

Factors Influencing Stakeholder Management in Building Projects Procured by Private Corporate Organisations

Nathaniel Ayinde Olatunde¹ and Henry Agboola Odeyinka²

¹Lecturer, Department of Quantity Surveying, University of Benin, 1154, P.M.B, Ugbowo Lagos Rd, Benin City, Nigeria. E-mail: nathaniel.olatunde@uniben.edu

²Professor, Department of Quantity Surveying, Obafemi Awolowo University, Ile-Ife, Osun 220282, Nigeria. E-mail: hodeyinka@yahoo.com (corresponding author).

Project Management

Received January 10, 2020; revised January 17, 2020; February 7, 2020; April 13, 2020; April 26, 2020; accepted May 9, 2020
Available online June 1, 2020

Abstract: Stakeholder management (SM) is of utmost importance in ensuring timely project delivery, delivery within budget, to the right quality level and to client's satisfaction. Private corporate organizations have limited resources and so could not afford project cost or time overrun and other issues that could impact project success. While studies are available that examined factors impacting stakeholder management in public building projects, there is a paucity of research on factors influencing stakeholder management in building projects procured by private corporate organizations; hence this study. The objective of the reported study is to assess the factors influencing SM in building projects procured by private corporate organizations in Southwestern Nigeria with a view to enhancing project delivery. The data for the study were collected using a structured questionnaire survey. Purposive sampling technique was used to select project managers (PMs) and client representatives (CRs) that were involved in the management of building projects procured by private corporate organizations between 2008 and 2017. A total of 106 questionnaires were received from PMs and CRs that responded to the questionnaire survey. The data collected were analysed using mean score (MS) analysis, Student's t-test and factor analysis. The result shows that the most important factors influencing SM comprise of 'maintaining good relationships with stakeholders', 'addressing stakeholders' concerns and needs' and 'avenue for communicating project impacts'. The further result using factor analysis shows that the factors influencing SM could be categorized into six component groupings of - project relationship, information input, stakeholder estimation, decision-making, sustainable support and external project relationship awareness. The study concluded that project managers need to pay attention to the identified top-ranking factors in order to achieve improved project delivery.

Keywords: Stakeholder management, building projects, private corporate organisations

Copyright © Association of Engineering, Project, and Production Management (EPPM-Association).
DOI 10.2478/jeppm-2021-0002

1. Introduction

The incessant call by researchers, professionals, clients and concerned individuals for improved construction project delivery cannot be achieved without a deliberate attempt to effectively manage all the stakeholders involved in the delivery of such projects. Eskerod and Jepsen (2013) opined that management of stakeholders is a major requirement in order to actualize the much-needed improvement in the delivery of construction projects, especially in relation to project quality, completion to stipulated time, completion to budgeted cost and participant satisfaction. Construction project stakeholders are individuals, a coalition of individuals, organisations, private or public entities that are actively involved in the execution of a construction project or whose rights, interests or livelihoods affect or are affected by the

execution of the construction project or its outcome (Freeman, 1984; Yang et al., 2011a; Project Management Institute (PMI), 2016).

Construction projects cannot be actualized without stakeholder involvement (Cole, 2005; Olatunde et al., 2017). Inaccurate assessment of various interest groups, the motivation for their actions and their capability to positively or negatively influence the project at various phases, especially on the part of the project manager has been identified as a major problem in the delivery of construction projects (Winch and Bonke, 2002). Research has identified underestimation of the influence of stakeholders on the construction project as a major factor responsible for project delay and an increase in construction cost (Yang et al., 2009). For instance, underestimation of the influence of stakeholders was

responsible for twelve months of delay in the commencement of construction work for the sea-crossing bridge project designed to connect Zhuhai in mainland China to Hong Kong and Macao due to a legal dispute regarding ecological impact of the bridge (Macau Daily Times (MDC), 2011). The cost of the delay and legal tussle was valued in millions of dollars (Mok et al., 2015).

