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Mugo, K. M., & Moronge, M.

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INFLUENCE OF ORGANIZATIONAL COMMUNICATION ON IMPLEMENTATION OF BUILDING PROJECTS IN NAIROBI CITY COUNTY, KENYA

Mugo, K. M.,[*1] & Moronge, M.[2]

[*1] Msc. Scholar, Jomo Kenyatta University of Agriculture & Technology [JKUAT], Nairobi, Kenya
[2]PhD, Jomo Kenyatta University of Agriculture & Technology [JKUAT], Nairobi, Kenya

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ABSTRACT

The study sought to establish the influence of organizational communication on the implementation of building projects within Nairobi County. The research targeted participants in the building process since they were the main source of communication and systems of information flow. The specific variables included communication framework, communication culture, communication management strategies and the use of Information Technology in communication. A total of 80 ongoing building projects within Nairobi City County were considered. The information collected from the respondents was analyzed through SPSS software. The study revealed that clear roles in the project organization aim at building effective organizational communication and also that a well-documented communication plan was essential to enhance project implementation. The study revealed that availability of information transparency to all participants during the course of the project to increase level of synergy. The study revealed that appropriate communication channel ensured that information was relayed to right audience and improves team coordination and increase synergy and trust. The study revealed that the level of skill among personnel ensured accurate interpretation of information relayed and also that the use of modern and compatible IT software ensured clear and timely interpretation of information. The government should put into place bodies to facilitate council approvals and to ensure that information should not by-pass relevant project consultant. Also the study recommended that communication roles within the project lifecycle should be assigned from the WBS or OBS to avoid overlapping roles. The study recommended that consortiums should provide clear communication lines that aim to support all subordinates to facilitate information sharing and cohesion. The study recommended that stakeholders in the building industry should adopt most forms of communication among them written form (site instruction books), email, verbal instructions (telephone) and messaging including WhatsApp. The study recommended that the management of the consortiums should adopt modern technology to facilitate their operations and take staff on training on the technology adopted.

Key Words: *Communication Framework, Communication Culture, Communication Management Strategies, Information Technology*

INTRODUCTION

The building industry involves a multitude of interlinked tasks, work packages and stakeholders. Coordination between stakeholders, tasks is a pre-requisite to ensuring effective and efficient project implementation. Communication can be defined as the process of conveying opinion facts, attitudes and ideas between persons. It has further been defined as way of "establishing a common understanding from a shared meaning" (Zulch, 2014; Otter & Emmitt, 2008). Communication plays an integral role for almost all industries as it is closely associated to the success of a project. Construction project implementation requires a formal document that guides its execution. A formal project plan must facilitate communication among stakeholders, approved documentation on project scope, cost and schedule (Young, 2014). Communication planning can be viewed as a precaution that seeks to reduce undesirable outcomes hence increasing efficiency and eliminating confusion.

The initial communication between the client and the design team is at the design brief where client's requirements are written down in a formal document referred to as the brief (Kirkham, 2014). This document provides a benchmark in the development of design. Early stage briefing is vital since it ensures potentially expensive designs can be avoided by identifying all options at the outset. Once the project takes-off, the client is continuously put into perspective on the progress of the project with respect to the envisioned design. The contractor is required to present this information inform of reports or any documentation which act as a communication tool on how works are progressing on site. The 'construction boom', has increased the magnitude of projects consequently increasing the level of complexity thus requiring better planning and increased coordination among actors. Construction projects rely mainly on human social interaction and are considered as 'highly transient human systems'. This can further be linked to the adversarial nature common in construction projects (Bertelsen, 2003).

Modern building projects has seen establishment of global teams that are expected to work together from different location and time to achieve the project deliverables within set deadline (Binder, 2007). Effective management of mega projects rely on early planning and organizing, project controls based on indicators and stakeholder communication (KPMG, 2015). Advancement in technology has led to adoption of virtual communication to overcome global communication challenges. Organizations that operate projects abroad employ virtual communication tools shifting from traditional face-to face contact which is ultimately impossible due to geographical limitations. This has brought forth opportunities and new threats as result if differentiation in the communication culture and structure of the native countries. There is need to identify strategies for effectively employing virtual communication since as much as it is beneficial it faces challenges of barriers especially for projects in developing countries that are located in remote areas where it would be deemed inappropriate. The use of Network IT (NIT) facilitates cooperation in organizations through click of a mouse and has enables people to connect with each other across borders. The use of instant messaging has facilitated exchange of information between employees in different geographical location and time all over the world (Lawlors, 2007).

Construction administration in developing countries have been adopted from developed countries abroad which have different culture, level of

expertise in the approach to construction implementation. The choice of arrangements, processes and procedures with respect to documentation, participant relationships and level of authority follows a set of channel of communication. Rapid urbanization across major African cities poses a new challenges and opportunities for the developing building sector. The East African community has been experiencing a high influx from foreign contracting firms setting up operations within the region, majority of them Chinese. Little studies have been conducted on their approach to construction management and organizational culture. It has been noted people from different nations and organizational culture often impose different thinking, comprehension as a result of communicational diversity (Rozkwitalska, 2010). Culture determines whether an organization will be willing to support certain types of 'foreign' practices and this will often contribute to barriers at the interface influencing the performance of the company.

The building industry has different stakeholders that can be divided into 4 broad categories - Developers (investors), Contractors (implementers), Suppliers/manufacturers and consultants (designers and supervisors). Developers vary from individuals to large corporations to governments and local authorities. Contractors range from one-man concerns to large multi-national corporations (Hassin & Abdelnasor, 2006). The Kenyan construction industry has been recording an annual growth of above 10% from 2013 to 2016 and contributes to 7 % of the gross domestic product (GDP) according to an economic survey carried out by KNBS. This has been attributed to increased demand for housing facilities in major urban towns resulting to high investment in the real estate sector. Private buildings completed in 2015 increased by 12.6%, with residential buildings accounting for 87.8% of completed private buildings as indicated in the report.

A historical glance of Nairobi's architecture can be dated back to 1900's with the construction of Jevanjee market built by Indians when Kenya was a British protectorate. Other early establishments constructed around this period include Indian Bazar, Imenti House and Nairobi Railways club. Cultural integration played an important role in the early construction period as Arabs, Indians, British and Locals had to collaborate in these projects. The British had to train a few natives their foreign language to act as interpreters to eliminate communication barriers experienced in the execution of these projects. They would also adopt some form of non-verbal cues to assist in better encoding of information through use of signals to instruct workers.

Statement of the problem

Communication acts as a critical link between persons, ideas and any relevant information required to ensure project success (PMI, 2013). Construction process applies a sequential approach to project development, where consultants are tasked with the responsibility of coming up with the design that will be implemented in the construction phase. A project environment requires a manager to constantly sell ideas, methodologies to a group of actors from different cultures or professions (Zulch, 2014). Supervisors will generally spend 60% to 90% of their time communicating (Tyagi & Misra, 2012).

All industries, be it in Information Technology (IT), manufacturing or business has emphasized the significance of communications to project success. This is no exception to the construction industry which remains complicated due to its unique nature. The construction industry worldwide and

more specifically in developing countries is greatly manual and as such require close supervision to ensure that they are executed right at first hand to eliminate re-work, increased project cost and prolonged project duration (Callistus & Clinton, 2016).

According to a survey conducted by Construction Review listed lack of effective communication among the biggest problems facing modern construction projects that need urgent solution due to increased disputes and delays. A report by Ministry of Housing- Kenya shows that 48% of approved building projects in Nairobi County are still incomplete of which 10% of these projects have completely stalled (Kihoro, 2015). Conflicts are inevitable in projects whose impact can be time consuming, expensive and unpleasant as they can destroy the relationship between the contractual parties and also add cost to the contract (Muigua, 2012). Communication flaws arising typically at the client-consultant-contractor-subcontractor interfaces have not been documented in Kenya and are likely to be the root cause of many drawbacks in the building implementation process due to poor co-ordination.

Studies conducted on the performance of project teams established that "communication and contacts" cause 74% of the problems experienced in projects (Komi-Sirviö & Tihinen, 2005) as cited by (Muszynska, 2015). The principle of integrated design and construction involves effective communication at the task level between work point and design team. Integrated design and implementation can only be accomplished by resolving communication challenges that act an encumbrance to the flow of information. Given the importance of these principles the study sought to assess and fill gaps established from communication practices among actors in construction projects within Nairobi County.

Objective of the Study

The general objective of the project is to assess the influence of organizational communication on the implementation of building projects in Nairobi County, Kenya. The specific objectives were:-

- To establish how communication framework influence implementation of building projects in Nairobi City County.
- To establish how communication culture in organizations influence the implementation of building projects in Nairobi City County.
- To find out how communication management strategies in organizations influence the implementation of building projects in Nairobi City County.
- To investigate how use of Information technology (IT) influence the implementation of building projects in Nairobi City County.

