study further reported that majority of the respondents (RII=0.77) accepted that most local construction companies use and rely on temporary labour force that in most cases do low quality work. This implies that most local construction companies rely on temporary labour force who are not reliable all the time in producing good quality work. This is in line with Boadu *et al*, 2020) who noted that local construction firms in Ghana are similar to many others around the world in that they only have a small core of regular workers while the majority of their field workers are employed on a temporary and casual basis.

The study reported that majority respondents (RII=0.76) accepted the fact that most local construction companies lack skilled and educated workforce thus unable to handle complex projects. This implies that local construction companies do not develop new designs, work on complex projects due to inadequate skilled and educated Engineers.

Most local construction companies use untrained employees and those that are semi-skilled and this has resulted into failure to read plans, designs and unable to handle complex projects and those that are handled, the final output is always of low quality. This is supported by Guloba et al. (2021) and Boadu et al. (2020) who stated that the supply of competent, educated, and experienced laborers is insufficient in Uganda and the construction industry is praised for being a place to hire untrained labor, which has tarnished its reputation as having a terrible record when it comes final output that is of low quality.

The findings indicated that majority of the respondents with RII= 0.61 accepted that the local construction industry is characterized by most local construction companies relying on labour intensive methods that lead to delays in project completion. This implies that most local construction companies rely on labour intensive method that that cannot be used to work on complex projects. The activities that can be done by the machines in short period of time are done by human beings who take long to complete them. This increases project duration time due to relying heavily on labour intensive methods. This is supported by Boadu et al, (2020) who noted that typical infrastructure is built utilizing labor-intensive techniques, including feeder roads, modest irrigation systems, buildings, and tiny dams, among others and Ghana's low cost of labor makes manpower-based processes more cost-effective than capital- or equipment-intensive ones, although they take longer to complete projects. This was witnessed by UNABCEC (2019) in the case of Armpass Technical Services Limited which took on several engineering interns on the ongoing Mubende - Kakumiro -Kagadi road.

Conclusion

The performance of local construction companies in Uganda is measured by the ability to compete for big contracts, complete the projects on schedule, high quality output, repay initial capital investment, pay and retain its skilled employees and acquire equipment. However, from the study findings the performance of local construction companies in Uganda is manifested by low quality output, delays in projects completion, projects extension due to highly relying on temporary manpower, labor intensive technique and small in size with limited capital investment. From the study findings, it was observed that most local construction companies are small in size with limited capacity where most of them are unable to win more than one contract at ago for example RIC (2014) noted that the analysis of the 256 contracts shows that 149 contractors were awarded only one contract each, 36 were awarded two or more contracts, and only a handful were awarded three or more contracts. So, few contractors appear to be winning several large contracts at a time.

4.5 The Measures of Improving Performance of Local Construction Companies in Uganda.

The study's third goal sought to establish the strategies or ways of improving the performance of local construction companies in Uganda and Participants were asked to draw on their experience while using the Likert scale of 1 to 5. NS=NOT SURE (3), D=DISAGREE (2), SA=STRONGLY AGREE (5), A=AGREE (4), SD=STRONGLY DISAGREE (1). The outcomes were shown below as follows.

4.5.1 Descriptive statistics on the challenges faced by local construction companies

The descriptive statistics of frequency and percentage were used in present the study findings as shown below

Table 4.9: The measures of improving the performance of local construction companies in Uganda

The measures of Improving Performance of Local Construction Companies	SA (5)		A (4)		NS (3)		D (2)		SD (1)	
	f	%	f	%	f	%	f	%	f	%
Continuously benchmarking foreign companies' operations to maintain competitiveness	29	24.4	39	32.8	12	10.1	22	18.5	17	14.3
Companies in the construction industry should always work together in the supply chain.	19	16.0	32	26.9	21	17.6	27	22.7	20	16.8
Increasing knowledge and skills for complex projects	21	17.6	47	40.3	11	09.2	19	16.0	21	17.6
Investment in innovative research and development that improve the quality, productivity, efficiency and management of the construction project.	44	37.0	61	51.3	00	00	10	08.4	04	03.4
Setting regulation as the stimulus for better construction industry improvement	11	09.2	33	27.7	19	16.0	39	32.8	17	14.3
Aligning national and international construction standards together	50	42.0	69	58.0	00	00	00	00	00	00
Merging of small and medium contraction companies in order to pull resources together for bigger contracts.	23	19.3	45	37.8	13	10.9	17	14.3	21	17.6
Continuous training and retraining of workers to gain advanced and sophisticated skills	27	22.7	68	57.1	05	04.2	12	10.1	07	05.9

