Wasiu Ola-awo

Dr Wasiu Adeniran Ola-awo, Lecturer, Federal University of Technology, Minna, Nigeria, PMB. 65, Minna, Niger State, Nigeria. Phone: +2348062382854, email: <olaade4u2006@gmail.com>, ORCID: https://orcid.org/0000-0002-6709-1352

Aisha Alayande

Aisha Alayande, Student, Federal University of Technology, Minna, Nigeria, PMB. 65, Minna, Niger State, Nigeria. Phone: 07010032567, email: <aishaalans92@gmail.com>

Ganiyu Olarewaju

Dr Ganiyu Olarewaju Bashir, Lecturer, Federal University of Technology, Minna, Nigeria, PMB. 65, Minna, Niger State, Nigeria. Phone: 08036269235, email: <bashiroganiyu@futminna.edu.ng>

Luqman Oyewobi

Dr Luqman Oyekunle Oyewobi, Lecturer, Federal University of Technology, Minna, Nigeria, PMB. 65, Minna, Niger State, Nigeria. Phone: +2348033823132, email: <l.oyewobi@futminna.edu.ng> ORCID: https://orcid.org/0000-0002-4492-2694

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CRITICAL SUCCESS FACTORS FOR EFFECTIVE INTERNAL CONSTRUCTION STAKEHOLDER MANAGEMENT IN NIGERIA

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ABSTRACT

In developing countries such as Nigeria, Stakeholder Management (SM) practice is weak. The weakness of this practice often inhibits project goals in terms of time and cost overruns, disputes and lack of trust among the stakeholders. This article reports the results of a study on critical factors for successful SM in construction projects in Nigeria, in order to suggest ways to enhance project performance. The study employed a quantitative survey research design, using self-administered questionnaires distributed to construction practitioners (quantity surveyors, architects, engineers, builders and project managers) on construction sites in two selected geo-political zones of Nigeria. The collected data was analysed, using descriptive and inferential statistics. The results indicated that seven critical factors are important to successful SM in the research environment. These include engagement of competent project leaders and team members, effective communication, promoting good relationships, formulating a clear project mission statement, management support, and a good SM

strategy which are instructive to improve SM. The study recommends the prioritisation of competency in the selection of project teams, effective relationship management and improved information dissemination during construction as the precursors of successful SM and project performance. Stakeholders must be adequately identified and analysed to ensure that they are competent for the contract and appropriate for the job. Construction practitioners, especially project leaders, could use identified critical success factors (CSFs) as a road map in the development of appropriate solutions for successfully managing stakeholders associated in the Nigerian construction industry.

Keywords: Construction projects, critical success factors, Nigeria, stakeholder management, stakeholder relationship

ABSTRAK

In ontwikkelende lande soos Nigerië, is die praktyk van Belanghebbendes Bestuur (BB) swak. Die swakheid van hierdie praktyk belemmer projekdoelwitte in terme van tyd- en koste-oorskryding, geskille en gebrek aan vertroue onder die belanghebbendes. Hierdie artikel rapporteer die resultate van ‘n studie oor kritieke faktore vir suksesvolle BB in konstruksieprojekte in Nigerië, ten einde maniere voor te stel om die prestasie van projekte te verbeter. Die studie het gebruik gemaak van ‘n kwantitatiewe navorsingsontwerp vir opnames met behulp van vraelyste wat self toegedien is aan konstruksiepraktisyns (bourekenaars, argitekte, ingenieurs, bouers en projekbestuurders) op konstruksieterreine in twee geselekteerde geografiese sones van Nigerië. Die versamelde data is geanaliseer met behulp van beskrywende en afleidende statistieke. Die resultate het aangedui dat sewe kritieke faktore belangrik is vir suksesvolle BB in die navorsingsomgewing. Dit sluit in die betrokkenheid van bekwame projekleiers en spanlede, effektiewe kommunikasie, die bevordering van goeie verhoudings, die formulering van ‘n duidelike missie van die projek, bestuursteun en ‘n goeie strategie vir die BB wat insiggewend is om BB te verbeter. Die studie beveel die prioriteit van bekwaamheid by die keuse van projekspanne, effektiewe verhoudingsbestuur en verbeterde verspreiding van inligting tydens konstruksie aan as voorlopers van suksesvolle BB en projekprestasie. Belanghebbendes moet voldoende geïdentifiseer en ontleed word om te verseker dat hulle bekwaam is vir die kontrak en toepaslik is vir die werk. Boupraktisyns, veral projekleiers, kan geïdentifiseerde kritieke suksesfaktore (GKS’s) as ‘n padkaart gebruik in die ontwikkeling van toepaslike oplossings vir die suksesvolle bestuur van belanghebbendes verbonde aan die Nigeriese konstruksiebedryf.

Sleutelwoorde: Bouprojekte, bestuur van belanghebbendes, kritieke suksesfaktore, Nigerië, verhouding met belanghebbendes

1. INTRODUCTION

Due to its complex nature, the construction industry requires the input of various stakeholders such as clients, consultants, designers, builders, suppliers, lawyers, financiers, and end-users (Winch, 2010). These parties often share their experiences, knowledge, and insights to accomplish the project (Aaltonen, Jaakko & Tuomas, 2008: 509). They may have varying interests that could lead to disagreements among project teams during project execution, and, ultimately, to adverse effects on the performance of projects. The survival of the construction organisation and the continuously gain of a competitive advantage of the firm rest on effective stakeholder management (SM) (El-Sawalhi & Hammad, 2015: 157). The success of

any project depends very much on fulfilling these stakeholders' needs and expectations (Aaltonen *et al.*, 2008: 510; Chinyio & Akintoye, 2008: 591).

Globally, the construction industry has a poor record of SM compared to other sectors such as manufacturing (Olander & Landin, 2008: 553). This is due to a dearth of an elaborate tool to manage SM performance in construction projects (Oppong, Chan & Dansoh, 2017: 1037). In addition, for a project to be successfully completed, the services of various stakeholders are required. These stakeholders originate from different professions, cultures and educational backgrounds, which could be responsible for divergent goals and expectations and consequently lead to challenges associated with managing project stakeholders (Li, Lu & Peng, 2011: 9705). In construction projects, poor SM leads to problems such as inadequate resources assigned to the project, poor scope and work definition, poor communication, changes in the scope of work, and unforeseen regulatory changes, which result in project delays and cost overruns (El-Sawalhi & Hammad, 2015: 157; Eyiah-Botwe, Aigbavboa & Thwala, 2016: 154; Nauman & Piracha, 2016: 5; Yang, Shen, Ho, Drew & Chan, 2009: 337).

In Nigeria, many construction projects could not achieve the set goals, due to weaknesses in SM, leading to a poor relationship, poor delivery, and disputes among the stakeholders (Ekung, Okonkwo, Odesola, 2014: 101). Most of the studies in Nigeria focus on barriers to effective SM in the delivery of multifarious infrastructure projects. These barriers include failure to understand stakeholders' needs and expectations; uncooperative attitude of stakeholders; failure to identify key stakeholders; failure to identify potential conflict areas, project manager's poor knowledge of SM (Zarewa, 2019: 85); lack of continuity in stakeholder management process; lack of clear definition or agreement as to who should be responsible for stakeholder management (Molwus, 2014); civil unrest and lack of political stability; change in bye-laws and regulations; delays in site handover; delays in inspection and approval; financial problems, and non-adherence to specifications (Yahaya, Kasimu, Shittu & Saidu, 2018: 87).