LITERATURE REVIEW

Theoretical Review

Structuration Theory

The importance of human communication has been a key area of study over the past century (Richmond and McCroskey, 2009). Structuration theory is an organizational communication model developed by Anthony Giddens in the 1970's that analyzed structures, social systems as inseparable. Giddens observed that in social analysis, the term structure refers to "rules and resources in interaction" and more explicitly to the structure properties that allow the 'binding' of time and space in a social systems. As long as the codes of communication are organized hierarchically the system of expectations can be integrated symbolically (Leydesdorff, 2010). Giddens further uses the phrase rules and resources

alternatively when giving reference to structures which lacks physical existence or order (Ma, 2010). Rules refer to formulas of engagement between participants while resources refer to all the relevant personal traits, abilities, knowledge, and possessions people bring to an interaction.

Structuration is a process depending on structural properties that are "both medium and outcome of the practices they recursively organize" Agents, in an organization set up are governed by structures in the 'constitution' of society. Structures may also change, either incrementally or radically through structuration. In terms of group decision making, this means that the decision is not only affected by the structures of the group but at the same time has an effect upon the same rules and resources. In any implementation process the organization structure is a representative of interdependence between input and output. Organizations and other social actors are comparable to a network that configures their actions which may be referred to a social structure (DiMaggio, 1991). More recent studies have strived to establish the link between structures and its influence on actors (Powell & White, 2005).

Contingency Theory

The contingency theory is an organizational theory developed by Fred E. Fiedler which claims that there lacks a most suitable management approach that fits all organizations due to differing organizational characteristics. The suitable way to make decision is dependent on external and internal organization environment. Modern organizational theories suggest that an organization is a network that consists of two or more persons. An organization is developed through communication among different actors and may produce a distinct culture, environment or situation as result of these interactions. The Leadership style adopted must match to the right circumstance. Situational context describes the level of development of the organization and is dependent on the Leader-member-relation. This is viewed as the level of acceptance of leadership style to organizational hierarchies. Effective leaders need to have good interpersonal skills and rapport building skills which show concern and support to subordinates.

Leaders who provide a clear task structure are able to infuse strong synergy and hence ensure task completion and objective accomplishment. Authority is exercised with respect to the level of influence that they hold to their followers. The hierarchy organizational breakdown structure is responsible for assigning individuals with such power is often referred to as positional power. In a project environment this type of power determines the level of productivity of subordinates. Organization theories give insights on how teams can effectively transform shared vision to desired goals. The organizational theory is defined as groups of human subsets that are formed with the aim of achieving specific goals (Etzioni, 1964). Organization are organized in to these groups to increase probability of achieving project goals through improved co-ordination and is the main reason of their existence (Burton & Obel, 2004). The building project organization can be referred as the 'professional bureaucracy' due to highly skilled professionals, expert standards and high fragmentation (Horii, 2005).

Functional Perspective Theory

Normative models on team performance developed towards end of the 1980s and highlighted on important considerations which were to be taken into account in a bid improve team effectiveness (Hackman, 1987). Functionalism is a concept

credited to Emile Durkheim. Durkheim sought to establish how different societies survive and maintain stability. He posits that traditional societies were held together by mechanical solidarity. A society consisted of small homogenous groups which shared strong ties and performed similar tasks. A social group is integrated to form a stable system that transforms other groups. Functionalist perspective views communication as a factor that can be manipulated to give a number of outcomes. Communication allows information exchange and can act a catalyst for effectiveness, collaboration or coordination in an organization (Putnam, 1983). A theoretical approach points the influence of other perspectives that takes into account the receiver's role in the interpretation of communication (Taylor, 1993).

The functional perspective is a theoretical paradigm in team communication management (Dickson, Baltes, & Sherman, 2002; Hirokawa & Poole, 1996). This theoretical perspective centers on the role of communication in teams (Julian & Leatham, 1994). Communication plays an integral role in reaching decisions or arriving at solutions. Quality decision making in teams rely on ensuring effective communication which is referred as 'requisite function' Functional perspective gives an in-depth correlation between team performance and communication. A number of task-based factors compel team members to communicate with one another. Teams who have history communicate differently than unfamiliar ones. This is as a result of different communication profiles that are distinct in different teams. Input-Process-Output (IPO) was pivotal in the development of improving team performance (Salas et al. 2009). It suggested that inputs who include individual and group characteristics are controlled through action of moderators to influence the output in form of accomplishments or desired level of satisfaction. The theoretical matrix that underpins this theory is credited to classical work of Burrel and Morgan (1979) who conceived the social theory which was classified into four perspectives: functionalist, radical humanist, interpretive and radical structuralist. Between the 1960's to 1980's was more acknowledged in relation to organizational communication. Interpretive perspective laid more emphasis on organizations culture.

Information Theory

Information theory is the quantitative study of signal transmission, processing, utilization and extraction of information. It is primarily applicable to information technology and communication in human communication theory serves as metaphor for linear transmission between humans and senders and receivers. Information theory has historical significance contemporary theories of human communication rarely refer to it directly. Information is measure of uncertainty in a system of signals. Information theory states that the higher the information in a system, the greater the uncertainty. This is symbolized from a "chaotic organization" perspective where there is too much information to process and predict outcomes. If the organization was smaller with less information to keep track of prediction could be easier because the information level is lower. (Littlejohn & Foss, 2009)

The information processing view provides a framework to design effective organizations. The biggest challenge is to design an appropriate structure that matches organizational demands with information processing ability (Horii, 2005). From a neo-information processing view, individuals possess diverse skills with respect to information processing, and have preference to different communication channels and media. These individual actors' properties combined with team

building determine the information processing capacity of an organization, affecting organizational performance. Advancements in technology have forced managers to handle a complex environment where access, retrieval and dissemination of information play a vital role in project implementation. Development of new software and programmes which are accessible in modern markets improve the efficiency in information retrieval overall project communication in many industries. Such tools include modern planning programmes such as MS Project and CAD design (AUTOCAD) which have assisted in the production of information by designers and improved management of projects (Dainty et al., 2006). The adaptation of communication processes in construction projects have taken a longer period mainly as a result of its fragmented nature (Sjoholt, 2003).

Conceptual Framework

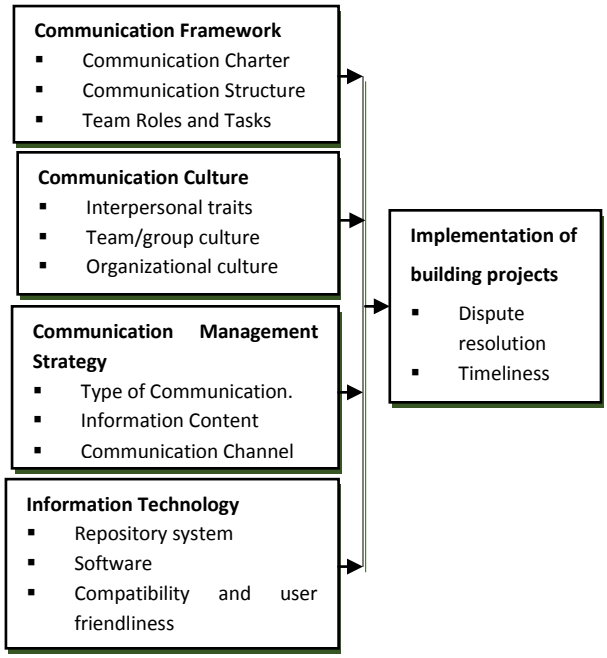

Figure 1: Conceptual Framework

Communication framework

A communication framework is a policy driven approach that gives information about a project. It defines a layout of how communication and interactions should occur in an organization. This assists the project team in building an effective communication strategy to enhance communication throughout project implementation.

A communications charter is regarded as a formal document that outlines a team's ideal communication methods. It helps to reduce unnecessary messages, saves people time, and improves the focus and efficiency of both team and individual communication and for better crisis management. A communications charter should document how the organizations communicates with its client or other organizations; how team members interact on social media; how people are expected or needed to reply emails and when they are not; how people engage in face to face communication; how to organize regular meeting and who is expected to attend; whether team members are expected to “dial in” remotely; what to include in the minutes and who is tasked to circulate them hence it is beneficial for projects with virtual teams. It offers additional clarification for the most preferred communication methods for teams working on the same project from different location and aids in providing regular feedback on project status reports. The communication process as established from the charter influences the quality of information. It is important to maintain steps in the communication process as this is where information gets distorted and damaging the effectiveness of the intended communication (Keyton, 2006).