Likert scaling 1=Strongly Disagree, 2 =Disagree, 3=Not sure, 4=Agree and 5=strongly agree, f=frequency, %=percentage

Table 4.9 shows that 32.8% of the respondents agreed that one of the measures to improve performance of local construction companies is by continuously benchmarking foreign companies' operations to maintain competitiveness, 24.4% strongly agreed, 18.5% disagreed, 14.3% strongly disagreed while 10.1% were not sure. This means that local contractors need to continuously study multinational construction companies' activities and their operations in order to benchmark them for them improve their performance.

“We need to try to study and benchmark the operations of the foreign construction companies in the country and we try to learn from them in order to be competitive”, one of the directors noted during the interviews

Table 4.9 also indicates that 26.9% of the respondents agreed that Companies in the construction industry should always work together in the supply chain in order to improve competitiveness of local construction companies, 22.7% disagreed, 16.8% stringy disagreed, and 17.6% were not sure while 16.0% strongly agreed. This implies that local construction companies need to work with other at different levels in the supply chain in order to build capacity which will enhance their competitiveness.

“The small construction companies need to work hand in hand in order to simplify the supply chain in order to bid and compete with foreign construction companies” one of the directors noted during the interviews

Furthermore, Table 4.9 shows that 40.3% of the respondents agreed that increasing knowledge and skills for complex projects is one of the measures to improve performance of local construction companies, 17.6% strongly agreed, 17.6% strongly disagreed, 16.0% disagreed, and 09.2% were not sure. This implies that local construction companies need to carry out retraining of their employees to gain skills

that may be required in complex projects, operate advanced technology, and develop new design.

“We need to encourage our engineers and give them scholarships to retrain in order to get the advanced technology skills which are required for complex projects” one of the directors noted during the interviews

Table 4.9 further indicates that 51.3% of the respondents agreed that in order to improve performance of local construction companies in Uganda, there must be investment in innovative research and development that improve the quality, productivity, efficiency and management of the construction project, 37.0% strongly agreed, 08.4% disagreed and 03.4% strongly disagreed while none was not sure. This implies that local construction companies need to do more innovative research in areas of advanced technology, designs and other engineering practices in order to improve the quality, productivity, efficiency and competitiveness.

“All local construction companies whether in class A-1 or A-5, we need to put aside some money meant for research on new innovations and development of new designs to improve our productivity”, one of the directors noted during the interviews

Table 4.9 above also shows that 32.8% of the respondents disagreed that setting regulation as the stimulus for better construction industry improvement, 27.7% agreed, 14.3% strongly disagreed, 16.0% were not sure, and 09.2% strongly agreed. This implies that mean the existing laws and regulation should be amended and be implemented in order to stimulate their growth and punishment wrong elements in the local construction industry.

Table 4.9 also shows that 58.0% of the respondents agreed that aligning national and international construction standards together is one strategy aimed at increasing the competitiveness of local construction companies in Uganda, 42.0% strongly agreed while none either was not sure, disagreed or strongly disagreed. This implies that local standard should be aligned with international construction standard so that the local construction companies can be recognized internationally.

“The national standards especially in the construction industry must be aligned with international standards and this will enable us gain trust and confidence of foreign donors” One of the directors noted during the interviews

Furthermore, table 4.9 above indicates that 37.8% of the respondents agreed that merging of small and medium construction companies in order to pull resources together for bigger contracts can easily enhance competitiveness of local construction companies, 19.3% strongly agreed, 14.3% disagreed, 17.6% strongly disagreed while 10.9% were not sure. This means that in order to improve competitiveness, local construction companies should pull resources and have one construction that handle contractors since there will be capacity.

Lastly, table 4.9 above shows that 57.1% of the respondents agreed that continuous training and retraining of workers to gain advanced and sophisticated skills is one of the best measures to improve the performance of local construction companies in Uganda, 22.7% strongly agreed, 10.1% disagreed, 05.9% strongly disagreed while 04.2% were not sure. This means that local construction companies need to retrain their employees in different areas in order to acquire advanced and sophisticated skills for complex project.