In addition, a lack of established critical success factors (CSFs) for managing internal project stakeholders is responsible for most of the problems associated with construction projects in Nigeria (Molwus, 2014). A number of studies have been conducted to explore CSFs for stakeholder management, especially in developed countries and a few in developing countries (Eyiah-Botwe *et al.*, 2016: 153). None of these studies was conducted within the Nigerian context (Molwus, 2014).

The absence of specific and significant studies on internal SM within the context of the Nigerian construction industry validated this study. It is, therefore, important to identify success factors critical for successful internal

SM, in order to suggest ways to improve project performance in the Nigerian construction industry. Identification of CSFs may assist project managers, who are responsible for overseeing SM activities, and project management to improve the performance and processes of SM. The findings would also assist construction managers in overcoming the challenges associated with SM and help manage relationships with stakeholders in the construction process in Nigeria.

2. LITERATURE REVIEW

2.1 Concept of project stakeholder

There are various definitions of the concept 'project stakeholder'. Li *et al*. (2011: 9705) and Freeman (1984: 49) define stakeholders as any individual, group, or organisation that may influence the performance of an organisation or a project, or whose interest is affected by the outcomes of the organisation's objectives. Oppong *et al.* (2017: 1038), citing Freeman (1984), affirmed that the concept 'stakeholder' originated at the Stanford Research Institute through an international memorandum in 1963. Since then, the stakeholder notion has been presented in four main domains: corporate planning, systems theory, corporate social responsibility, and organisational theory. Studies have classified stakeholders into external (secondary) and internal (primary) stakeholders (Freeman, 1984; Nilson & Fagerström, 2006: 169; Winch, 2010: 75; El-Sawalhi & Hammad, 2015: 158).

External stakeholders have a public or special interest stake in the organisation or project (Nilson & Fagerström, 2006: 169), but less direct involvement, nevertheless sometimes extremely influential. In other words, external stakeholders are not directly connected with the project or the business, and there is no formal contractual bond with the project or th organisation nor direct legal authority over the organisation or the project, but they have a public or special interest stake in the project or the organisation (*e.g.*, neighbours, local community, as well as public and local authorities) (Freeman, 1984; Nilson & Fagerström, 2006: 169; El-Sawalhi & Hammad, 2015: 158).

Primary or internal stakeholders have a direct stake in the organisation and its success (Nilson & Fagerström, 2006: 169). Examples are owners, customers, and suppliers (Chinyio & Olomolaiye, 2010: 3; El-Sawalhi & Hammad, 2015: 158). Internal stakeholders have formal, official, or contractual relationships with the organisation and sometimes invest something of value in a firm in the form of capital, human, or financial aid (Olander, 2003: 5). Without their participation, the organisation cannot survive. Internal stakeholders are active decision-makers, who must be

involved in all phases of the project, and their involvement greatly influences the success of the project (Buertey, Amofa & Atsrim, 2016: 118).

This article adapted Freeman's (1984) definition and Winch's (2010) classification, because they are globally cited by many authors (Oppong *et al*., 2017: 1038). In the construction industry, there is a strong emphasis on the internal stakeholder relationship, such as procurement and site management, while the external stakeholder relationships are hardly considered. This article focuses on the internal stakeholder management perceptions.

2.2 Stakeholder management in construction projects

SM refers to effective relationships with stakeholders (El-Sawalhi & Hammad, 2015: 158; Lim, Ahn & Lee, 2005: 831). Freeman (1984) developed an SM framework that includes the process of identifying key stakeholders and winning their support (Olander, 2003: 5). Due to the fragmented nature of the construction industry, project activities are handled by different stakeholders who have different interests indirectly or directly in the project. A series of complex activities are involved during each phase of a construction project, in which stakeholders have a decisive role to play. Proper management of the participating stakeholders (Olander, 2003: 5; Eskerod & Jepsen, 2013) is important for construction projects to be successful; therefore, SM is designed to curtail stakeholder activities that might adversely affect the project.

Studies acknowledge the benefits of SM, which include the help to integrate managerial concerns that are frequently treated separately; to influence the projects' outcomes positively, and to select realistic options, in order to maximise the ultimate project value (El-Sawalhi & Hammad, 2015: 158; Oppong *et al*., 2017: 1037; Yang, Shen & Ho, 2009: 160).

In project execution, clients, end-users, public authorities, and other stakeholders have high expectations or demands. When their demands and expectations are met, mutual stakeholder satisfaction is achieved, which is an important indicator of the success of a construction project (Nauman & Piracha, 2016: 2; Oppong *et al*., 2017: 1040).

Nauman and Piracha (2016: 2) asserted that the project stakeholders may have either a positive or a negative impact on the success of projects. Persistent stakeholder opposition may lead to delays and project failures. Stakeholders' obstruction or controversies during the design and implementation of the project may lead to time and cost overruns and poor quality, due to conflicts.

Furthermore, Nauman and Piracha (2016: 3) affirmed that integrating and managing the relationships and interests of shareholders to accomplish a successful project delivery is the central task in SM. At any time during project execution, some stakeholders have so much power that they can interfere, change the scope, and disturb the progress of the work. Olander and Landin (2008: 553) as well as Chinyio and Akintoye (2008) believe that different individuals and groups of stakeholders can influence the outcome of projects. Stakeholders should be recognised based on their influence on the project outcomes.

It can be inferred from the above statements that the stakeholders have resources and information to influence project outcomes. Therefore, if there is no plan for SM in projects, this could not only create unexpected problems, but also cause uncertainty as to the completion of the project. Many project problems could be overcome, if the stakeholders are actively engaged in early planning and integrated into the project team, and if a systematic approach is used to identify and manage stakeholders in the project delivery process.

2.3 Critical factors for successful stakeholder management in construction

CSFs can be defined as areas of activities and practices that require satisfactory results, in order to ensure successful competitive performance for SM, the organisation and/or the construction project (Rockart, 1979; Yang *et al.,* 2009: 337; Winch, 2010; Waghmare, Bhalerao & Wagh, 2016: 49). Studies affirmed that CSFs implications are limited to the specific environment in which they are established (Toor & Ogunlana, 2009: 149; Yong & Mustaffa, 2013: 959). The weakness in SM practices, due to lack of CSFs, often inhibits project goals in terms of time and cost overruns, disputes and poor relationship among stakeholders (Cleland, 1995).

