

**COMMUNICATION AND PERFORMANCE OF SELECTED CONSTRUCTION
PROJECTS IN KAMPALA AND WAKISO DISTRICTS - UGANDA.**

BY

DUNCAN TAYEBWA

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DECLARATION

I hereby declare that this work or any part thereof has not previously been submitted in any form to any University or to any other body whether for the purpose of assessment, publication or for any other purpose. Where information previously used has been captured in this report, it has fully been acknowledged. I confirm that the intellectual content of the work is the result of my own efforts and no other person.

Signature.....

Date.....

DUNCAN TAYEBWA

APPROVAL

This is to certify that this research was developed under my supervision.

.....

DR. STELLA KYOHAIRWE

Date.....

.....

MR. ANACLET NAMANYA

Date.....

DEDICATION

This work is dedicated to my wife, Maureen and the entire Kateshumbwa family for the love and support.

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TABLE OF CONTENTS

ITEM	PAGE NO.
DECLARATION.....	i
APPROVAL.....	ii
DEDICATION.....	iii
ACKNOWLEDGEMENT.....	iv
TABLE OF CONTENTS.....	v
LIST OF FIGURES.....	x
LIST OF TABLES.....	xi
ACRONYMS.....	xii
ABSTRACT.....	xiii
CHAPTER ONE: INTRODUCTION.....	1
1.1 Introduction.....	1
1.2 Background of the study.....	1
1.2.1 Historical Background.....	1
1.2.2 Theoretical Background.....	3
1.2.3 Conceptual Background.....	5
1.2.4 Contextual Background.....	7
1.3 Statement of the Problem.....	9
1.4 General Objective of the Study.....	10
1.5 Specific Objectives.....	10

1.6	Research Questions.....	10
1.7	Hypotheses of the Research.....	11
1.8	Conceptual Framework.....	11
1.8.1	Illustrative Conceptual Framework.....	11
1.9	Significance of the Study.....	12
1.10	Justification of the Study.....	13
1.11	Scope of the Study.....	13
1.11.1	Content Scope.....	13
1.11.2	Geographical Scope.....	13
1.11.3	Time Scope.....	14
1.12	Operational Definitions.....	14
 CHAPTER TWO: LITERATURE REVIEW.....		15
2.1	Introduction.....	15
2.2	Theoretical Review.....	15
2.3	Conceptual Review.....	16
2.4	Communication and Construction Project Performance.....	19
2.4.1	Technical Perspective and Construction Project Performance.....	22
2.4.2	Contextual Perspective and Construction Project Performance.....	23
2.4.3	Negotiated Perspective and Construction Project Performance.....	25
2.5	Summary of the Literature Review.....	27

CHAPTER THREE: METHODOLOGY	28
3.1 Introduction.....	28
3.2 Research Design.....	28
3.3 Study Population.....	28
3.4 Sample Size and Selection.....	29
3.5 Sampling Technique and Procedure	29
3.6 Data Collection Methods	30
3.6.1 Questionnaire Survey.....	30
3.6.2 Face to Face Interviews	31
3.7 Data Collection Instruments	31
3.7.1 Structured Questionnaire	32
3.7.2 Interview Guide	32
3.8 Quality Control	33
3.8.1 Validity	33
3.8.2 Reliability.....	34
3.9 Procedure of Data Collection.....	35
3.10 Data Analysis.....	36
3.10.1 Quantitative Data Analysis	36
3.10.2 Qualitative Data Analysis	37
3.11 Measurement of Variables	37

CHAPTER FOUR: PRESENTATION, ANALYSIS AND INTERPRETATION OF

RESULTS	38
4.1 Introduction	38
4.2 Response Rate	38
4.3 Respondents Characteristics	39
4.3.1 Experience of Respondents.....	40
4.3.2 Education Level Distribution.....	40
4.4 Results on the study Variables	42
4.4.1 Technical Perspective	42
4.4.2 Contextual Perspective.....	46
4.4.3 Negotiated Perspective.....	49
4.4.4 Performance of Construction Projects and Timeliness.....	53
4.4.5 Performance of Construction Projects and Project Cost.....	54
4.4.6 Performance of Construction Project and Project Quality.....	56

CHAPTER FIVE: SUMMARY, DISCUSSION, CONCLUSION AND

RECOMMENDATIONS	58
5.1 Introduction:	58
5.2 Summary of the Research Findings.....	58
5.2.1 Technical Perspective and Construction Project Performance	58
5.2.2 Contextual Perspective and Construction Project Performance	59
5.2.3 Negotiated perspective on the Construction Project Performance	60

5.3	Discussion of Study Findings	61
5.3.1	Technical Perspective and Construction Project Performance	61
5.3.2	Contextual Perspective and Construction Project Performance	62
5.3.3	Negotiated Perspective and Construction Project Performance	63
5.4	Conclusions.....	64
5.4.1	Technical Perspective and Construction Project Performance	64
5.4.2	Contextual Perspective and Construction Project Performance	65
5.4.3	Negotiated Perspective and Construction Project Performance	65
5.5	Recommendations	66
5.5.1	Technical Perspective and Ponstruction Project Performance.....	66
5.5.2	Contextual Perspective and Construction Project Performance	67
5.5.3	Negotiated Perspective and Construction Project Performance	67
5.6	Limitations of the Study	68
5.7	Contributions of the Study.....	68
5.8	Areas for further research.....	68
	REFERENCES.....	70
	APPENDIX A:QUESTIONNAIRE.....	i
	APPENDIX B: INTERVIEW GUIDE.....	i
	APPENDIX C: INTRODUCTION LETTER.....	i
	APPENDIX D: FILED RESEARCH.....	i
	APPENDIX A: TABLE FOR DETERMING SAMPLE SIZE.....	i

LIST OF FIGURES

Figure 1:	Information Theory showing communication flow.....	4
Figure 2:	Conceptual Framework.....	11
Figure 3:	Five Standards of Effective Communication.....	19

LIST OF TABLES

Table 1:	Category of Study Population and Population sample size.....	29
Table 2:	Summary of Reliability Statistics on the Questionnaires.....	34
Table 3:	Respondents Response Rate.....	39
Table 4:	Experience of Respondents.....	40
Table 5:	Education Level Distribution.....	41
Table 6:	Technical Perspective.....	42
Table 7:	Technical Perspective and Project Performance Correlation Matrix.....	44
Table 8:	Regression Output for Technical Perspective and Project Performance.....	45
Table 9:	Contextual Perspective.....	46
Table 10:	Contextual Perspective and Project Performance correlation Matrix.....	48
Table 11:	Regression Output for Contextual Perspective and Project Performance.....	49
Table 12:	Negotiated Perspective.....	50
Table 13:	Negotiated Perspective and Performance Correlation Matrix.....	52
Table 14:	Regression Output for Negotiated Perspective and Project Performance.....	52
Table 15:	Performance and Timeliness.....	53
Table 16:	Performance and Projects Cost.....	55
Table 17:	Performance of Projects and Quality.....	56

ACRONYMS

BCB	Building Control Bill
CPO	Construction Project Organisation
CSF	Critical Success Factors
CVI	Contact Validity Index
H&S	Health and Safety
MOWT	Ministry of Works and Transport
NBRB	National Building Review Bill
NCI	National Construction Industry
NTMP	National Transport Master Plan
QA	Quality Assurance
QC	Quality Control
SPSS	Statistical Package for Social Scientists
TMO	Temporary Multi-Organisation
TQM	Total Quality Management
UMI	Uganda Management Institute
UNABCES	Uganda National Association of Building and Civil Engineering Services

ABSTRACT

The study assessed the effect of communication on construction project performance in the Districts of Kampala and Wakiso in Uganda. The study objectives were to examine whether there is a relationship between technical perspective and construction project performance, assess the effect of contextual perspective on the overall project performance and assess the effect of negotiated perspective on the construction project performance. The study employed cross sectional research design through triangulation using both qualitative and quantitative approaches. A total of 71 respondents were selected using random sampling technique and the tools used included both questionnaires and interview guide. Pearson's correlation coefficient analysis was used for testing the hypotheses and results obtained showed a statistically significant positive relationship between technical perspective (21.6%), contextual perspective (29.4%) and negotiated perspective (19.5%) of communication and construction project performance the dependent variable. With the results obtained, the study concludes that technical perspective, contextual perspective and negotiated perspective are important factors in predicting construction project performance. The study recommends that stakeholders especially project participants' should focus at ensuring the elimination of challenges that create errors and distortions in information transfer, more time is devoted at improving on information required in implimentation of projects interms of providing of adequate and proper details, contractors and indeed all stake holders devote more effort and resources towards communication practices in their CPOs. It is also recommended that key stakeholders especially project owners take interest and become more involved in projects through providing timely information, participating in meeting and ensuring that key issues are addressed on time. Lastly, contractors should devote more effort in preparing proper project proposals to clients and insuring that project participants are knowledgeable about communicating value to the key stakeholders.

CHAPTER ONE

INTRODUCTION

1.1 Introduction

In undertaking any research, it is necessary to initially establish the need for such a study and to clearly set out the intentions of the research. By so doing, a point of reference is provided against which the outcomes of the research can be assessed. The research aimed at understanding effect of communication on construction project performance with dimensions of time, cost and quality. Communication has been considered as an important variable in the executing of construction projects (Mehta, 2008). Indeed, effective communication does not only enhance production and completion of projects within a stipulated time and cost but also acts as a temperate on which the project should be managed from its inception to implementation. This is the intention of this chapter in which the research context is set, the background and the aim and objectives are defined. A brief discussion of the scope of the research and the significance of the research are also included.

1.2 Background of the study

1.2.1 Historical Back ground

In all aspects of human professions, communication is seen as a vital central organ especially through the use of language. Humans have transferred culture, recorded history and documented occurrences to a good deal with the use of language from one generation to another (Adedapo, 2011). The organ called communication has helped man to build societies and other social groups which has contributed immensely to the growth of man's life and made it enjoyable. Through communication, the workers especially in construction firms find it easy and are highly productive to work together. The working day of every personnel is

filled with communication in different ways and forms through orders, directives, information, conversation, requests and rumors. Construction Industry is one of the most booming industries in the whole world. The industry accounts for around one-tenth of the world's gross domestic product, half of all resource usage and up to forty percent (40%) of energy consumption. The construction industry is also a key indicator and driver of economic activity and wealth creation (Economic Watch, 2012). Construction activity is an important contributor to GDP in most industrialized countries and contributes significantly to global economic growth (Walsh and Sawhney, 2002). The global construction industry (CI) makes up approximately 9% of the world's GDP. This sector is also the largest industrial employer in most countries, accounting to around 7% of the total employment worldwide. According to a survey in Engineering News Record (ENR 2005) total world construction spending in 2004 was near \$4 trillion. As mentioned by Crosthwaite (2000), the importance of the CI is related not only to its size but also to its role in economic development. Its contribution to GDP in the U.S in 1996 was around 10.7%, while in Australia, it was in the region of 6.3% (Crose et al. 1991).

With the exception of South Africa, the structure of the rest of Sub-Saharan Africa's construction sector is very fragmented and underdeveloped, which severely limits its potential to evolve into a functional industry (ILO, 1987). A part from the highly fragmentary structure, the other most noticeable feature of sub-Saharan Africa's construction sector, which perhaps best explains its problems, is the lack of co-ordination in the industry. This has hindered the development of professional cadres of trades and management personnel, which makes it exceedingly difficult to subject the sector to regulatory policies and improvement programmes. It is hardly surprising therefore that the sector is bedevilled by technical and managerial difficulties arising from skill shortages, and as a result, applications of technological and management techniques to construction processes.

Over the last 20 years in Uganda, the construction industry has attained average growth rate of around 12% (Tindiwensi, 2006). Investment in the building and construction sector is governed by a number of laws and regulations including the Town and Country Planning Act, the Building Code, Condominium Properties Act, National Shelter Strategy and National Housing Policy. The government of Uganda is currently in the process of passing other laws and policies to consolidate building construction standards and competitiveness in the industry. These include the National Construction Industry (NCI) policy, the Building Control Bill 2009 (BCB), National Transport Master Plan (NTMP), and amendment of the Engineers Registration Act of 1969 all aimed at improving coordination, regulation and development of the construction industry. The construction industry is one of the most information dependent industries (Tam, 1999) and heavily depends upon traditional means of communication such as face to face meetings, phone calls and the exchange of drawings and associated paperwork or documents (Mohamed and Stewart, 2003). Crucial to the running of any construction project is the movement and transfer of project information amongst the distinct professions all of whom have conflicting priorities and differing objectives (Faniranet et al, 2001). Construction projects are assembled by gathering different professions and areas of expertise under one flag (Wikforss, 2006). Typical of such assemblies is that each professional group also bears with it unique set of principles, rules, knowledge domains and professional skills formulated in a certain manner. At the same time, as this helps make the profession strong and successful, it also explains why they cannot cooperate with other professions particularly well. Communication can therefore be seen as the key factor in the overall success of any construction project.

1.2.2 Theoretical background

The study was based on two theories, the information theory and the goal setting theory. The information theory underpinned the independent variable (IV) communication and the goal

setting theory underpinned the dependent variable (DV) project performance. The information theory was developed by Claude E. Shannon in 1948, a Bell Telephone Company research scientist; his goal was to get maximum line capacity with minimum distortion (Shannon and Weaver, 1949). This was done after Claude E. Shannon acknowledged that the fundamental problem of communication is that of reproducing at one point either exactly or approximately a message selected at another point. The theory emphasizes that whatever the communication problem reducing information loss is the solution. In the wake of scientific discoveries spawned by world war11, Americans were optimistic that all social problems could be recast into mechanical terms susceptible to engineering solutions. Shannon, an Engineer at Bell Laboratories, portrayed communication as a mechanistic system as shown below.

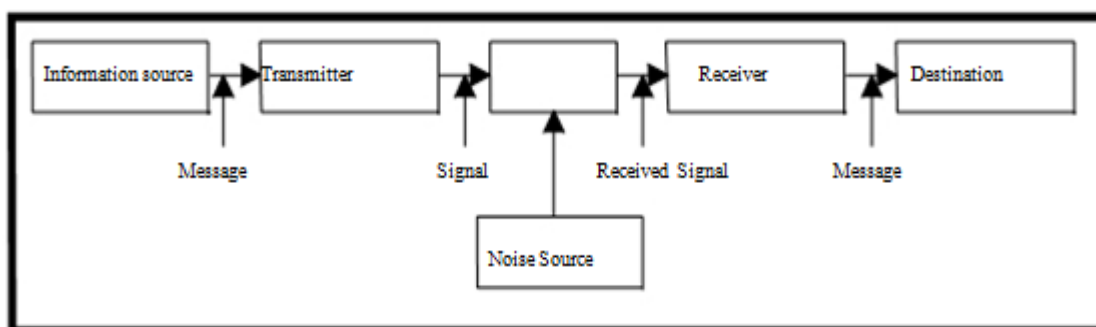


Figure 1: Information Theory showing communication flow from source to destination.

Source: Adapted from The Mathematical Theory of Communication (Shannon and Weaver, 1949).

The above model consists of the sender, message, channel where the message travels, noise or interference and the receiver. Weaver applied the model to the interpersonal features of conversation and focused on source-destination relationship. It is important to note that the theory suggests that without the communication messages being efficiently delivered without interruption, little performance outcomes should be expected. It should be noted, therefore, that the information theory is applicable to this study since communication is aimed at the

message being properly understood by either parties. Hence, the principles of this theory were applied in establishing expected effects of communication on construction project performance.