An Organization Breakdown Structure (OBS) and Work Breakdown Structure (WBS) are incorporated

to represent the construction processes in relation to the communication systems. The WBS demonstrates the interrelationship of different project components and also aid in scheduling project activities or processes (Rajani and Shobha, 2012). An OBS assists to assign tasks and responsibilities to different individuals or groups in accordance with the scheduled processes. Communication tasks within project lifecycle can be assigned in relation with input from the WBS and OBS. Tasks and responsibilities can be assigned using Responsibility Assignment Matrix (RAM) framework.

Hierarchical communication is termed as the exchange of information with whose goal is to purposely influence members and teams in a formal organization (Widhiastuti, 2012). It is expected that project participants follow the communication plan which guides respective roles throughout the project life cycle. In a building project the first level manager can be referred to as the project managers who rely a lot on communication to manage the internal and external organizational structure. He guides the execution of the project with the assistance of other middle level manager who may be commercial manger, construction manager or contract manager.

Middle level managers are mostly perform to as administrative roles which include operation and implementation functions undertaken by division managers as directed by top level managers. First line managers are tasked to oversee daily operations. According to Burns and Stalker (1961), for any control system to be effective, it should conform to the structure of the project organization and be related to decision center responsible for performance. It is evident that communication cannot be separated from the organizational structure which defines the level of authority and responsibility. A set of communication interactions and corresponding roles is formally given by contractual relationships between the project participants (Zerjav & Ceric, 2009). Effective communication makes actors understand their role in a project whether at personal, group or organizational level (PMI, 2013). Different alliances in building projects receive and transmit information differently (Winch, 2010). Participants in building projects include; client, Architect, Engineer, Quantity Surveyors and the main contractors form relationships either through general or total contracting under traditional collaboration. The lead consultants or the Architect is poise to take the role of a project manager who acts as an agent of the client. The contractor is mainly the construction manager under total contracting.

The project manager is tasked with the overall responsibility of ensuring time management and keeping the project on schedule. Field supervisors assist the project management in planning schedules seeking approvals that may hinder project progress as designed in the project plan. If the project is to proceed diligently the communication roles plays an apparent role in keeping all participants in the loop on what has been achieved and what is intended to be achieved. The communication is also important as it bridges office work and work on-site. The project managers assesses performance of the field supervisors by what they have accomplished on a daily basis. This information can summarized in form of a work-time status report prepared on a weekly basis and should accurately reflect the operations on site.

Looking into the activities in the construction process, it contains massive activities for collaboration and communication of information among different parties to proceed with the

construction work (Peansupap & Walker, 2005; Winch, 2010). With engagement of external project management consultant, it facilitates the effective and efficient communication among the parties through eliminating unnecessary or excessive communications and information from the project. As the result, the time efficiency of the project is improved. The term project manager, project administrator, construction manager or project coordinator appear to have a similar function by their roles may vary (Kerzner, 2002). Project managers and coordinators play a role in integrating tasks, measuring performance regarding technical progress. A project manager however is expected to ensure overall leader who is responsible for organizing, planning and controlling the project organization.

Communication Culture

Communication at corporate and global level involves some intercultural interaction in for of sharing information among people, teams or organizations from different countries or cultures Culture can be defined as a set of shared understanding among members, groups, organizations, communities or nations (Hofstede, 1991). Culture is distinguished through language which is the most essential medium of communication (Walker et al. 2003). Markets have increasingly been globalized from 1960's and as a result communication problems are commonly due to misinterpretation of language (Loosemore and Al Muslmani, 1999). Cultural diversity is a major issue that affects that productivity of an organization or team (Adler, 1997).

Large organizations are often subdivided in professional teams or departments and often encounter the challenge in maintaining information flows due to the complex interaction process as established in the organizational structure. At the interface of these interactions it is not uncommon for misinterpretation and misunderstanding to occur in the process (Danity, Moore & Murray 2006). Integration in a construction viewpoint entails parties working together in a collaborative working environment that promotes free information flow (Evbuomwana & Anumbab 1998). Project-based teams in construction industry may include joint ventures, consortiums or special purpose vehicles (Laubacher and Malone, 2002). Communication is the base for better management of each participant is vital in influencing project team performance.

Construction people derive a different image across people. Some of the traits mostly refer to them as demanding, strong, honest, dishonest, ignorant, egocentric, shrewd, calculating, tough, hard-driving, demanding, strong, ignorant or shrewd. Despite all these they have a recognizable commonality trait or makeup to their personalities and behavioral characteristic. Construction people just like other people are sociable people and desire to 'fit in' to a group (Motsa, 2006). Project managers must consider different personalities when dealing with today's global projects. There is need to adopt new approaches to infuse synergy in the midst of unsettling perspectives on cultural diversities at state, regional or organizational level. This facilitates successful cross-cultural interaction at task level (Ramaprasad and Prakash, 2003). It is also important to acknowledge the impact semantic and emotional factors which serve as a bridge to effective delivery of message content (Breu *et al.,* 2008).

Human relationship skill ensures communication is done effectively to build harmony within the team. Projects experienced the highest level of conflict in the implementation phase (Stanslaus, 2011).

Conflict is perceived to be dysfunctional for teams working together hence the importance of conflict management structures and project leadership to avert instances of conflict. Team building process requires more of a conciliatory approach in the event of disputes. Confrontationist approach destroys team's spirit. A coordinator should show concern to human psychology due to different personalities. To achieve this he must be proficient in interpersonal skills and should be in a position to clearly communicate both verbally and in written form. A coordinator must communicate with the client and different organization within the project. Team building skills is defined as the ability to integrate actors across different culture, disciplines to ensure working group transform in to a cohesive unit (Kerzner, 2002). This is an essential skill for a project coordinator. Different entities address their members in accordance with characteristics of each target group. This is due to the diverse culture which varies across the internal environment. Internal communication is aimed at giving instruction; clarify tasks, dispute resolutions, motivating and rewarding staff. Motivation is an integral function when dealing with teams from different cultures.

The labour intensiveness of construction activity– the construction industry relies heavily on human manpower. The industry mainly employs individuals from diverse cultures and occupational backgrounds. Occupations in a construction industry range from skilled, craft, and professions are supposed to work in different teams. Teamwork through project's process eliminates several barriers which include disrespect, mistrust and rivalry among individuals (Uher and Loosemore 2004). Information encoding and decoding across construction teams is generally affected by semantics as a result of team members being not in a position to share common form of understanding. Instances of miscommunication are rather common (Horii, 2005). Approaches are used to organize people and tasks depending on different beliefs, cultural values between subgroups. These factors increase the internal complexity of managing people effectively and hence influence the performance of teams.

The construction projects can be described as an organization that constitutes to partnering of authorities, suppliers and contributors (Client, design team and contractor) with an aim of achieving the client's objectives (Walker, 2015). The existing knowledge of organizational culture is justifiable explaining culture in a construction project since it relies on collaborations between internal and external environment. "Organizational communication" is defined as a way of distributing and obtaining messages which create a coordinated system. Cultural entities select the most suitable communication instrument that suits the target parties or teams (Zecheru, 2002). A confrontational culture affects overall project costs since it leads reduction to reduction of labour efficiency ultimately increasing production costs (Ng *et al.,* 2002).

The construction industry is fragmented and is made up of many different organizations that collaborate to realize common project goals. These organizations are not necessarily mutually supportive or compatible which can lead to personal objectives and competing demands parallel within a project-based environment. This is often characterized by a lack of identity which promotes an adversarial culture resulting from lack of feedback or disconnect in the co-ordination between design and implementation (Abadi, 2005).

Communication Management Strategy

Effective communication in both traditional and virtual teams is a critical component for ensuring team effectiveness (Pitts, Wright & Harbakus, 2012). Team effectiveness is defined in terms of high performance that originates from maximization of both social and technical practices for optimally effective teams (Cohen et al, 1996). Planners and implementers rely on open and clear communication to ensure that information is not ambiguous or distorted at all levels of project execution. Effective project communication management ensures that project information is appropriate and timely generated, compiled and disseminated to the right audience. To aid this there is need to establish an information delivery path and information sharing system for to report on progress (Kwak & Ibbs, 2002) as cited by (Muszynska, 2015). Communication management strives to build trust and improve co-ordination among team through clear communication structures that aims at eliminating ambiguity.