Nilson and Fagerström (2006: 169) as well as Bourne and Walker (2006: 650) highlighted the process of managing stakeholders. This process consists of identifying relevant stakeholders and their relation to the system; determining stakeholders' needs and specifying the nature of their interests; measuring stakeholders' interest, by establishing the stakeholder and requirement matrix; balancing the stakeholder requirement, by predicting the future behaviour to satisfy the stake; managing the influence of stakeholders' behaviour on the project, and evaluating the participants. Stakeholders possess three attributes, namely power, legitimacy, and urgency, which continuously change in a manager-stakeholder relationship.

Studies identified various factors that contribute to the successful management of stakeholders in construction projects in various countries.

For instance, Yang *et al*. (2009: 337) in Hong Kong; Li *et al*. (2011: 9705) in China; Eyiah-Botwe *et al*. (2016: 153) as well as Amoatey and Hayibor (2017:146) in Ghana; El-Naway, Mahdi, Badwy and Al-Deen (2015: 10651) in Egypt; Olander and Landin (2008: 553) in Sweden, and El-Sawalhi and Hammad (2015: 157) in the Gaza Strip.

In Hong Kong construction projects, Yang *et al*. (2009: 338) as well as Yang, Shen, Drew and Ho (2010: 778) developed a set of 15 CSFs to be applied by project managers to ensure that stakeholders are effectively managed, under five main categories, namely precondition factor; stakeholder estimation; information inputs; decision-making, and sustainable support. Yang *et al*. (2009: 337) found that the three top-ranked factors influencing SM are managing stakeholders with social responsibilities; assessing the stakeholders' constraints and project needs, and frequently communicating with stakeholders. From the perspective of the project managers (PM), Yang *et al*. (2010) identified social responsibilities, information input, and prompt communication as three vital CSFs for SM. Yang *et al*. (2009: 160) asserted that top management support is vital for effective stakeholder engagement. This study's findings mainly reflect the SM environments in two regions where the studies were conducted.

Similarly, Li *et al*. (2011: 143) studied the hierarchical groupings of 16 CSFs for SM, based on a Chinese case study. The study was conducted on local government construction projects and identified managing stakeholders with social responsibility, frequent communication with properly engaged stakeholder, as well as promoting and keeping a good relationship as CSFs for SM in construction projects. They affirmed that, in order to cope with the uncertainties and complexities of construction, a flexible project organisation is required, through flexible project administration of recruiting personnel to achieve project objectives.

Eyiah-Botwe *et al*. (2016: 153) identified five CSFs for SM for the Ghanaian construction industry, using 60 respondents, comprising both internal and external stakeholders. Based on the descriptive analysis conducted, they found that early stakeholders' identification; project managers' competence; managing culture and political environment; formal SM process, and communication were highly ranked success factors. They believed that the cultural and political environment plays a vital role in stakeholder interest; a public project without political support would experience a setback. To develop a methodology for SM to achieve success on a construction project in Egypt, El-Naway *et al*. (2015: 10658) identified ten factors that have a great impact on effective SM. Among the factors identified are prioritising stakeholders based on their influence and power on the project; analysing stakeholders with social responsibilities; formulating appropriate strategies to manage stakeholders, as well as defining and formulating a clear

statement and project missions. Other factors identified were exploring stakeholders' needs and constraints in projects; identifying stakeholders; ensuring effective communication for all project stakeholders; promoting a good relationship with stakeholders; understanding stakeholders' areas of interests; building trust between project top management, and involving all the stakeholders in the project.

In addition, Amoatey and Hayibor (2017: 143) conducted a study at local government-level projects in Ghana to investigate the CSFs for effective project SM. The study respondents were 92 (internal and external) stakeholders. The five top CSFs identified were communicating with participating stakeholders; identifying stakeholders properly; formulating a clear project mission statement; keeping and promoting good relationships, and analysing stakeholder conflicts and coalitions.

In a study conducted in the Gaza Strip on the factors affecting the SM process in construction projects, El-Sawalhi and Hammad (2015: 167) revealed that the top five factors affecting SM are engaging highly competent project managers; clearly assessing the alternative solution; ensuring effective communication between the project and its stakeholder; examining the stakeholders' expectations and needs, as well as setting common project goals and objectives. In a study conducted in Nigeria on factors influencing construction community SM outcome, results indicated that regulatory requirements and public expectations, location of projects, effect of cumulative development, poverty, and lack of information disclosure are some of the high-ranking factors influencing engagement performance.

In a comparative study of factors affecting the external project SM of two railway development projects in Sweden, Olander and Landin (2008: 553) identified five crucial factors for implementing external project SM, namely communicating benefits and negative impacts; analysing stakeholder concerns and needs; evaluating alternative solutions; media relations, and project organisation. In a study conducted in Pakistan on project SM, Nauman and Piracha (2016: 1) identified effective communication among all project stakeholders, exploring stakeholders' needs and constraints to projects were ranked first and second. Chinyio and Akintoye (2008: 591) affirmed that the provision of top-level management support; responding to power interest dynamism; maintaining existing relationships; being proactive; negotiations, and trade-offs, among others, are crucial for a successful SM engagement.

Abd-Karim, Abdul-Rahman, Berawi and Jaapar (2007: 15) reviewed literature on the strategies and issues of SM in the construction industry. They concluded that vital features of successful SM are significant leadership and commitment of the management and their organisation; better interactions and relationships through communications and

understandings; alignment of values, motivations, and incentives for the stakeholders, and the advancement of assessment of the influences, interests and importance of stakeholders. Furthermore, promoting a good relationship among the project team is another critical factor for the successful delivery of projects and for meeting stakeholder expectations.

A construction project requires various contracting parties to realise its objectives and this feature makes it prone to conflicts, most especially in traditionally procured projects for lack of trust. Therefore, to build and maintain a good relationship, interests such as reliable behaviour; good communication; sincerity; competence; integrity; commitment, and benevolence must be present and these lead to effective SM (Karlsen, Græe & Massaoud, 2008: 7). Trust and commitment among stakeholders can be built and maintained through good relationships and these are vital ingredients for effective SM. Trust encourages the exchange of vital information and determines whether team members are willing to permit others to influence their decisions and actions that will serve as problem-solving. Reliable behaviour is vital for trust-building and is important in SM, although trust may be lost through inconsistent behaviour.

Studies by, among others, Jergeas, Eng, Williamson, Skulmoski and Thomas (2000: 121), Karlsen *et al*. (2008: 7), as well as Olander and Landin (2008: 553) recognised that communication is a vital CSF that encourages an effective relationship between the stakeholders and the project team. On the other hand, Rowlinson and Cheung (2008: 612) affirmed that stakeholder relationship management success depends on a well-defined communication strategy. Jergeas *et al*. (2000: 121) believed that two factors are crucial for improving stakeholders' performance in a developmental project, namely effective communication, common goals and objectives setting, and project priorities among stakeholders. Regular and effective communication is necessary within all project teams for project success (El-Naway *et al*., 2015: 10651).

Furthermore, Aaltonen *et al.* (2008: 510) affirmed that the most crucial factor in project SM is relationship management. It is essential to understand the nature of the relationship between contract parties, as their interactions will aid the system (Abd-Karim *et al*., 2007: 3). When stakeholders understand each other's views, it strengthens the relationships, thus preventing assumptions and preconceived ideas. The success of any project depends on the relationship management skills of the project leader(s). Stakeholders' attitude is another vital factor for the success of stakeholders in a project, as it influences their support of, or opposition to the project (Amoatey & Hayibor, 2017: 146; Nguyen, Skitmore, Wong & Kwok, 2009: 1129).

