



Improving Communication between Client and Contractor during Construction Project in Nigerian Construction Industry

Ishaq Mukhtar Ishaq^{1*}, Roshartini Omar², Mohd Yamani Yahya², Norliana Sarpin²

¹Department of Building Technology Abubakar Tafawa Balewa University P.M.B 0248 Bauchi, NIGERIA

²Department of Construction Management, Faculty of Technology Management and Business, Universiti Tun Hussein Onn Malaysia (UTHM), 86400, Parit Raja Batu Pahat, MALAYSIA

*Corresponding Author

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Abstract: Communication today has become the crucial element of every organisation. In construction industry, during construction project, information need to be accurately and timely communicating among project stakeholders in order to realized the project objectives. Poor communication between client and contractor during construction project is one of the major factors that affect project delivery. Therefore the objectives of this research are to investigate the causes and effects of poor communication between client and contractor and the suitable methods to improve communication between the client and contractor. The objectives where achieved by identifying the causes and effects of poor communication between client and contractor, and the methods to improve communication between the client and contractor in the Nigerian construction industry through a statistical analyses. Structured questionnaire was used to 120 combinations of clients and contractors in the construction industry with 80% of response rate. Several analyses such as frequency, mean, ranking and Regression were used to analyze the data. The results shows that, lack of corporation and selfish interest were the most causes of poor communication between the client and contractor. Contrastingly, maintaining integrity and sufficient trust were the most significant ways to improve communication between the client and contractor. The hypothesis reveals that, poor communication between the client and contractor has significant effects on construction projects. This research will profit the client and contractor, and the various project stakeholders in the construction industry, by providing adequate knowledge regarding the causes and effects of poor communication between the client and contractor, so that necessary steps to be taken for prevention. Also it will provide knowledge about the appropriate strategies (method) to employ in order to improve communication between the two parties.

Keywords: Construction, Communication, Client, Contractor, Nigeria

1. Introduction

The construction industry plays an important role in a country's national economy, irrespective of the country's levels of economic development. The construction industry sector compared to country's economy is important, because it employs between 2% and 10% of the total workforce of most countries (Abdul Rashid *et al.*, 2010).

Over the last decade, the Nigerian economy increased effectively, with the help all sectors of the economy, especially the construction sector (Dantata, 2008). The Nigeria's economic growth is high and the contribution of construction sector has been on steady raise, with upward progression in its actual contribution, which stood about 3% in 2012, due to an improved budgetary implementation with the private sector participation (Isa *et al.*, 2013). Its noted, that the all-inclusive effects of this sector, and especially its employment generating potentials, makes it a veritable platform for sustainable development especially if proper mechanism are put in place for the growth of the sector to be simulated (Isa *et al.*, 2013). Communication today has become the crucial element of every organisation and is necessary to perpetuate the health of the organisation. Organisations cannot exist without communication, and management will not be able to receive information inputs, and supervisors would not be able to give instructions, coordination of work is impossible and the organisation will collapse for lack of it (Titus and Brochner, 2005). Communication in construction is the exchange of project specific-information (Mehra, 2009).

Efficiency in building depends upon the quality of relationship between the client, professionals, contractors and sub-contractors. In other words, the problems in construction are a communication problem (Emmitt and Gorse 2008). Participants need to collaborate, share, collate, and integrate significant amounts of information to realize project objectives (Emmitt and Gorse, 2007; Emmitt 2010). The project participants must provide timely and accurate information to all project stakeholders so that members of the project prepare information in variety of ways to meet the need of stakeholders so as to incorporate feedback from these stakeholders (Mehra, 2009). During all stages of construction such as design, production, organisation and management, communication is paramount important in order to realize the construction processes (Tipili *et al.*, 2014). Information sharing among the project participants is vital for realizing the project objectives. Construction project management requires effective communication among project stakeholders for successful project delivery (Yang *et al.*, 2007). During construction project, irrespective of the size of the project, communication between the user (client), contractor and other parties involve in the project plays a vital role in order for the project to be realized (Dainty *et al.*, 2006). Communication is done between the client and contractor during construction process through so many means, such as face-to-face, meetings, telephone conversation, emails, video conferencing or combination of two or more means to pass information to the contractor instructing them to undertake or perform a particular task whenever the client feels such (Maslej, 2006; Zuppa *et al.*, 2009), and also through documents and reports (Ryd and Fristedt, 2007). For every organisation to perform effectively, there is need for it to adopt adequate information sharing between the managers and staffs in order for the organisation to promote its activities (Wikforss and Alexander, 2007).