The goal setting theory began with the early work on levels of aspiration developed by Kurt Lewin and has since been primarily developed by Dr. Edwin Locke, who began goal setting research in the 1960's. The research revealed an inductive relationship between goal setting and improved production performance. Goal setting involves the conscious process of establishing levels of performance in order to obtain desirable outcomes. The goal setting theory was based on the premise that much human action is purposeful, in that it is directed by conscious goals (O'Neil & Drillings, 1994). Under goal setting theory, several conditions are particularly important in successful goal achievement. These include goal acceptance and commitment, goal specificity, goal difficulty, and feedback (O'Neil & Drillings, 1994). Goal setting is widely used in the workplace as a means to improve and sustain work performance. Goal setting theory is based on the assumption that behaviour reflects an employee's conscious goals and intentions. Consequently, the expectation is that employee efforts and performance within an organization will be influenced by the goals assigned to or selected by these employees. In the workplace, successful managers use the goal setting theory to clarify expectations, improve performance, and develop employees into stronger workers, which in turn makes the company stronger (Fried & Slowik, 2004). Therefore, the principles of goal setting theory guided the study in measuring the dependent variable performance of construction projects.

1.2.3 Conceptual background.

The study was based on communication as the independent variable with technical, contextual and negotiated perspectives as the main dimensions and performance as the dependent variable with dimensions of time, cost and quality (workmanship).

In general, communication can be considered as the process of transmitting information from one point to another. Communication usually involves the transfer of information, a generic term that embraces meaning such as knowledge, processed data, skills and technology. Communication involves both sending and receiving messages, which involves ensuring timely and appropriate generation, collection, dissemination, storage and ultimate deposition of project information (Project Management Institutes Standards Committee, 1996). Drenth et al. (1998), defined communication as the sending and receiving of messages by means of symbols. Mead (1934) and Blumer (1972) stressed communication as symbolic interaction that created meaning and one's sense of both self and society. Construction communication, within an organizational context, is to convey an instruction to influence the actions/behaviors of others, or may involve an exchange of, or request for information during a construction project (Hoezen, 2011). It is a means by which information is exchanged between different parties. In construction, communication helps operatives and other members of the building team to be linked together in order to achieve the central goal (Mehta, 2008). Communication is therefore essential for the success of any construction business activity; it enables an organization to track progress, and is an integral part of the construction process.

Business dictionary defines performance as the accomplishment of a given task measured against preset known standards of accuracy, completeness, cost and speed. In a contract, performance is deemed to be the fulfillment of an obligation, in a manner that releases the performer from all liabilities under the contract. The criteria in which project performance has often been assessed have also been called key performance indicators. Key performance indicators (KPIs) include factors such as time, cost, quality, client satisfaction; client changes, business performance and safety in order to enable measurement of project and organizational performance throughout the construction industry. Samson and Lema (2002) stated that KPIs are very important in order to deliver value to stakeholders. Turner (1993)

emphasizes that the common assessment of the success of construction projects is that they are delivered on time, to budget, to technical specification and meet client satisfaction. The KPIs also allow to trace which processes and capabilities must be competitively and distinctive, and which merely need to be improved or maintained. So, the construction industry must be sure they have right processes and capabilities in place if performance is to improve.

1.2.4 Contextual background

Construction personnel in the field need large amounts of information ranging from project drawings, specification and other details to support their decision making (Chen & Kamara, 2008). Most of this information that on-site construction personnel receive and transfer is paper based files, which include drawings, specifications, correspondences and progress information (Bowden et al., 2004). Careful communication planning which involves determining the information and communication needs and setting the right expectations with all the project stakeholders is extremely important (Miah et al., 1998). This must be done through team building so that there is cohesion among the members. Project Managers must exercise overall team building in planning with the team members and other stakeholders. A Project Manager, can for example provide communication skills training to the team as well as set some ground rules during execution stage of the project. It should be noted the an improvement in construction communication skills gradually leads to an improvement in the overall performance of the construction performance and the industry as a whole and therefore leads to an improvement in any Country's economic growth.

In Uganda for example, the construction industry has been the key driver of economic growth over the last 20 years, with industry value real growth average of around 12% (Tindiwensi, 2006). Specifically, the sector experienced tremendous growth in the 2007/ 2008 financial

year, with a 13% growth up from the 11.3% 2006/2007. This growth was largely due to the Commonwealth Heads of Government (CHOGM) meeting 2007, a period where construction especially of hotels and other infrastructure facilities was extensive mainly in the Kampala and Wakiso districts which were at the heart of CHOGM activities.

Like in any economy, the construction industry in Uganda is mainly concerned with the planning, regulation, design, manufacture, construction and maintenance of buildings and other structures (Harvey & Ashworth, 1997; ONS, 2002). In terms of size and structure, the industry can be viewed as having a narrow and a broad definition (Pearce, 2003). The narrow definition focuses attention on the actual on-site construction activities of contractors whilst the broad definition, which actually covers the true extent of the construction industry, draws in the quarrying of construction raw materials, manufacture of building materials, the sale of construction products, and the services provided by the various associated professionals (Pearce, 2003).

Government is implementing a number of strategic actions aimed at addressing the constraints being faced by the construction industry like construction related accidents and fire out breaks, inadequate resources (equipment, personnel, financial), etc. These include the National Construction Industry (NCI) policy, the Building Control Bill 2009 (BCB), National Transport Master Plan (NTMP), and amendment of the Engineers Registration Act of 1969. The NCI policy aims to improve coordination, regulation and development of the construction industry. An effective institutional framework is to be put in place to address the current weaknesses in the industry. The BCB will address the shortfalls in the existing laws and provide for use of appropriate building standards and establishment of a National Building Review Board (NBRB) and building committees to oversee and regulate building works. The NTMP constitutes an essential element for overall planning of economic and social development of Uganda. If all key stakeholders play their roles to the latter, the

construction industry will be vibrant and capable of supporting the country's development plans. According to Ministry of Works and Transport annual performance report for Public / Government Project for the FY 2011/12 most projects failed to meet their initial objectives and it is believed that lack of effective communication among other factors was a major contributor to this failure of most Projects. The report indicates that over 50% of the Ministry's projects were not completed on time, within the original cost estimate and to the required quality. Failure to realize the completion of a project in its specified time, within the estimated cost and quality definitely means poor project performance. Since the construction sector is seen as one of the major contributors of any Country's economic growth, addressing the problems of project performance would not only enhance service delivery in the sector but would improve the Country's economic development. This study therefore assessed the effect of communication on construction project performance.

1.3 Statement of the problem

Communication is an important ingredient for construction project performance. According to Hoezen (2011) the performance of the construction project strongly depends on the quality of communication. In Uganda there is evidence that communication among others has not been given enough attention by building contractors particularly during the delivering process (MOWT, FY 2011/12). According to MOWT annual performance report FY/2011/12 over 50% of the ministry's projects were not completed on time, within the original cost and the required standard. Failure to address loopholes in communication undermines performance of construction projects and often leads to failure of projects. However, it is not known whether communication among other factors contributes to the failure of the ministry's projects. It is believed that if gaps in communication are not bridged, it is likely that most projects will continue to experience delays and cost increases which reflects a bad image and presents a burden to the tax payers whose resources are used in funding most of the projects (monthly

projects progress report for May 2012). If this trend is not reversed, it is likely to continuously reduce on service delivery (performance quality), and this hinders the growth and development of the construction industry ‘in the two districts and thus the country’s economic development. It is from such back drop, that the study aimed at assessing the effect of communication on performance of construction projects in Uganda. This study accounted for the merits of effective communication so as to bridge the gap created by ineffective communication in construction project.

1.4 General objective of the study

The principal aim of this research was to determine empirically the effect of communication on construction projects performance in the Ugandan context particularly in Kampala and Wakiso Districts.

1.5 Specific objectives

In order to achieve the above mentioned objective, the study;

- a) Examined whether there is a relationship between Technical Perspective and Project Performance of construction projects
- b) Assessed the effect of Contextual Perspective on the overall Performance of the construction project
- c) Assessed the effect of Negotiated Perspective on the Project Performance of a construction project.

1.6 Research questions

- a) What is the relationship between Technical Perspective and Project Performance of construction projects?
- b) What is the effect of Contextual Perspective on the overall Performance of the construction project?
- c) What is the effect of Negotiated Perspective on the Project Performance of a construction project?

1.7 Hypotheses of the research

- a) There is a relationship between Technical Perspective and Project Performance of construction projects
- b) Contextual Perspective has an effect on the Performance of the construction projects
- c) Negotiated Perspective has an effect on the Project Performance of construction projects

1.8 Conceptual framework

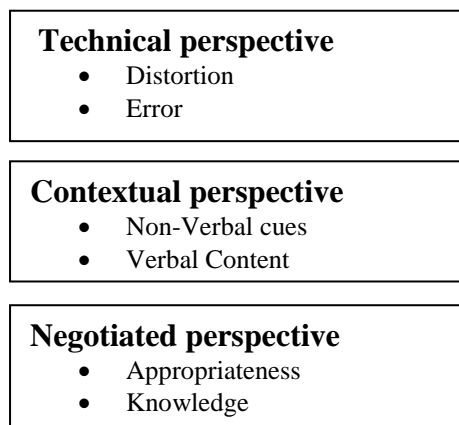
The study conceptualized that the effectiveness of construction project performance could be affected by the technical approach, the contextual approach and negotiated approach of communication perspectives.

1.8.1 Illustrative Conceptual Framework

The study conceptualized that the success of construction project performance could be affected by technical, contextual and negotiated perspectives of communication.

Independent Variable (IV)

Communication



Dependent Variable (DV)

Project Performance

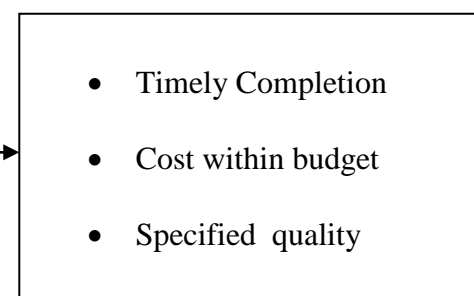


Figure 2: A Conceptual framework showing the linkage between communication and project performance.

Source: Adapted from the Mathematical Theory of Communication (Shannon and Weaver 1949) with the modification by the researcher.

As indicated in Figure 2, the framework explains how communication as an independent variable (IV) influences the performance of any given construction project. The researcher considered that the three result areas covering construction project performance (time, cost and quality) are affected by the three perspectives to communication which included the technical, the contextual and the negotiated approaches to ensure successful completion. Under the technical approach, the information by the sender should be received by the receiver with no errors and distortions; on the other hand, the contextual approach considers the larger context of communication. It focuses on non-verbal cues and verbal content of the message. It looks at the rational context between the sender and the receiver. Lastly, the negotiated view considers that the appropriateness and knowledge of the message is important to enable the receiver understand and generate a proper response. As a result, performance for a given construction project will be timely, cost efficient and to the required standard/quality. Many of the problems that occur in during execution of construction projects are either as a direct result of people failing to communicate and/or processes information effectively, which leads to confusion and can cause good plans to fail. Therefore it is of paramount importance to identify the impact of effective communication on the general performance of a construction project

1.9 Significance of the study

The study seeks to examine the impact of ineffective communication during construction service delivery. From the information gathered, the importance of effective communication on execution and delivery process will be made known to policy makers and all stakeholders especially those involved at the supervisory level of construction work. In addition, it is hoped that the intended study will add new concepts and knowledge about communication and thus generate information that will be used in redefining and modifying the briefs and concepts of the study.

The study results will also be useful to other researchers and academicians, thus acting as a bench mark for further research. Other researchers will use the research findings as a point of reference and literature and also identify gaps that the study may not address.

1.10 Justification of the study

Most stake holders on a construction projects do not give due attention to communication. Previous studies have done little in attempting to make these stake holders understand the impact of effective communication on the general performance of the Project. The research therefore sought to put forth general solutions to the impact of ineffective communication on construction project performance and made known to all stake holders. The study focused on the two districts of Kampala and Wakiso because they house most of the large and medium construction companies in Uganda and most of the big projects are undertaken in the two districts therefore giving a general trend across the entire country.

1.11 Scope of the study

1.11.1 Content Scope

The study assessed the effect of communication on construction project performance, measuring performance in terms of time, cost and quality. Under communication the study focused on Technical, Contextual and Negotiated perspectives.

1.11.2 Geographical Scope

Geographically, the study focused on construction projects within Uganda but with special attention given to a few selected construction sites within the regions of Kampala and Wakiso Districts. This is because these two Districts house most of the large and medium construction firms in the Country. This ensured that potential variations due to the national

context were controlled and kept uniform as much as possible, and to ensure that findings reflected the general trend across Uganda.

1.11.3 Time Scope

The research was limited to the period between 2006 and 2012. This is because many projects undertaken during this period did not meet their objectives and many of them ended up failing. The study examined the effect of communication as an aid to construction project performance in Uganda.

1.12 Operational Definitions

The key concepts in this research include; communication which is the independent variable, and performance the dependent variable with dimensions of time, cost and quality/workmanship.

Communication: An exchange of information between different parties on a construction project which information is clearly understood by either party.

Performance: The ability to accomplish project objectives within a stipulated time and cost while meeting the required standards.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter is intended to present a detailed study of literature on communication within the construction process and describing communication as a vital tool towards good performance of construction projects. Arguments and observations by different authors regarding the relationship between communication and performance of construction projects are reviewed. These are presented in order of the three main themes that is objective by objective. The chapter particularly focuses on how the technical, contextual and negotiated perspectives of communication are related to construction project performance. This was done by reviewing primary and secondary data from journal articles, books, reports and through survey, observation and interview.

2.2 Theoretical Review

Two theories guided the study, the information theory and the goal setting theory. The information theory emphasizes that whatever the communication problem reducing information loss is the solution. It is important to note that the theory suggests that without the communication messages being efficiently delivered without interruption, little performance outcomes should be expected.

Goal setting theory involves the conscious process of establishing levels of performance in order to obtain desirable outcomes. By understanding goal setting theory; you can effectively apply the principles to goals that you or your team members set. Locke & Latham's research confirms the usefulness of goal setting and the theory continues to influence the way we measure performance today. Use clear and challenging goals, commit yourself to achieving them, provide feedback on goal performance and take into consideration the complexity of

the task. If you follow these simple rules, your goal setting process will be much more successful, and your overall performance will improve (Locke & Latham, 2006). Goal setting is a general theory that can be applied in a multitude of work situations. Support for the theory comes from individual and group settings, laboratory and field studies, across different cultures and involves many different tasks (Locke & Latham, 2002). The strongest support relates to the relationship between specific, difficult goals and task performance. Goal setting is something most of us recognize as necessary for our success (Locke & Latham, 2006).

2.3 Conceptual Review

Performance can be considered as an evaluation of how well individuals, groups of individuals or organizations have done in pursuit of a specific objective (Ankrah and Proverbs, 2005). These objectives vary significantly, but from an industry or organisational perspective, they generally revolve around satisfying the key stakeholders notably customers, employees, shareholders, the various suppliers, government and society as a whole. Mullins (2005) described performance as relating to such factors as increasing profitability, improved service delivery or obtaining the best results in important areas of organisational activities. In construction, because of the numerous participants who contribute towards the achievement of project objectives, performance has been defined in one sense as a participant's (client, architect or contractor) contribution to the execution of the task required to complete the project (Soetanto, 2002).