The planning and design stages in projects require the involvement of all key stakeholders. The proper identification of stakeholders during the

project design stage allows for better understanding of their needs and increases the likelihood of meeting the goals of a project's stakeholders (Amoatey & Hayibor, 2017: 151). Stakeholder knowledge is another driver that has an impact on projects. The more knowledgeable a stakeholder is, the more the understanding about the project. Stakeholder knowledge may range from full awareness to total ignorance (Nguyen *et al*., 2009: 1134).

A clear mission identification is another vital ingredient for effective SM (Amoatey & Hayibor, 2017: 151). The formation of a clear mission statement is an essential requirement for effective SM and project success. Moreover, a construction project is associated with conflicts. Whenever there is a disagreement, the ability to analyse conflicts and coalitions among stakeholders is a vital ingredient for SM (Yang *et al*., 2009: 340; Freeman 1984).

Table 1 summarises the SM's critical success factors cited by the previous researchers.

Table 1: Summary of stakeholder management's critical success factors cited in previous studies

CSFs	*Source*
Effective communication with stakeholders	El-Naway *et al*., 2015; Amoatey & Hayibor, 2017; El-Sawalhi & Salah Hammad, 2015; Eyiah-Botwe *et al.,* 2016; Yang *et al*., 2009; Jergeas *et al*., 2000; Waghmare et al., 2016
Openness and building of trust	El-Naway *et al*., 2015; Karlsen *et al*., 2008
Clarity of stakeholders' roles	El-Naway *et al*., 2015
Management support	Zakuan *et al*., 2012
Managing stakeholders with corporate social responsibilities	Yang *et al*., 2009; El-Naway *et al*., 2015
Commitment among stakeholders	Abd-Karim *et al*., 2007; Nauman & Piracha, 2016
Promoting a good relationship	Amoatey & Hayibor, 2017; Nauman & Piracha, 2016; El-Naway *et al*., 2015; Yang *et al*., 2009
Compromising interests and conflicts	Amoatey & Hayibor, 2017; Yang *et al*., 2009
Resolving conflicts among stakeholders effectively	Yang *et al*., 2009; Chinyio & Akintoye, 2008
Ability to identify and analyse potential conflicts and coalitions among stakeholders	Amoatey & Hayibor, 2017; Yang *et al*., 2009
Understanding the area of interest of each stakeholder	El-Naway *et al*. 2015; Yang *et al*., 2009
Good understanding of the project task, goals and objectives, by setting common goal and objective.	El-Sawalhi & Hammad, 2015; Jergeas *et al*., 2000

CSFs	*Source*
Proper identification of the stakeholders (project team)	Buertey *et al*., 2016; Amoatey & Hayibor, 2017; Eyiah-Botwe *et al*., 2016; El-Naway *et al*., 2015; Yang *et al.*, 2009
Ability to formulate appropriate strategies for managing stakeholders	Buertey *et al*., 2016; El-Naway *et al*., 2015
Timely engagement or involvement of all stakeholders	Buertey *et al*., 2016
Determining stakeholders' requirements (needs), expectation and constraints	Buertey *et al*., 2016; Yang *et al*., 2009; Nauman & Piracha, 2016; El-Naway *et al*., 2015
Ability to assess stakeholders' behaviour/ attitude and reaction	Amoatey & Hayibor, 2017; Yang *et al*., 2009
Formulating a clear project mission statement	Amoatey & Hayibor, 2017; El-Naway *et al*., 2015; Jerges *et al*., 2000
Engaging a competent project leader and team	El-Sawalhi & Hammad, 2015; Eyiah-Botwe *et al*., 2016; Waghmare *et al.*, 2016
Evaluating the alternative solution	El-Sawalhi & Salah Hammad, 2015; Waghmare *et al.*, 2016
Understanding the influence of stakeholders on the project	Abd-Karim *et al*., 2007; El-Naway *et al*., 2015
Proper assessement and prioritisation of stakeholders' attributes (power, urgency, and proximity)	El-Naway *et al*., 2015; Amoatey & Hayibor, 2017; Yang *et al*., 2009; Nguyen *et al*., 2009
Adequate management of culture and political environment	Eyiah-Botwe *et al*., 2016
Analysis of stakeholders' concerns and needs	Olander & Landin, 2008
Communication of benefits and negative impacts	Olander & Landin, 2008
Allowing for flexible project organisation	Olander & Landin, 2008; Chinyio & Akintoye, 2008; Li *et al*., 2011
Predicting stakeholders' potential influence on the project	Jepsen & Eskerod, 2009

3. RESEARCH METHODOLOGY

3.1 Research design

This study identifies the CSFs for internal construction SM in Nigeria. It uses a quantitative survey research design approach involving a self-study questionnaire that gives the researchers the opportunity to generalise their findings from the target population (Creswell, 2014; Bryman, 2012: 232). In the questionnaire, 27 original CSFs, identified through the literature review, were set as the factors critical for successful SM in Nigeria. Statements on how critical each of the 27 factors is in the success of SM were extracted, based on the agreement levels of respondents. Principal component analysis (PCA) was used to reduce these measured variables to smaller factors critical for SM. Oladimeji (2019: 149), citing Pallant (2013: 192), affirmed that PCA can be used to extract factors, in order to summarise

the information into a manageable number of factors with the highest Eigenvalues in each component.

3.2 Population, sampling and response rate

The target population for this study is internal stakeholders (construction professionals, including project managers, architects, quantity surveyors, engineers, and builders) who are directly involved in public project execution in the study areas (Lagos, Abuja, Oyo, Osun, Niger, and Kogi). The rationale for choosing Lagos and Abuja as study areas includes the availability of substantive construction experts and projects; the accessibility to data, and location of the head offices of most of the construction professionals in those areas. The choice for Oyo, Osun, Niger and Kogi is the accessibility to data.

Unfortunately, there is no standard database and official list stipulating the number of stakeholders involved in SM. Therefore, construction practitioners involved in SM cannot be readily ascertained in the study areas. Based on this, the researcher contacted Federal and State ministries in the study areas, including Abuja municipal area council and FCDA and the Lagos State Development and Property Corporation, to identify projects executed between 2010 and 2018, with stakeholders involved. This is in line with the submission by Babatunde, Perera, Zhou & Udeaja (2015: 74) on barriers to public private partnership projects in developing countries, where a high number of organisations are involved and their population cannot be readily determined. The researchers identified 100 public building projects executed between 2010 and 2018 in the study areas. They identified the names and addresses of construction practitioners (stakeholders) involved in SM in these projects. A list of 821 construction practitioners was produced, as the target population for this study includes project managers (89), architects (194), quantity surveyors (206), engineers (173), and builders (159) (see Table 2). Based on random selection, a sample of 450 construction professionals were selected, representing project managers (64), architects (98), quantity surveyors (111), engineers (82), and builders (95), all of whom were provided with questionnaires. The sample size was calculated in accordance with Krejcie & Morgan (1970: 608), where a recommended sample size for a population of 800 is 260. Thus the sample of 450 is sufficient for a population of 821. Of the 450 questionnaires distributed, a total of 175 valid questionnaires were returned, representing a 39% response rate.