According to Mitkus (2014), communication between client and contractor is affected by so many factors such as lack of trust and inadequate responsibility, which causes misunderstanding among the two parties during construction process, which leads to conflict among them. Similarly Lau and Rowlinson (2011), also mentioned, lack of trust and misunderstanding results to communication failure between the client and contractor in managing construction projects. Konrad (2011), stated that, lack of trust, unwillingness for cooperation and lack of open communication among project participants affects communication process during project execution. According to Antonio and Senol (2012) said, lack of effective communication among project stakeholders such as client and contractor, is one of the major factors causing delay in construction projects in Malaysia. Murray and Seif (2013) also mention that, poor communication between client and contractor is one the factors that leads to time overrun in construction projects in Malaysian Construction projects (Memon and Nawabshah, 2014), in Nigerian construction projects (Isah, 2012), and in Indian construction projects (Doloi *et al.*, 2012). Kelleher *et al.*, (2006) said, for communication to be truly effective, mutual understanding and collaboration between the sender and the receiver must exist. Communication is a two-way process and to enhance two-way effective communication flow between client and contractor, effective communication channels must be employed, such as face-to-face, telephone calls, email, video conferencing or written (Goh *et al.*, 2005). Panayiotou (2007), said communication between client and contractor will be improved with better correlation between them, in order to achieve the desired objectives. A study by Hayward (2006), found out face-to-face communication among client and contractor during construction promote better understanding among the parties, and allows the development of project specific-goals and objectives.

According to Titus and Brochner (2005), information dissemination plays a profound role in a construction environment whether during the preconstruction period or the project implementation, sharing and communicating such information is vital not just to the procurer but to all the parties involved in the project. For every organisation to perform effectively, there is need for it to adopt adequate information sharing between the managers and the staffs in order for the organisation to be successful (Awad and Alhashemi 2012). Communication is the most critical factor of construction projects, because information regarding the project needs to be shared among project participant in order to complete projects (Antonio and Senol, 2012). Because, communication today has become the essence of every organisation and is essential to preserve the wellbeing of the organisation (Awad and Alhashemi, 2012). Conflict in the construction industry is tend to marginalized when there is an effective communication among the participants (Wong *et al.*, 2008). Mutual trust, joint working, mutual objectives and open communication are also helpful for the improvement of quality performance (Meng, 2012). Because without personal communication skills interpersonal relationships cannot be developed (Awad and Alhashemi, 2012).

2. Research Problem

Poor communication between project participants such as client and contractor is one of the factors that affect working efficiency; it is the reason for relatively low productivity of the construction industry (Phang *et al.*, 2012). Murali (2007), stated that problem of communication within project environment leads to severe misunderstanding between client and contractor, therefore affects the execution of project. According to Kasimu and Abubakar (2012), poor quality in construction project is one of the major problems in the Nigeria construction industry. The major problems in terms of inadequate communication on project leads to many negative effects such as disputes between clients and contractors, increased costs, loss of productivity and revenue, and termination of contract. Similarly, Laufer *et al.* (2008) mention that, poor communication between client and contractor results to conflict, misunderstanding, uncertainty and lack of mutual cooperation among the two parties.

Communication is very imperative in construction project, because once there is poor communication between construction stakeholders, such as client and contractor, there will be crisis which can lead to withdrawal of the team members from further participations which will affect the project delivery (Femi, 2014). Jimoh (2012) highlighted that poor communication between client and contractor in Nigerian construction industry which leads to delay in the decision making process that may in no small affects the successful completion of project. Because everyone concerned with design, erection, use and eventual recycling of a building relies on effective communication, to get things done (Emmitt and Gorse, 2008).

The Nigerian construction industry has suffered many setbacks in term of completion of the projects at stipulated period and within the predetermine sum and quality. Where, lack of effective communication between project stakeholders is one of the major causes of delay which results to abandonment of project in Nigerian construction projects (Kasimu and Usman, 2013). Because communication is germane to effective construction project management, not only within client and contractors team, but the entire project participants in a given project (Jimoh, 2012).

Ogwueleka (2011) mentions that, communication and communication channels are among the major critical success factors influencing project performance Nigerian. While majority of the construction projects carried out in Nigeria experience time and cost overrun due to the poor of communication among project participants such as client and contractor during project execution (Kasimu and Abubakar, 2012). Based on these problems, the research attempts to investigate the causes and effects of poor communication between the client and contractor, and the appropriate methods to improve communication between the client and contractor in the Nigerian construction industry.

2.0 Communication in the construction industry

According to Emmitt and Gorse (2007), communication within construction teams, or rather the effectiveness of communication within construction teams is a significant factor in the successful completion of construction projects. Construction is a service business where interpersonal skills which include communication skills play an important role for the success of a project (Antonio and Senol, 2012). Communication plays a vital role in all stages of construction such as design, production, organisation and management (Tipili *et al.*, 2014). Information sharing among the project participants is vital for realizing the project objectives. According to Yang *et al.* (2007), building project management requires effective collaboration and coordination between all the stakeholders and effective communication between all the members is believed to be crucial for successful project delivery. Also, in construction, communication has been identified as one of the major Critical Success Factor for successful project delivery (Yu *et al.*, 2006; Xue *et al.*, 2010; and Meng, 2012). In procurement, Titus and Bröchner (2005) said, information plays a profound role in a construction environment whether it is during the preconstruction period or during the project implementation. Such information is vital not just to the procurer but to all the suppliers and parties involved in the project.