Ankrah et al. (2005) argues that performance in this context may also be approached from two perspectives; the first relating to the business performance of the contractor and the second relating to the performance on projects. The former is very rarely the subject of construction management research and is normally assessed using financial results and ratios, productivity figures, comprehensive self-assessment tools such as the balanced

scorecard (Kaplan & Norton, 1992), or a synthesis of some of the existing generic self-assessment tools (Mbugua, 2000). In many cases, as observed by Bassioni et al. (2004), references to performance (whether contractor or construction industry performance) and research in this genre have been focused on project performance (Soetanto et al., 2002; Xiao and Proverbs, 2003). This has been the case because the characteristics of the industry are such that a project is often a major business endeavor representing a major investment by the client (Hobday, 2000), and representing a major part of a participant's annual turnover (Fellows et al., 2002). This implies that ultimately it is the project performance that determines overall business performance. These characteristics make project performance critical.

Because the client is the principal stakeholder in the construction process, good performance has been defined typically in terms of the delivery of projects on time, to specification and within budget, providing good service and achieving reasonable life-cycle costs. More recently, the requirements of the other stakeholders such as employees and society have come into focus with the need to promote sustainable construction and corporate social responsibility, and this is reflected in a more comprehensive set of industry Key Performance Indicators (KPIs) of project performance covering such issues as environmental protection and respect for people (DTI, 2004). Although the construction industry in Uganda is considered to have improved, it is also true that over the years and irrespective of the KPIs assessed, construction projects in Uganda have in the main failed to satisfy stakeholders, and this has led to the publication of such reports as the factors hindering the development of construction industry (Katende et al., 1998) and the challenges facing the growth of construction industry in Uganda (UNABCES, 2008) reports, all calling for performance improvement in the industry. These reports represent the latest manifestations of continuous end-user dissatisfaction which according to Cain

(2004) can be traced back at least 70 years not necessarily in Uganda but in many other economies. Reports on the construction industry stemming from Simon (1944) have recounted the same industry failures time and time again.

Communication is the exchange and flow of information and ideas from one person to another; it involves a sender transmitting an idea, information, or feeling to a receiver (U.S. Army, 1983). Merriam-Webster Dictionary defines communication as to convey knowledge of or information; to reveal by clear signs; to transmit information, thought, or feeling so that it is satisfactorily received or understood; and to open into each other. Communication can be analyzed as a two way process as information is not only sent but also received, understood and implemented (Adeleke, 2004). When we have the line of communication we mean the channel through which information is transmitted within a construction site or organization from one person to the other. Communication can be in the way of telephone, written notes, emails, text messages and verbal. Communication is very important in the work setting. Many of the problems that occur in an organization are the either the direct result of people failing to communicate and/or processes, which leads to confusion and can cause good plans to fail.

Effective communication is a two-way process. The person communicating has to send a clear and concise message to the responding party. The message must be understood correctly to have a response. According to Mistry et al, 2008, effective communication occurs only if the receiver understands the exact information or idea that the sender intended to transmit. “Ineffective communication is the most frequently cited category of root causes of sentinel events. Effective communication, which is timely, accurate, complete, unambiguous, and understood by the recipient, reduces errors and results in an industry” (the Victorian Quality Council, 2010). Effective communication also requires individuals and teams having access to adequate and timely information necessary to perform their role effectively and

appropriately. The use of technical terms and jargon, acronyms and abbreviations and diagrams to communicate can influence how well information is shared and therefore the effectiveness of communication (*the Victorian Quality Council, 2010*). As in business, adhering to the five standards of effective communication (Murphy et al, 1997) in industries is likely to facilitate improvements in the exchange of information between construction professionals, and information should be:

Complete	It answers all questions asked to the level that is satisfactory to those involved in the exchange of information
Concise	Wordy expressions are shortened or omitted. It includes only relevant statements and avoids unnecessary repetition
Concrete	The words used mean what they say: they are specific and considered. Accurate facts and figures
Clear	Short, familiar, conversational words are used to construct effective and understanding messages
Accurate	The level of language is apt for the occasion: ambiguous jargon is avoided, as are discriminatory or patronising expressions

Figure 3: Five standards of effective communication.

Adopted from Murphy et al, (1997)

2.4 Communication and Construction Project Performance

Recent findings indicate that the performance in construction industry is highly affected by the ineffective communication practices. One reason for ineffective communication comes from the temporary nature of the projects. This reason also leads to inevitable conflicts; in construction process, there are several key actors who only get together for short term projects. Sometimes integration of migrants into workforce in construction sites could be the case; resulting a serious language barrier. As the projects get more complex, achieving and maintaining effective communication become more problematic. This solely may be the reason why literature in communication in construction industry focuses on solutions within

the technological developments, such as information flows, communication media, information and communication technologies (ICT). The majority of communications in construction projects take place between individuals using face-to-face meetings or through other media such as phone, fax, e-mail and letter, all of which can be regarded as interpersonal communication. Communication is an important topic in the construction industry. Kotzé et al stated that frequently problems in construction are referred to as communication problems since the construction industry forms a complex communication environment due to its specific characteristics. Poor communication in the construction industry has a significant detrimental effect on project quality, cost, schedule, and worker safety (Maslej, 2006)

Construction schedules can be significantly delayed as a direct result of poor communication. Mis-communicated information leads to work being redone or corrected. In construction, work is organized so that minimal or no time is wasted in the assembly process. To achieve this, trades are scheduled to work consecutively as a team. For example, in a housing project, a high labour turnover is employed. The formwork gang could be scheduled to start work immediately after the foundations are completed by the concrete gang. If the concrete gang has to correct their work due to miscommunication, this in turn will delay the formwork gang who will then delay all the consecutive crews. Conclusively, it only takes a small misunderstanding to lead to significant project delays. According to Jergeas (2005), many project delays, particularly on larger scale developments occur due to unrealistic schedules. Project changes typically mean additional work. They must be communicated to the execution team early enough if schedule deadlines are to be met. This will minimise any errors likely to be made as a result of late dissemination of information.

The cost on any given construction project can grow significantly as a direct result of poor communication. According to Maslej (2006), project cost can increase due to three main

reasons; Incomplete or faulty contract documents, misinterpretation of contract documents and lack of proper project supervision. Lack of proper project supervision can lead to schedule delays and can significantly increase the cost of any given project. Poor communication and inefficiencies between companies is responsible for 30% of design and construction costs, excluding material costs such as concrete, brick and mortar (Construct ware, 2009)

Maslej (2006) also noted that language barrier was a strong contributor to poor communication practices on the jobsite and had a tremendous impact on worker safety. In many cases, contractors are willing to take risks associated with hiring employees who cannot communicate freely with other workers. Apart from the fact that the contractors take on a larger work load in order to maximize profit, they also save a considerable amount of money in labour costs by making use of illegal immigrants with language barrier. Many of these immigrants have little or no English skills which can cause severe communication problems on the worksite and affect productivity, profitability and above all worker safety (Dexter, 2005). The four most common causes of all deaths and fatal injuries in construction are falls, being struck by something, caught in between machinery or some other equipment, electrical shock which are all related to workers with little or no language skills (Maslej, 2006).

Collier (2005) explained that quality in construction is the standard of work that is expected based on the requirements of the contract documents including drawings, specifications, contracts, addenda and any additional conditions supplementary to the contract. Dunbar (2006) stated that the purpose of a construction specification is to clearly communicate the owner's expectations to the contractor in a manner that is fair and equitable. He further suggested that well written specification will result in accurate documents. Although poor project quality is often associated with being the contractor's fault, it is predominantly the

mistakes that designers and specification writers make that are responsible for desired project quality not being achieved (Maslej, 2006). Inefficiencies in contract documents issued by consultants are a form of miscommunication and can lead to significant quality problems.

2.4.1 Technical Perspective and Construction Project Performance

The operational procedures and other management activities associated with the design, construction and subsequent performance of a building rely a great deal on how information is being transmitted between the various participants of the building team and for this reason, means of communication should not only clarify issues but must also attempt to bring harmony to the entire work process and also foster co-operation between the parties to ensure maximum contribution from members (Butler, 1982). To make communication effective, and minimise errors and distortions, careful thought has to be given to the choice of media and message, how the message will be delivered and who will deliver it and the best writing, or presentation style to use based on the personality of the person you wish to communicate with (Burke, 2003).

Before any useful outcome can be achieved from the communication, the receiver has to accurately understand the sender's idea. This means the message has to be effective in the receiver's space; if the message is not understood by the receiver, the sender is wasting his/her time. It is important to note that a single communication is complete once the feedback-message has been decoded by the sender and checked for accuracy against the original idea. Once this loop has been closed both people have a common understanding of the idea. This does not require agreement or concurrence, but if there is to be a disagreement, it helps if everyone has the same basic understanding of the issue or idea in dispute.

Effective communication requires both the sender and the receiver to be engaged (Burke, 2010). The purpose of any communication is to create understanding leading to appropriate

responses or actions by the receiver. However, the understanding is formed in a person's mind and no two minds are the same more so in a construction project environment where there are different many parties all from different cultures and backgrounds. For effective communication, particularly across cultures one must be aware of these potential 'barriers' and plan to reduce their effect. This requires the gathering of information about each of the stakeholder's you need to communicate with, including their relative importance, influence and level of support and receptiveness. From this understanding an effective communication can be designed that has the best chance of working effectively for you in the receiver's reality.

2.4.2 Contextual Perspective and Construction Project Performance

Construction being a fragmented and dynamic sector with a project based nature makes many stakeholders operate in it and attract frequently changing sets of relationships which are contractually driven. The culture shows a reality of conflicts and lack of mutual respect and trust there in (Dainty et al., 2006). Burke (2003) stresses that for a project to succeed, there is continuous need for communication to issue instructions, solve problems, make decisions, resolve conflicts and keep everyone supplied with information they need. There are different communication instruments, such as contracts, specifications, reports, manuals, schedules, calculations, drawings, computer files, disks, print-outs, photographs, agenda's and minutes of meetings (Knipe, 2002). The management of documentation and communication used in a project is used by a number of subcontractors, the storage and retrieval thereof for further use important. Broadly, Kotzé et al. (1999), Le Roux (1999), Smit & Cronje (1992) describe methods and means of communication as;

- a) Oral communication which occurs in the form of meetings, discussion groups, talks including the grapevine, interviews, announcements and conversations, both face to face and over the telephone.

- b) Written communication takes place by means of letters, circulars, memoranda, manuals, reports, seminars and minutes of meetings
- c) Non-verbal communication can convey powerful messages in the business world by means of gestures, appearance or attitudes.
- d) Electronic communication. It is possible to send messages all over the world at a very high speed. Messages can be sent and received using computer terminals, electronic mail (e-mail) and fax facilities.

Verbal communication involves using speech to exchange information, communicating verbally in face to face conversation. Meeting, interviews, conferences, speeches and phone calls are other forms of verbal communication. We communicate verbally to exchange ideas understand diverse points of view and solve problems (Thomas & John, 2003). Verbal skills are among those most valued by employers to improve professional work performance (Kotzé et al, 1999). In verbal communication, one person sends a message to another person or group using speech. Communication is only successful when the speaker and the listener understand each other. Non-verbal cues have a significant role in communication as well. As Kurien states in her article; Albert Mehrabian, a professor emeritus of psychology came up with the 7%-38%-55% rule. According to his study in 1971, he mentioned that there are three elements to any face-to-face communication 7% words, 38% vocal tone and 55% body language. He also stated that nonverbal communication is pivotal for communicating feelings and attitudes. So it may be beneficial to master the skills of using and reading non-verbal cues to improve communication in construction. Suat et al., (2012) stressed that communication is the most critical factor of construction projects. In order to complete projects, people need to communicate. Despite the advancements in communication technologies, construction project participants mainly prefer face to face communication⁵. Face to face communication also allows practicing non-verbal communication. Due to its

highly diverse population, construction communication needs to include high level of non-verbal communication in order to overcome the challenges associated with diverse backgrounds.

According to Sunindijo et al., (2012) a non-verbal cue is one of the major factors in social competences. People accomplish verbal communication by listening. Therefore listening is crucial; however almost two-thirds of a conversation's actual messages were provided with nonverbal actions. Developing skills in non-verbal language is essential to understand a person and/or a situation during the project. Having good listening and understanding skills distinguish great leaders from the ordinary ones. This is particularly important in construction organizations that the development of leaders is highly critical in today's business environment (Burke, 2003). Given the significance of nonverbal messages, supervisors need to be aware of the messages they send. For example, supervisors' nonverbal messages, such as conservative clothing and a firm handshake, should communicate a professional, businesslike attitude. In addition, employees often consider the physical presence of the supervisor as a nonverbal message that the supervisor is interested in what the employees are doing

2.4.3 Negotiated Perspective and Construction Project Performance

Effective communication is one of the most important factors contributing to the success of a project (PMBOK, 2007). The project team must provide timely and accurate information to all stakeholders. Members of the project team prepare information in a variety of ways to meet the needs of project stakeholders. Team members also receive feedback from these stakeholders. Project communication includes general communication between team members but is more encompassing and must be appropriate and well negotiated upon to create meaning (Burke, 2003). More importantly, in project delivery, effective

communication is central in interviewing stakeholders for requirements and presenting reports to management, negotiating scope, budgets, deadlines and resource allocations, advising team members or senior managers, conducting and participating in meetings, resolving conflict, motivating the team and influencing others. All of these activities are enhanced by effective communication. However, for a communication to be effective, at least two of these elements need to be present;

- i) Power: if a communicator is perceived to be powerful (important), the message being communicated will be seen to have importance. Power comes from a range of sources including technical expertise.
- ii) Credibility: Built by making all communications accurate, timely and complete, as well as consistent, open and auditable. Errors are managed (and credibility least damaged) by openly identifying the problem and correcting it. Secrecy destroys credibility.
- iii) Relevance: Appropriate to the audience, subject-matter and environment. The relevance of the information to the recipient is enhanced through additional characteristics including being timely and presented in a concise and consistent format.

Power is useful if you have it and can reduce the effort needed to tailor individual messages for each recipient (although effective leaders do this anyway), the receivers want to understand your message. To communicate a single message to many people, the organization may use posters and electronic or printed bulletin board notices. These are efficient but impersonal ways to send messages, so they usually supplement more personal types of communication. For example, if a factory's managers want to promote quality, they can use posters that say "Quality First." For the message to be effective, however, managers and supervisors also should praise individuals for doing quality work, discuss quality when evaluating performance, and set an example in the quality of their own work.

2.5 Summary of Literature Review

Literature revealed that communication; technical perspective, contextual perspective and negotiated perspective affect performance of projects. Dainty et al. (2006) revealed that the fundamental components contributing to the construction industry's poor performance are its ineffective communication practices, its organizational fragmentation and lack of integration between design and production processes. However, Takim and Akintoye (2002) indicated that the level of success in carrying out construction project development activities will depend heavily on the quality of the managerial, financial, technical and organisational performance of the respective parties, while taking into consideration the associated risk management, the business environment, and economic and political stability. According to Wang (1994), as construction is becoming more complex, a more sophisticated approach is necessary to deal with initiating, planning, financing, designing, approving, implementing and completing a project. The challenge that remains unanswered is the extent to which communication in general can be used effectively for the performance of projects. The researcher intends to investigate answers to this gap in this study.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter outlines the research methodology adopted for undertaking this research study. It covers the research design, the area of the study, and population of the study, sampling procedure, data collection methods and instruments, procedure for data collection, measurement of variables and data analysis. A quantitative methodology, which incorporates to a small degree some aspects of the qualitative approach, is adapted. Arguments are presented justifying the choice of this approach and the specific research methods applied to collect data.