“We need to encourage our engineer and give them scholarships to retrain in order to get the advanced technology skills which are required for complex projects” one of the directors noted during the interviews

4.5. 2 Relative importance index and ranking of the measures of Improving Performance of Local Construction Companies in Uganda

According to the analysis of the measures of improving the performance and competitiveness of local construction companies, the study revealed many strategies/measures and these were ranked according to the relative importance index and the results are shown below;

Table 4. 10: The relative importance index and Ranking of the measures of Improving Performance of Local Construction Companies in Uganda

<i>Measures of Improving Performance of Local Construction Companies</i>	<i>RII</i>	<i>RANK</i>
Aligning national and international construction standards together	0.88	1 ST
Investment in innovative research and development that improve the quality, productivity, efficiency and management of the construction project.	0.82	2 ND
Continuous training and retraining of workers to gain advanced and sophisticated skills	0.76	3 RD
Continuously benchmarking foreign companies’ operations to maintain competitiveness	0.67	4 TH
Merging of small and medium contraction companies in order to pull resources together for bigger contracts.	0.65	5 TH
Increasing knowledge and skills for complex projects	0.65	6 TH
Companies in the construction industry should always work together in the supply chain.	0.61	7 TH
Setting regulation as the stimulus for better construction industry improvement	0.57	8 TH

Table 4.10 above presents the questionnaire findings on the measures aimed at improving the performance of local construction companies and their competitiveness in Uganda basing on relative Importance Index (RII). The higher Importance Index (RII) indicates the higher the need of the stated measure in order to improve the performance of local construction companies.

The study findings revealed majority of the respondents (RII=0.88) accepted that aligning national and international construction standards together is one strategy aimed at increasing the competitiveness of local construction companies in Uganda. This implies that local standard should be aligned with international construction standard so that the local construction companies can be recognized internationally. This in agreement with UNABCEC (2021) noted that, in accordance with Ugandan government policy, a foreign construction company that wins a large-scale project in Uganda is required to subcontract 30% of its total work to locally registered companies in Uganda in order to build those companies' capacity and enable them to compete for similar projects once they have gained the necessary expertise and experience.

The study finding showed that majority of the respondents (RII= 0.65) accepted the fact that there is a need to increase knowledge and skills for complex projects as one of the measures to improve performance of local construction companies. This implies that local construction companies need to carry out retraining of their employees to gain skills that may be required in complex projects, operate advanced technology, and develop new designs. This can also be achieved through research and training that will give employees/Engineers new skills. This in line with Lindlöf *et al.* (2013) who noted that workers should able to gain more knowledge to use the contract paperwork, drawings, and specifications as a starting point for their job and to exhibit quality workmanship.

The findings showed that most respondents (RII=0.67) accepted the fact that measures to improve performance of local construction companies is by benchmarking foreign companies' operations to maintain competitiveness continuously. This means that

local contractors need to continuously study multinational construction companies' activities and their operation in order to benchmark them for them improve their performance. Most foreign/ multinational companies have proved their operation in various countries and have proved to be successful, therefore local construction companies need to try to benchmark their operations in order to improve their performance and competitiveness. This is in line with Abarinda *et al.* (2019), who cited Engineer Ohno, the architect of the Toyota Production System framework, it was dangerous to copy pre-existing models without understanding their importance and how they fit into the bigger picture.

Conclusion

Basing on the study findings, the researcher developed a framework showing several measures and how they can be used to improve the performance and competitiveness of local construction companies in Uganda the framework is shown in the figure below.

4.6 A framework for improving the performance and competitiveness of local construction companies in Uganda

The study developed a framework for improvement of performance of local contractors which looked at measures which can be undertaken in order to improve the performance and competitiveness. In the framework developed, the study indicated that performance of local companies can be improved by adopting technology that the local contractor deploys, adaption of transparent public procurement on contractors' selection, aligning national and international construction standards together, continuously benchmarking foreign companies' operation, merging of small and

medium contraction companies in order to pull resources together for bigger contracts. All the above-mentioned measures are intended to build capacity of local construction in form of Sophisticated Skills, financial capacity, advanced technology, modern equipment aiming at providing competition, improved output and projects completed on schedule and budget.