Table 2: Population, sample and response

Construction practitioners involved	*Population or respondents*	*Number of questionnaires administered*	*Number of valid questionnaires*
Quantity surveyors	206	111	35
Architects	194	98	27
Engineers	173	82	40
Builders	159	95	33
Project managers	89	64	40
Total	821	450	175

3.3 Data collection

This study used the drop-and-collect method in administering the questionnaire to 450 construction practitioners on the selected project sites from the study areas in Nigeria from November 2019 to January 2020. The selected participants take full responsibility for the management of projects and play a central role in relationships with other stakeholders. The questionnaire consists of two parts. The first part obtained demographic information of the respondents on profession, level of education, number of years' experience in the business, and the type of ownership in the business.

The second section set 27 Likert-scale items on the construct 'factors critical to internal SM'. Respondents were requested to rate their level of agreement on how critical these items are in managing internal stakeholders in the Nigerian construction industry. The data from these measurements forms the Likert-scale items used in the descriptive analysis as well as the variables used in the inferential statistics, which tested the validity and reliability of the factors. To reduce the respondents' bias, closed-ended questions were preferred for section two (Akintoye & Main, 2007: 601).

3.4 Method of analysis and interpretation of the data

The Statistical Package for Social Sciences (SPSS) version 20 was used to analyse factors critical for SM by means of descriptive and inferential statistics (Pallant, 2013: 134). The respondents' background information was analysed, using descriptive statistics, in which the frequencies and percentages were generated and reported.

To rank the level of agreement by mean scores on how critical the initial 27 success factors are for SM, these factors were rated on a five-point Likert scale. According to Leedy and Ormrod (2014: 185), Likert-type or frequency scales use fixed choice response formats and are designed to measure opinions. The following scale measurement was used regarding mean scores, where 1 = strongly disagree (≥1.00 and ≤1.80); 2 = Disagree

(≥1.81 and ≤2.60); 3 = Neutral (≥2.61 and ≤3.40); 4 = Agree (≥3.41 and ≤4.20), and 5 = Strongly agree (≥4.21 and ≤5.00).

A Kruskal-Wallis test was used to test whether there is any significant difference in the ranking of the factors by the clients, consultants, and contractors at a 5% significance level.

In determining the internal reliability of the critical factors in the statements, Cronbach's *alpha* values tested were conducted in line with Wahab, Ayodele and Moody (2010: 67). The Cronbach's *alpha* acceptable values range from 0.70 to 0.95 (Tavakol & Dennick, 2011: 54-55). In this study, a cut-off value of 0.70 was adopted. In addition, a range from 0.2 to 0.4 was suggested as the optimal inter-item correlations mean (factor loadings) for the factor to be reliable (Pallant, 2013: 134). This study, therefore, adopted a value of 0.4 and above.

Furthermore, in determining the suitability of the obtained data for factor analysis, the following tests were conducted: Meyer-Olkin (KMO) (Lorenzo-Seva, Timmerman & Kiers, 2011), and Bartlett's Test of Sphericity (Hair, Black, Babin & Andersen, 2014: 110). In the KMO test, as the values of the test vary between 0 and 1, values above 0.7 are required for applying PCA (Hair *et al*., 2014). A statistically significant Bartlett test ($p<0.05$) indicates that sufficient correlations exist between the variables to continue with the analysis (Hair *et al*., 2014: 110; Pallant, 2013: 190).

For factor extraction, PCA was adopted to analyse the information into a minimum number of factors, by concentrating the explanatory power on the first factor (find the principal components of data) (Ahadzie, Proverbs & Olomolaiye, 2008; Rossoni, Engelbert & Bellegard, 2016: 102).

3.5 Limitations

The study was conducted across two geopolitical zones of Nigeria and focused on public building construction projects. The findings mainly reflect the SM CSFs in the study environments and should not be generalised, because it could only be applied for construction projects being undertaken in countries with a similar cultural context.

4. RESULTS AND DISCUSSION

4.1 Respondents' profile

It is obvious that the majority (23% each) of the respondents were engineers or project managers, and had either a Masters' degree (56%) or a first degree (39%); only 5% of the respondents had PhD degrees (see Table 3). Analysis of the respondents' organisation type showed that the

vast majority of them were consultants (42%), or contractors (39%) and over half of the respondents have fifteen years' professional experience or more. These characteristics imply that the respondents have adequate education and experience to give substantial information that could help in making useful inferences and deductions on factors critical for internal SM.

Table 3: Profile of the respondents

Demographic	*Characteristic*	*Frequency*	*Percentage*
Profession	Quantity surveyor	35	20
	Architect	27	15
	Engineer	40	23
	Builder	33	19
	Project manager	40	23
	Total	175	100
Education level	PhD	8	5
	Masters	98	56
	First degree	69	39
	Total	175	100
Experience	10-14 years	70	40
	15-19 years	60	34
	Above 20 years	45	26
	Total	175	100
Organisation type	Clients	33	19
	Contractors	69	39
	Consultants	75	42
	Total	175	100

4.2 Ranking of critical success factors for stakeholder management

Table 4 shows the Mean Score (MS), Cronbach's *alpha* and the Kruskal-Wallis test results of the 27 identified factors critical for effective SM in descending order, as ranked by the respondents (clients, contractors, and consultants). With an average MS rating of 3.87, respondents agreed that all the factors evaluated are SM success factors within the Nigerian context.

Table 4: Ranking of stakeholder management's critical success factors with their means, Cronbach's *alpha* and Kruskal Wallis value

Variable	*Stakeholders CSFs N=175* *1 = strongly disagree (≥1.00 and ≤1.80); 2 = Disagree (≥1.81 and ≤2.60); 3 = Neutral (≥2.61 and ≤3.40); 4 = Agree (≥3.41 and ≤4.20), and 5 = Strongly agree (≥4.21 and ≤5.00)*	*MS*	*Cronbach's alpha*	*Kruskal Wallis*	*Rank*
CF24	Engaging project leader and team that is competent	4.51	0.893	0.992	1