3.2 Research Design

The research study adopted a cross sectional research design. This research design is appropriate because it allows studies to be conducted over a short period of time other than the longitudinal one which demands that studies are conducted over a longer period of time (Amin 2005). A cross-sectional study is one where the data is collected at one point in time on several variables over periods, weeks or months in order to answer research questions. It is one time investigation of a situation. It is cheap and captures phenomena in its natural setting. The unit of data analysis was the construction projects with special focus on Contractors' professionals Engineers, Quantity Surveyors, Architects and Clerk of works within selected construction firms in the Districts of Kampala and Wakiso.

3.3 Study Population

The target population of this study consisted of professionals Engineers, Quantity Surveyors, Architects and Clerk of works from building construction sites of 75 selected construction

companies in Kampala and Wakiso district. The reason for seeking this information was to know the role of effective communication in regards to timely delivery within a predetermined cost and standard of construction projects in the two districts.

3.4 Sample Size and Selection

The researcher used a sample size of 71 for the study. The sample sizes were determined using the Table for Determining Sample Size from a Given Population (Krejcie and Morgan, 1970) refer appendix E.

Table1: Category of study population and sample size

Category of Respondents	Target Population	Sample Size	Sampling technique
Architects	15	14	Simple Random sampling
Civil Engineers	20	19	Simple Random sampling
Quantity Surveyors	20	19	Simple Random sampling
Clerks of works	20	19	Simple Random sampling
Total	75	71	

Source: UNABCES, 2012

According to Sekaran & Bougie (2010), an appropriate sampling design should be used; a large sample size will not in itself allow the findings to be generalized to the population. Too large a sample size say over 500 could also become a problem as much as too small sample size below 30, this would be prone to committing type 2 errors.

3.5 Sampling Techniques and Procedure

In this study, the researcher employed simple random sampling technique where all respondents in the defined population had an equal independent chance of being selected as a

sample. According to Mugenda & Mugenda (2003) in simple random sampling every element has an equal chance of being selected in the sample and is simple.

3.6 Data Collection Methods

Information was gathered using both quantitative and qualitative methods. To ease the process of collecting data, the Researcher hired research assistants who were briefed on how to collect data. The main tool for data collection was a questionnaire and was supplemented by face to face structured interviews to amplify and improve on reliability and validity of information collected. Data collected using qualitative approach in this research was considered necessary because as noted in Walker (1997), empirical research provides strong evidence for explaining phenomenon, enabling researchers to address the questions ‘*how much*’ or ‘*how many?*’. More appropriately in the context of this investigation this kind of research enabled the researcher to establish “which variables are significant, and to what extent, in a scientific way” (Walker, 1997), thus allowing the objective of explanatory assertions about the sample, and by inference the population, to be achieved (Babbie, 1990; Czaja & Blair, 1996).

3.6.1 Questionnaire Survey

In this study, questionnaires were used to collect data. A structured questionnaire was used to collect information from the randomly sampled respondents. It was a Likert scale statement questionnaire with category response continuum of Strongly Agree (SA), Agree (A), Neutral (N), Disagree (D) and Strongly Disagree (SD). Being the main data collection tool, the questionnaire were designed to be respondent-friendly in order to maximise the response rate, which is widely recognised as being particularly low in construction management research (Xiao, 2002). It is well known that proper questionnaire design is vital for successful data collection (Babbie, 1992; Fellows & Lui, 1997; Creswell, 2003). Considerable effort

therefore was devoted towards this endeavour. Questionnaires are economical in terms of time and are easy to fill and take less of the respondents' time and that of the researcher in administering and analyzing them (Amin, 2005). The last section requested the respondents' opinion on the communication that existed within the CPO on the project. The questions addressed the key dimensions of communication identified in the interviews conducted with various construction professionals.

3.6.2 Face to Face Interviews

The interviews were used as an opportunity to ignore a priori ideas and to draw on the knowledge of professional without imposing biases or knowledge obtained directly from literature or experience (Nicolini, 2002). Like Hofstede et al. (1990), the intention was to paint a qualitative, empathetic description of communication on construction projects. A series of in-depth semi-structured interviews were carried out with experienced professional working within various construction firms. The main thrust of the interviews was drawn out of those issues that are considered important on construction projects and the main challenges faced by construction project organisations. Open ended questions were asked with the aim of getting detailed information from the respondents. It was chosen because some of the respondents are known to be semi-illiterate and therefore not able to read and handle questionnaires. According to Amin (2005) it gives more clarity and yields the biggest response rate. However, interviewing as a method is comparatively more costly and time consuming.

3.7 Data Collection Instruments

The instruments used in collection of primary and secondary data were both quantitative and qualitative.

3.7.1 Structured Questionnaire

A structured questionnaire was used to collect information from the randomly sampled respondents. Likert scale statement questionnaire with category response continuum of Strongly Agree (SA), Agree (A), Neutral (N), Disagree (D) and Strongly Disagree (SD) was used. The questionnaire was in four parts. The first section requested for general personal information about the respondent. The second section asked the respondents to provide information about the most recently completed construction project on which they had direct operational involvement. This section was based on the literature review and interviews in regards to factors influencing the communication of a CPO. In exploring the various communication means that have developed within CPOs, this section was intended at providing data for contextualising and categorising the various communication strategies found.

The third section asked details about the performance of the projects. The specific indicators assessed were identified in literature. These performance indicators were chosen in accordance with the theory of task performance which posits that measures of performance must reflect the desired goals/objectives (Ankrah & Proverbs, 2005). By identifying the project objectives in respect of the key dimensions of communication, it is possible to identify appropriate performance indicators which then will form the basis of the questions in this section of the questionnaire survey.

3.7.2 Interview Guide

This contained a set of open ended questions that were used for interviewing key informants in the study refer appendix C.

3.8 Data Quality Control

The developed data collection instruments were tried on selected respondents who are considered to be in the situations similar to the actual study sample. An assessment of the data obtained helped the researcher to revise, refine and improve the instruments before they were used to collect the actual data.

3.8.1 Validity

According to Sekaran (2003) validity attest to whether an instrument measures what it is supposed to and is justified by the evidence. The validity of the research instruments was checked using content and face validity by research experts and my supervisors to ensure that instruments include an adequate and representative set of items that tap the key concepts of the study. For the instrument to be accepted as valid the CVI should be greater or equal to 0.7 (Amin, 2005). Content validity index (CVI) = No. of items declared valid divided by the total No. of items. Four judges rated the questionnaire and the results obtained are shown below:

Judge 1 = $32/38 = 0.842$

Judge 2 = $34/38 = 0.895$

Judge 3 = $30/38 = 0.789$

Judge 4 = $33/38 = 0.868$

Overall content validity index = $(0.842 + 0.895 + 0.789 + 0.868)/4 = 0.849$

Results obtained gave values of content validity index (CVI) greater than 0.7 which made the two questionnaires valid for use.

3.8.2 Reliability

The reliability of the research instrument was assessed using the Cronbach Alpha Coefficient. Sekaran, (2003), defined reliability as the degree to which an instrument is consistent, stable and free from error, despite fluctuations in test taker, administrator or conditions under which the test is administered. This was done by giving questionnaires to a section of respondents to test the appropriateness of the questions. This helped identify and rectify any inadequacies such as clarity of questions early enough before administering the questionnaires to the respondents. The researcher administered 10 questionnaires on all the respondents in an area that had similar characteristics as the study area to attest the reliability of the questionnaire that was used in the study. The internal consistency “reliability” of the questionnaire was measured using Cronbach’s alpha using Statistical Package for Social Scientists (SPSS) computer software for data analysis. The pre-test results on the questionnaire gave an overall alpha of 0.90. This is shown below in the table of Reliability Statistics that provides the actual value for Cronbach’s alpha.

Table 2: Summary of reliability statistics on the questionnaires

Variable	No of Items	Cronbach’s Alpha
Technical perspective	8	0.67
Contextual perspective	6	0.90
Negotiated perspective	6	0.68
Project Performance	18	0.77
Overall (all variables)	16	0.90

Source: Primary data

The alpha value obtained is acceptable which makes the questionnaires relevant for use (refer to tables 2). Tuckman (1999) suggests that an alpha of 0.75 or greater is acceptable for

instruments that assess knowledge and skills and 0.50 or greater is acceptable for attitude and preference assessments.

3.9 Procedure of Data Collection

Permission to conduct the study and collect data was sought from the administration of Uganda Management Institute (UMI) that explained the importance and significance of the study (appendices C and D). Data collection instruments were developed and research assistants recruited and trained. Data collected was assessed to help researcher revise, refine and improve the instruments. Appointments were made with the respondents, and interviews were conducted and data collected. In order to obtain all the data required to address the research hypotheses, information on already completed projects was required. The questionnaire was therefore developed with an invitation to participants to use their most recently completed construction project as the frame of reference for responding to the questionnaire. The rationale for targeting most recently completed projects was that on such projects, complete data can be collected to enable a reasonably accurate assessment of performance to be made especially as some of the performance measures are output based and retrospective (Dainty et al., 2003). Besides, such projects would also still be relatively fresh in the minds of respondents, making it relatively easier for them to recall their experiences thus minimising the potential distortions. This is consistent with Borman (1978), Tsui & Ohlott (1988) and Weekley & Gier (1989). Retrospective data collection designs according to Ogbonna & Harris (2002) are a valid and reliable means of gaining insight into organisational phenomena. Questionnaire items were therefore directed towards unearthing facts and views of respondents about these projects. The questionnaire survey was designed primarily to elicit information on the kind of communication that exists during construction project delivery and information on performance outcomes so that relationships between them can be explored using appropriate statistical techniques.

3.10 Data Analysis

Both quantitative and qualitative data analysis was done. The raw data was properly cleaned, sorted, condensed into manageable and meaningful data that can be interpreted and explained.

3.10.1 Quantitative Data Analysis

The data that was collected and processed and analyzed. Data processing involved editing, coding, classification and presentation in form of frequency tables and graphs as suggested by Kothari (2004). A multiple regression analysis was run using Statistical Package for Social Scientists (SPSS) a computer software package to examine the relations between the independent variables and the dependent variable. The data was analyzed using the major categories of data analysis that is descriptive analysis and inferential analysis which produced various reports for the researcher's interpretation and discussion.

To test the hypothesis, the researcher used Pearson's product moment correlation coefficient analysis to obtain an indication of the strength and significance of the relationship of all the variables in the study and used a significance level of 0.05. A significance level is the probability of obtaining similar results if the study is repeated many times using different but equal random samples (Mugenda & Mugenda, 1999). For a p-value (significance level) of less than or equal to 0.05, is considered statistically significant. The study based on this principle to reject or accept the null hypothesis H_0 .

Regression analysis was further done to test the magnitude of the relationship between the independent and dependent variables. A coefficient of determination (R^2) equal or above 0.05 implied a significant positive relationship. This was to establish whether the independent variable predicts the dependent variable (Kothari, 2004), using the coefficient of determination (R^2). Linear regressions were used to determine the extent to which independent variables affect the dependent variable.

3.10.2 Qualitative Data Analysis

Qualitative data collected through interviews, was edited, coded and arranged in themes. This was done systematically using words to describe patterns of events and relationships derived from the information gathered, making useful conclusions and recommendations.

3.11 Measurement of Variables

The variables under study were rated on a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The Likert scale state has five category response continuums strongly disagree, disagree, neutral, agree and strongly agree and were applied in the designing of the questionnaire to help in investigating the relationship between the independent and dependent variables. In the study, three levels of measures were used namely; the nominal scale, ordinal and interval scale (Mugenda & Mugenda, 1999). The interval scale were used for measuring the age brackets, the ordinal scale used to measure responses to Likert statements and the nominal scale used for categorizing the variables in the questionnaire (Amin, 2005). Interviews were conducted to measure opinions and perceptions and open ended questions were used to avoid bias.

CHAPTER FOUR

PRESENTATION, ANALYSIS AND INTERPRETATION OF RESULTS

4.1 Introduction

In this chapter, the researcher presented the findings of the study derived from processing the data collected. Both qualitative and quantitative data is presented, analysed and interpreted objective by objective in order to provide the answers to the research using various statistical tools. These included percentages, correlations and regression models. This study intended to study the effect of communication on construction project performance in the Districts of Wakiso and Kampala, in Uganda.

The findings in this section were presented so as to address the following study objectives;

- a) Examine whether there is a relationship between Technical Perspective and Project Performance of construction projects
- b) Assess the effect of Contextual Perspective on the overall Performance of the construction project
- c) Assess the effect of Negotiated Perspective on the Project Performance of a construction project.

4.2 Response Rate

The study had targeted 71 respondents and received 58 eligible respondents from the various respondents' category as shown in the table 3. The response rate was calculated using the ratio of the actual number of respondents to the expected number of respondents multiplied by 100%. The results are presented in table 3.

Table 3: Respondent's response rate

Respondent's Category	Sample Size	Actual respondents	Response Rate
Architects	14	12	85.7%
Civil Engineers	19	17	89.5%
Quantity Surveyors	19	17	89.5%
Clerk of works	19	12	63.2%
Total	71	58	81.7%

Source: Primary Data

The results in table 3 show a good response rate of 81.7% for the study by all categories of respondents. This is a good participation/response rate because Amin (2005) recommends that a minimum of 70% is adequate for a valid research. The good response rate could be attributed to the fact that performance is of great concern in construction service delivery. However, the researcher was not able to collect information from the anticipated sample size of 71 and managed to collect information from 58 respondents. This could be attributed to the nature of construction projects management which is more of private than public and information flow is restricted. Nevertheless, this data can be relied upon to give a frame work in which conclusions of the study can be made.

4.3 Respondents Characteristics

This section presents the findings on characteristics of the respondents. These include, age, level of education, occupation, experience of respondents, total number of employees, period firm has been operating and nature of ownership of the firms. However, some of the characteristics though important were not analyzed since their findings do not relevantly contribute to this study.

4.3.1 Experience of Respondents in the Construction Industry.

Results in the table 4 below show the experience of respondents.

Table 4: Experience of respondents

Experience of respondents	Frequency	Percent
Less than 3 yrs	12	20.0
4-6 yrs	17	30.0
Valid 7-8yrs	16	28.0
More than 8 yrs	13	22.0
Total	58	100.0

Source: Primary Data

From the results in the table 4 above, of the respondents sampled 30% had an experience of between (4-6) years while 28.0% had an experience between (7-8) years, 22.0% had experience of more than 8 years and 20% had an experience of less than 3 years. The above results clearly show that majority of the respondents 80% had an experience of over 4 years. It is assumed that with this level of experience, the respondents are aware of the importance of communication to construction project performance and therefore it's not likely that personnel's experience is among the probable cause of poor project performance. However, those interviewed had this to say "*most of the work which requires high skills is done by consultants; this limits the level of skills development by the managing personnel on site hence poor project performance*". This shows that experience alone without competent skills is not enough to deliver a project to the required performance level.