In the Nigerian construction industry, construction project cost and time overrun have been attributed majorly to action or inaction of internal stakeholders with the resultant consequences of loss of millions of Naira either by the client, contractor or consultants (Ogunseemi and Jagboro, 2006; Olatunde, 2015). This implied that the need to meet project objectives is still a burning issue in the Nigerian construction industry (Opawole, 2016; Olatunde and Alao, 2017). Stakeholder management (SM) is described as the systematic identification, analysis, classification and planning of steps to engage and influence stakeholders at every point of the project life cycle (Missonier and Loufrani-Fedida, 2014; PMI, 2016). Researchers opined that SM is not just about managing the participants involved in a project, rather it is a process that involves a deliberate and carefully planned course of actions to identify, prioritize, analyse and monitor the needs and interests of stakeholders (Lock, 2007; Eyiah-Botwe et al., 2016a). Stakeholder management (SM) is of utmost importance in ensuring timely project delivery, delivery within budget, to the right quality level and to client's satisfaction. Private corporate organizations have limited resources and so could not afford project cost or time overrun and other issues that could impact project success. Studies have been carried out that examined the factors impacting stakeholder management in public building projects (Oyeyipo et al., 2019). However, there is a paucity of research on factors influencing stakeholder management in building projects procured by private corporate organizations; hence this study. This study, therefore, seeks to answer the following research question: what are the factors influencing SM on building projects procured by private corporate organizations in Southwestern Nigeria? In addition, it seeks to test the hypothesis that there is no statistically significant difference between the opinions of project managers and client representatives on factors influencing SM on projects procured by private corporate organizations in the study area.

Factors influencing SM can be described as a set of variables that affect stakeholders' interests in such a way that project objectives may or not be achieved (Yang et al., 2011a). Extant literature identified several factors as being essential to the successful implementation of SM on construction projects. According to Jergeas et al. (2000) setting of common goals and objectives and communication with stakeholders are two major factors that are required to achieve improved project delivery. Landin (2000) posited that the performance of construction projects in the long term is dependent on the capability of the project manager to satisfy stakeholders and this will depend on decisions made and the procedure put in place by decision-makers in stakeholder communication. Aaltonen et al. (2008) stated that the main concern for managers in SM of the construction project is the management of relationship between the stakeholders and the project team. Other studies have identified several factors that influence SM, though some of the factors were identified as critical success factors (CSF) for SM in

construction projects. Yang et al. (2009b) study in detail and group CSFs for construction project SM. The study used literature review; face-to-face interviews and pilot studies to identified, ordered and grouped 15 CSFs for SM on construction projects in Hong Kong. The topmost CSFs according to the survey were; managing stakeholders with social responsibilities, exploring the stakeholders' needs and communication with and engagement with stakeholders adequately and frequently.

The study by Olander and Landin (2008) found five major factors relating to SM process that can influence project outcomes. These factors according to the study are; analysis of stakeholder agitations, interest and needs, communication, assessment of other solutions; project organization; and media relations. Bakens et al. (2005) corroborated by Young (2006) agreed that effective communication is the key to good SM. Jepsen and Eskerod (2009) considered that identification of sufficiently important stakeholders, and warranting information gathering concerning expectations is critical to meet the challenge of project SM. El-Naway et al. (2015) in developing a methodology for SM to achieve project success identified 30 factors that were included in 6 groups. These are a management support group, information input group, stakeholder assessment group, decision-making group, action and evaluation group and continuous support group. The study found that the factors that mostly influence SM on construction projects are managing stakeholders with social responsibilities, defining and formulating a clear statement of project missions, formulating adequate strategies to manage stakeholders and building trust between project top management and the most engaged stakeholders on the project respectively.

Eyiah-Botwe et al. (2016a) analysed the CSFs for enhanced SM in Ghana. The study identified 35 CSFs from literature and validates them through a questionnaire survey. The study found that identification of stakeholders early in the project life cycle, management of culture and political environment, communication, the competence of project manager and formal SM process respectively were the most important CSFs for enhancing SM in the Ghanaian construction industry. Waghmare et al. (2016) analysed factors affecting SM process in building construction projects. The study used the six main grouped identified by El-Naway et al. (2015) to group 30 factors contributing to the success of SM. Asma and Sunny (2018) found that the most important critical success factor affecting the SM process on construction projects is identified and setting a common goal and objective for the project. It is worthy of note that many of the extant literature only concentrated on the CSFs for SM and none has examined factors influencing SM of construction projects procured by private corporate organisations; hence creating a research gap in the literature.