Variable	*Stakeholders CSFs N=175* *1 = strongly disagree (≥1.00 and ≤1.80); 2 = Disagree (≥1.81 and ≤2.60); 3 = Neutral (≥2.61 and ≤3.40); 4 = Agree (≥3.41 and ≤4.20), and 5 = Strongly agree (≥4.21 and ≤5.00)*	*MS*	*Cronbach's alpha*	*Kruskal Wallis*	*Rank*
CF6	Good communication	4.43	0.896	0.122	2
CF22	Promoting a good relationship	4.19	0.892	0.956	3
CF7	Formulating a clear project mission statement	4.16	0.899	0.528	4
CF26	Management support	4.08	0.909	0.963	5
CF1	Good stakeholders' management strategy	4.07	0.910	0.321	6
CF17	Timely engagement or involvement of all stakeholders	4.06	0.908	0.090	7
CF9	Openness and building of trust	4.02	0.917	0.058	8
CF21	Commitment among the stakeholders	4.00	0.890	0.261	9
CF3	Proper identification of the stakeholders (project team)	3.95	0.900	0.245	10
CF14	Managing stakeholders with corporate social responsibilities	3.90	0.897	0.821	11
CF20	Good understanding of the project task, goals and objectives through setting of common goal and objective.	3.87	0.906	0.142	12
CF4	Ability to assess stakeholders' behaviour/attitude and reaction	3.85	0.894	0.624	13
CF2	Proper assessment of stakeholders' attributes and prioritise them (power, urgency, and proximity)	3.84	0.874	0.787	14
CF18	Resolving conflicts among stakeholders effectively	3.83	0.867	0.402	15
CF25	Predicting stakeholders' potential influence on the project	3.82	0.900	0.00*	16
CF19	Adequate management of culture and political environment	3.82	0.879	0.269	17
CF16	Understanding the influence of stakeholders on the project	3.78	0.887	0.211	18
CF11	Ability to identify and analyse stakeholder possible conflicts and coalitions among stakeholders	3.74	0.901	0.190	19
CF13	Allowing for flexible project organisation	3.73	0.887	0.951	20
CF27	Analysing stakeholders' concerns and needs	3.72	0.905	0.02*	21
CF12	Communication of benefits and negative impacts	3.71	0.912	0.04*	22
CF5	Determining stakeholders' requirements (needs), expectation and constraints	3.71	0.856	0.035*	23

Variable	*Stakeholders CSFs N=175* *1 = strongly disagree (≥1.00 and ≤1.80); 2 = Disagree (≥1.81 and ≤2.60); 3 = Neutral (≥2.61 and ≤3.40); 4 = Agree (≥3.41 and ≤4.20), and 5 = Strongly agree (≥4.21 and ≤5.00)*	*MS*	*Cronbach's alpha*	*Kruskal Wallis*	*Rank*
CF10	Clarity of stakeholders' roles	3.60	0.877	0.723	24
CF23	Understanding area of interest of each stakeholder	3.42	0.891	0.368	25
CF15	Evaluating the alternative solution	3.40	0.889	0.982	26
CF8	Compromising interests and conflicts	3.39	0.887	0.005*	27
	Average (composite score)	3.87			

* significant p >0.05

Respondents strongly agreed that engaging the project leader and the team, that is competent (MS 4.51) and effective communication (MS 4.43), are the top two factors critical for SM in construction projects within the Nigerian context. Promoting a good relationship (MS 4.19), formulating a clear project mission statement (MS 4.16), management support (MS 4.08), and good SM strategy (MS 4.07) are ranked three to six, respectively.

This study's findings are in line with El-Sawalhi and Hammad (2015: 167), who ranked project manager competencies first, while Eyiah-Botwe *et al*. (2016: 164) ranked it fourth, when investigating CSFs for enhancing SM in the Ghana construction sector. Effective communication with all the stakeholders was ranked second by Yang *et al*. (2009: 342), while communicating with all stakeholders engaged was overall ranked first by Amoatey and Hayibor (2017: 150) and third by El-Sawalhi and Hammad (2015: 157). Promoting a good relationship was ranked fourth by Amoatey & Hayibor (2017: 150) and sixth by Yang *et al*. (2009: 342). This factor concurs with Jergeas *et al*.'s (2000) conclusion that successful relationships are vital ingredients for the successful delivery of projects. Furthermore, formulating a clear project mission statement was ranked third by Amoatey & Hayibor (2017: 150), indicating that, for any project to be successfully completed, there must be a clear mission statement, which is a necessary requirement for effective SM. According to Waghmare *et al.* (2016: 50), prior to any SM activity, the project leader/management team should have a clear idea of the objectives and tasks of the project at a particular stage.

The Kruskal Wallis test was conducted to ascertain whether there are statistical differences in ranking the CSFs for effective SM among the three groups (clients, contractors, and consultants). Table 4 shows that there was no statistically significant difference in ranking 22 factors with p-values >0.05. This high level of agreement obtained in ranking is not surprising, as most of the respondents have adequate knowledge of SM. However, since their p-value was <0.05, respondents had different opinions

on ranking five factors, including predicting stakeholders' potential influence on the project (0.000); analysing stakeholders' concerns and needs (0.020); communicating benefits and negative impacts (0.040); determining stakeholders' requirements (needs), expectation and constraints (0.035), and compromising interests and conflicts (0.005). The reason for the differences in ranking five SM CSFs may be that the respondents are from different organisations, with different roles and responsibilities in the project.

4.3 Principal component analysis for factors critical to achieving successful stakeholder management

The Kaiser-MeyerOlkin (KMO) value of 0.876 was obtained, which is greater than 0.70, and Bartlett's test of Sphericity has the significant value of ($p<0.05$) at 5% level of significance, as shown in Table 5. Therefore, the obtained results indicate that the data is robust and suitable for conducting factor analysis in line with Pallant (2013).

Table 5: Kaiser-Meyer-Olkin Measure and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.876
Bartlett's Test of Sphericity	Approximate Chi-Square	1864.202
	Df	351
	Sig.	.000

Furthermore, the scree plot test and eigenvalues criteria were used to determine the maximum number of factors to retain. PCA, with initial Eigenvalue greater than 1 criterion, the orthogonal varimax rotation and a factor loading of 0.4 were used to determine the number of factors to retain and rotation in line with Hair *et al*. (2014). Based on the initial Eigenvalue greater than one and scree plot criteria, shown in Figure 1, seven factors (components) explain a cumulative variance of approximately 67% of the total variance. The scree plot consists of the Eigenvalues and the data points above the break (point of inflexion), as shown in Figure 1.