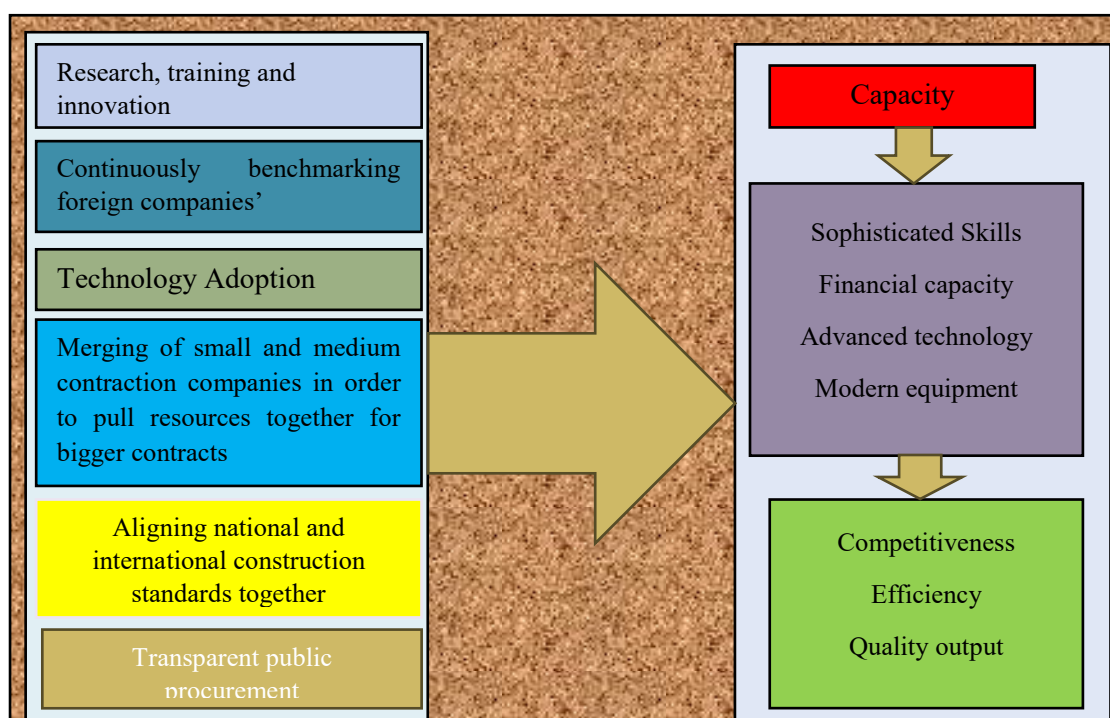


Figure 4.5: A framework for improving the performance and competitiveness of local construction companies in Uganda

4.6.1 Description of the framework

Research, training and innovation

Research, training, and innovation play crucial roles in the construction industry, contributing to its growth, sustainability, and competitiveness. Research in construction often focuses on developing new materials and construction techniques. This can lead to stronger, more durable, and cost-effective structures. Research efforts are directed towards sustainable construction practices, including eco-friendly

materials, energy-efficient designs, and waste reduction, Research helps improve safety standards and practices in the construction industry, reducing accidents and injuries on job sites. Studies explore how emerging technologies like Building Information Modeling (BIM), drones, and automation can enhance construction processes.

Continuously benchmarking foreign local construction companies' operation

Continuously benchmarking foreign and local construction companies can be a valuable practice for gaining insights, improving competitiveness, and identifying areas for improvement in the construction industry. By continuously benchmarking foreign and local construction companies, you can adapt to industry trends, improve your company's performance, and maintain competitiveness in the construction market. It's a dynamic process that requires commitment and a willingness to embrace change and innovation.

Technology adoption in construction industry

Technology adoption in the construction industry has been steadily increasing in recent years, transforming the way projects are planned, designed, executed, and managed. These technological advancements aim to enhance efficiency, safety, sustainability, and overall project outcomes.

Merging of small and medium contraction companies in order to pull resources together for bigger contracts

Merging small and medium construction companies to pool resources and pursue larger contracts is a strategic move that can offer several advantages. Some of the benefits include enhanced financial capability, access to larger projects, geographic

expansion, diverse skill sets and expertise, resource sharing, access to skilled workforce, competitive advantage.