2. Method

The purpose of this study was to assess the factors influencing SM in construction projects procured by private corporate organizations in Southwestern Nigeria. The study employed a project-by-project survey research design. The study used a questionnaire survey for data collection, which is quantitative data were collected for the study. Data were collected from two categories of respondents (project managers and client representatives). Primarily, questionnaires were administered on project

managers from integrated consultancy firms (Architectural firms and Quantity Surveying firms) that offer project

Table 1. Response rate to the questionnaire survey

Activity	Project Managers		Client Representative		Total	
	Frequency	%	Frequency	%	Frequency	%
Questionnaire Distributed	66	100	66	100	132	100
Questionnaire Returned	62	93.94	47	71.21	109	82.58

Table 2. Summary of characteristics of respondents to the questionnaire

Category	Classification	Project Manager		Client Representative	
		Frequency	Percentage	Frequency	Percentage
Profession of respondent	Project Managers	11	17.74	10	22.73
	Architects	28	45.16	4	9.09
	Quantity Surveyors	20	32.26	11	25.00
	Engineers	3	4.84	5	11.36
	Accountants	0	0.00	8	18.18
	Admin Staff	0	0.00	6	13.64
	Total	62	100.00	44	100.00
Years of experience	1-5	7	11.29	1	2.27
	6-10	9	14.52	14	31.82
	11-15	12	19.35	12	27.27
	16-20	16	25.81	7	15.90
	21-25	7	11.29	6	13.64
	26-30	7	11.29	2	4.55
	31-35	4	6.45	2	4.55
	Total	62	100.00	44	100.00
Highest Academic Qualification	HND	10	16.13	5	11.36
	PGD	3	4.84	7	15.91
	B.Sc/B.Tech	10	16.13	13	29.55
	M.Sc/M.Tech/MBA	38	61.29	16	36.36
	PhD	1	1.61	3	6.82
	Total	62	100.00	44	100.00
Number of projects executed	1-5	5	8.06	11	25.00
	6-10	5	8.06	7	15.91
	11-15	14	22.58	7	15.91
	16-20	9	14.52	4	9.09
	21 and above	29	46.78	15	34.09
	Total	62	100.00	44	100.00

Mean years of respondents' work experience=17 years. Mean number of projects executed by respondents=18

management services for private corporate organizations in the study area within 2008-2017.

Every project manager from each firm was asked to nominate a completed building project procured by a private corporate organization where they participated within the period. Structured questions relating to the objectives of the study were asked from the respondents, and the respondents were asked to provide answers regarding their experiences on the nominated projects. Interval scale data were collected using a scale of 0 to 5, where 0 is 'not applicable', 1 is 'very low extent', 2 is 'low extent', 3 is 'moderate extent', 4 is 'high extent' and 5 is very high extent. To test the validity and reliability of the data collected, the Cronbach's alpha measure of reliability/internal consistency was used.

The client/client representative of each nominated project was also contacted for their opinion on the factors influencing SM as related to such a project so as to ensure a balance of opinion and avoid bias. The use of a questionnaire survey approach was considered adequate for the study because previous researches (Waghmare et

al., 2016; El-Naway et al.; Ling and Li, 2012; Oyeyipo et al., 2019) adopted questionnaire survey in their studies. Mean score analysis and factor analysis were used for data analysis using SPSS statistical software. The Cronbach's alpha coefficient of factors influencing SM was 0.935. Since the figure is above 0.7 (De Vellis, 2003), it suggests that the data supplied is adequate and the responses are reliable.