According to Wikforss and Alexander (2007) indicates that, the performance in construction industry is highly affected by the ineffective communication practices. Poor communication during project execution still remains an aspect of construction that to date given little attention from construction industry (Ali and Ken, 2011). Augusto *et al.* (2009), have consistently drawn attention to the difficulties caused by the organisational systems in which construction teams operate, where inadequacies of effective communication reported seem to come from poor interaction practices and this nature of interaction affects the strength of relationships between the actors and ultimately affects their ability to transfer knowledge and appropriate task-based information for project delivery. From survey conducted by Kasun and Janaka (2006), shows that more than 40% of the respondents from the construction site protested about the insufficient of job site communication between project participants, affects progress of work. Indeed, language barrier indirectly causes the lack of communication between the supervisors and labours. This consequently causes the misunderstanding by the labours in their work scope and then lead to poor workmanship.

Communication is necessary in construction, from a research done by Augusto *et al.* (2009), 80% of the Hispanic workers in American construction sector mentioned that the communication with the supervisors is vital and need to be improved. Therefore, American supervisors suggested that the training in communication skills is essential to eliminate the language gap among themselves and the foreign labours. Ling *et al.* (2007) stated that, effective communication leads to effective projects deliver. As Tai *et al.* (2009) reckoned that, "no communications means no management". Apart from the communication between supervisors and construction labours, proper communication and teamwork are

also necessary between contractors and subcontractors. Through a continual communication among parties involved, working relationship among the construction parties can be closer. In the construction industry, communication has been identified as an effective means to reduce conflict (Wong *et al.*, 2008). In a procurement project, the parties involved have decisive roles based on the information available or communicated to them therefore, information needs to be captured and communicated efficiently between relevant parties during a construction project while better means of managing the information flow results in enhanced productivity of projects (Titus and Bröchner, 2005).

Therefore, proper communication is very important to improve the relationship among the construction team and consequently improve the workmanship quality in construction (Ali and Ken, 2011). While communications management is arguably one of the most important aspects of project management, it must be done in an effective manner and within the constraints of the allocated time and resources (Mitkus, 2014).

2.1 Communication in Global Construction Industries

According to research conducted by Barggen and Ma (2011), in Sweden, a project in the construction industry is special, unique and consumes a lot of time, and to achieve a high standard design and effective project delivery, lies a high demand on communication between actors working properly, project has well established information and communication routine, open information channel (face-to-face meetings), and effective communication that leads to trust, discipline and improve performance. According to study conducted by Johansen and Walter (2007), on Implementation of Lean Construction in the German Construction Industry, it was argued that frequent use of collaboration technology would point towards lean conformance and effective communication and collaboration has been emphasized throughout the implementation process.

According to study conducted by Ochieng and Price (2010), the study reveals that participants in UK acknowledged that effective communication on projects is aided by the early establishment of clear lines of responsibility and clear robust issue resolution process within the integrated team, as noted in the study, both internal and external cross-cultural communication provides the invisible glue which can hold a dislocated multicultural project team together and it was established that effective communication is the key to managing expectations, misconceptions, and misgivings on multicultural project teams. As confirmed, good communication strategies are primary in establishing, cultivating, and maintaining strong working relationships on heavy construction engineering projects.

In Hong Kong, communication between the government and the construction industry [cultural factor] is affected by four variables influence, which are: communication between government and contractors; availability of information; government's concern for its image; and use of construction IT, where at the moment, there is not enough communication between the government, the industry and regulations guidelines are sometimes not effectively disseminated to the industry (Martyn *et al.*, 2008). From a research of Xiao and Proverbs (2002), found that better quality performance of Japanese construction projects can be attained attribute to effective communication, steady and durable working relationship between Japanese contractors and subcontractors.

According to Oke *et al.*, (2010), suggest that the Nigerian Quantity Surveyors should carry-out a proper cost and communication management which will always leads to effective project management. In Uganda, Alinaitwiet *al.* (2007), mention that, communication is one of the major factors influencing labor productivity in the country's construction industry. According to study conducted by Ochieng and Price (2010), the study reveals that participants in Kenya acknowledged that effective communication on projects is aided by the early establishment of clear lines of responsibility and clear robust issue resolution process within the integrated team, as noted in this study, both internal and external cross-cultural communication provides the invisible glue which can hold a dislocated multicultural project team together and it was established that effective communication is the key to managing expectations, misconceptions, and misgivings on multicultural project teams. As confirmed, good communication strategies are primary in establishing, cultivating, and maintaining strong working relationships on heavy construction engineering projects.

According to Ogwueleka (2011), mentions that, communication and communication channels are among the major critical success factors influencing project performance Nigerian. While lack of effective communication is the second major causes of delay in Nigerian construction projects (Kasimu and Usman, 2013). According to study conducted by (Tipili *et al.*, 2014), the study found out that project professionals (architecture, contractor, consultant, and engineers) within the construction industry in Nigeria has a strong appreciation of impact of project communication, where they unanimously agreed on the importance of communication on project site and therefore, mention that lack proper communication management has great effects on project delivery.