Types of communication involved in a project may often have many often occur in different dimensions (PM1, 2013). Communication dimensions can be classified as verbal or non-verbal, formal and informal; official and non-official, internal and external or vertical and horizontal. Verbal communication could be described as the most direct form of communication as it relies on use of words. Verbal communication is classified into two major forms; Written and Oral communication. Oral communication is mainly spoken words or conversations to consult or inform while written communication includes information presented in hardcopies form such as brochures, formal contracts, and memos. The clarity of communication depends on the writing style, grammar and vocabulary which conversely ensures effectiveness of the communication. Visual aids additionally reinforce written communication or are used to give a better presentation of information to eliminate any communication barriers (Rohani & Gunasekaran, 2016). People's attention is easily drawn by visual tools that would better encode information rather than lengthy group of words (Carlson, 2009). They include drawing, graphic design, colour, pictures, illustrations and signs. Workflow in a project team can be made efficient through better visual management to ensure everyone is kept in the loop on progress. (MDes, 2007) Information posters are used to give information of project intended output. They may be posted in front of the site and inside site office.

Nonverbal communication is defined as communication without words and involves the use of body language which is drawn from behaviors such as tonal variations, facial expressions, as well as posture and spatial distance with the audience. Spoken words are not enough for effective communication and hence the importance of non-verbal expressive cues (Rane, 2010). Nonverbal communication is expressed through non-linguistic means which affects direct communication as it serves to either reinforce or contradict the verbal message being communicated. The conveyer of the message may be conscious or unconscious of the message and may do it intentionally for audience to clearly understand magnitude of the information. Interactions can be further enhanced if the audience can correctly interpret non-verbal cues.

Organizations essentially communicates both internally and externally to ensure project success (Krizan, 2011). Internal communication occurs within the project and can be categorized into vertical or horizontal communication. Vertical communication occurs up and down within a project while horizontal communication occurs

among individuals or teams at same hierarchical level. External communication occurs where customer, vendors, other projects, organizations, the public interact the project. “The harmonization of both internal and external communication creates a conducive environment for working teams which the organization is dependent on” (Theaker, 2004).

The building industry is highly fragmented with the specialization of different occupation that has led to emergence of different professions and professional organizations. The term fragmentation refers to the number of firms or specialists involved in building projects (Nawi, Baluch & Bahauddin, 2014). Internal fragmentation involves integration of alliance organizations within the internal project environment (client, consultants) while external fragmentation describes points of contact with non-alliance organizations (local –government).

Formal communication can be through briefings, reports and minutes. Informal communication is mainly through memos, discussions. Meetings can be held at significant times of the project. Kick off meetings are mostly held for members to familiarize at the project strategy. Trade co-ordination meetings are important as they assist work to progress smoothly as per arrangement. Other informal arrangement or instructions can be reviewed in these meetings to ensure everything is in keeping with to the project contractual terms. Crisis meetings are held where work progress has jeopardized by a party fails to perform or an unforeseen event that grounds diligent progress of a project. Crisis threatens stakeholder expectations and overall organization or team performance (Coombs & Holladay, 2010). A list of discussion items are circulated to the team with minutes specifically to be discussed in the meeting. Typical meetings are normally short and last fifteen minutes to one hour depending on issues that may arise. An effective meeting does not necessarily have to be held as frequent but depends on needs of the specific team (Lindlöf & Söderberg, 2011). Reports presented in these meetings continuously remind employees and construction workers about the project’s objectives and the results of their daily work. They include Monthly plans that highlight the project milestones and give project status information of sub processes and activities that have been accomplished and further document areas of concern that may hinder progress the work.

Effective communication relies on the content of the message (Nourizia, 2014). Contractual content is a very important for effective implementation of the project (Maina, 2012). At the beginning of a project the client and contractor enter into a contract defining the terms of engagement. The contractual document forms a formal engagement between parties entering in to an agreement. The information content in any contractual engagement includes conduct, rights and obligations of parties as well as remedies in the event of breach.

Projects have become considerably complex over the last three decades due to more sophisticated design details. This has resulted to greater risk factors that arise as result of errors, omissions, ambiguities which may survive the review and bidding process. Contractors are forced to thoroughly review design drawings, specifications and other contractual documents through issue for Request for Information (RFI). Design periods in modern construction projects have been compressed to reduce overhead cost in the bidding stage so such requests mainly occur in to the actual implementation stage and not before (Navigant, 2013)

The contractor is at liberty to seek clarification on contract deficiencies, interpretation of errors, omission or subtle ambiguous information relating to specifications and subsequent implication of costing from the client's representative who may either be an Architect, Engineer or Quantity Surveyor. Requests for clarifications are transmitted inform of RFI. Inquiries and responses need to be captured in the project records according to contractual terms. The design team can also request for clarification from the contractor on work program scheduling. A client offers commitment to supply relevant information through a release schedule which includes crucial dates to be observed during execution of the project.

Claims can arise from RFI due to additional works that cannot be reasonably estimated at the early phase of the project. It is important to inform parties in the construction process on change orders or instructions through the established channels. Amendments in design drawings or instructions issues directly to a subcontractor should be communicated to the main contractor. Similarly a Clerk of Works must notify a tradesman supervisor on relevant instructions issued to an operative. The number of RFI is subject to legal scrutiny due to the implication of a high number of issued RFIs in a project. Contractors are expected to list, classify specifications with and give reasons for substitution with their respective cost implications. Communication channel describes the media in which information is to be disseminated to the team. Information among project stakeholders is shared through several communication methods. The suitability of the method to be adopted is dependent on a number of factors that must be agreed upon at the beginning of the project by the project stakeholders. These factors include availability of required tools and resources, time and cost constraints, availability and applicability depending on the intended audience (PMI, 2013).

Communication can be shared in two main methods**;** push and pull communication. Push communication ensures that information is transmitted to specific audience who requires the information however it does not guarantee the message is received by the target audience or understood. Push communications communication in building projects includes include emails, reports, memos, and voicemails (Otjacques, 2003). Information flow in a construction project that requires speedy response can adapt this mode of communication. It can also be suitable to act as reminder messages for specific calendar dates when a meeting is scheduled or when you are to receive a consignment. The push mode forces the recipient to espouse a given stimuli once information is sent. The recipient may decide to read, ignore or answer.

Pull communication is suitable for bulky information or for larger audience. Recipients of information in a pull communication loop can access the information at their own discretion. Methods of communication include intranet sites, information databases and repositories. The pull mode is contrary of push approach that adopt 'if they need it' (Thorpe and Mead, 2001). The pull mode is however advantageous since it cannot be easily compromised by malicious users who may trigger unnecessary information flow. The information can only be retrieved from a repository when required.

Communication media refer to reports, letter, e-mail data interchange, fax, teleconferencing, and telephone calls (PMI, 2013). The type of technology to be used to transmit the information will be determined by the usage the communication media. Communication media can either be one-way or two-way. The difference between these

forms of media is the response and interaction time. One-way media include letters, fax, reports that can be transmitted without presence of the receiver. Two-Way media allow real time interaction and include telephone calls, videoconferencing require both the sender and receiver for transfer of information. Two- way media allows easy negotiations and clarification of information for both the sender and recipient.

Information Technology

There are three information systems involved in ICT (Winch, 2010). They include Engineering Information Management System (EIMS), Project Management Information systems (PMIS) and Enterprise resource management system (ERMS). In the construction industry, the design and computing tasks have been the first ones to intensively use the new information technologies EIMS systems. It has been widely promoted since the Internet widespread all over the world. This has been promoted by the worldwide internet use. The new age has seen a steep rise in mega projects that are complex due to demand in sophisticated designs. Today's clients have additionally been very sensitive to project time and cost (Munyoki, 2014). There is need for better reporting of information on anticipated risks and also give assurance that progress is on schedule. For easy access and retrieval of the Information, the target audience must be familiar to the system and format of this information.

From the start of the project until the award of the construction contract, the project team should strive to maintain a set of project records. They should be are organized and indexed according a uniform filing system. The project team archives the Project History File (PHF) when the project is complete. This file includes selected project development records, final project records, the project Risk Management Plan, the project Charter, and the project Communication Plan. These include all letters, memos, and reports that document project decisions or that would be useful to develop a subsequent project. The utilization of internet has emerged as an important mode of distributing information in a flexible and reusable way that aims to improve overall project performance by reducing daily tasks such as record-keeping. Project members are able to channel their energies to other project related tasks (Kajewski, 2003). The ICT platform allows information feedback and retrieval thereby allowing easy audit trail for project client and other project consultants. This eliminates obstacles in tracking of responses by ensuring that data management is efficient and information is transmitted in real time throughout the implementation process (Mwape & Ndihokubwayo, 2010). Information format in a repository system gains vital significance if it is structured in a clear which widely influences information processing, tracking and easy automation. A well indexed repository system additionally strengthens the search process.

When developers produce software, one of their top concerns is the compatibility of their software with real field environments that are equipped with different software components. Today's software systems are typically composed of multiple components, each with different versions. Software compatibility testing is a quality assurance task aimed at ensuring that multi-component based systems build and/or execute correctly across all their versions' combinations, or configurations. Because there are complex and changing interdependencies between components and their versions, and because there are such a large number of configurations, it is generally infeasible to test all potential configurations. IT plays an

integral role in data management in the form of data storage and access through software management such as Computer Aided Design (CAD) and Building Information systems (BIM).