3. Results

3.1 Response to Questionnaire Survey

Table 1 shows the response rate to the questionnaire survey by the two categories of respondents. Results from the 66 questionnaires distributed to each group of respondents show that the project managers' category enjoyed a higher return rate of 93.94% compared to the client representatives (71.21%). This could be because firms that have executed building projects for private corporate organisations in the study area were pre-identified. Also, ample time was given for data collection with frequent follow up through phone calls, mails, and direct interactions with them in workshops and seminars. On the

whole, 82.58% of the questionnaire distributed were returned, this high return rate could be as a result of the relationship established between the researcher and the respondents during the preliminary survey carried out earlier. However, only 80.30% of the distributed questionnaire was used for analysis, due to incomplete responses from some of the questionnaires. The response rate achieved for the survey was considered adequate for analysis based on the assertion of Sutrisna (2009), that performing statistical analysis in a survey within the response rate equal to or above the threshold of 30% is acceptable; hence, the 80.30% used for the survey was considered adequate.

3.2 Characteristics of Respondents to Questionnaire Survey

Table 2 shows the characteristics of the respondents in the two categories of the target population. In the project managers' category, 17.74% of the respondents were practicing primarily as project managers (executive PM), 45.16% as architect/PM, and 32.26% as quantity surveyor/PM. For the client representatives' category, 22.73% were predominantly project managers, 9.09% were primarily architects, 25.0% were quantity surveyors and 31.82% were other professionals (accountant and administrative officers). The distribution of profession is indicative of the adequate representation of all the major professions involved in the management of stakeholders in the Nigerian construction industry. The 31.82% of other types of professionals in the client representative category was due to the fact that some private corporate organisations do not always keep built environment-related professionals in their employ, most especially when their line of business does not warrant such. In such situations other members of staff who participated in the projects were chosen as respondents.

Regarding the years of working experience in the project manager's category, the majority of the respondents (25.81%) have between 16 and 20 years of work experience, about 19.35% have worked between 11 and 15 years and only 6.45% have worked for more than 31 years. For the client representatives' category, respondents who have worked between 6 and 10 were in the majority (31.82%) and closely followed by those in the 11 to 15 years' category, while only a minority (4.55%) has more than 26 years of working experience. The mean years of working experience is 17 years which is considerable. It could, therefore, be inferred from this background that the respondents have adequate work experience to supply the information required, since they have worked for more than 17 years on the average.

Considering academic qualifications, it is evident that the majority of the respondents are adequately educated; many of the project managers (61.29%) have a Master of Science/Technology degree as their highest academic qualification, 16.13% of the respondents have Bachelor of Science/Technology and Higher National Diploma as their highest academic qualification and 1.61% were Doctors of Philosophy (PhD) in their fields. The client representative category had 36.36% of respondents with Master of Science/Technology certificate, 29.55% had Bachelor of Science/Technology degree and only 6.82% were PhD holders. This distribution is an indication that the respondents have the required academic qualification to supply the information required in the study, as the majority of them were master degree holders.

Results for the number of projects executed by the respondents, show that 46.77% of those in the project manager category has executed more than 20 construction projects, while 14.52% of them have been involved in 16 to 20 construction projects. For the client representative category, 34.09% have executed more than 20 construction projects in their construction career. However, the comparatively smaller number in the client representatives' category, could be attributed to the fact that these respondents are not primarily engaged with construction activities, unlike the project managers, who are basically built environment professionals. However, the two categories of respondents have executed a sufficient number of construction projects to enable them to supply accurate information for the survey, since they have executed an average of 18 construction projects in their careers. From the background information of the respondents therefore, it could be concluded that the information supplied by them was adequate and could be relied on.

4. Discussion

4.1 Factors Influencing SM on building project procured by private corporate organizations

Table 3 shows the results of the analysis of the responses to the questionnaire survey. From the Table, it is evident that the top three factors influencing SM according to the project managers' scoring are maintaining good relationships with stakeholders ranked 1st with MS=3.98, addressing stakeholders' concerns and needs ranked 2nd with MS=3.81 and promoting good relationships with stakeholders ranked 3rd with MS=3.74. However, in relation to the clients' representatives' scoring, addressing stakeholders' concerns and needs ranked 1st with MS=3.82, avenue for communicating project impacts ranked 2nd with MS =3.71 and maintaining good relationships with stakeholders ranked 3rd with MS=3.66 were the most important factors. This result is significant in that both the project managers and client representatives view the three most important factors in the same way; even though the order by which each of them rated the factors were slightly different.