According to Augusto *et al.* (2009), language barrier in communication between the foreign labours and local supervisors causes the communication failure on the jobsite, found that 82% of the respondents in the survey mentioned that the most general trouble faced on the jobsite by the America supervisors is the language obstacle when communicating with the foreign labours.

Mahamid (2013) conducted a study and identified that communication is one of the main factors affecting labor productivity in Palestinian building construction projects. Also communication ranks highest among the factors influencing labor productivity in Kingdom of Saudi Arabia's Construction Industry.

2.3 Problems of Communication in Construction

Performance in construction industry is highly affected by ineffective communication practices (Wikforss and Alexander, 2007). One reason for ineffective communication comes from the temporary nature of the projects. Communication can have direct and indirect effects on team and organisational performance (Wok and Hashim, 2013). Ineffective communication management system in construction project delivery in Nigeria is the major cause of failures associated with construction projects (Tipili *et al.*, 2014). Interactions and relationships in the workplace are influenced by numerous individual differences in communication, and these have been found to affect co-workers' satisfaction and productivity (Myers and Sadaghiani, 2010).

Problems of communication in construction project delivery in Nigeria are enormous because, as the project unfolds and the design is realized, information in the form of drawings, specifications and construction methods must be communicated from one expert to another (Tipili *et al.*, 2014). Foley (2004) said, communication poorly managed will lead to de-motivated workforce, design errors, slowdown in the entire job and failure in production. This reason also leads to inevitable conflicts; in construction process, where there are several key actors who only get together for short term projects (Antonio and Senol, 2012).

Language barrier is a type of communication barrier that has been agitating the stakeholders in the construction industry in Malaysia, and consequently, this language barrier has led to other problems especially in progress of the work and safety matters (Valithern, 2014). Hence, it shall be overcome to improve the working environment at construction site. Similarly Ochieng and Price (2010) stated that, many of those with experience of working with multicultural project teams have yet to develop skills to cope with such a challenging communication environment.

PMI's 2013 Pulse of the Profession™ report revealed that US\$135 million is at risk for every US\$1 billion spent on a project. Further research on the importance of effective communications uncovers that a startling 56 percent (US\$75 million of that US\$135 million) is at risk due to ineffective communications. According to Sappe (2007), commonly noted challenge to containing costs in conventional construction projects is lack of effective communication among various technical experts who tend to use their own tools, protocol, and industry standards for making decisions and tracking information. Failure to understand the individuality of each stakeholder is often a cause of the communication break-downs that are all too common in the construction industry (Aulich, 2013).

Since poor or insufficient communication is the major factor that contribute to the failure of projects, then information must be properly managed, transferred and understood so that the various aspects of the project can be assembled to realize the design (Tipili *et al.*, 2014). Therefore, using an appropriate communication management system to resolve construction and design problems is essential accomplish the production and social functions within the organisations cannot be overemphasized and the effects of communication and communication management has a great impact on any project delivery.

Tipili *et al.* (2014) mention that ineffective communication management system in construction project delivery in Nigeria is the major cause of failures associated with construction projects. While Valithern (2014) said, language barrier is a type of communication barrier that has been agitating the stakeholders in the construction industry in Malaysia, and consequently, this language barrier has led to other problems especially in progress of the work and safety matters. Foley (2004) identified that communication poorly managed will lead to de-motivated workforce, design errors, slowdown in the entire job and failure in production. While Myers and Sadaghiani (2010) found out that, interactions and relationships in the workplace are influenced by numerous individual differences in communication, and these have been found to affect co-workers' satisfaction and productivity.

3. Research Method

This part discuss the methodology that was used in this research to achieve the objectives of this research, that are to investigate the causes and effects of poor communication between client and contractor and the appropriate methods to improve communication between the two parties in Nigerian construction Industry. The research adopted quantitative method by means of questionnaire. In quantitative research, Creswell (2012) stated that, researcher identifies a research problem based on trends in the field or on the need to explain why something occurs. It means that the research problem can be answered best by a study in which the researcher seeks to establish the overall inclination of responses from individuals and to note how this tendency varies among people. However, some quantitative research problems require that you explain how one variable affects another. Variables are an attribute or characteristic of individuals that researchers study.

The quantitative data analysis used in this research is the SPSS software. Descriptive analysis and ranking of the mean values is conducted to identify the variable that is having a significant perception of respondents. Linear Regression was use to find the percentage to which poor communication between client and contractor has effects on construction projects in Nigerian construction industry, based on the hypothesis revealed. The result is discussed and the recommendations on portions that need further studies were pointed out.