The construction industry started to implement CAD software about 15 years ago and today it is widely used by actors in the sector. CAD packages have been expanded with visualization features which allow modelling in more dimensions. Information regarding the production can be retrieved from the model, which gives an advantage over previous used manual techniques. Performance data can be linked to production models which give project managers and other actors a powerful tool in decision making (Dainty, et al., 2006).

Exchange of Information mainly focusses on technology and ignores the functionality aspect from user perspective. Focus must be shifted to whether the right information is being transmitted to the right audience, at the right time and in the right format. Compatibility of information should be analyzed from a sender's perspective as he must configure information in a comprehensible manner to reduce costly errors. The building design process requires the Architect, Engineer or a Quantity Surveyor to use information from a wide array of disciplines including art, science and technology. Conventional methods failed to provide meaningful information to clients as a result of poor coordination. Technological development has had significant impact on the building process from the presentation of design information by relevant project consultants. The Architect is expected to combine art, technology, building knowledge and social skills to effectively communicate to other consultants and the client (Sariyildiz & Veer, 1998).

Lack of trained personnel in IT is a big barrier in the uptake in IT within building projects. Construction site processes readily require an integrated and collaborative IT support system (Weippert, Kajewski and Tiley, 2003). Certain on-site processes may require the use of portable or wireless devices but may not be sufficient to handle more complex and bulky computations that are subject to system restrictions (Dwivedi, 2002).

Empirical Review

Communication Framework

Project communication plan aims at ensuring clear communication through appropriate methods, techniques that build trust and propagate suitable personal behavior. A more recent analysis indicates that the RFI process as we know it today developed in the last half century as a result of the growing legal need for project documentation. A study conducted the effect of structures on design team performance established that the functionality of teams in anchored the level of co-ordination between individuals and set tasks. (Badke-Schaub, Neumann, Lauche, and Mohammed, 2007)

A study carried on the formation of project team mental models investigated the structure of the team and organization and he level of socialization established that how teams are organized in terms of tasks allocation is likely to affect formation and coordination of teams. Team structures can be classified in three namely; flat teams, distributed flat teams and functional teams. Flat teams have no hierarchy and no leader but may emerge based on team interaction. Distributed flat teams are usually geographically distributed and as result social cliques are likely to emerge due to physical boundaries (Katzenbach, 1993). Functional teams have well organized hierarchies which emerge at task or subtasks level. A member at each sub-group takes leadership role and is expected to co-ordinate

activities with other subgroup leaders (McDonough, Kahn, and Barczak 2001).

Notwithstanding, there are challenges in explaining problems and gaps that exist in the implementation of construction project organizations (Gann & Salter, 2000; Grabher, 2002). This is due to the fact that projects are organized on basis of their uniqueness which militates diffusion of new management practices. Studies conducted in cross-project environment have established that there exists some form of discontinuities which is problematic since to projects (Scarbrough, 2004). The construction project organization encounters difficulties in embracing new innovative practices due to complexities in existing structures at institutional or at organization level (Fairclough, 2002).

Studies carried out on project roles have the opinion that a project manager should ideally be not a technical expert since he would be more absorbed in technical matters and responsibilities which would negatively impact the project (Kerzner 2002). Other researchers who have done similar studies on different roles of project team have distinguished the roles of a project manager to be different from a project coordinator (Forsberg, Mooz, & Cotterman 1996). The hierarchy places the project manager as the overall project leader however he requires project coordinators, project administrator in contractual matters and technical assistants who aid in different responsibilities. Ochieng & Price (2009) suggested that the project manager must in addition understand, articulate and verify project objectives with the teams to influence the effective performance of building projects. (Sarvarazadeh, Lamit, Norouzi, & Shabak, 2013) conducted a research on potential communication problems between an Architect and a client. They identified that most of the problems could be categorized as social or technical. Allowing interactive participation at every design stage was recommended as a possible framework to manage such problems but would additionally require supportive design techniques.

Communication Culture

Studies on culture and multicultural communication have focused on groups, interpersonal and national level interaction (Hart, 1998). This influences the performance as well as operation of a project manager since multicultural teams are distinct from mono-cultural teams. (Adler, 1997) A study carries on international projects that involve expatriates working together on projects showed that 50% of such foreign assignments are considered failures (Nauman, 1993). Successful project rely on building relationships and trust as a communication management strategy (Remidez & Jones, 2012). International projects are major trend today and due to high levels of complexity they require locals and expatriates from different cultures to interact and come up with creative solutions to emerging challenges in the project implementation process (Kealey et al., 2006). Cross cultural competence involves infusing a team spirit and bringing to attention the impact of culture on the performance of individuals.

Another aspect that was noted among international teams was that professional such as project managers and design consultants were the inability to have specific skills while entering into a new culture (Arslan and Ross, 2008). A study conducted on professionals reported most them experienced culture shock in cross-cultural projects and lacked necessary skills to handle them effectively. Many managers attributed the lack of cross-cultural adaptation to lack of exposure and experience in working with people from different cultures and

were likely to be shocked. This ultimately affects the performance of the project. An effective way of ensuring that skills, knowledge from diverse cultures is by establishing an effective internal communication among actors and further extending this to the external organizations or players (Apud & Apud-Martinez, 2008).

The growing interest of culture in the construction industry has seen researchers extend research to expatriate construction companies. Hall (1999) investigated international British companies and established that they adopted an ethnocentric response to cultural difference in project handled overseas. Liu and Fellows (1999) investigated impact of culture on construction goals Mahalingham et al (2005) investigated impact of cultural differences on global projects. More research conducted on the impact of cultural differences on quality of management (Pheng & Alfelor 2000), on communication (Loosemore & Al Muslmani 1999).

It was established that cultural differences are often an issue which need not be ignored and must be given special attention for better management of construction projects (Fleury 1999). A study carried out the management style between two different cultures: Israel and Japanese found out that different project managers have different styles in managing projects Israeli project managers focused "scope" and "time" management while Japanese project managers focused on "cost" and "communication" management (Zwikael, Shimizu & Globerson, 2005).

The question of running international projects characterized with cross-culture has come to the forefront of management thinking (Evans, 2006; Kauser and Shaw, 2004). Project face risk of becoming dysfunctional due to different culture especially at the transitional stage from pre contract to post contract and hence the need for developing project culture during the project lifecycle Marrewijk (2007). Horii (2005) carried out a research on the interaction of groups involved in international joint ventures established that groups exhibited a unique culture as a result of common history or shared experiences on struggles and success.

Essentially, cultural dimensions are entrenched in collective individualism that ultimately affects the team and the organization. Manager's evaluation on project performance and desired project outcomes is an extension on their personal identity and level of openness to subordinates.

Communication Management Strategy

Effective team communication has a critical impact on the performance of organizations. Studies carried out on the construction industry show that timely flow of information flow is important to ensure that work flows smoothly. There is also high interdependence on organization from suppliers, subcontractors and specialized contractors. It was established that 22% of problems experienced onsite resulted from poor communication (O'Connor & Tucker, 1999). Communication issues can be directly linked to disputes, cost overruns and delays among building process actor. A proper coordinated system is key in ensuring that the timely flow of information. A more similar study conducted on the causes for cost overruns in building projects established that close to 30% of the cost overruns resulted from an ineffective communication structure (I.A.I, 2002).

Douras (2010) proposed seven key communication techniques to be practices in teams working in remote areas. This includes setting consistent communication schedules, providing details and reasons for any requests, asking as opposed to telling, sending positive e-mails to serve as

motivation, building trust and relationship among team members and allowing team members to provide feedback or opinion on matters affecting them. Modi et al. (2012) conducted a similar study conducted on communication practices in teams recommended that there was need for staff rotation to build cohesion, building shared understanding on various communication structure to synchronize work patterns to improve communication flow, decentralization of common teams hence reducing dependency on one location.

Information sharing in an organization is a key indicator of an integrated team (Rahman, Kumaraswamy & Ling, 2007) Team members should have access to information as an input for better decision making (Baiden,2006). The biggest challenge is however ensuring this information is able to get to the target audience within the appropriate time. The project should act as collaborative environment where there is open sharing of ideas through discussion or formal brainstorming session at different levels in the project hierarchy. Research findings as carried by many scholars however indicate that many projects are mainly supported by project managers' intuition or neglect (Adera, 2013).