Considering the overall mean response of the opinions of the two categories of respondents the top three most important factors influencing SM on building projects procured by private corporate organizations in the study area are maintaining good relationships with stakeholders, addressing stakeholders' concerns and needs and avenue for communicating project impacts.

On the other hand, looking at the lowest-ranked factors, it is evident from Table 3 that 'avenue for diagnosing stakeholders' potential for cooperation' ranked 23rd under the project manager's scoring; 'corporate social responsibility awareness' ranked 24th and 'platform for changing project resistant stakeholders to project supporters ranked' 25th. The ranking of the scoring of client's representatives however indicated that 'avenue for selecting adequate procurement method' ranked 23rd, 'corporate social responsibility awareness' ranked 24th and 'avenue for diagnosing stakeholders' potential for cooperation' ranked 25th as the three least important factors influencing SM. The overall mean scoring of the results showed that 'platform for changing project resistant stakeholders to project supporters ranked' ranked 23rd, 'avenue for diagnosing stakeholders' potential for

cooperation' ranked 24th and 'corporate social responsibility awareness' ranked 25th respectively as the three least important factors influencing SM on private corporate organization projects in the study area.

Table 3. Factors influencing stakeholder management

S/N	Factors	Overall		Mean Ranking			t-value	P-value	
		Mean	Rank	PM	Rank	CR			Rank
1	Maintaining good relationships with stakeholders	3.82	1	3.98	1	3.66	3	-1.77	0.08
2	Addressing stakeholders' concerns and needs	3.81	2	3.81	2	3.82	1	-0.23	0.82
3	Avenue for communicating project impacts	3.71	3	3.71	5	3.71	2	-0.40	0.69
4	Awareness of project benefits	3.66	4	3.73	4	3.59	4	-1.19	0.24
5	Promoting good relationships with stakeholders	3.61	5	3.74	3	3.48	8	-0.98	0.33
6	Comprehensive identification of stakeholders	3.57	6	3.581	8	3.57	6	-0.73	0.47
7	Avenue for keeping all stakeholders informed during the life of the project	3.57	6	3.60	6	3.55	7	-0.16	0.87
8	Medium for understanding stakeholders' interest in the project	3.54	8	3.60	6	3.48	8	0.00	1.00
9	Avenue for exploring stakeholders' needs for projects	3.45	9	3.53	9	3.36	14	-4.15	0.00*
10	Avenue for engagement with stakeholders	3.44	10	3.50	10	3.39	12	-2.11	0.04*
11	Avenue for defining clear statement of project mission	3.43	11	3.27	16	3.59	4	0.40	0.69
12	Medium for assessing stakeholders' attributes (power, urgency and proximity)	3.43	11	3.40	11	3.46	10	-1.10	0.28
13	Medium for resolving conflicts among stakeholders	3.41	13	3.40	11	3.41	11	-0.71	0.48
14	Avenue for classifying project goals and objectives	3.38	14	3.40	11	3.36	14	14.32	0.00*
15	Avenue for formulating strategies for managing stakeholders	3.36	15	3.36	15	3.36	14	-3.63	0.00*
16	Avenue for building trust among project coalition	3.32	16	3.26	17	3.39	12	-0.86	0.40
17	Avenue for analysing stakeholders' interest/power	3.28	17	3.21	21	3.34	17	-25.01	0.00*
18	Avenue for assessing stakeholders' reactions to implementation of strategies	3.22	18	3.23	19	3.21	18	2.81	0.01*
19	Medium for analysing change in stakeholders' interest and relationships	3.20	19	3.23	19	3.18	19	-0.85	0.40
20	Avenue for selecting adequate procurement method	3.20	19	3.40	11	3.00	23	-1.34	0.19
21	Avenue for predicting the influence of stakeholders	3.14	21	3.24	18	3.05	20	-0.52	0.61
22	Medium for assessing stakeholder behaviour	3.13	22	3.21	21	3.05	20	0.55	0.59
23	Platform for changing project resistant stakeholders to project supporters	3.05	23	3.08	25	3.02	22	-0.71	0.48
24	Avenue for diagnosing stakeholders' potential for cooperation	3.03	24	3.19	23	2.86	25	-0.24	0.81
25	Corporate social responsibility awareness	3.027	25	3.15	24	2.91	24	-1.46	0.15