4.3.2 Education Level Distribution

Results in the table 5 show the education levels of respondents in the different firms.

Table 5: Education Level distribution

Education level	Frequency	Percent
Diploma	8	14.0
Bachelors	35	60.0
Post graduate	15	26.0
Total	58	100.0

Source: Primary Data

From the above analysis in table 5, of the respondents sampled 60.0% had a bachelor's degree, 26% had a postgraduate qualification and 14% had a diploma. This clearly shows that the respondents had adequate education background since majority of them (86%) were at a degree level. This shows that construction projects are being managed by qualified personnel who should be in position to deliver in terms of construction project performance as required. It is also assumed that with this level of education background, the respondents are aware of the importance of communication to construction project performance and therefore the question of personnel's education level being one of the probable cause of poor project performance would not arise. When one of the managers was asked whether their personnel are often trained as way of developing their skills and competence in doing their work, he said that *"plans are their for employee training and development but due the costs involved it is rarely done, he also said that another challenge is that some employees after training they leave the company. The reason why management is reluctant to train their employees since this is seen as loss to the company"*. This shows that the construction industry lacks competent personnel to ensure that construction standards are adhered to, this is likely to affect the industry in terms of performance.

4.4 Results on Study Variables

This section presents the study findings of the independent variables on communication with dimensions which include technical, contextual, and negotiated perspectives and their effect on construction project performance. The variables under study were rated on 5-point likert scale questionnaire of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD) and Undecided(UD). The findings are presented in tables for each item of the variable. Correlations were done for purposes of showing relationships and regressions run to determine variations. For easy interpretation of data, SA and A were combined to mean respondents general agreement. SD and D were combined to mean disagree.

4.4.1 Technical Perspective

The descriptive for the Technical Perspective Variable were as shown in the table below

Table 6: Technical Perspective

Technical Perspective	SD freq (%)	D freq(%)	UD freq(%)	A freq(%)	SA freq (%)
Efforts are usually made in course of project execution to avoid errors in communicating with stakeholders.	0(0)	2(4.0)	5(10.0)	32(64.0)	11(22.0)
There are error free communications and recordings in this project	2(4.0)	20(40.0)	10(20.0)	13(26.0)	5(10.0)
There are no complaints in this project about errors made by the project officials during execution process	5(10.0)	18(36.0)	13(26.0)	9(18.0)	5(10.0)
All project officials communicate in way that allows for no error in the course of executing project	3(6.0)	10(20.0)	9(18.0)	18(36.0)	10(20.0)
No officials in this project have been found to be guilty of presenting distorted results for personal gain	3(6.0)	5(10.0)	3(6.0)	27(54.0)	12(24.0)
Our transactions are always free from distortion of records In the course of transacting business with stakeholders	0(0)	9(18.0)	5(10.0)	28(56.0)	8(16.0)
We normally present construction ideas to the stakeholders which are accurate	0(0)	2(4.0)	0(0)	37(74.0)	11(22.0)
Stakeholders have not complained of any variances between what we propose to do for them and what we actually do	0(0)	5(10.0)	5(10.0)	25(50.0)	15(30.0)

Source: Primary Data

The results in the table 6 above shows that the majority of the respondents agreed that efforts are usually made in course of project execution to avoid errors in communicating with stakeholders (86%) and all project officials communicate in a way that allows for no error in the course of executing project (56%). This shows that management is doing all it can to avoid errors in communication and have effective project communication. However the majority of the respondents disagreed to the fact that there are error free communications and recordings in their projects (44%) and that there are no complaints in their projects about errors made by their project officials during execution process (46%). This could mean that there is concealment of information, and communication is not given the attention it deserves during project execution. Probably stakeholders are not sharing information freely and are disappointed with the way communication of the key issues is handled. During the interviews, it came out clearly that indeed communication was not given enough attention it deserves as one the respondents stated that, *“the major challenges faced during construction is the lack of details that tend to hinder progress and performance during construction.”* He went ahead and stated. *“for example in a situation where only the details of a door lock are provided in the specifications and bills of quantities (BoQs) but during construction you discover that also the frame needs to be changed means that you stay fixing of the lock subject to provision of the details for the door frame which will mean more time and additional cost.”* This indicates that some errors which are usually made at the planning stage always emanate and end up affecting the implimentation stage since some interview comments revealed that the lack of adequate details usually hinders the progress of the work.

The findings on distortion indicated that the majority of respondents agreed that no officials in this project have been found to be guilty of presenting distorted results for personal gain (78%), transactions are always free from distortion of records in the course of transacting business with stakeholders (72%), accurate ideas are normally presented to stakeholders

(96%) and that stakeholders have not complained of any variances between what we propose to do for them and what we actually do (80%). This shows that project participants are aware of their roles regarding proper and adequate communication and how important those roles are to ensure good results on the project in which they have participated in. This also shows that efforts are made to ensure elimination of distortion in communication which is likely to improve project performance.

Hypothesis Testing

The study tested hypotheses in order to be able to generalize the findings from the samples to the population and this was done using inferential statistics. Correlation analysis was done to determine the direction and strength of the relationship between the variables and Regression analysis was conducted to establish the magnitude of the relationship of the variables and to predict the importance of the independent variable to the dependent variable. To verify the alternative hypothesis that Technical Perspective affects construction project performance, the P-value was determined. Pearson's product moment correlation coefficient was used as shown in the table below.

Table 7: Technical Perspective and Project Performance Correlation matrix

		Technical Perspective	Project Performance
Technical Perspective	Pearson Correlation	1	.465**
	Sig. (2-tailed)		.000
	N	50	50
Project Performance	Pearson Correlation	.465**	1
	Sig. (2-tailed)	.000	
	N	50	50

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

Source: Primary Data

Results showed that there is a moderate positive relationship between technical perspective and construction project performance ($r = .465^{**}$, $p < .001$). This shows that when the Technical Perspective elements such as the accuracy of records and timeliness of the communication are well managed, the projects are bound to be successful and shall be successful. A regression analysis was done to determine the magnitude of the relationship between the two variables as shown in the relationship model below.

Table 8: Regression output on Technical Perspective and Project Performance

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	3.717	.224	16.625	.000	
	Technical perspective	.194	.070	.465	2.778	.000

Dependent Variable: Construction Project Performance

Source: Primary data

Results in the table 8 above show that the Technical Perspective can explain up to 21.6% of the variations in the Project Performance ($R = 0.465$ and $R^2 = 0.216$). The regression model was statistically significant (sig. $< .001$). Therefore a one standard deviation increase in technical perspective leads to 0.465 increases in predicted project performance with the other variables held constant; this means that technical perspective is an important factor in predicting project performance. The results from the above tables give a Sig. (2-tailed) value of 0.000 which is less than alpha (0.05) and R^2 value above 0.05 which is the researcher's basis to reject the null hypothesis and uphold the research or alternative hypothesis that technical perspective greatly influences construction project performance.

4.4.2 Contextual Perspective

The results in the table 7 below show the contextual perspective descriptive that were attained from the study findings.

Table 9: Contextual Perspective

Contextual Perspective	SD freq (%)	D freq(%)	UN freq(%)	A freq(%)	SA freq (%)
We use written letter messages to communicate value and the necessary details to stakeholders	0(0)	12(24.4)	6(12.0)	22(44.0)	10(20.0)
Meetings are sometimes held with clients to address them about key issues of their projects	0(0)	2(4.0)	0(0)	27(54.0)	22(42.0)
Communication using the internet has been lately added to the tools of conducting business in this project	2(4.0)	0(0)	2(4.0)	23(46.0)	23(46.0)
Stakeholders are given freedom to voice their opinions about the progress of any construction project	0(0)	0(0)	0(0)	33(66.0)	17(34.0)
Stakeholders' failure to praise and thank the construction team after a new project, is understood to mean dissatisfaction	0(0)	10(20.0)	23(46.0)	13(26.0)	4(8.0)
Stakeholders' avoidance of meetings is sometimes taken as an objection to our offer that we have made	0(0)	12(24.0)	23(46.0)	12(24.0)	3(6.0)

Source: Primary Data

In light of the contextual perspective, results in table 9 above revealed respondent's overall response on non- verbal cues and verbal content dimensions. On non verbal cues respondents agreed that construction firms use written letter messages to communicate value and the necessary details to stakeholders (64%) and communication using the internet has been lately added to the tools of conducting business (92%). This clearly shows that project participants are aware of the right communication strategies that are needed to ensure good performance during the delivery process and thus meet the expectations of the clients. This is supported by some comments "*like these days internet is the way to communicate since it is faster and cheaper compared to other means of communication*". This could mean that there is effective

communication in the construction industry implying that communication is not necessarily the cause of poor project performance. However, the big question is why the poor project performance in the construction industry?

The results on verbal content indicated that respondents agreed that meetings are sometimes held with clients to address them about key issues of their projects (96%) and that stakeholders are given freedom to voice their opinions about the progress of any construction project (100%). Encouraging stakeholders to directly air their views is a good indicate towards achieving excellent project performance. However there is general uncertainty among the respondents if the Stakeholders' failure to praise and thank the construction team after a new project is understood to mean dissatisfaction (46%) and if the stakeholders' avoidance of meetings is a reflection of an objection to offer made (46%). This shows lack of feedback which could mean that some stakeholders either do not know how important their views are to the project performance or lack of interest in the project.

Therefore there is need to educate and sensitize all project stakeholders on their importance to participate in project activities. This is likely to improve the project performance since stakeholders will be able to participate either directly or indirectly in the project activities including meetings and appreciate the project team. During the interviews it came out clearly that indeed the respondents were in favour of verbal communication during construction as many of them said that, *"we prefer to have regular site meetings since this will resolve any outstanding issues their and then without having to wait for written communication instructions from the project consultants. They further stressed that meetings were a key ground in which one can easily be understood.* This shows that it is important to have both verbal and nonverbal communication as they each complement one another.

Hypothesis Testing

To verify the alternative hypothesis that contextual perspective affects construction project performance, the P-value was determined. Pearson's product moment correlation coefficient was used as shown in the tables below

Table 10: Contextual Perspective and Project Performance Correlation matrix

		Contextual Perspective	Project Performance
Contextual Perspective	Pearson Correlation	1	.542**
	Sig. (2-tailed)		.000
	N	50	50
Project Performance	Pearson Correlation	.542**	1
	Sig. (2-tailed)	.000	
	N	50	50

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

Source: Primary Data

The above table 10 gives Pearson correlation (r) of 0.542 and p-value of 0.000 which is significant at the 0.01 level. This indicates a moderate positive relationship between the two variables contextual perspective and construction project performance. This means that changes in one variable are correlated with changes in the second variable. A regression analysis was done to determine the magnitude of the relationship between the two variables and the importance of contextual perspective in determining construction project performance as shown in Table 11.

Table 11: Regression output on Contextual Perspective and Project Performance

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3.346	.289		11.575	.000
1 Contextual perspective	.298	.087	.542	3.409	.002

Dependent Variable: Construction Project Performance

Source: Primary data

The results in the table 11 give a regression coefficient of 0.542 at significance level 0.000 of 99% confidence level hence a positive relationship. Results indicated that the Contextual Perspective can predict up to 29.4% of the variance in the Project Performance ($R = 0.542$ and $R^2 = 0.294$). Therefore, a one standard deviation increase in contextual perspective leads to 0.542 increases in predicted project performance with the other variables held constant; this means that contextual perspective is an important factor in predicting project performance. The results from the above tables give a Sig. (2-tailed) value of less than alpha (0.05) and R^2 value above 0.05 which is the researcher’s basis to reject the null hypothesis and uphold the research or alternative hypothesis that contextual perspective greatly influences construction project performance.

4.4.3 Negotiated Perspective

The results in the table 12 show the negotiated perspective descriptive that were attained from the study finding.

Table 12: Negotiated Perspective

Negotiated perspective	SD freq (%)	D freq (%)	UN freq (%)	A freq (%)	SA freq (%)
The right and appropriate project proposals are normally presented to our stakeholders.	0(0)	0(0)	2(4.0)	30(60)	18(36.0)
Appropriate costing and associated expenses are normally well negotiated by the project officials.	0(0)	2(4.0)	0(0)	30(60)	18(36.0)
Project officials are knowledgeable about communicating value to the necessary stakeholders.	0(0)	3(6.0)	5(10.0)	20(40.0)	22(44.0)
All members in this project have the right experience and qualifications necessary for communicating the project progress and justifying necessary steps.	2(4.0)	8(16.0)	2(4.0)	20(40.0)	18(36.0)
Trainings are often held to enhance the stakeholder knowledge about the projects.	0(0)	15(30.0)	12(24.0)	17(34.0)	7(14.0)
Our project proposals to the stakeholders have always been considered to be befitting the situation at hand	0(0)	0(0)	3(6.0)	38(76.0)	8(16.0)

Source: Primary Data

Under the negotiated perspective, there are two dimensions appropriateness and knowledge. Under appropriateness respondent's generally agreed to the fact that right and appropriate project proposals are normally presented to the stakeholders (96%), appropriate costing and associated expenses are normally well negotiated by the project officials (96%) and project proposals to the stakeholders have always been considered to be befitting the situation at hand (93.4%). This shows that appropriate measures are in place to ensure that improved project performance is achieved. Indeed during the interviews, one of the respondents stated that, *"we try as much as possible to capture all cost implications expected at the planning stage so that we avoid a lot of variances during implementation"*. However when one of the respondents was asked about the appropriateness of the project cost, had this to say *"in most cases the initial project cost is not sufficient to deliver the project, costs have to be revised which in the end affects the project performance in terms of cost and time"*. This comment is

supported by other comments in the background characteristics which show that project team lack appropriate skills and competence for the construction projects to perform.

Knowledge as a dimension of negotiated perspective respondents generally agreed that project officials are knowledgeable about communicating value to the stakeholders (84%), all members on projects have the right experience and qualifications necessary for communicating the project progress and justifying necessary steps (76%) and that training is often held to enhance stakeholders' knowledge about the projects (48%). This shows that the project team has relevant knowledge and indeed respondents are aware of the appropriate communication strategies that enhance performance during implementation. This means that all is done to improve construction project performance. However knowledge without relevant experience and skills as indicated in the background results may not necessarily deliver the project to success. Therefore, there is need for project personnel to undergo relevant skill development and training in order to improve project performance. The need for training and skill development was revealed by some respondents who state that, "*In most cases we are not given the opportunity to upgrade in academic levels. Indeed, one of the respondents revealed that he was relieved of his duties when he requested to be allowed to leave early and go for his studies in the evening.*" This is a clear indication that respondents are aware that in order to improve on their performance, there is need for them to continuously upgrade, however, it should be noted that without the support of their employers, this realisation may not come to pass.

Hypothesis Testing

To verify the alternative hypothesis that negotiated perspective affects construction project performance, the P-value was determined. Pearson's product moment correlation coefficient was used as shown in the tables below

Table 13: Negotiated Perspective and Project Performance Correlation matrix

		Contextual Perspective	Project Performance
Contextual Perspective	Pearson Correlation	1	.442**
	Sig. (2-tailed)		.000
Project Performance	N	50	50
	Pearson Correlation	.442**	1
	Sig. (2-tailed)	.000	
	N	50	50

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

Source: Primary Data

The results show that the Negotiated Perspective, is moderately positively related to the Project Performance of ($r = .442^{**}$, $p < .001$). The results indicated that should the negotiated perspective be put into consideration in order to enhance the Project Performance, better and positive project results will be realised. A regression analysis was done to determine the magnitude of the relationship between the two variables and the importance of negotiated perspective in determining construction project performance as shown below.