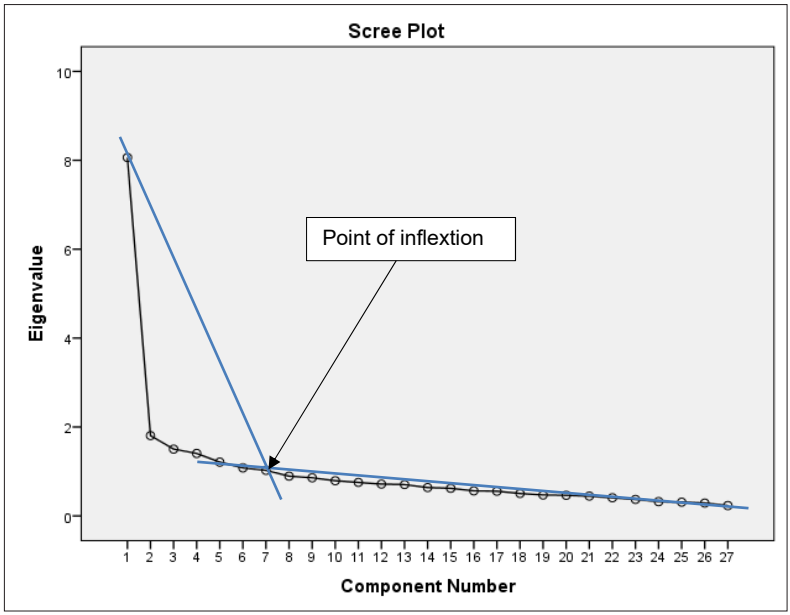

Figure 1 Scree plot of CSFs for SM

The scree plot in Figure 1 and Table 6 confirms the retaining of 7 components, where component 1 (stakeholder identification and analysis) explains 30.861% of the total variance; component 2 (formulating an appropriate strategy to manage stakeholders), 7.689%; component 3 (effective relationship management), 6.567%; component 4 (support and commitment of top management), 6.202%; component 5 (project leaders and stakeholders' adequate knowledge), 5.482%; component 6 (effective communication), 4.999%, and component 7 (adequate information-gathering about the project and stakeholders' contributions), 4.795%.

Table 6: Total variance explained – Extraction method: Principal component analysis

Component	*Initial Eigenvalues*		
	Total	*% of variance*	*Cumulative %*
1	8.062	30.861	30.861
2	1.806	7.689	38.550
3	1.503	6.567	45.117
4	1.405	6.202	51.320
5	1.210	5.482	56.802
6	1.080	4.999	61.801
7	1.025	4.795	66.596

Based on PCA, orthogonal varimax rotation with Kaiser Normalization rotation method and with a significant factor of .04, the correlation between components and variables after rotation are shown in Table 7. The only factor that failed the loading test is managing stakeholders with corporate social responsibilities. Correlation exists between variables 3, 5, 2 and 4, as they load onto Component 1: Stakeholder identification and analysis. Similarly, correlations were identified between variables 1, 27, 25, 8, 15, and 18, which loaded onto Component 2: Formulating appropriate strategy to manage stakeholders. Variables 22, 13, and 19 show correlation, as they loaded onto Component 3: Effective relationship management. Correlation exists between variables 26, 10, 21 and 17, which all loaded onto Component 4: Support and commitment of top management. Variables 24, 7, 11, 16, and 23 show correlation as they loaded onto Component 5: Project leaders and stakeholders' adequate knowledge. Variables 6, 9 and 12 show correlation, as they loaded onto Component 6: Effective communication. Only variable 20 was loaded onto Component 7: Adequate information-gathering about the project and the stakeholders.

Table 7: Rotated component matrix for CSFs for achieving internal SM

Variable	*Factor*	*Component*						
		1	*2*	*3*	*4*	*5*	*6*	*7*
	F1: Stakeholder identification and analysis							
CF3	Proper identification of the stakeholders (project team)	.708						
CF5	Determine stakeholders' requirements (needs), expectation and constraints	.707						
CF2	Proper assessment of stakeholders' attributes & prioritise them (power, urgency, and proximity)	.705						
CF4	Ability to assess stakeholders' behaviour/ attitude & reaction	.616						
	F2: Formulating appropriate strategy to manage stakeholders							
CF1	Good stakeholders' management strategy		.712					
CF27	Analysis of stakeholders concerns and need		.618					
CF25	Predicting stakeholders' potential influence on the project		.556					
CF8	Compromising interest and conflicts		.551					
CF15	Evaluation of the alternative solution		.506		.424			
CF18	Resolving conflicts among stakeholders effectively		.503	.409				
	F3: Effective relationship management							
CF22	Promoting good relationship			.744				
CF13	Allow for flexible project organisation			.696				
CF19	Adequate management of culture and political environment			.632				
	F4: Support and commitment of top management							
CF26	Management support				.708			
CF10	Clarity of roles of stakeholders				.672			
CF21	Commitment among the stakeholders				.642			
CF17	Timely engagement or involvement of all stakeholders				.527			

Variable	*Factor*	*Component*						
		1	*2*	*3*	*4*	*5*	*6*	*7*
	Factor 5: Project leaders and stakeholders' adequate knowledge							
CF24	Engaging project leader and team that is competent					.735		
CF7	Formulating a clear project mission statement					.695		
CF11	Ability to identify and analyse stakeholder possible conflicts and coalitions among stakeholders					.536		
CF16	Understanding the influence of stakeholders on the project				.461	.535		
CF23	Understanding area of interest of each stakeholder					.507		
	F6: Effective communication							
CF6	Good communication						.651	
CF9	Openness and building of trust						.613	
CF12	Communicating the benefits and negative impacts						.498	
	Factor 7: Adequate information gathering about the project and stakeholders							
CF20	Good understanding of the project task, goals and objectives through setting of common goal and objective.							.857

The seven emerged factors explained approximately 67% of the total variance, when factor analysis was conducted on the identified SM CSFs. These factors are stakeholder identification and analysis; formulating an appropriate strategy to manage stakeholders; effective relationship management; support and commitment of the top management; effective communication; leaders and stakeholders' adequate knowledge. And adequate information-gathering about the project and stakeholders. The finding of this study is similar to that of Takim, Akintoye and Kelly (2004: 1130) when analysing measures of construction project success in Malaysia. In their study, the analysis grouped into four factors that explained 64.989% of the total variance.

Factor 1: Stakeholder identification and analysis

With four sub-factors, this component accounts for 30.861% of the total variance. Proper identification of the stakeholders has the highest loading (project team) of 0.708); determining stakeholders' requirements (needs), expectation, and constraints has a loading of 0.707; proper assessment of stakeholders' attributes and prioritising them (power, urgency, and proximity) has a loading of 0.705, and the ability to assess stakeholders' behaviour/attitude and reaction has a loading of 0.616. Jepsen and Eskerod (2009) considered stakeholder identification as the first step in stakeholder analysis. Since there are many parties involved in construction contracts, the key stakeholders must be adequately identified at the commencement of the contract so that their roles can be analysed, in order to understand their expectations and how they can potentially influence the project. This is in line with Eyiah-Botwe *et al*.'s (2016: 153) findings on SM

for the Ghanaian construction industry, in which they affirmed that early stakeholder identification is critical to SM.

Factor 2: Formulating appropriate strategy to manage stakeholders

This factor accounts for 7.689% of the total variance and comprises six sub-factors. Good SM strategy has the highest factor loading of 0.712; analysis of stakeholders' concerns and needs, 0.618; predicting stakeholders' potential influence on the project, 0.556; compromising interests and conflicts, 0.551; evaluating the alternative solution, 0.506, and effectively resolving conflicts among stakeholders, 0.503. This is in line with the finding of El-Naway and Hammad (2015: 13-14), who discovered that formulating appropriate strategies allows for easy SM and productive results. The attitude and ability of the project management team to treat various stakeholders' issues are referred to as the SM strategy (Waghmare *et al.,* 2016: 51). Yang *et al*. (2009: 342) asserted that formulating appropriate strategies to deal with stakeholders is important, as this will guide how the project management team would treat different stakeholders.