The research survey was conducted in three Local governments in Adamawa state in North Eastern part of Nigeria. The Local governments are Yola North, Yola South, and Gerie Local Government areas of Adamawa State of Nigeria; the state is part of North Eastern states of Nigeria. The state government embarks in development in the state, with

construction of basic amenities such as schools, roads, hospitals and other infrastructure. A lot construction activities is going on in state, where the researcher choses the client and contractors of Millennium Development Goals (MDG,s) office, Adamawa State Ministry of Education and Adamawa State Urban and Regional Planning Development Board, as the organisations involves in major constructions in the State.

This research will take the clients and contractors in Yola North, Yola South and Gerie, local governments' areas of Adamawa state as the population area. Where Yola, is the state capital of Adamawa state while Gerei is a neighboring town to the state capital. The contractors that are in the town are 132, according to Adamawa State Urban and Regional Planning Development Board, and there is no record of registered clients in the state. The research consider contractors and clients working for Millennium Development Goals (MDG,s) office, Adamawa State Ministry of Education and Adamawa State Urban and Regional Planning Development Board, as the organisations involves in constructions in the State.

According to Kothari (2004), sampling may be defined as the selection of some part of an aggregate or totality on the basis of which a judgement or inference about the aggregate or totality is made. In other words, it is the process of obtaining information about an entire population by examining only a part of it. In most of the research work and surveys, the usual approach happens to be to make generalisations or to draw inferences based on samples about the parameters of population from which the samples are taken.

4. Data Analysis

This section of the research work integrates confirmed ideas, together with the know-how of client and contractors. It discloses the factors that causes and effects of poor communication between client and contractor during construction project and with the methods of improving the communication between the two parties. The research will be conducting three types of analyses to achieve the desired objectives. These are the descriptive mean, frequency and Linear Regression. Descriptive analyses and ranking of the mean value is conducted to identify the variable that is having significant perception of respondents as use by previous research of Tipili *et al.* (2014) and Maame Aba (2012) on communication in construction industry. Linear Regression was carried out identify percentage of which poor communication between client and contractor affects construction project, based on the hypothesis.

4.1 Reliability Test

Cronbach's Alpha is a commonly used test of internal reliability. It calculates the average of all possible split-half reliability coefficients and a computed alpha coefficient varies between 1, denoting perfect internal reliability, and 0, denoting no internal reliability. The figure of 0.75 or more usually is treated as a rule of thumb to denote an accepted level of reliability (Singh, 2007). The Reliability test value is 0.757 for the variables under causes of poor communication, 0.791 for that of effects of poor communication. Also the variables under the methods to improve communication were having the value as 0.779. This is suggesting very good internal consistency reliability for the scale with this sample values above .7 are considered acceptable (Pallant, 2011).

4.2 Findings and Discussion

4.2.1 Causes of poor communication between the client and contractor

The results was analysed based on the descriptive analyses for objective number one (1). The result was arranged from the highest mean to the lowest. The five (5) top causes of poor communication are lack of cooperation, selfish interest, and misunderstanding between the two parties. Others are lack of open communication and lack of trust. These were ranked as 3.84, 3.79, 3.72, 3.65, and 3.64 respectively. Moreover, failure to understand the individuality of each other, unpleasant relation, conflicting ideas, language barrier and complexity of project were ranked as 3.58, 3.53, 3.47, 3.03 and 2.98 respectively. The results also showed the complexity of project having the lowest mean of 2.98.

The results of the survey and indicated that, the most significant factor that causes poor communication between client and contractor is lack of cooperation between the two parties. The result indicates that, respondents rated the variable with highest mean value of 3.84 though it is between agree and strongly agree based on the likert scale. The result shows mutual cooperation plays a vital role between the client and contractor during project execution, in order for them get along and communicated effectively, because of their different projects goals. Unwillingness to associate and support each other to achieve such objectives will cause communication failure between the two parties, as also highlighted by studies Konrad (2011), who identified unwillingness of cooperation between the client and contractor, is among the major causes of poor communication between the two parties.

The variable was rated high by Project Managers from the professional group that participated in this survey. This shows that, projects managers understand the consequences of cooperation during project management since they are in charge of managing the entire project activities and resources. Managing human resources requires full cooperation among individuals and groups that participate in a project in other to accomplish the task ahead of them. Since construction is labour intensive environment that involves different individuals and groups, as supported by Lee (2011),

who mention that, successful project management requires full cooperation among project participants, and communication plays a vital role to successful project management. The variable also scored high by professionals that falls between 11-15 years of experience in the construction industry, which shows that the respondents acquires ample years of experience in the construction industry, to perceive lack of cooperation as the major cause of poor communication between the client and contractor.

The second factor is selfish interest between the two parties with 3.79 mean. The respondents agreed that selfish interest also causes poor communication between the two parties. The variable a new factor the researcher suggested and introduce to test if the variable also causes poor communication between the client and contractor. Where the respondents ranked it as the second major causes of poor communication between the two parties. The respondents feels that selfish interest from either or both parties will cause communication gap between the two parties. Such selfish interest emerges from how each party views his or her objectives of the project. The client objectives is to achieve much by paying less, while the contractor's aim is only to maximize profit. This conflict of interest causes not only communication barrier but affect the project delivery entirely. The respondents that rated this variable most are the Quantity Surveyors who emerge from the Client Organisation. The Quantity Surveyors believe that interest both parties pursue derived from the financial aspect of the project, which is why the quantity surveyors has knowledge of it, due to their involvement and awareness regarding project monetary terms.