Modi, Abbott & Counsell. (2012) recommended the use of various communication channels, and the use of multiple communication modes for easier sharing of information especially for projects in different geographic locations. (Han & Jung, 2014) explored the different forms of communication project among project actors. Forms of communication can be classified into two – within the organization and between co-operating teams. Practices within the organization include face-to face communication that foster internal interaction; use of e-mails for recordkeeping and follow-up purposes; use of phone calls, regular team meeting and use of instant messaging.

Application of media capabilities in the communication management process serves to match tasks. Most projects tasks encompass transmission of information based on shared meanings. The need to use different communication media in performing these tasks is important since the use of only one media is unable to relay information and knowledge under synchronicity theory (Niinimäki, Lassenius & Paasivaara, 2012). Common communication and collaboration tools as identified by the researcher include the use of- Internal messengers, Audio conferencing, Emails and Video conferencing. Internal messenger is the most common due to informality and multitasking ability. Audio conferencing is also a common methods however challenged by poor sound quality. The use of E-mail is the most common transmission media for most projects. Video conferencing has a strong social presence however is not commonly used.

Information Management

Information management system ensures interrelated organizations run effectively (Koskela & Vrijhoef, 2000). Suppliers contribute close to 80% of any construction contract which affects quality, time and cost (Clark et al., 1999). Previous research has cited timely information flow in the construction project is crucial for diligent progress of works on site. Researchers in have highlighted the benefit of adopting ICT in construction projects since it is eliminates instances of delay in obtaining information and ensures improved flow of information to different groups located at different geographical locations (Love, Irani & Edwards, 2004; Root & Thorpe, 2001). Organizations consider technological development through training and

upgrading software as barrier in the effective adoption and use of ICT. In any collaborative project environment nationally or internationally information sharing is enhanced through the use of ICT. Contractors use modern construction programs for cost estimating to track their cash flow and also assess profit margins at specific periods within project implementation.

A study conducted on the Indian construction industry to find out the level of ICT usage in building project found out that IT had done little to transform this sector however it is quickly catching to match up other developing countries (Yang, Ahuja & Shankar, 2007). The construction industry in more developing countries is experiencing a rapid development in ICT as a result of increasing need to have speedy information due to tight project duration periods. The building process is an information demanding environment from initial design to implementation on-site. Due to the intensity of this information an efficient information management system is vital for ensuring efficiency and gives competitive advantage for contracting firms (Chen & Kamara, 2008).

Construction site offices require up-to-date ICT support to streamline work on site. Modern construction projects have adopted push and pull functionalities through project specific website (PSWS) to aid in communication. Most of the web systems encounter retrieval difficulties as data increases. Rimmington, Dickens & Pasquire, (2015) conducted a research to explore the changing face of construction projects towards the use of technology as primary means of communication. The research noted adverse consequences with the rise in the use of technology since there was loss of interpersonal communication skills among project players. This was a confirmation of exacerbated tension between human-electronic as well as human- human interface. The increase in use of IT has a significant effect of erosion of soft communication skills and directly affects project team interaction.

Implementation of Building Projects

Bandulahewa (2015) did a study on effective project communication for construction project managers in Sri Lanka. Thus, this study explored existing communication process of construction projects including barriers and strategies adopted by project managers in Sri Lanka and identified an effective plan to improve such process. The research problem was approached through questionnaire survey and structured interviews conducted in civil engineering construction projects. Sample of 35 constructions professional was obtained across client, consultant and contractor organization in Sri Lankan construction industry. Existing communication process was examined through questionnaire survey and new communication plan was proposed.

The empirical findings revealed that only some of the factors identified though literature review have considerable impact on the current communication practice in Sri Lankan construction industry. Two-way communication; effective communication strategies ensuring successful technological transfer; and, project type and duration influences, communication strategy and structure were identified as most important in the existing communication process in the construction industry. Varying capacity and capability, varying concept of time, poor planning, community interference and lack of necessary skills were hindered effective communication. Communication strategies: timely reports; team meetings; delegating responsibilities; clear communication channels; adjusting and adopting; and, problem

solving were frequently used by the construction project managers to overcome communication barriers. This communication plan indicates all available method for information distribution and including formal ways for messages delivery to the project manager. Further, it provides guidance for project managers to manage communication in construction to enhance production and timely completion of projects.

Gachie (2011) did a study on corporate strategy implementation in construction industry in Kenya: a case of H-young & Co. East Africa Ltd, in Nairobi, Kenya. This research was conducted through a case study since it is a research on one organization. Primary data was collected using self-administered questionnaire while secondary data was collected by use of desk search techniques from published reports. The respondents of this study were the employees at H-Young & Co. East Africa Ltd in Nairobi Kenya. The study established that Organisation culture influences adherence to organizational vision, mission and values thus steering the implementation of organizational strategy in the construction industry; strategy implementation requires a strong alignment between employee attitudes and strategic goals and objectives. The study established that commitment of top level management influence strategy implementation in the construction industry it revealed that while management's commitment is a positive signal for organization to enhance strategy implementation firms in construction industry. The study established that communication is a key success factor in strategy implementation. Communication processes should be planned to match requirements for a strategy to be implemented. The study further found out that companies use short message service, internal memos, emails, stakeholder meeting, oral presentations and periodic reports in communicating strategy implementation within and outside their organization. The companies used horizontal communication structure, down-up communication structure and upward-down communication structure.

RESEARCH METHODOLOGY

Descriptive research design gives an actual representation of things and incorporates a planned framework for analytical purposes (Mugeda, 2003). A case study relies on a sample to give a holistic representation of a phenomenon under research. The use of descriptive research design was most applicable for this study as it focused on describing the independent variables. The study population for this research consisted of different classes of construction companies, consultants and clients identified from different construction projects within Nairobi County.

RESULTS AND DISCUSION

Communication Framework

This section sought to examine the impact of communication framework on effective implementation of building projects in Nairobi City, Kenya. The study findings were presented as follows in each of the category.

Table 1: Type of project team organization adopted

Type of project team organization is adopted	Frequency	Percentage
Consortium	37	50.0
Design Build	35	47.3
Special purpose vehicle (SPV)	2	2.7

Total	**74**	**100.0**

Table 2: The overall team leader for the building project

Team Leader	Frequency	Percentage
Architect	40	54.1
Project Manager	34	45.9
Total	**74**	**100.0**

Table 3: Conveyance of site meetings

Leader	Frequency	Percentage
Architect	22	29.7
Project Manager	33	44.6
Both	19	25.7
Total	**74**	**100.0**

Table 4: Communication framework on establishment of ideal communication interactions in a project

Statement	1	2	3	4	5	Mean	S.D
Clear roles in the project organization aim at building effective organizational communication	0	0	7	45	22	4.203	1.081
A well-documented communication plan is essential to enhance project implementation	0	1	8	44	21	4.149	1.041
Developing standard communication procedures aims at alleviating disputes that arise from ambiguity in documentation	0	2	6	34	32	4.297	1.051
Communication roles within the project lifecycle should be assigned from the WBS or OBS to avoid overlapping roles	0	1	6	39	28	4.270	1.053

Table 5: Handling of conflicts as a result of delayed flow of information

Responsibility	Frequency	Percentage
Architect	22	29.7
Quantity Surveyor	18	24.3
Project Manager	25	33.8
Engineer	9	12.2
Total	**74**	**100.0**

Table 6: Decision-making linked to communication framework that leads to delays in decision making

Level of Impact	1	2	3	4	5	Mean	S.D
Late delivery of design information from project consultants.	0	1	3	33	37	4.432	1.175
Lack of necessary council approvals	0	4	12	27	31	4.149	0.912

Inadequate information on change orders from project consultants.	0	2	10	35	27	4.176	0.947
Drawing discrepancies from omission in production of information	0	2	8	38	26	4.189	0.988
Rigid contract documentation and bureaucracy due to ambiguity in contract interpretation	0	1	2	40	31	4.365	1.147
Lengthy decision making from client	0	2	4	44	24	4.216	1.091
Information by-passed relevant project consultants	0	1	3	30	40	4.473	1.219

Table 7: Rating overall communication framework and its impact on project implementation

Rating	Frequency	Percentage
Very effective	21	28.4
Effective	42	56.8
Less Effective	7	9.5
Not effective	4	5.4
Total	**74**	**100.0**

Communication Culture

This section sought to examine the impact that communication culture have on effective implementation of building projects in Nairobi City, Kenya. The study findings were presented under each of the section.