Aligning national and international construction standards together

Aligning national and international construction standards is a complex and essential undertaking to ensure consistency, safety, and quality in the construction industry, as well as to facilitate international trade and cooperation. Aligning national and international construction standards is a long-term effort that requires commitment, coordination, and collaboration among various stakeholders. The ultimate goal is to promote safety, quality, and consistency in construction while facilitating international cooperation and trade in the industry.

Transparent public procurement in selection of contractors

Transparent public procurement in the selection of contractors is crucial for ensuring fairness, accountability, and efficiency in the allocation of public contracts. It helps prevent corruption, promotes competition, and ensures that public funds are used wisely. Transparent public procurement in the selection of contractors helps build trust in the government, encourages healthy competition, and maximizes the value of public investments while minimizing the risk of corruption and favoritism. It is a critical component of good governance and efficient use of public resources.

4.7 Chapter Summary

The study results are given and analyzed objective by objective in this chapter. The key study findings indicate that local construction companies in Uganda are faced with many challenges and have affected the performance of construction contracts by local contractors. Measures of how the performance of local construction can be improved

were established. The study's key findings are summarized, conclusions are formed, and recommendations are offered in the next chapter.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter discusses the major data findings, the conclusions that can be taken from them, and the suggested solutions. The study's goal was the primary emphasis of the conclusions and suggestions made. The researcher's objectives included identifying the difficulties faced by local construction enterprises in Uganda, establishing characteristics of local construction companies, and developing strategies for enhancing that performance.

5.1 Summary of the findings

The study aimed at analyzing the factors affecting the performance of local construction companies in Uganda. Respondents of the study comprised of directors and head of departments of local construction companies. The response rate of 90.2% that was considered was more than adequate for the study. The research revealed that men predominate in the local construction business, reflecting a gender representation gap. Since the majority of the responders had a degree or higher and had significant experience working on numerous projects in the local construction business, the information they provided was quite reliable. Therefore, the researcher achieved the main study objective by coming up with the proposed framework aiming at improving the performance of local construction companies in Uganda. The specified objectives are summarized as follows;

5.1.1 The challenges faced by Local construction Companies in Uganda

From the study, it was reported local construction companies were facing a lot of challenges that affect their performance and competitiveness. The study established that the challenges were affecting construction companies in all classes as per UNABCEC, and the prominent challenges according to the study are the high cost of accessing credit, high lending interests, and high guarantee requirements.

The study also reported that skilled manpower with advanced and sophisticated skills are scarce, expensive to hire and those available are hired by government and multinational construction companies hence causing local construction companies loose on complex projects.

The study also reported that the government directives such as awarding contracts to UPDF engineering brigade, corruption and bribery among government employees, awarding contracts as per the funder or loan agreement hence making small construction companies lose contracts to multinational companies.

5.1.2 The characteristics of local construction companies in Uganda

The study reported that Local construction industry in Uganda is characterized by very many local contractors with low capacity in form of equipment, temporary manpower, insufficient advanced and sophisticated technology and this has led to either delays in project completion, low quality work out put or unable to handle big and complex projects.

5.1.3 Measures of improving performance of Local construction companies in Uganda

The study revealed that for the local construction companies to improve their performance and their competitiveness in the construction industry, the measures were benchmarking foreign companies' operations, investment in innovative research and development that improve the quality, productivity, efficiency and management of the construction project, setting regulations as the stimulus for better construction industry improvement, integrating small and medium-sized construction firms in order to pool resources together for bigger contracts and aligning national and international construction standards together as well entering joint ventures

5.2 Conclusions

5.2.1 The challenges faced by Local construction Companies in Uganda

Local construction companies in Uganda are faced with several challenges such as the high cost of accessing credit, high lending interests, high guarantee requirements, government directives, corruption and bribery, awarding contracts as per the funder or loan agreement, lack of capacity in form of equipment and skilled manpower and delayed payment by clients especially government.

5.2.2 The characteristics of local construction companies in Uganda

Local construction industry in Uganda is characterized by very many local contractors with no capacity in form of equipment, temporary manpower, insufficient advanced and sophisticated technology which results into delays in project completion, low quality work out put, unable to handle big and complex projects, abandoning of the construction projects.

5.3.3 Measures of improving performance of Local construction companies in Uganda

The study also concluded that local construction companies should continuously benchmark multinational construction companies, pool resources to build capacity for handling big projects, retraining of employees to acquire advanced skilled, and integration in the supply chain.