The third factor that causes poor communication between the client and contractor is misunderstanding between the client and contractor, which is ranked third (3rd) by the respondents having mean of 3.72. Misunderstanding between the client and contractor is among the critical reason that affects communication between the two parties. Unclear project objectives, and failure for the contractor to understand the perception of the client causes misunderstanding between the two parties that will cause difficulty to communicate with each other. Lack of understanding between two parties will directly leads communication breakdown between them. For the two parties to effectively communicate, there must be mutual understanding between them. This also highlighted by study of Lau and Rowlinson (2009) who stated that, lack of understanding between the client and contractor results to communication failure in managing construction project. Understanding is among the key factors that will lead to successful project delivery, because poor communication between the client and contractor is due to misunderstanding between the two parties (Mitkus, 2014).

The fourth causes as ranked is lack of open communication between the two parties with 3.65 mean. The respondents agreed that lack of open communication also causes poor communication between the two parties. Lack openness in all dealings between the two parties will cause communication barrier between them. Failure to completely express each other's mind will affect the way both parties interact with each other. Both the client and the contractor have to express his or her view regarding the way the project is running, and show his or her dismay whenever any of them finds something wanting regarding the project running. This will lead to better understanding and communication between the two parties. This result was also supported the research of Konrad (2011) who also mentioned lack of open communication causes poor communication between client and contractor during construction project.

The fifth item that causes communication failure between the client and contractor during construction project in the Nigerian construction industry, is lack of trust between the two parties. The respondents rated the variable with mean value of 3.64. The result shows Trust plays a vital role between the client and contractor during project execution, in order for them to get along and communicated effectively, and it is one of the major critical success factor to partnering and collaboration in the construction industry. Alliances work on the principles of mutual trust, commitment and communication (Lee and Cavusgil 2006) to reduce conflict and enhance productivity and overall performance (Lambe and Robert *et al.*, 2000; Lee and Cavusgil 2006). When there is no trust among the two parties, there will not be interaction (communication), as highlighted by studies of Mitkus (2014), who mentions that, lack of trust between the client and contractor will results to argument and conflicts that affects the communication between the two parties. Lau and Rowlinson (2011) stated that lack of trust between the client and contractor leads to communication failure during managing construction project. Also Konrad (2011), identified lack of trust is among the major causes of poor communication between client and contractor.

The respondents ranked language barrier and complexity of projects as the least factors that causes poor communication between the client and contractor, with mean values of 3.03 and 2.98 respectively. The respondents rated language barrier low because, Nigerian speaks one international language, and the native languages is understood among each other, and this is not a communication problem in the construction industry. While complexity of project is rated the least, because, the respondents feels that a client will not appoint a contractor to carry out a construction project, unless the client acknowledge that the contractor is capable and competent to do so.

4.2.2 Effects of poor communication between the client and contractor

This part provides the result of Linear Regression analysis for the effects of poor communication between the client and contractor. From the grouped variables, understanding and trust as effects of poor communication between client and contractor during construction project with significant value of 31.1% and 26.2% respectively. The other two factors that have reasonable percentage are relationship and project having 12% and 11% respectively.

Hypothesis

- H₁ Poor communications between client and contractor have significant effect on construction project in Nigeria construction industry.
- H₀ Poor communication between client and contractor do not have significant effect on construction project in Nigeria construction industry.

From the analyses conducted to test the hypothesis if poor communication have or do not have significant effects on construction project, it revealed that the hypothesis is accepted, that is poor communication between client and contractor has significant effect on construction project in Nigeria construction industry with 87% significant effects.

Value of R Square

From Table 1 the value of R Square obtained is 87%, which shows that poor communication between client and contractor has 87% significant effects on construction project in Nigeria construction industry.

Table 1- Percentage of R Square

Model	R Square	Change Statistics	
		R Square Change	Sig. F Change
1	.0	.087	.0

One of the objectives of this research is to investigate the effects of poor communication between client and contractor during construction project in Nigerian construction industry. There are ten (10) variables which are categorised in to four (4) groups. The analysis was done using Linear Regression to find if poor communication between client and contractor affects construction project in Nigeria construction industry. From the result of R Square in Table 1, the results shows that poor communication between client and contractor have significant effect on construction project in Nigeria construction industry with 87% R Square value. The result was analyse using the highest mean scores of objective one (1) which are lack of cooperation, selfish interest, misunderstanding, lack of open communication and lack of trust, as the independent variables, while the grouped variables which are Trust, Understanding, Relationship and Project management as dependent variables.