Table 8: Number of workers employed for the project

Number of workers employed	Frequency	Percentage
Less than 50	9	12.2
50-100	28	37.8
100-200	24	32.4
Over 200	13	17.6
Total	**74**	**100.0**

Table 9: How often the site meetings are held

Frequency of holding a meeting	Frequency	Percentage
Weekly	36	48.6
After a Fortnight	23	31.1
Monthly	15	20.3
Total	**74**	**100.0**

Table 10: Frequency of co-ordination meetings between sub-teams and group leaders

Frequency of co-ordination meetings	Frequency	Percentage

Daily	34	45.9
After a Fortnight	19	25.7
Weekly	15	20.3
Monthly	6	8.1
Total	**74**	**100.0**

Table 11: How the overall sub-team/group culture in the project has impacted implementation of building project

Impact	Frequency	Percentage
Improved team performance by over 75%	16	21.6
Improved team performance by between 50% to 75%	35	47.3
Improved team performance by between 25% to 50%	13	17.6
Improved team performance by below 25%	10	13.5
Total	**74**	**100.0**

Table 12: Communication culture role for any building project information and total team commitment

Statement	1	2	3	4	5	Mean	S.D
Availability of information transparency to all participants during the course of the project to increase level of synergy	0	3	11	35	25	4.108	0.903
The lead consultant needs to provide clear communication lines that aim to support all subordinates	0	4	9	39	22	4.068	0.934
Responsible information sharing ensures discretion in sharing sensitive information between organizations.	0	3	8	34	29	4.203	0.974
Synchronized work patterns maximize on overlaps and increase the communication bandwidth.	0	2	9	33	30	4.230	0.981
Multiple communication modes alleviate problems associated with geographical distance and give a real-time progress of the project	0	1	4	38	31	4.338	1.103
Staff rotation for team builds trust and team cohesion improve project implementation	0	3	6	39	26	4.189	1.011
Use body language as tool for communication ultimately impacts the team performance	0	4	7	52	11	3.946	1.165

Communication Management Strategy

This section sought to examine the impact that communication management strategies have on effective implementation of building projects in Nairobi City, Kenya. The study findings were as presented under each of the section.

Table 13: Most common form of communication used in issuing instructions by project consultants

Form of communication used	Frequency	Percentage
Written form (Site Instruction books)	30	40.5
Email	27	36.5
Verbal Instruction (Telephone)	10	13.5
Messaging (Text, WhatsApp)	7	9.5
Total	**74**	**100.0**

Table 14: Common mode of communication in communicating disputes during project implementation

Common mode of communication	Frequency	Percentage
Meetings	22	29.7
Issuance of Notice through E-mail	33	44.6
Issuance of Notice through Formal letters	19	25.7
Total	**74**	**100.0**

Table 15: Forms of communication used in building projects to give guidance on site

Level of influence	1	2	3	4	5	Mean	S.D
Internal memos	0	3	8	43	20	4.081	1.001
Signs & posters	0	1	4	37	32	4.351	1.109
Design specification in BQs	0	2	11	30	31	4.216	0.957
Site Instruction books	0	2	10	38	24	4.135	0.948
End user Manuals	0	1	3	40	30	4.338	1.122

Table 16: Communication management strategy impact on implementation of the project

Impacted on implementation of the project	Frequency	Percentage
Improved team performance by over 75%	19	25.7
Improved team performance by 50% to 75%	33	44.6
Improved team performance by 25% to 50%	14	18.9
Improved team performance by 25%	8	10.8
Total	**74**	**100.0**

Table 17: How management strategies have contributed in mitigating disputes and delays in the project implementation stage

Statement	1	2	3	4	5	Mean	S.D
Appropriate communication channel ensures that information is relayed to right audience and improves team coordination and increases synergy and trust	0	1	6	43	24	4.216	1.065
Appropriate communication channel ensures that information is transmitted on time and in the right format	0	0	4	30	40	4.486	1.218

Appropriate Information content is an important essential in reducing ambiguity in project implementation	0	0	4	48	22	4.243	1.158
Adoption of a communication plan has a positive impact on the success implementation of building project	0	1	5	38	30	4.311	1.079
User friendly communication tools and techniques are critical during implementation of the project	0	6	14	33	21	3.932	0.783

Information Technology

Table 18: Inappropriate or inadequate information submitted to contractors and other project implementers

Statement	1	2	3	4	5	Mean	S.D
The level of skill among personnel ensures accurate interpretation of information relayed	0	8	14	28	24	3.919	0.745
The use of modern and compatible IT software ensures clear and timely interpretation of information	0	2	5	40	27	4.243	1.054
An effective repository system ensures easy retrieval and archiving of information	0	1	3	32	38	4.446	1.188
Effective use of modern IT tools ensures better coordination of communication in projects	0	1	3	39	31	4.351	1.125

Table 19: ICT development contributions

Level of contribution	1	2	3	4	5	Mean	S.D
Reduced instances of design Misinterpretations.	1	3	4	32	34	4.284	1.076
Reduced number of Clarification sought on issued design information	0	0	9	27	38	4.392	1.118
Reduced number in change orders originating from inadequate information in design drawings	0	2	2	39	31	4.338	1.127

Table 20: Usage of modern Information Technology impact on project implementation

Impact of Information Technology	**Frequency**	**Percentage**
Improved timeliness in supply of information by over 75%	18	24.3
Improved timeliness in supply of information by 50% to 75%	36	48.6
Improved timeliness in supply of information by 25% to 50%	13	17.6
Improved timeliness in supply of information by below 25%	7	9.5
Total	**74**	**100.0**

Implementation of Projects

Table 21: Project implementation process to be improved for effective information flow in the project

	1	**2**	**3**	**4**	**5**	**Mean**	**S.D**

Timeliness in response in design issues or requested information	0	4	11	33	26	4.095	0.884
Clarity of information relayed to the team	0	2	4	37	31	4.311	1.084
Ensure feedback channels are available to project teams	0	0	8	36	30	4.297	1.038
Enhance conflict communication among project teams to mitigate delays arising from disputes.	1	7	4	32	30	4.122	0.970
The lead consultant should effectively integrate inter-cultural teams to improve performance on-site	0	5	10	22	37	4.230	1.033
Project communication plan should resonate well with all project requirements on professional service.	0	4	7	27	36	4.284	1.057
Tracing mechanisms for RFIs or any other important information.	0	0	8	42	24	4.216	1.041

Inferential Statistics

In this study, correlation analysis and multiple regression analysis was conducted to test the influence among predictor variables. The research used statistical package for social sciences (SPSS V 20) to code, enter and compute the measurements of the multiple regressions

Correlation Analysis

This finding implied that communication framework, communication culture, communication management strategy and information technology, relates with organization implementation of building projects. The findings concur with the findings of Gachie (2011) who found out that commitment of top level management influence strategy implementation in the construction industry it revealed that while management's commitment is a positive signal for organization to enhance strategy implementation firms in construction industry.

Table 22: Pearson Correlation Results

		Organization Performance	Comm. framework	Comm. culture	Comm. management strategy	Information Technology
Communication framework	Pearson Correlation	.723(*)	1			
	Sig. (2-tailed)	0.02	.043			
	N	74	74			
Communication Culture	Pearson Correlation	.785(*)	.864(*)	1		
	Sig. (2-tailed)	.04	.04	0.04		
	N	74	74	74		
Communication management	Pearson Correlation	.705(*)	.604(*)	.390(*)	1	

strategy	Sig. (2-tailed)	.001	.001	.004		
	N	74	74	74	74	
Information Technology	Pearson Correlation	.714(*)	.733(*)	.502(*)	.350(*)	1
	Sig. (2-tailed)	.002	.002	.02	.02	.02
	N	74	74	74	74	74

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

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

Model Summary

Table 23: Model Summary

Model	R	R Square	Adjusted R Squared	Std. Error of the Estimate
1	.868	.753	.721	.01652

Analysis of Variance

Table 24: Analysis of Variance

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.612	4	0.653	9.603	.002
	Residual	11.016	69	0.068		
	Total	13.628	73			

Beta Coefficients

From the above coefficients, the established regression equation was:

$Y = 0.683 + 0.486 X_1 + 0.526 X_2 + 0.353 X_3 + 0.298 X_4$

The equation above reveals that holding communication framework , communication culture, communication management strategy and information techology, and implementation of building projects would be at 0.683

From the regression equation the results reveal that communication framework is statistically significant in explaining implementation of building projects. This is an indication that a unit increase in communication framework will lead to 0.486 an increase in implementation of building projects. From the regression equation the results reveal that communication culture is statistically significant in explaining implementation of building projects. This implies that communication culture had positive significant effect on implementation of building projects. This is an indication that a unit increase in communication culture will lead to 0.526 increases in implementation of building projects.