5.3 Recommendation

A framework work was developed and UNABCEC should emphasize it among its members and those that are not yet their members.

Local construction firms in Uganda should have enough working capital, and contracts should only be given out based on their financial capacity and available technical resources. But, by joining forces and creating public-private collaborations with financial support who would be ready to finance significant construction projects, local construction companies in Uganda could increase their working capital.

Since skilled labor has been found to be an asset that pays off in the long term, there is a need to encourage the development of personal skills through training and skill upgrading within the construction business.

Also, a mechanism that aims to reduce the high costs of engineering and technician training must be developed. With the existing lack of competent labor, this should be done. There is a need for new intermediate level colleges, but it's important to keep the technical colleges that are already there and not turn them into universities like they have in the past.

According to the study's suggestions, clients, particularly the government, must increase the speed at which payments are approved.

5.4 Areas for further research

Similar research should be done in the procurement process effect on the performance of local construction companies.

Analysis of the financial behavior on the performance of local construction companies

A related study be carried out on the analysis on the effect of technology and capacity on the performance of local construction companies.

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APPENDICES

APPENDIX 1: QUESTIONNAIRE FOR THE EMPLOYEES OF LOCAL CONSTRUCTION COMPANIES IN UGANDA.

I am Mutekanga Zadock, Analyzing the factors affecting the performance of local construction companies in Uganda" is the title of a research project being conducted by a Kyambogo University Master of Science in Construction Technology and Management student. You have been designated as a respondent in this study, and you are obliged to fill out this questionnaire as completely and accurately as you can. This questionnaire's responses will all be used only for academic research.

Part A: BIO DATA

Please (√) as appropriate

1. Gender of the respondent

Male Female

2. Age bracket of the respondent

Below 20 years 20-29years 30-39years
40-49years 50-59 years

3. Marital status of the respondent

Single Married widowed

4. Education levels of the respondent

Primary Diploma
Secondary Bachelor's Degree
Certificate Master's degree

5. Years of experience in construction industry

Below 5year 5-10years 10-15years 15-20years above 20 years

6. What is the name of Construction Company?

7. Which position do you have at your construction company?

Director Architect procurement officer safety

controllers

Finance controller Surveyor Human resource marketers

Project manager Site engineer

8. What is the biggest construction project have you ever undertaken in terms of project cost?

Below 500million 500-1billion

1-5billion 5-10billion Above 10billion

Part B: THE CHALLENGES FACED BY LOCAL CONSTRUCTION COMPANIES

The challenges experienced by regional building firms in Uganda are listed below.

Please describe, based on your knowledge and using a Likert scale of 1 to 5, the difficulties experienced by Uganda's regional construction firms. (If applicable, check the box.) NS=NOT SURE (3), D=DISAGREE (2), SA=STRONGLY AGREE (5), A=AGREE (4), SD=STRONGLY DISAGREE (1)

Please indicate your level of agreement by ticking your best alternative

s/n	Challenges faced by Local construction Companies	1	2	3	4	5
	Technical Capacity and competence					
1	Inadequate number of competent workers to facilitate high quality output					
2	Competence allows employees to know what they need to be more productive					
	Funding method					
3	The cost of accessing credit is high					
4	Lending interest rates are high					
5	Guarantee requirements and bid bonds are expensive					
	Selection criteria					
6	lowest price criterion does not favor quality of the work of local construction companies.					
	Project Duration					
7	Clients prefer shorter project duration that is capital intensive					
	Skilled Manpower					
8	Acute shortage of skilled manpower					
9	It is expensive to hire highly skilled manpower					
10	Highly skilled manpower is hired by government and international companies					
11	Ineffective professional education and training / retraining of man power					
	Capital investment					
12	local construction companies have remained small and are unable to take on complex projects because of the limited capital invested					
13	Procurement approaches, in a construction industry need heavy investment that may not be easily accessed by local construction companies					
14	Durability and complexity are the main reasons why the construction of civil engineering works and buildings is capital-intensive.					
	Working Capital					
15	The precise composition and finance at all stages during construction determine the amount of working capital that is sufficient.					
16	Diversion of funds to activities					

17	Insufficient provision of funds to finance present assets to enable projects' timely and cost-effective completion					
	Political directives					
18	A directive to award all construction projects to a given construction company					
19	Awarding a project to construction company according to loan agreement.					
	Technology					
20	Advanced and sophistication technology is expensive to acquire					
21	Advanced technology requires additional training that is expensive					
	Corruption					
22	Local companies need to pay bribes in order to get contracts					
23	Corruption reduces working capital of a company					
	Payment Default					
24	Due to late, inadequate, inconsistent, and nonpayment of invoices, contractors have had cash flow issues.					