Factor 3: Effective relationship management

Effective relationship management accounts for 6.567% of the total variance with three sub-factors, where promoting good relationship has the highest loading of 0.744; allowing for flexible project organisation, 0.696, and adequate management of culture and political environment, 0.632. This study finding is similar to that of Nauman and Piracha (2016) in that a good relationship promotes trust that is vital to SM. This study's finding is consistent with that of Aaltonen *et al*. (2008: 510), who believe that managing the relationship between the project and its stakeholders is vital in project SM and improves the stakeholders' performance on the project. Abd-Karim *et al.* (2007) concluded that it is essential to understand the nature of the relationship between contract parties and their interactions with the system. Although stakeholder relationship management success depends on a well-defined communication strategy, according to Rowlinson and Cheung (2008: 618), cordial relationships between the project stakeholders and the project management team are important for successful project delivery and attainment of stakeholder expectations. The attitude and ability of the project management team to build effective relationships with stakeholders include that the project team must decide on the levels and methods of SM, and appropriate strategies to address issues raised by stakeholders (Waghmare *et al.,* 2016: 51). When the relationship between contract parties is sour, the possibility of having poor

performance is certain. Effective relationship management can effectively reduce poor performance (Meng, 2012: 194).

Factor 4: Support and commitment of top management

Factor 4 forms 6.202% of the total variance, where management support has the highest loading of .708; clarity of stakeholders' roles, 0.672; commitment among the stakeholders, 0.642, and timely engagement or involvement of all stakeholders, 0.527. This study finding concurs with that of Chinyio and Akintoye (2008) in that the provision of top-level management support is a vital ingredient for successful SM. El-Naway *et al*. (2015: 10655) believed that building trust between project top management and stakeholders allows for meeting the expectation of all those who have an interest in, or impact on the project, due to the transparent assessment of all the possible solutions based on stakeholders' interest. Delivery or output of the project is affected by the support and management style of top management. Top management shows support through the commitment of resources; formulating quality policy; effective communication with the project team at the time of need and at unexpected situations without delay, and managing the entire process through close monitoring. The commitment and support of top management is crucial in achieving results, as they are positioned to monitor the management process, facilitate problem-solving activities and use the effects of SM as an indicator for the performance measurement of the management team.

Factor 5: Project leaders and stakeholders' adequate knowledge

This factor accounts for 5.482% of the total variance and has five sub-factors. Engaging project leader and team that is competent has the highest loading of 0.735; formulating a clear project mission statement, 0.695; ability to identify and analyse potential stakeholder conflicts and coalitions among stakeholders, 0.536; understanding the influence of stakeholders on the project, 0.535, and understanding the area of interest of each stakeholder, 0.507. Nowadays, due to technological advancement and sophisticated tastes of the stakeholders that warrant the stakeholders' needs to seek a variety of information from numerous sources led the stakeholders to be more knowledgeable than ever. The more knowledge a stakeholder has about the project, the more s/he may influence it (Nguyen *et al*., 2009: 1137). The level of knowledge may range from full awareness to total ignorance and this knowledge cannot be bought; each stakeholder gains knowledge about the project through receptiveness project undertaking. Waghmare *et al*. (2016: 52) asserted stakeholder knowledge as a driver with a significant impact on projects.

The project manager should have a good understanding of the tasks and objectives at each stage of the project's life cycle, including issues about cost, schedule, and budget (El-Sawalhi & Salah Hammad, 2015: 162). They concluded that the project manager with competency, experience and good communication skills is successful in relationship management of stakeholders. This will contribute to the good performance of the project.

Factor 6: Effective communication

Effective communication accounts for 4.999% of the total variance and has three sub-factors, where good communication has the highest loading of 0.651; openness and building of trust, 0.613, and communication of benefits and negative impacts, 0.498. Trust can only exist where effective communication facilitates the exchange of visions and ideas. For construction projects to be successfully managed, all the professionals on the contract must be able to communicate effectively (Tipili, Ojeba & Ilyasu, 2014). Therefore, all key stakeholders must possess communication skills, in order to discuss difficulties relating to the project and facilitate the exchange of ideas and visions. A good communication system mitigates risks and increases the reputation of contract parties.

A project environment where there is trust, open communication and employee involvement provides a sound basis for effective project delivery (Hansen-Addy & Nunoo, 2014). A high level of trust and commitment naturally promotes cooperation, as well as open and joint problem-solving attitudes among contracters. According to Rowlinson and Cheung (2008: 6, 18) trust and cooperation are built on face-to-face communication between all concerned parties. Stakeholders' interaction with each other leads to the attainment of project or organisation goals, because it allows for exchanging information, sharing knowledge, disseminating instructions, and providing supporting tasks.

Factor 7: Adequate information-gathering about the project and stakeholders

This single factor accounts for 4.795% of the total variance. Good understanding of the project task, goals, and objectives through the setting of common goals and objectives is the only item under this factor with a factor loading of 0.857. Before commencing any management activity, extensive research and analysis on the project and stakeholders' information is required (Waghmare *et al*., 2016: 50). Construction project problems are compounded by the diverse nature of stakeholders with varying interests on the project. It is, therefore, vital to identify and assess stakeholders' areas of interests. In the project system environment, it is

important to identify the key stakeholders for the project manager to effectively interact with them.

5. CONCLUSIONS

The study investigated factors critical for effective internal project SM in the Nigerian context, because scholars have identified CSFs for construction SM in various countries, but no specific research prior to this study could be identified for the Nigerian construction industry context. The results indicate that the six most significant factors for SM in the Nigerian construction industry are engaging a project leader and a team that is competent; effective communication; promoting a good relationship; formulating a clear project mission statement; management support, and a good SM strategy.

A total of 27 factors that are critical for effective internal construction SM in construction projects were grouped into seven components through factor analysis: stakeholder identification and analysis; formulating an appropriate strategy to manage stakeholders; effective relationship management; support and commitment of top management; project leaders' and stakeholders' adequate knowledge; effective communication, and adequate information-gathering about the project and stakeholders. The study concluded that these seven factors are essential for successful relationship management of stakeholders in the Nigerian construction industry and will have a positive impact on good project performance, if special attention is paid to them.

Since, prior to this study, there are no specific CSFs to improve SM within the Nigerian construction industry context, the following recommendations are proposed: prioritisation of competency in the selection of a project team; effective relationship management, and improved information dissemination during construction as the precursors of successful SM and project performance. Stakeholders must be adequately identified and analysed to ensure that they are competent for the contract and appropriate for the job.

This study has added to the growing body of knowledge on project management, with an insight into the CSFs for internal construction project SM within the Nigeria context to focus on achieving project goals. The findings would help the decision-makers in the industry understand key factors for prioritising when managing stakeholders. The limitations of this study were the two geopolitical zones of the country. Therefore, the study's findings should not be generalised, since the scope of data collection was limited to only two zones. Future studies may examine the relationship between internal SM CSFs and the key measures of performance of the stakeholders in Nigerian construction projects. In addition, studies

could also be conducted on a comparison of internal and external stakeholders' performance.

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