The grouped variables identified the percentage of which poor communication between client and contractor has effects on construction projects. Understanding group (misunderstanding and loss of mutual cooperation) has the highest percentage. It was rated by the respondents with 31.1% value, to show the variables poor communication between client and contractor has effects on construction project from the hypothesis revealed, with significant effects up to 31%. The results shows misunderstanding between the client and contractor is a barrier to communication between them, since the absence of mutual understanding will leads to conflicts and confusion during projects execution between the two parties. As indicated by Laufer *et al.* (2008) who mention that, poor communication between client and contractor results to conflict, misunderstanding, uncertainty and lack of mutual cooperation among the two parties. Also Mitkus (2014) highlighted that, communication between client and contractor if affected by whatever factor, which causes misunderstanding among the two parties during construction that leads to conflict among them. Better understanding enhances flow of communication between the two parties.

The second group with highest score is Trust (distrust and fear of exploitation and betrayal). The respondents' rate is second group that poor communication between client and contractor affects construction project, having 26.2% significant effect. Lack of trust between the two parties is major factor that affects project delivery. This is because trust promotes understanding, better working relationships and communication among project participants. Because of the absence of communication between client and contractor creates fears of exploitation and betrayal, which results to avoidance of commitment of the team (Wong *et al.*, 2008). Also Titus and Brochner (2011), said lack of understanding and communication results to trust issues among projects stakeholders (client and contractor).

The other groups, which are Relationship (loss of commitment regarding project objective and conflict) and Project management (poor project management, delay, time and cost overrun), which came third (3rd) and fourth (4th) with almost same score of 12% and 11% significant effects. Misunderstanding and lack of trust will leads to conflicts, and when conflicts exist between the two parties, it will affects the relationship and interaction (communication) between the two parties. Commitments come from how each party is satisfied with each other and the project also. The lesser the satisfactory the lesser commitment renders from any of the party. While lack of commitment persist, the communication gap between the two parties will be wider that will affect the entire project delivery. This also mentioned by Mitkus (2014), the true cause of construction related conflicts is unsuccessful communication between the participants (client and contractor) in a construction project. Laufer *et al.*(2008) mention that, poor communication between client and contractor results to conflict. While Bogers *et al.* (2008)mention that lack of communication among construction parties such as client and contractor results to poor management, selection of proper materials and soar relationship between the two parties. Poor communication is one of the major factor that causes delay in Nigerian

construction projects (Isah, 2012). While Murali (2007), concluded that poor communication between client and contractor leads to delay in Malaysian construction projects.

4.2.3 Methods to improve communication between client and contractor

This part provides the result of descriptive analysis for objective number three (3), that is the methods of improving communication between client and contractor. Maintaining integrity, sufficient trust, understanding and collaboration, effective communication, and understanding client needs, with mean score of 4.13, 4.08, 4.08, 4.05, and 4.03 respectively, is the most appropriate methods that can improve communication between client and contractor during construction project in the construction industry in Nigeria.

The other factors that have reasonable mean value are recognized as face-to-face communication, flexible atmosphere, use of ICT tools, maintaining long term relationship, and the use of instant messenger, having mean value 4.01, 3.72, 3.65, 3.64 and 3.31 respectively.

The third objective of this research is to propose appropriate methods of improving communication between the client and contractor in the Nigerian construction industry. The most suitable method to improve communication between the client and contractor is maintaining integrity between them. The result indicates that the respondents rated the variable with highest mean value of 4.13. The variable is another factor the researcher suggested and introduces to test if it has potential influence towards improving communication between the client and contractor. The respondent perceives that integrity is the major ingredients for proper understanding and communication between two or more contracted parties. Each party has to be the man of his own words, because integrity is adherence to moral and ethical principles. And honesty and trust for better communication will all manifest from maintaining integrity. The Quantity Surveyors from the professional's background rate this variable high because, of the nature of their profession. The quantity surveyors deals with the estimation of materials, equipment's, labor and their prices for the entire projects. The client's needs a trustworthy and competent quantity surveyor that will always perform such task to for him/her. The quantity surveyor most provide accurate estimate to the client without producing any wrong or incomplete estimates, that will later cause conflict between the client and contractor. The quantity surveyors most always provide accurate estimates that will avoid misunderstanding and conflicts which will result to loss of integrity from both parties. The quantity surveyors sees maintaining integrity as the major factor that promotes healthy working relationship between the client and contractor, which will enhance better communication between the client and contractor. The variables also score high among the professional's that acquire more than 15 years of experience. This justifies why the variables was ranked first, because the experienced professionals who justifies that integrity plays a vital role in promoting communication between the client and contractor. Because both parties are expected to exhibit high level of integrity in order to acquire functional level of good communication between them.

The second method that will improve communication between the client and contractor is sufficient trust, which was ranked second highest variable that will improve communication between client and contractor in the Nigerian construction industry. It was rated by the respondents with 4.08 mean values. Trust is another way to foster good working relationship, because without sufficient trust between the client and contractor, there will always be doubt and fear of betrayal, which will lead to conflict, misunderstanding and communication break down between them. Both parties need to be honest with each other, because this will promote trust between the two of them. This is also highlighted by Lau and Rowlinson (2011), who stated that, trust improve information exchange and communication among the project stakeholders. Both parties have to be honest and fair with each other throughout the project, because it will promote trust that will improve better working relationship and communication between them.