Table 14: Regression output on Negotiated perspective and project performance

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3.656	.259		14.115	.000
1 Negotiated perspective	.195	.075	.442	2.605	.015

Dependent Variable: Construction Project Performance

Source: Primary data

Results in table above 14 indicated that the Negotiated Perspective can predict up to 19.5% of the variance in the Project Performance ($R = 0.442$ and $R^2 = 0.195$). The regression model was statistically significant (sig. $<.015$). Therefore a one standard deviation increase in contextual perspective leads to 0.442 increases in predicted project performance with the other variables held constant; this means that negotiated perspective is an important factor in predicting project performance. The results from the above tables give a Sig. (2-tailed) value of less than alpha (0.05) and R^2 value above 0.05 which is the researcher's basis to reject the null hypothesis and uphold the research or alternative hypothesis that negotiated perspective greatly influences construction project performance.

4.4.4 Performance of Construction Project and Timeliness

The results in the table 15 show the performance of construction projects and timeliness of the projects.

Table 15: Performance and Timeliness

Performance/ Timeliness	SD freq (%)	D freq(%)	UN freq(%)	A freq(%)	SA freq (%)
Poorly presented information on site creates a problem in timely delivery of Construction Project	0(0)	0(0)	2(4.0)	22(44.0)	27(54.0)
Site meetings lead to a faster flow of information during a construction project	0(0)	0(0)	0(0)	20(40.0)	30(60.0)
Channels of communicating must be applicable to all members of the construction team.	0(0)	2(4.0)	0(0)	23(46.0)	25(50.0)
Timely issuance of instructions will affect completion period of the project	0(0)	0(0)	2(4.0)	25(50.0)	23(46.0)
Face-to-face meetings are the most effective means of communicating and prevents unnecessary delays	2(4.0)	3(6.0)	0(0)	20(40.0)	25(50.0)
Incomplete and inaccurate drawings make construction more difficult and leads to un necessary delays	2(4.0)	0(0)	0(0)	17(34.0)	32(64.0)

Source: Primary Data

From the analysis, the respondents generally agreed that site meetings lead to faster flow of information during construction (100%) and further indicated that face to face meetings are the most effective means of communicating and that it prevents unnecessary delays (90%). The respondents further agreed that poorly presented information (98%) and incomplete and inaccurate drawings have an impact on timely delivery of projects (98%). The respondents also generally agreed that channels of communication must be applicable to all members of the construction team (98%) and timely issuance of instructions will affect completion period of the project (98%). It is clear from these results that respondents are aware of the critical communication issues likely to affect timely completion of a construction project and therefore in an event that these issues are not well tackled during implementation of the project, it's likely that performance will be greatly hindered.

During interview, most of the respondents indicated that the challenges they are usually faced with during project implementation was late issuance of instruction, irregular site meetings and un detailed project drawings which tends to progressively affect project progress and raise a lot of queries. This revelation by the respondents clearly shows a communication gap between the project consultants and the contractor's team and this definitely has an impact on the construction completion period. It should be noted that during project implementation, project drawings, specifications, Bills of Quantities and other tender documents are communication instruments that the contractor uses in execution of work and therefore in a situation where some level of detail is lacking, there is a likely hood of impacting on the project.

4.4.5 Performance of Construction Project and Project Cost

The results in the table 16 shows the performance of construction project and cost

Table 16: Performance and Project Cost

Performance/Project cost	SD freq (%)	D freq(%)	UN freq(%)	A freq(%)	SA freq (%)
Incomplete and inaccurate drawings make construction more difficult leads to delays and cost increases	0(0)	0(0)	0(0)	25(50.0)	25(50.0)
Misinterpretation of contract drawings makes construction difficult and consequently leads to cost increases	0(0)	0(0)	0(0)	30(60.0)	20(40.0)
Lack of proper project supervision increases to cost increases	0(0)	0(0)	0(0)	30(60.0)	20(40.0)
Poor coordination of site activities leads to time wastages and consequently increases the project cost	0(0)	0(0)	0(0)	23(46.0)	27(54.0)
Poor site layout/organisation impacts negatively on the output leads to cost increases	0(0)	0(0)	0(0)	35(70.0)	15(30.0)
Late dissemination of information will affect output on site negatively and often leads to cost increases	0(0)	0(0)	2(4.0)	28(56.0)	20(40.0)

Source: Primary Data

There was a general consensus (100%) among the respondents that incomplete and inaccurate drawings, misinterpretation of contract drawings, lack of proper project supervision, and poor coordination of site activities leads to time wastages and consequently increases the project cost. Respondents also unanimously agreed that late dissemination of information will affect output on site negatively and often leads to cost increases (96%). Results from the above indicate that respondents are aware of critical communication issues that affect project cost and that therefore if the issues are not well handled during the implementation stage, they are likely to grossly affect the performance of the project. *When asked about the communication challenges that tend to affect project cost, most of the respondents indicated that inaccurate construction drawings coupled with misinterpretation of project details are among the most*

challenges they face. This admission by the respondents reveal a serious communication gap that if not addressed progressively will affect the project not only on the cost dimension but also time. This also means that perhaps, project planners (consultants) don't give much attention to details at the planning stage and such the effect will emanate during the project delivery state hence affecting the project cost and time. The misinterpretation of project drawings could be attributed to the fact that most contractors don't employ experienced and well qualified personnel to handle the construction delivery.

4.4.6 Performance of Construction Project and Project Quality

The results in the table 17 below shows the performance of construction and project quality

Table 17: Performance and Project Quality

Performance/ Quality	SD freq(%)	D freq(%)	UN freq(%)	A freq(%)	SA freq (%)
Poorly drawn details often leads to mistakes and work repetition of works which affects the workmanship	0(0)	0(0)	0(0)	28(56.0)	22(44.0)
Mis-interpretation of contract drawings makes construction difficult and consequently leads mistakes and reworks and this affects the workmanship	0(0)	0(0)	0(0)	27(54.0)	23(46.0)
Lack of proper project supervision increases to cost increases	0(0)	0(0)	0(0)	22(44.0)	28(56.0)
Poor specifications will lead to mis-communication and this result into quality flaws	0(0)	0(0)	2(4.0)	20(40.0)	28(56.0)
Poor communication systems leads to work repetition which affects the quality of work	0(0)	0(0)	2(4.0)	35(70.0)	13(26.0)
Poor and distorted information affects the level of work done on site	0(0)	0(0)	2(4.0)	33(66.0)	15(30.0)

Source: Primary Data

The results showed that the respondents generally agreed that poorly drawn details, mis-interpretation of contract drawings, lack of project supervision, poor specification and lack of proper project supervision contributed equally(100%) to the poor quality projects. From the above, it's clear that respondents are aware of the key communication issues that affect project quality and as such if these issues are not well addressed during the execution period, it will greatly have an effect on the performance of the project. During the interviews, one of the respondents stated that, *“poor supervision, lack of detailed contract documents, inadequate specifications, lack of qualified staff are the major causes of poor workmanship on projects leading to poor project delivery.”* This further strengthened the above argument that indeed the respondents were well aware of the key communication issues that lead to poor quality and as consequence affect performance on construction projects.

CHAPTER FIVE

SUMMARY, DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The chapter in this section contains the summary of the findings that were presented in the previous chapter. Furthermore, this section shows the discussion that was done while at the same time comparing research studies that had been done by the other scholars. The section ends by giving reasonable conclusions and recommendations.

5.2 Summary of the Research Findings

The study set out to explore the effect of communication on performance of construction projects in Kampala and Wakiso districts in order to devise ways of improving on performance. The study variables were conceptualized from technical perspective, contextual and negotiated perspectives, which were the independent variables of the study, and project performance as the dependent variable. From the study it was revealed that there is a relationship between communication and construction project performance.

5.2.1 Technical Perspective and Construction Project Performance

The study found out that technical perspective has a statistically significant positive effect on construction project performance of a correlation coefficient of 0.465 and significance levels of 0.000. The R/beta value of 0.465 and R^2 value of 0.216 also indicate that technical perspective is an important factor in predicting construction project performance.

The general findings on the descriptive results showed an agreement from the respondents that efforts are usually made in course of project execution to avoid errors in communicating with stakeholders, all project officials communicate in way that allows for no error in the

course of executing project execution, no officials in this project have been found to be guilty of presenting distorted results for personal gain, transactions are always free from distortion of records, accurate construction ideas are usually presented to the stakeholders and that stakeholders have not complained of any variances between what is proposed and actually done. This shows that management is doing all it can to avoid errors and distortions in communication and project participants are aware of their roles regarding proper and adequate communication and how important those roles are to ensure good results on the project in which they have participated in. However some respondents disagreed on the fact that there are no complaints and errors are made by the project officials during execution process. This could mean that there is concealment of information, and communication is not given the attention it deserves during project execution. Probably stakeholders are not sharing information freely and are disappointed with the way communication of the key issues is handled.

5.2.2 Contextual Perspective and Construction Project Performance

The results showed that the Contextual Perspective, is positively related to the Project delivery Performance($r = .542^{**}$, $p < .001$). Similarly, results indicated that the Contextual Perspective can predict up to 29.4% of the variance in the Project Performance. This implies that improving on the non verbal and verbal cues will probably lead to an improvement in project performance in terms of timely delivery, within cost and to the required standard/workmanship.

The general findings on the descriptive results revealed respondent's overall agreement that construction firms use written letter messages to communicate value and the necessary details to stakeholders, meetings are sometimes held with clients to address them about key issues of their projects, communication using the internet has been lately added to the tools of

conducting business and that stakeholders are given freedom to voice their opinions about the progress of any construction project. This clearly shows that project participants are aware of the right communication strategies that are needed to ensure good performance during the delivery process and thus meet the expectations of the clients. Encouraging stakeholders to directly air their views is a good indicate towards achieving excellent project performance.

However, there was general uncertainty among the respondents if the Stakeholders' failure to praise and thank the construction team after completion of a new project and stakeholder's avoidance of meetings is understood to mean dissatisfaction or a reflection of an objection to offer made. This shows lack of feedback which could mean that some stakeholders either do not know how important their views are to the project performance or lack of interest in the project.

5.2.3 Negotiated Perspective on the Construction Project Performance

The results indicated that there exist a significant and positive relationship between the Negotiated Perspective and Project Performance of ($r = .442^{**}$, $p < .001$). The regression analysis further indicated that the negotiated perspective is a significant predictor of Project Performance (19.5%); implying that an improvement on the negotiated perspective interms knowledge generated and message appropriateness will result into good project performance.

General results from the descriptive indicated that respondent's generally agreed to the fact that appropriate project proposals are normally presented to the stakeholders, project officials are knowledgeable about communicating value to the stake holders, all members on projects have the right experience and qualifications necessary for communicating the project progress and justifying necessary steps and that training is often held to enhance stakeholder's knowledge about the projects. This shows that appropriate measures are in place to ensure that improved project performance is achieved. The project team should have

relevant knowledge and be aware of the appropriate communication strategies that enhance performance during implementation. Results also indicate lack of appropriate skills and competence for the construction projects to perform which suggest the need for the project team to continuously up grade.

5.3 Discussion of Study Findings

5.3.1 Technical Perspective and Construction Project Performance

The objective was to establish the effect of contextual perspective on construction project performance in Kampala and Wakiso Districts. The findings showed a significant positive relationship and that technical perspective is an important factor in predicting construction project performance.

The study revealed that efforts are usually made in course of project execution to avoid errors and distortion when communicating with stakeholders and that the project team are aware of the means of eliminating errors and distortions and strategies are usually put in place to eliminate the same. These findings are in agreement with Burke (2003). He observed that to make communication effective, and minimise errors and distortions, careful thought has to be given to the choice of media and message, how the message will be delivered, who will deliver it and the best writing, or presentation style to use based on the personality of the person you wish to communicate with.

This further agrees with Butler (1982) who observed that the operational procedures and other management activities associated with the design, construction and subsequent performance of a building rely a great deal on how information is being transmitted between the various participants of the building team and for this reason, means of communication should not only clarify issues but must also attempt to bring harmony to the entire work process and also foster co-operation between the parties to ensure maximum contribution

from members. Victorian Quality Council (2010) indicated that effective communication, which is timely, accurate, complete, unambiguous, and understood by the recipient, reduces errors and results in an industry.

5.3.2 Contextual Perspective and Construction Project Performance

The study objective was to find out how contextual perspective can affect construction project performance in Kampala and Wakiso Districts. The findings show a significant positive relationship and that contextual perspective is an important factor in predicting construction project performance.

The major findings revealed respondent's overall agreement, that construction firms use written letter messages and internet to communicate value and the necessary details to stakeholders. And also meetings are sometimes held with clients to address them about key issues concerning the progress of the project where stakeholders are encouraged to voice their views. This clearly shows that project participants are aware of the right communication strategies that are needed to ensure good performance during the delivery process and thus meet the expectations of the clients. Encouraging stakeholders to directly air their views is a good indicator towards achieving excellent project performance. This is consistent with Kotzé et al (1999) who observed that verbal skills are among those most valued by employers to improve professional work performance. This further agrees with Emmitt & Gorse (2007) who observed that to engage in a meaningful communication we need to build on information and develop a context supported by cues and clues and guides us to use subsets of knowledge and help us to link information together. In practice offering information, opinions, beliefs and asking questions help to develop an understanding of the other person's knowledge and beliefs as does examining and analyzing the verbal and nonverbal information presented (Emmitt & Gorse, 2007). This is further supported by Suat et al (2012) who observed that

despite the advancements in communication technologies, construction project participants mainly prefer face to face communication. Face to face communication also allows practicing non-verbal communication. Due to its highly diverse population, construction communication needs to include high level of non-verbal communication in order to overcome the challenges associated with diverse backgrounds. This is supported by Dainty *et al* (2006) who observed that the culture of communication shows a reality of conflicts and lack of mutual respect and trust therein. Therefore, the larger context of communication which focuses on both nonverbal cues as well as verbal content must be well understood to create meaning and therefore have an impact on project performance. This is consistent with Mead (1934) and Blumer (1972) who stressed communication as symbolic interaction that create meaning and one's sense of both self and society. The information must be technically satisfactory to be able to create meaning and generate appropriate response between the sender and the receiver.

5.3.3 Negotiated Perspective and Construction Project Performance

The study objective was to find out how negotiated perspective can affect construction project performance in Kampala and Wakiso Districts. The findings show a significant positive relationship and that negotiated perspective is an important factor in predicting construction project performance.

Results indicate that appropriate measures are in place to ensure that improved project performance is achieved. The project team should have relevant knowledge and be aware of the appropriate communication strategies that enhance performance during implementation. Mistry *et al* (2008) observed that effective communication occurs only if the receiver understands the exact information or idea that the sender intended to transmit. Failure to exchange information and ask questions will decrease a person's ability to use the others

knowledge and thus considerably hinders effective communication hence poor project performance (Brownell et al. 1997) as cited in (Emmitt & Gorse, 2007).