Any the challenges faced by local construction companies in Uganda, specify.....

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Part C: THE CHARACTERISTICS OF LOCAL CONSTRUCTION COMPANIES IN UGANDA

Clearly state your opinion with regard to the characteristics of local construction companies in Uganda. By Using a scale from 1 – 5 where SA= **STRONGLY AGREE (5)**, **A=AGREE (4)**, **NS=NOT SURE (3)**, **D=DISAGREE (2)** AND **SD STRONGLY DISAGREE (1)**

Please indicate your opinion by ticking your best alternative

s/n	The characateristics of local construction companies in Uganda	1	2	3	4	5
1	Most local construction companies rely on Labour Intensive Methods that lead to delays in project completion.					
2	Most local construction companies lack skilled and educated workforce thus unable to handle complex projects.					
3	Most local companies use and rely on temporary labour force that in most cases do low quality work.					
4	Local companies are small in capacity and many in number to take on big and complex projects.					
5	Sophisticated construction contracts are not awarded to local construction because of lacking advanced sophisticated technology.					
6	Local construction companies tend not to expand expertise of their employees.					
7	Local contractors work on one project at time because of limited resources such as capital, technology and skilled man power					

Any another characteristic of local Construction Companies in Uganda, specify.....

Part D: THE MEASURES OF IMPROVING PERFORMANCE OF LOCAL CONSTRUCTION COMPANIES IN UGANDA.

The methods listed below can help local construction firms in Uganda perform better. Please provide your thoughts on the significance of strategies to enhance the performance of local construction companies in Uganda based on your experience and using the Likert scale of 1 to 5. (If applicable, check the box.) NS=NOT SURE (3), D=DISAGREE (2), SA=STRONGLY AGREE (5), A=AGREE (4), SD=STRONGLY DISAGREE (1)

Please indicate your level of agreement by ticking your best alternative

s/n	Ways of improving performance of Local construction companies	1	2	3	4	5
1	Continuously benchmarking foreign companies' operations to maintain competitiveness					
2	Companies in the construction industry should always work together in the supply chain.					
3	Increasing knowledge and skills for complex projects					
4	Investment in innovative research and development that improve the quality, productivity, efficiency and management of the construction project.					
5	Setting regulation as the stimulus for better construction industry improvement					
6	Aligning national and international construction standards together					
7	Merging of small and medium contraction companies in order to pull resources together for bigger contracts.					
8	Continuous training and retraining of engineers to gain advanced and sophisticated skills					

Any other ways of improving performance of Local construction companies in

Uganda,

specify.....

.....

.....

.....

**APPENDIX II: INTERVIEW GUIDE FOR THE DIRECTORS OF LOCAL
CONSTRUCTION COMPANIES.**

1. How long have you been in the construction industry?
2. What is the biggest construction project in terms of cost have you ever worked on?
3. What is the most challenging construction project have you ever worked on?
4. Why was that project challenging?
5. What was your general performance of that project?
6. What are the characteristics of local construction companies in Uganda?
7. What should be done in order to improve the performance of local construction companies in Uganda?

APPENDIX III: CALCULATION OF RELATIVE IMPORTNACE INDEX

(RII)

$$RII = \frac{\sum W}{A \times N}$$

WHERE SUMMATION W = [F5 X (W5)] + [F4 X (W4)] + [F3 X (W3)] + [F2 X (W2)] + [F1 X (W1)]

Where; W= weighting given to each factor by the respondents (ranging from 1 to 5),

A = highest weight (in this case, 5),

N = total number of respondents.