Mutual understanding and collaboration, is another method of improving communication between the client and contractor that was ranked as same as sufficient trust, with 4.08 mean value. It was accepted by the respondents that, having mutual understanding and collaboration between the two parties will enhance communication between them. For both client and contractor to have mutual understanding their must exist a clear statement and clear objectives that they both understood that will guide them. Both parties need to identify and understand the needs of each other, this was seen as way to improve better communication between the two parties. For communication to be truly effective, mutual understanding and collaboration between the sender and the receiver must exist (Kelleher *et al.*, 2006).

The third method that improves communication between the client and contractor is by use of effective communication channel. Effective communication channel promotes greater feedback and understanding. Therefore, the respondents agreed by rating this variable with 4.05 average mean value. Both the client and the contractor have to agree and adopt a means of communication to be use throughout the project. This will help both parties to communicate effectively, because of the communication channel adopt for the project. The communication channel adopted, will only be used for project purpose only, so as soon as information was send or received through that channel, both parties will understand the nature and reason for receiving such message. The use of other means of communication channels associated with other activities, for example, a channel is used as business line, private, and official will only create confusion and lack of effective feedback. Effective communication channel improve better interaction and promotes speedy feedbacks. Because communication is a two-way process and to enhance two-way effective communication flow between the client and contractor, effective communication channels must be employed, such as telephone calls, email, and video conferencing or written (Goh *et al.*, 2005).

The fourth factor that can improve communication between the client and contractor during construction project in Nigerian construction industry Understands client's needs. The respondents rated the variable with 4.03 mean value. The respondents confirms that contractor adherence to client needs enhances good working relationship and communication between the two parties. This is clarifying by the slogan which says "*The customer is always right*". This shows that the contractor should have adequate knowledge about the client's do's and don'ts, also try to understand the client's perception and try not to deviate from the client's needs and wants. He or she should always keep the customer happy by fulfilling the customer's desire, and this will promote open communication between them.

Face-to-face communication is also a significant method to improve communication between the client and contractor during construction project in the Nigerian construction industry. Regular face-to-face meeting promotes clarity and genuinely exchange of information. The respondents rated this item in the group with 4.01 mean value. Both parties should ensure frequent face-to-face site meetings, because this will ensure close track of the project as the project unfolds, and it will keep both parties fully aware about the project site activities. This will eliminate any surprise and conflicts that will arise as the project progressed. Frequent face-to-face meetings promote better understanding, flexible atmosphere and communication between the two parties. The result supports the research of Hua *et al.* (2005), who mentioned that, face-to-face communication by promoting shorter distance will lead to efficient feedback and enhance spontaneity. Also, Hayward (2006), found out that face-to-face communication among client and contractor during construction promote better understanding among the parties, and allows the development of project specific-goals and objectives.

5. Discussion

Ranking of the mean values for variables in each group was carried out to unveil the most significant factor(s) that causes poor communication between the client and contractor. Five variables picked as the most significant factors that causes poor communication between the client and contractor. Which the lack of cooperation, selfish interest, misunderstanding, lack of open communication and lack of trust as the major causes of poor communication between the client and contractor, having mean values of 3.84, 3.79, 3.72, 3.65, and 3.64 respectively.

One of the objectives of this research is to investigate the effects of poor communication between client and contractor. Hypothesis was generated to identify if poor communication between client and contractor have or do not have significant effects on construction project. The analysis was carried out using Linear Regression to identify the percentage to which poor communication affects construction project. The result reveals that poor communication between client and contractors have significant effects on construction project in Nigerian construction industry, with value of R Square 87%.

Ranking of the variables using descriptive means was conducted also on the methods of improving communication between the client and contractor. Five (5) methods were considered as most appropriate Fwhich shows that maintaining integrity, mutual understanding and collaboration, effective communication channel, understanding client needs, and face-to-face communication as the most appropriate methods to improve communication between client and contractor, having mean values of 4.13, 4.08, 4.08, 4.05, 4.03, and 4.01 respectively.

6. Conclusion

Considering the result obtained from the research, it is important to propose appropriate methods that could possibly improve communication between the client and contractor during construction projects in the Nigerian construction industry. The construction industry is the major beneficiary of these research findings. The clients and contractors and other participants in the industry are going to benefit if the client and contractor avoids or reduces all causes of poor communication between them. Good relationship and communication between the client and contractor will improve the quality of communication between them that will results to successful project delivery. The research is contributing to knowledge in the academic environment, and the society at large. The causes and effects of poor communication between client and contractor and improvement methods mentioned in this research were richer than the previous researches conducted indicating that the objective of this research was also addressed in the research. The society at large benefits from this research, because social vices caused due to the inability of client and a contractor to communicate effectively that affects project delivery. Therefore, the research contributed to the humanity immensely.

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