According to Burke (2003), project communication includes general communication between team members but is more encompassing and must be appropriate and well negotiated upon to create meaning. Dainty et al. (2006) further supported this argument and revealed that the fundamental components contributing to the construction industry's poor performance are its ineffective communication practices, its organizational fragmentation and lack of integration between design and production processes.

The nature of the relationship established through communication will affect the actor's congruent understanding and hence the actor's ability to use information to aid decision making (Emmitt & Gorse, 2007). The project team should continuously up grade to bridge the gap of appropriate skills and competence for the construction projects to perform. Therefore, good communication practices such as appropriate messages are central in improving construction project performance and as such stakeholders especially project participants should ensure that gaps that may exist in the course of communicating are properly bridged.

5.4 Conclusions

The following conclusions have been drawn from the study findings.

5.4.1 Technical Perspective and Construction Project Performance.

Since the findings showed a significant positive relationship between technical perspective and construction project performance, it implies that technical perspective is an important

factor in predicting construction project performance. Therefore, an improvement on the technical aspects of communication can greatly improve construction project performance.

Lack of proper construction details greatly influences project performance. It is therefore important that that great attention is given to the level of details required especially at the planning stage (development of plans, specifications, BoQs and other details) as these act as communication tools to the project implementers, reduces queries and greatly improves on performance.

5.4.2 Contextual Perspective and Construction Project Performance.

The significant positive relationship between contextual perspective and construction project Performance indicates that contextual perspective is an important factor in predicting construction project performance. The more contextual a perspective is emphasized the better the performance of construction projects. It is therefore, important to ensure that the contextual aspects of communication are well addressed during project implimentation.

The use of both verbal and nonverbal communication during construction project delivery positively affects performance. It is therefore important that project participants embrace both verbal and non-verbal communication as they complement and minimise any likely misunderstandings that may affect the progress of the project.

5.4.3 Negotiated Perspective and Construction Project Performance.

The significant positive relationship between negotiated perspective and construction project performance proves that negotiated perspective is an important factor in construction project performance. Negotiated perspective therefore should be given uttermost attention during construction process if construction projects are to be successful.

Training and development is essential in producing of competent and skilled personnel for generation of appropriate project proposals which are knowledge based to Clients. This minimises variances during project delivery and greatly influences performances. It is therefore important to note that there is need for continuous training and development of personnel in construction firms as this will improve on project performance.

5.5 Recommendations

As previously pointed out earlier in literature, one of the most important tasks of the Project Manager (and indeed all key stakeholders) is to ensure optimum project delivery. Within the limitations outlined, this research has provided some direction on what an optimum project delivery ought to be, and some indication of aspects where there is potential for improvement in during construction. A number of recommendations can thus be put forward to provide some direction for improvement in this regard as follows.

5.5.1 Technical Perspective and Construction Project Performance

The study recommends that stakeholders especially project participants' should focus at ensuring the elimination of challenges that create errors and distortions in information transfer. This can be done through encouraging participation of all stake holders and creating awareness about the importance of communication and its impact on performance of projects. It is further recommended that more time is devoted at improving on information required in implimentation of projects interms of providing of adequate and proper details that would eliminate unnecessary delays, cost and improve on workmanship during construction.

5.5.2 Contextual Perspective and Construction Project Performance

It is recommended that contractors and indeed all stake holders devote more effort and resources towards communication practices in their CPOs. In practical terms this means putting more effort and time into improving the communication needs of their firms, emphasising teamwork, promoting free and open communication on site, emphasising timely delivery of instructions, having regular meetings, communicating using the internet, site tidiness, recognising good performance, keeping operatives informed of project developments, encouraging greater workforce participation in planning and decision-making, and encouraging communication between managers and operatives.

It is also recommended that key stakeholders especially project owners take interest in following up the progress project, providing timely information, participating in meeting and ensuring that key issues that require utmost attention are addressed on time to avoid any chances of delays and other disadvantages that may come with it. In addition, clients should always voice out their opinion regarding the progress of the project as this could potentially improve on performance.

5.5.3 Negotiated Perspective and Construction Project Performance

To improve on knowledge generated and message appropriateness, and overall performance, it is important that Contractors devote more effort preparing proper project proposals and insuring that project participants are knowledgeable about communicating value to the stake holders. This means devoting more time and resources in training and development of project participants to enhance their knowledge and skills in project management aspects.

5.6 Limitations of the Study

Lack of cooperation by some respondents who thought the study was on a fault finding mission. The researcher had to explain this over and over again to convince them to participate in the exercise.

The research was aimed at how communication with technical, contextual and negotiated perspectives affects construction project performance. These are not the only factors that affect performance on a construction project.

5.7 Contributions of the Study

The findings of the study can be used to improve construction project performance in Uganda and beyond. Project participants during the delivery process of the construction projects can use the finding to manage performance for better and improved outcomes. The study findings can also be used by other scholars in underpinning their researches in areas related to construction performance and communication.

5.8 Areas for further research

This research has revealed a number of significant associations between the dimensions of communication and the project performance outcomes that might be indicative of the effect of communication, although causality has not actually been established. To confirm and further validate these associations, future research in this genre must endeavour to collect data from a bigger sample to increase the precision of the analysis and to enable firmer conclusions to be drawn from the theories. A key recommendation therefore is that for future research in this domain, rather than addressing several dimensions of communication superficially, researchers must identify a specific

dimension of communication and investigate this to great depth to unearth the underlying assumptions and beliefs that inform a particular direction.

It has been found in this research that a significant and positive relationship exist between the three perspectives under communication and project performance corroborating the finding in the three perspectives as indicated in the literature that communication greatly influences the performance of projects on construction sites. Unfortunately beyond pointing out the association between the three perspectives and poor performance, these studies do not go further to inquire into the underlying causes of this relationship and how it can be mitigated. Since project performance is the most important objective on construction projects, it is recommended that further research be undertaken to dig deeper into the role of communication practices in undermining efforts to improve performance. Given that communication is an inevitable part of construction; such research will represent a significant contribution to knowledge.

As indicated in the previous chapters, the research context was limited to construction projects in Uganda. It is important to note that there may be significant differences in the findings if this study is replicated in other countries. It will therefore be interesting and useful for benchmarking purposes to find out if differences do exist and the effects if at all they exist on project outcomes. It is therefore recommended that the study is replicated in other countries to allow for comparative analysis to be undertaken.

REFERENCES

- Abuja (2001) *Research methods. New Delhi: Rawat publications.*
- Amin, M.E (2005). *Social Science Research: Conception, Methodology and Analysis*
Kampala: Makerere University Press
- Ankrah, N. A. & Proverbs. D. (2005): *A framework for measuring construction project performance: overcoming key challenges of performance measurement, in Khosrowshahi, First Edition: Proceedings of the 21st Annual ARCOM Conference.* London, ARCOM.
- Ankrah, N. A. (2003): *A Comparative Study of the Organizational Cultures of Architectural Practices and Construction Firms*, M.Sc. thesis, University of Strathclyde, Glasgow.
- Armstrong, .M. (2007): *Performance measurement, key strategies and practical guidelines, 3rd page publishers.*
- Barifaijo, K. M. Basheka, B & Oonyu, J (2010, *How to Write a Good Dissertation/Thesis: A Guide to Graduate Students (1st Ed).* Kampala: The New Vision Printing and Publishing Company Ltd.
- Bank of Uganda; *Annual Supervision Report*; December 2010; Issue No. 1
- Bernice Hurst (1991): *The hand book of communication Skills.*
- Beene, L.E, Kurtz, L.D and bloc, J.R (1997): *Contemporary business communication prentice Hall International.*
- Blumer, Herbert (1972): *Symbolic Interactions.* Englewood Cliffs, N.J.: Prentice-Hall.
- Cain, C. T. (2004): *Performance measurement for construction profitability,* Victoria, Australia, Blackwell Publishers.
- Conrad, C. (1994): *Strategic Organizational Communication - Toward the Twenty-First Century.* Fort Worth, TX: Harcourt Brace College Publishers.

- Cronen, Vernon E. (1991): *Coordinated Management of Meaning Theory and Post enlightenment Ethics*. In *Conversation on Communication Ethic*, Karen Joy Greenberg (ed.), pp. 21-53. Norwood, N.J.: Ablex.
- Cronen, Vernon E. (1995): *Coordinated Management of Meaning: The Consequentiality of Communication and the Recapturing of Experience*. In *The Consequentiality of Communication*, Stuart Sigman (ed.), pp. 17-65. Hillsdale, N.J.: Lawrence Erlbaum Associates.
- Cruse, N., Green, R., Mills, B. and Toner, P. (1999): *Constructing the future: a study of major building construction in Australia*. Employment Studies Centre, University of Newcastle.
- Cheng, E., H. Li, P. Love, and Z. Irani (2001): *Communication in Construction Theory and Practice*. Routledge. ISBN 0-415-32723-7.
- C.Hendrickson (1998), *Project management for construction; fundamental concepts for Owners, Engineers, Architects and Builders*. Department of Civil and Environmental Engineering, Carnegie Mellon University, Pittsburgh, PA 15213
- Dainty, A., Moore, D., and Murray, M. (2006): *Communication in Construction; Theory and Practice*. London & New York: Taylor and Francis, 2006.
- Dawson. C (2002). *Practical Research methods: A User friendly guide to mastering research techniques and projects*. New Delhi: UBS publishers.
- Drenth, P.J.D., H. Thierry, and C.J. deWolff (eds.). 1998. *Handbook of Work and Organizational Psychology* (2nd Edition). East Sussex: Psychology Press Ltd.
- Diya. J.S and Sanpe, J.B (2006): *Motivation of scientists in a government research institute: Scientists' perceptions and role of management*. *Management decision. Journal*, Vol.44 No. 10, PP.1325= 1543.
- Economic Watch (June 2012): *Construction Industry trends* (http://www.economywatch.com/world_industries/construction/world.html)

- Encyclopedic Article: *strugeen*. T(1995) *science fiction*. In *the encyclopedia Americana* (Vol. 24, pp.390.392) Danbory, CT. Grolier.
- Emmitt, Stephen; Gorse, Christopher A. (2003). *Construction communication*: University of Twente.. Wiley-Blackwell. ISBN 1-4051-0002-8
- Fried, Y., & Slowik, L. H. (2004). Enriching goal-setting theory with time: An integrated approach. *Academy of Management Review*, 29(3), 404-422. Retrieved October 3, 2009, from ABI/INFORM Global. (Document ID: 657136811).
- Government of Uganda (2010/11): *Annual Performance Report*
- Handford Michael and Petr Matous (2011), *Lexicogrammar in the international construction industry: A corpus-based case study of Japanese-Hong-Kongese on-site interactions in English*, *English for Specific Purposes*, Volume 30, Issue 2, Pages 87-100.
- Hall, A. J., Gunnery, S. D., Andrejewski. S. A. (2011): *Nonverbal Emotion Displays, Communication Modality, and the Judgment of Personality*, *Journal of Research in Personality*, no.45, 77-83
- Harold F. O'Neil Jr, Michael Drilling (1994), *Motivation: Theory and Research*, Psychology Press, ISBN, 0805812873, 9780805812879.
- Hendrickson C (1998): *Project Management for Construction; Fundamental Concepts for Owners, Engineers, Architects and Builders*, Department of Civil and Environmental Engineering, Carnegie Mellon University, Pittsburgh, PA 15213 Copyright C.
- Henry.L, Kigundu B.N, and Tindiwensi D (2011): *An investigation into the causes of construction accidents in Uganda*. Makerere University, Kampala-Uganda
- Hill, C.J. 1995, 'Communication on construction sites', *Proceedings of 11th Annual Conference of Association of Researchers in Construction Management*, September 18-20, University of York.

- Hoezen, M., Reymen, I., Dewulf, G. (2006). "The Problem of Communication in Construction." (paper presented at the CIB W96 Adaptables Conference, Eindhoven, Netherlands, July 3-5, 2006).
- John Butler (1983): *Elements of Administration for Building Students*, Third Edition, 17-21
Conway street, London: Hutchinson & Co.(Publishers) Ltd
- Journal of corporate Real estate (2007): *The concept of workplace performance and its value to management. Vol. 6 No.2, PP.133-148 Vischer, C.J.*
- Katende J, Alinaitwe H and Tindiwensi D (2008): *A study into factors affecting construction industry in Uganda, Second International Conference on Advances in Engineering and Technology*, Makerere University
- Kearsley, G. (1999). Cognitive dissonance: *Theory into Practice (TIP) Database [online]*
Available: <http://www.gwu.edu/~tip/festinge>
- Kotzé BG1, Verster JJP2 and Berry FH3 1(2009), *Department of Quantity Surveying and Construction*, University of Free State.
- Lazega, E. 1992. *The Micropolitics of Knowledge – Communication and Indirect Control in Workgroups*. New York: Aldine de Gruyter.
- Locke, E.A., & Latham, G.P. (1990): *A theory of goal setting and task performance*. Englewood Cliffs, NJ: Prentice-Hall.
- Locke, E.A. & Latham, G.P. (2002): *Building a practically useful theory of goal setting and task motivation: A 35-year odyssey*. American Psychologist.
- Locke, E.A., & Latham, G.P. (2005), *Goal setting theory: Theory building by induction*. In K.G. Smith & M.A. Mitt (Eds.), *Great minds in management: The process of theory development*. New York: Oxford
- Locke, E. A., & Latham, G. P. (2006): *New directions in goal-setting theory*. Current Directions in Psychological Science, 15(5), 265-268. doi: 10.1111/j.1467-8721.2006.00449.x

- Loosemore, M., Al Muslmani, H. S. 1999. Construction project management in the Persian Gulf: intercultural communication *International Journal of Project Management*.
- Loosemore, M., Patrick, L. (2002) "Communication Problems with Ethnic Minorities in the Construction Industry." *International Journal of Project Management*.
- Manning, P.K. (1992): *Organizational Communication*. New York: Aldine de Gruyter.
- Mead, George Herbert. 1934. *Mind, Self, and Society*. Chicago: University of Chicago.
- Mistry K., Jagers J., Lodge A., Alton M., Mericle J., Frush K., Meliones J. (2008): Using Six Sigma Methodology to Improve Handoff Communication in High Risk Patients. In: *Advances in Patient Safety: New Directions and Alternative Approaches*.
- Murphy, H.A., Hildebrandt, H.W., and Thomas, J.P.(1997) *Effective Business Communications*.7th edition. McGraw-Hill/Irwin.
- Mugenda, O. M. & Mugenda, A. G. (1999). *Research Methods: Quantitative and Qualitative Approaches*. Nairobi: African Centre for Technology Studies
- Mugenda, O. M. & Mugenda, A. G. (2003). *Research Methods: Quantitative and Qualitative Approaches*
- Mugenda O.m and Mugenda A.G (2003). *Research methods: O.M and qualitative approaches (Rev. ed)*. Nairobi, Africa Centre of Technology studies (ACTS)
- Murphy, H.A, Hildebrandt, HN and Thomas, J.P (1991) *effective business communication, 7th ed, Boston: MC Grow-hill*.
- Netherlands Journal of facilities Management, Vol.22, No. 9/10,PP.240-246.
- O'Neil Jr & Drillings, M. (Eds.). (1994): *Motivation: Theory and research*. Hillsdale, NJ: Lawrence Erlbaum Associates
- Oladapo, A.M. (2000): *Project Performance in a Changing Environment*. AACE *International Transactions, INT09.1-INT09.10*.