F = frequency

CHALLNGES FACED BY LOCAL CONSTRUCTION COMPANIES	N	W5	W4	W3	W2	W1	RII
Inadequate number of competent workers to facilitate high quality output	119	27	49	8	21	14	0.69
The cost of accessing credit is high	119	31	71	0	10	7	0.78
Lending interest rates are high	119	35	66	0	12	6	0.79
Guarantee requirements and bid bonds are expensive	119	41	77	0	1	0	0.87
Lowest price criterion does not favor quality of the work of local construction companies.	119	19	47	21	28	4	0.68
Clients prefer shorter project duration which is capital intensive	119	28	54	13	14	10	0.73
High shortages of skilled manpower	119	44	49	7	19	0	0.80
It is expensive to hire highly skilled manpower	119	41	56	11	14	3	0.83
Highly skilled manpower is hired by government and international companies	119	31	65	0	18	5	0.77
Ineffective professional education and training / retraining of man power	119	49	43	15	12	0	0.82
Local construction companies have remained small and are unable to take on complex projects because of the limited capital invested	119	18	61	9	16	15	0.69
Procurement approaches in a construction industry need heavy investment that may not be easily accessed by local construction companies	119	33	63	10	8	5	0.79
Durability and complexity are the main reasons why the construction of civil engineering works and buildings is capital-intensive.	119	23	44	19	17	16	0.67
Throughout construction, having enough working capital depends on having the right funding and composition.	119	8	15	69	17	10	0.59
Diversion of funds to other activities	119	13	31	40	24	11	0.62
Insufficient financing of present assets that enable projects to be completed within set budgets and timelines.	119	17	45	23	21	13	0.65
A directive to award all construction projects to a given construction company	119	29	39	12	22	17	0.67

Awarding a project to a construction company according to loan agreement.	119	28	77	3	5	6	0.79
Advanced and sophisticated technology is expensive to acquire	119	28	71	3	9	8	0.77
Advanced technology requires additional training that is expensive	119	34	52	11	15	7	0.75
Local companies need to pay bribes in order to get contracts	119	41	75	2	1	0	0.86
Corruption reduces working capital of a company	119	26	69	11	8	5	0.77
Underpaying, paying infrequently, or paying late Contractors now have trouble paying their bills because of nonpayment.	119	47	72	0	0	0	0.88
<i>CHARACTERITICS OF LOCAL CONSTRUCTION COMPANIES</i>	<i>N</i>	<i>W5</i>	<i>W4</i>	<i>W3</i>	<i>W2</i>	<i>W1</i>	<i>RII</i>
Most local construction companies rely on Labour Intensive Methods that lead to delays in project completion.	119	16	42	17	21	23	0.61
Most local construction companies lack skilled and educated workforce thus unable to handle complex projects.	119	34	52	11	15	7	0.75
Most local companies use and rely on temporary labour force that in most cases do low quality work.	119	28	71	3	9	8	0.77
Local companies are small in capacity and many in number to take on big and complex projects.	119	13	61	0	31	14	0.65
Sophisticated construction contracts are not awarded to local construction because of lacking advanced sophisticated technology.	119	31	88	0	9	0	0.88
Local construction companies tend not to expand expertise of their employees.	119	25	27	19	41	7	0.64
Local contractors work on one project at time because of limited resources such as capital, technology and skilled man power	119	37	51	8	17	6	0.76
<i>MEASURES TO IMPROVE PERFRMANCE OF LOCAL CONSTRUCTION COMPANIES</i>	<i>N</i>	<i>W5</i>	<i>W4</i>	<i>W3</i>	<i>W2</i>	<i>W1</i>	<i>RII</i>
Continuously benchmarking foreign companies' operations to maintain competitiveness	119	29	39	12	22	17	0.67
Companies in the construction industry should always work together in the supply chain.	119	19	32	21	27	20	0.61
Increasing knowledge and skills for complex projects	119	21	47	11	19	21	0.65
Investment in innovative research and development that improve the quality, productivity, efficiency and management of the construction project.	119	44	61	0	10	4	0.82
Setting regulation as the stimulus for better construction industry improvement	119	11	33	19	39	17	0.57
Aligning national and international construction standards together	119	50	69	0	0	0	0.88
Merging of small and medium contraction companies in order to pull resources together for bigger contracts.	119	23	45	13	17	21	0.65
Continuous training and retraining of workers to gain advanced and sophisticated skills	119	27	68	5	12	7	0.76

APPENDIX IV: KREJCIE AND MORGAN SAMPLE SIZE TABLE

<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	100000	384

Note.—*N* is population size. *S* is sample size.

Source: Krejcie & Morgan, 1970