Further from the regression equation the results revealed that communication management strategy

is statistically significant in explaining implementation of building projects. This implies that communication management strategy had positive significant effect on implementation of building projects. This is an indication that a unit increase in communication management strategy will lead to 0.353 increases in implementation of building projects. From the regression equation the results reveal that information technology is statistically significant in explaining implementation of building projects. This implies that information technology had positive significant effect on implementation of building projects. This is an indication that a unit increase in information technology will lead to increase 0.295 in implementation of building projects. Communication framework was found to be the laid down guidelines for communication within the organization, while the communication culture was to be the practiced communication process within the organization. The findings concur with Gachie (2011) whose study finding on communication and strategy implementation showed that communication media, type of communication, communication flow and employee productivity positively influenced strategy implementation in organizations.

Table 25: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		β	Std. Error	Beta		
1	Constant	0.683	0.113		6.044	.001
	Communication Framework	0.486	0.138	0.397	3.522	.009
	Communication culture	0.526	0.128	0.431	4.109	.004
	Communication Management strategy	0.353	0.102	0.286	3.461	.012
	Information Technology	0.298	0.089	0.214	3.348	.020

FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

The first objective of the study was to examine the impact of communication framework on effective implementation of building projects in Nairobi City, Kenya. The study revealed that different organization adopted different type of project team organization for their project with most adopting a consortium. Further the study revealed that the overall team leaders in the organizations were the architects and project Managers. On who was responsible for conveying the site meetings the study indicated that meetings were conveyed by both the architects and the project managers. Further the study revealed that; developing standard communication procedures aims at alleviating disputes that arise from ambiguity in documentation also those communication roles within the project lifecycle should be assigned from the WBS or OBS to avoid overlapping roles. Additionally the study revealed that clear roles in the project organization aim at building effective organizational communication. Also the study revealed that a well-documented communication plan is essential to enhance project implementation. In addition the study revealed that project managers, engineers, architects and the quantity surveyors were the one who handles project conflicts as a result of delayed flow of

information. Also the study indicated that information by-passed relevant project consultants and that there was late delivery of design information from project consultants. Also the study revealed that there is rigid contract documentation and bureaucracy due to ambiguity in contract interpretation and that there are lengthy decision making from client. Also the study revealed that to a great extent there was drawing discrepancies from omission in production of information and also that there is inadequate information on change orders from project consultants. Additionally to a great extent there lacks necessary council approvals. Further the study revealed that overall communication framework and its impact on project implementation would be rated as effective.

This section sought to examine the impact that communication culture have on effective implementation of building projects in Nairobi City, Kenya. The study revealed that number of workers employed were mostly in the range of 50-100. Also the study revealed that most of the site meetings were held on a weekly basis. Further the study revealed that the frequency of co-ordination meetings between sub-teams and group leaders was mostly done on a daily basis. Additionally the study revealed that overall sub-team/group culture in the project impacted implementation of building project and improved team performance by 50% to 75%. Also the study revealed that; multiple communication modes alleviate problems associated with geographical distance and give a real-time progress of the project. Also the study revealed that synchronized work patterns maximize on overlaps and increase the communication bandwidth. Further the study revealed that responsible information sharing ensures discretion in sharing sensitive information between organizations and that staff rotation for team builds trust and team cohesion improve project implementation. Further the study revealed that availability of information transparency to all participants during the course of the project increases level of synergy and also that the lead consultant needs to provide clear communication lines that aim to support all subordinates. Additionally the study revealed that use of body language as tool for communication ultimately impacts the team performance.

This section sought to examine the impact that communication management strategies have on effective implementation of building projects in Nairobi City, Kenya. The study revealed that issuing instructions by project consultants was mostly done via written form (Site Instruction books). Also the study revealed that the most common mode of communication in communicating disputes during project implementation was through issuance of notice through email. Further the study revealed that often; Signs & posters, end user manuals, design specification in BQs, site instruction books and internal memos are used in building projects to give guidance on site. Also the study revealed that the communication management strategy impacted the implementation of the project by improving team performance by 50% to 75%. Also the study revealed that; appropriate communication channel ensures that information is transmitted on time and in the right format, also that adoption of a communication plan has a positive impact on the success implementation of building project. Further the study revealed that appropriate information content is an important essential in reducing ambiguity in project implementation and that appropriate communication channel ensures that information is relayed to right audience and improves team coordination and increases synergy and trust. Also that user friendly communication

tools and techniques are critical during implementation of the project.

This section sought to examine the impact that communication management strategies have on effective implementation of building projects in Nairobi City, Kenya. The study revealed that; an effective repository system ensures easy retrieval and archiving of information also that effective use of modern IT tools ensures better coordination of communication in projects. Additionally the study indicated that; the use of modern and compatible IT software ensures clear and timely interpretation of information also that the level of skill among personnel ensures accurate interpretation of information relayed. Additionally the study revealed that; due to technology advancement there has been reduced number of clarification sought on issued design information. Also that there is reduced number in change orders originating from inadequate information in design drawings. Further the study revealed that there are reduced instances of design misinterpretations. Also the study revealed that usage of modern IT impacted the implementation of the project through improved timeliness in supply of information by 50% to 75%.

On project implementation the study revealed that; there should be clarity of information relayed to the team and also that feedback channels are available to project. Also the study revealed that project communication plan should resonate well with all project requirements on professional service. Further the study revealed that lead consultant should effectively integrate inter-cultural teams to improve performance on-site also that there should be tracing mechanisms for RFIs or any other important information. In addition the study revealed that conflict communication should be enhanced among project teams to mitigate delays arising from disputes and that extent timeliness should be ensured to response in design issues or requested information.

Conclusion

The first objective of the study was to investigate how communication framework influences the implementation of building projects in Nairobi City County. The study revealed that clear roles in the project organization aim at building effective organizational communication and also that a well-documented communication plan is essential to enhance project implementation. Thus the study concludes that overall communication framework and its impact on project implementation is effective.

Regarding the second objective which was to access how communication culture in organizations influences the implementation of building projects in Nairobi City County. The study revealed that availability of information transparency to all participants during the course of the project to increase level of synergy. Also the study revealed that multiple communication modes alleviate problems associated with geographical distance and give a real-time progress of the project. Thus the study concludes that overall sub-team/group culture in the project impacts implementation of building project and improves team performance.

On the third objective of the study which was to find out how communication management strategies in organizations influence the implementation of building projects in Nairobi City County. The study revealed that appropriate communication channel ensures that information is relayed to right audience and improves team coordination and increases synergy and trust. Further the study revealed that appropriate information content is an important essential in

reducing ambiguity in project implementation. Thus the study concludes that adoption of a communication plan has a positive impact on the success implementation of building project.

The fourth objective was to investigate how the use of Information Technology (IT) influences the implementation of building projects in Nairobi City County. The study revealed that the level of skill among personnel ensures accurate interpretation of information relayed and also that the use of modern and compatible IT software ensures clear and timely interpretation of information. Thus the study concludes that effective use of modern IT tools ensures better coordination of communication in projects.

Recommendations

On the first objective of the study which was to find out how the communication framework influence the implementation of building projects in Nairobi City County. The study research revealed that there is late delivery of design information from project consultants and also that there lack necessary council approvals. Also the study revealed that there is rigid contract documentation and bureaucracy due to ambiguity in contract interpretation. Thus the study recommends that the government should put into place bodies to facilitate council approvals and toe ensure that information should not by-pass relevant project consultant. Also the study recommends that communication roles within the project lifecycle should be assigned from the WBS or OBS to avoid overlapping roles.

The second objective of the study was to find out how communication culture in organizations influences the implementation of building projects in Nairobi City County. The study revealed that responsible information sharing ensures discretion in sharing sensitive information between organizations and also that staff rotation for team builds trust and team cohesion improve project implementation. Thus the study recommends that consortiums should to provide clear communication lines that aim to support all subordinates to facilitate information sharing and cohesion. Also the study recommends that the policy makers in the industry should indicate a code of conduct that is aimed to integrate and nurture better culture in the organizations.

Regarding the third objective of the study which was on communication management strategies in organizations. The study revealed that appropriate communication channel ensures that information is transmitted on time and in the right format and also that user friendly communication tools and techniques are critical during implementation of the project. Thus the study recommends that stakeholders in the building industry should adopt most forms of communication among them written form (site instruction books), email, verbal instructions (telephone) and messaging including WhatsApp. This is to ensure that information is communicated without error and on time.

On the fourth objective of the study the study research revealed that adoption of modern information technology has reduced instances of design misinterpretations, number of clarification sought on issued design information and also has reduced number in change orders originating from inadequate information in design drawings. Thus the study recommends that the management of the consortiums should adopt modern technology to facilitate their operations and take staff on training on the technology adopted. Also the study recommends that the government should ensure favorable policies are enacted relating to

information technology applied by the construction industries in terms of acquisition and application.

Suggestions for Further Studies

This study sought to assess the influence of organizational communication on the implementation of building projects in Nairobi County, Kenya. The study recommends more studies to be conducted on the influence of adoption of Information Technology (IT) on the implementation of building projects.

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