- Oluwatayo, A and Amole, D (2011): *Architectural firms: workforce, business strategy and performance*, *Australasian Journal of Construction Economics and Building*
- Oso, Y.N, and Onen, D (2009) “ *A General Guide to writing research proposal and report.*
- Pearce, Barnett. 1994. *Interpersonal Communication: Making Social Worlds.* New York: Harper Collins.
- Pearce, Barnett. (1995): *A Sailing Guide for Social Constructionists. In Social Approaches to Communication.* Wendy Leeds-Hurwitz (ed.), Chapter 5. New York: Guilford.
- PPDA Workshop, (2008): Challenges Facing the construction Sector in Uganda Held Imperial Royale Hotel, Kampala.
- Proverbs, D.C. and Holt, G.D. (2000) A Theoretical Model for Optimum Project (Time) Performance Based on European Best Practice. *Construction Management and Economics.*
- Project Management Institute (PMI) (2004) *A Guide to the Project Management Body of Knowledge.* 3rd Ed. Newton Square, Pa: PMI.
- Project Communication Handbook (September,2012), Third Edition
- Rory Burke (2003) Forth Edition: *Project Management, planning and control techniques;* Burke Publishing
- Sahu.R.K, (2007). *Performance management systems New Delhi, Excel printers.*
- Sekarans, U. (2003), *research methods for business. A skill building Approach, 4th, edition,* John Wileys and sons. Inc.
- Shannon, Claude E and Warren Weaver. (1949): *The Mathematical Theory of Communication.* Urbana, IL: University of Illinois Press.
- Sorrentino, D.M. (2006): *The seek mentoring program, an application of the goal-setting theory.* Journal of College Student Retention.

- Soetanto, R., Proverbs, D. G. & Cooper, P. (2002): *A tool for Assessing Contractor Performance, Journal of Construction Procurement.*
- Soetanto, R., Proverbs, D. G. & Holt. G. D. (2001): *Achieving quality construction projects based on harmonious working relationships: clients' and architects' perceptions of contractor performance, International Journal of Quality and Reliability Management.*
- Social Science Research: *conception mythology and analysis. Kampala. Makerere University Policy.*
- Smith, K.G., & Hitt, M.A. (2005). *Great minds in management: the process of theory development. New York, NY: Oxford University Press.*
- Steinberg, Sheila(1997). *Introduction to communication. CapeTown. The Rustica press.*
- The new vision news paper, July 6th 2002 page 6
- Suat G, Gulsen. S, & Sevgi.Z (2012): *Non-Verbal Cues: Improving Communication in Construction Projects, American Society for Engineering Education*
- Takim, R and Akintoye, A (2002): *Performance indicators for successful construction project performance. In: Greenwood, D (Ed.), University of Northumbria.*
- Takim, R. & Akintoye, A. (2002): *Performance indicators for successful construction project performance, in Greenwood, D. J. (Ed.) 18th Annual Association of Researchers in Construction Management (ARCOM) Conference, Newcastle-upon-Tyne..*
- Terziovski, M. (2006), *“Quality Management practices and their leadership with customer satisfactions and productivity improvement “Journal of Management Research News, Vol. 29.*
- Thomas N. Duening, J.m Ivancevich (2003): *Management principles and Guidelines, Third Edition, New Delhi, Atomic Dog Publishing USA.*

- Thomas, S.R., Tucker, R.L., Kelly, W.R. 1998, 'Critical communication variables' in *Journal of Construction Engineering and Management*. Vol. 124, No. 1.
- Tindiwensi D. (2006): *An investigation into the performance of the Uganda construction industry before and after liberalization (1976-2002)*, Unpublished PhD Thesis, Makerere University.
- Tone, Konelio and Skitmore, Martin (2004): *Construction project management in samoa: a survey of intercultural communication*. *Journal of Building and Construction Management*.
- TZabbar, D.Vadi, Y& Baruch Y. (2003). *Organizational career management in Israel*.
- Turner, R.J. (1993). *The Handbook of Project-Based Management*. London: McGraw-Hill Companies.
- U.S. Army. (October 1983): *Military Leadership* (FM 22-100). Washington, DC: U.S. Government Printing Office.
- Vander of Voordt, J.M (J.M, (2003): *productivity and employee satisfaction in flexible work places*
- Victorian Quality Council Secretariat(July 2010): *Promoting effective communication among healthcare professionals to improve patient safety and quality*. Published by the Hospital and Health Service Performance Division, Victorian Government Department of Health, Melbourne, Victoria.
- Wang, T. H. (1994). *The Malaysian Construction Industry, its trend of growth-past, present & future*, *The Master Builders Journal*, pp 3-7
- Walsh, K. and Sawhney, A. (2002) *International comparison of costs for the construction sector: towards a conceptual model for purchasing power parity*, The World Bank Group.
- Walker, D. H. T. (1995): *An investigation into construction time performance*", *Construction Management and Economics*.

Website:<http://www.brasley.educ/compulsory/psiphi/d59/ep/503r.html>. American
psychological association's official site

White, K.W., and E.N. Chapman. 1996. *Organizational Communication – An Introduction to Communication and Human Relations Strategies*. Needham Heights, MA: Simon and Schuster Custom Publishing.

White, K.W., and E.N. Chapman. (1996): *Organizational Communication - An Introduction to communication and human relations strategies*. Needham Heights, MA: Simon and Schuster Custom Publishing.

Xiao, H, Proverbs. D, Shaw. T & Holt G. (2000): *A new approach to comparing the performance of contractors internationally*, Association of Researchers in Construction Management, Glasgow.

APPENDIX A: QUESTIONNAIRE

Dear Respondent,

I am **Tayebwa Duncan** a student of Uganda Management Institute (UMI) taking masters degree in management studies. I am undertaking this research as a partial fulfillment for the award of a Master Degree in Management Studies of Uganda Management Institute. The research aims to deepen understanding of the Ugandan construction project performance, and the role communication plays in determining project performance outcomes. The findings of this research will be utilised in the development of a tool to help Contractors and other project participants assess their communication practices, identify orientations incompatible with good performance, so that steps can be taken to initiate and manage communication improvements.

Such a study requires input from industry experts whose contribution will not only help make this research successful, but will also ensure that construction industry perspectives are central to the research and that the outcomes are relevant and responsive to the needs of construction organisations. It is in the light of this that I am seeking your contribution, as a construction industry expert, to this research by way of completing the attached form which will take not more than five minutes of your time. In return for your assistance, the findings of this survey will be fed back to you for your consideration and further input.

Thank you very much for your time and cooperation.

Section A: Project Firm Characteristics

A1. Name of the Construction firm.....

A2. How long has the your firm been operating

Below 5 yrs	05 – 10 yrs	Over 10 yrs

A3. How many Employees does your Construction firm have?

Less than 10	11-30	Over 30

A4. What is the nature of ownership of the Project?

Local	International

Section B: Institution Staff Characteristics

B1. Gender Male Female

B2. Age Group

21 – 30 yrs	31 – 40 yrs	41 – 50 yrs	Over 50 yrs
1	2	3	4

B3. Highest level of education

Diploma	Degree	Post Graduate	Other (Please specify)
1	2	3	4

B4. How long have you been working in the construction industry?

Less than 3 yrs	4 – 6 yrs	7 – 8 yrs	More than 8 yrs
1	2	3	4

B5. What is your designation in the firm or company?

Architect	Civil Engineer	Quantity Surveyor	Clerk of Works	Other
1	2	3	4	5

Section C: Descriptive variables

For the following statements, please indicate the extent of your agreement or disagreement by ticking the appropriate number that best represents your opinion from the scale provided.

Strongly Agree (SA) = 5, Agree (A) = 4, Neutral (N) = 3, Disagree (D) = 2, Strongly Disagree (SD) = 1

Technical Perspective

Serial No.		Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
1.	This project has efforts to avoid errors in the course of communicating transactions with stakeholders	1	2	3	4	5
2.	There are error free communications and recordings in this project	1	2	3	4	5
3.	There are no complaints in this project about errors made by the project officials in marketing its value	1	2	3	4	5
4.	All project officials communicate in a way that allows for no error in the course of conducting their business	1	2	3	4	5
5.	No officials in this project have been found to be guilty of presenting distorted results for personal gain	1	2	3	4	5
6.	Our transactions are always free from distortion of records In the course of transacting business with stakeholders	1	2	3	4	5
7.	We normally present construction ideas to the stakeholders which are accurate	1	2	3	4	5
8.	stakeholders have not complained of any variances between what we propose to do for them and what we actually do	1	2	3	4	5

Contextual perspective

		Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
1.	We use written letter messages to communicate value and the necessary details to stakeholders	1	2	3	4	5
2.	Meetings are held with clients to address them about key issues of their projects	1	2	3	4	5
3.	Communication using the internet has been lately added to the tools of conducting business in this project	1	2	3	4	5
4.	Stakeholders are given freedom to voice their opinions about the progress of any construction project	1	2	3	4	5
5.	Stakeholders' failure to praise and thank the construction team after a new project, is understood to mean dissatisfaction	1	2	3	4	5
6.	Stakeholders' avoidance of meetings is taken as an objection to the offer made	1	2	3	4	5

Negotiated Perspective

		Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
1.	The right and appropriate project proposals are normally presented to our stakeholders.	1	2	3	4	5
2.	Appropriate costing and associated expenses are normally well negotiated by the project officials.	1	2	3	4	5
3.	Project officials are knowledgeable about communicating value to the necessary stakeholders.	1	2	3	4	5
4.	All members in this project have the right experience and qualifications necessary for communicating the project progress and justifying necessary steps.	1	2	3	4	5
5.	Trainings are often held to enhance the stakeholder knowledge about the projects.	1	2	3	4	5
6.	Our project proposals to the stakeholders have always been considered to be befitting the situation at hand	1	2	3	4	5

Performance of Construction Projects

Serial No.		Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
	Timeliness					
7.	Poorly presented information on site creates a problem in timely delivery of Construction Project	1	2	3	4	5
8.	Site meetings lead to a faster flow of information during a construction project	1	2	3	4	5
9.	Channels of communicating must be applicable to all members of the construction team.	1	2	3	4	5
10.	Timely issuance of instructions will affect completion period of the project	1	2	3	4	5
11.	Face-to-face meetings are the most effective means of communicating and prevents unnecessary delays	1	2	3	4	5
12.	Incomplete and inaccurate drawings make construction more difficult and leads to unnecessary delays	1	2	3	4	5
	Project Cost					
1.	Incomplete and inaccurate drawings make construction more difficult, leads to cost overruns	1	2	3	4	5
2.	Mis-interpretation of contract drawings makes construction difficult and consequently leads to cost increases	1	2	3	4	5
3.	Lack of proper project supervision leads to increases project cost	1	2	3	4	5

4.	Poor coordination of site activities leads to time wastages and consequently increases the project cost	1	2	3	4	5
5.	Poor site layout/organisation impacts negatively on the output and leads to cost increases	1	2	3	4	5
6.	Late dissemination of information will affect output on site negatively and often leads to cost increases	1	2	3	4	5
	Project Quality					
1.	Poorly drawn details often leads to mistakes and repetition of works which affects the workmanship	1	2	3	4	5
2.	Mis-interpretation of contract drawings makes construction difficult and consequently leads mistakes and reworks and this affects the workmanship	1	2	3	4	5
3.	Lack of proper project supervision leads to mistakes and this affects the workmanship	1	2	3	4	5
4.	Poor specifications will lead to mis-communication and this result into quality flaws	1	2	3	4	5
5.	Poor communication systems leads to work repetition which affects the quality of work	1	2	3	4	5
6.	Poor and distorted information affects the level of work done on site	1	2	3	4	5

APPENDIX B: INTERVIEW GUIDE

Section A

General information

1. Company Name:.....
2. Position:.....
3. Qualification.....
4. Number of years with the firm:.....
5. Year of existence/age of firm:.....
6. Gender:.....
7. Work experience:.....

Section B

Communication and timely delivery of Construction Projects

8. In your opinion, does communication during construction project delivery affect completion time?
9. What major communication challenges are faced by the Contractors in Uganda that affect the completion time?
10. In your opinion, how can the above challenges be addressed?
11. Does your construction firm provide staff training in studies related to communication: if not why?

Communication and its effect on cost of during Construction Projects delivery

12. In your opinion, does communication during construction project delivery have an impact on project cost?

13. What major communication challenges are faced by the Contractors in Uganda that affect the project cost?
14. In your opinion, how can the above challenges be addressed?
15. Does your construction firm provide put in place measure to mitigate the communication challenges that affect project cost? If not why?

Communication and its effect on quality of during Construction Projects delivery

16. In your opinion, does communication during construction project delivery affect the quality outcomes of the project?
17. What major communication challenges are faced by the Contractors in Uganda that affect the project quality?
18. In your opinion, how can the above challenges be addressed?
19. Does your construction firm provide put in place measures to mitigate the communication challenges that affect project quality? If not why?

Thank you!

APPENDIX C: INTRODUCTION LETTER



Telephones:

256-41-4259722 /4223748 /4346620
256-31-2265138 /39 /40
256-75-2259722

Telefax:

256-41-4259581 /314

E-mail:

admin@umi.ac.ug

UGANDA MANAGEMENT INSTITUTE

Plot 44-52, Jinja Road
P.O. Box 20131
Kampala, Uganda
Website: <http://www.umi.ac.ug>

Your Ref:

Our Ref: G/35

05 December 2012

TO WHOM IT MAY CONCERN

MASTERS IN MANAGEMENT STUDIES DEGREE RESEARCH

Mr. Duncan Tayebwa is a student of the Masters Degree in Management Studies of Uganda Management Institute 25th Intake 2011/2012 specializing in Project Planning and Management, **Reg. Number 11/MMSPPM/25/098.**

The purpose of this letter is to formally request you to allow this participant to access any information in your custody/organisation, which is relevant to his research.

His Research Topic is: ***"The Effect of Communication on the Performance of Construction Projects in Uganda"***

A handwritten signature in blue ink that reads 'Benon C. Basheka'.

Benon C. Basheka (PhD)
HEAD, HIGHER DEGREES DEPARTMENT

APPENDIX D: FIELD RESEARCH LETTER



UGANDA MANAGEMENT INSTITUTE

Telephones:

256-41-4259722 /4223748 /4346620
256-31-2265138 /39 /40
256-75-2259722
256-41-4259581 /314
admin@umi.ac.ug

Telefax:

E-mail:

Plot 44-52, Jinja Road
P.O. Box 20131
Kampala, Uganda
Website: <http://www.umi.ac.ug>

Your Ref:

05 December 2012

Our Ref: G/35

Mr. Duncan Tayebwa
11/MMSPPM/25/098

Dear Mr. Tayebwa,

FIELD RESEARCH

Following a successful defense of your proposal before a panel of Masters Defense Committee and the inclusion of suggested comments, I wish to recommend you to proceed for fieldwork.

Please note that the previous chapters 1, 2 and 3 will need to be continuously improved and updated as you progress in your research work.

Wishing you the best in the field.

Yours sincerely,

Benon C. Basheka (PhD)

HEAD, HIGHER DEGREES DEPARTMENT

APPENDIX E: TABLE FOR DETERMINING SAMPLE SIZE.

N	S	N	S	N	S
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 and *S* is sample size.

Source: Krejcie and Morgan, 1970