PM = Project Manager. CR = Client Representative. *Significant at 5% level

A further analysis was carried out to test the hypothesis that there are no statistically significant differences in the opinions of project managers and client representatives on the factors influencing SM in the study area. The test was carried out using Student's *t*-test and 5% level of significance. The result (see Table 3) shows that among the three most critical and three least critical factors influencing SM there was no statistical difference in the opinions of the two categories of respondents (*P* value>0.05). However, among the 25 factors influencing

SM there were statistical differences in the opinions of project managers and client representatives on 6 factors. The factors are an avenue for exploring stakeholders' needs for projects (*P* value =0.000), an avenue for engagement with stakeholders (*P* value= 0.041), an avenue for classifying project goals and objectives (*P* value =0.000), an avenue for formulating strategies for managing stakeholders (*P* value= 0.001), an avenue for analysing stakeholders' interest/power (*P* value=0.000) and an

avenue for assessing stakeholders' reactions to the implementation of strategies (P value = 0.007).

The 25 factors influencing SM identified by the study were subjected to factor analysis so as to identify a relatively small number of factor groupings that can be used to represent relationships among the factors (Li et al., 2005). The Bartlett's test of sphericity was significant ($P=0.00$) (Table 4), and the value of the KMO index was 0.87, well above the recommended minimum value (0.6). Therefore, the results of these tests confirmed that the data set was appropriate for factor analysis in all ramifications. The Principal Component Analysis (Table 5) produced a 6-component solution. The Eigenvalue of the 6-component factor groupings being greater than 1.00 explains 68.67% of the variance. Each of the factors belonged to only one of the groupings, with the value of factor loading exceeding or being equal to 0.50 (Table 6). To further confirm the adequacy of the 6-component solution for factor analysis, the scree plot in Figure 1 shows a complete break after the sixth component, which also supports the decision to retain a 6-component solution. The factors influencing SM were grouped into 6 principal components, and the corresponding importance ranking of the extracted components are: Project relationship, information input, stakeholder estimation, decision-making, sustainable support and external project relationship awareness.

Table 4. KMO and Bartlett's test of factors influencing stakeholder management

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.87
Bartlett's Test of Sphericity	Approx. Chi-Square	1488.000
	df	300.000
	Sig.	0.000

The Project Relationship component accounts for 39.58% of the total variance between factors promoting SM (Table 5). This value shows that the component was comparatively important than the other 5 components. The result implies that project managers and client/client representatives in the study area considered project relationship components the most important in influencing SM on building projects procured by private corporate organizations. The components related to projects relationships are FP1, FP3, FP3, FP5, FP6, FP 4 and FP25 (Table 7).

The information input component accounts for 9.69% of the total variance between factors influencing SM (Table 5). This implies that information input is another major component of factors influencing SM second to project relationships. The components related to information input are; FP11, FP10, FP12, FP19 and FP 17 (Table 7).

The stakeholder estimation component of factors influencing SM account for 5.81% of the total variance between factors influencing SM. This value though lower compared with the project relationship and information input components, is high compare to other components. This means that stakeholder estimation could be considered as an important component among the factors influencing SM. The stakeholder estimation component consists of FP14, FP16, FP15, and FP13.

In order to address the stakeholder estimation component of factors influencing SM, the project manager must create: a medium for assessing stakeholders' attributes (power, urgency and proximity), an avenue for analyzing stakeholders' interest/power, an avenue for defining clear statement of project mission and an avenue for formulating strategies for managing stakeholders.

The decision-making component of factors influencing SM account for 4.85% of the total variance between factors influencing SM on building projects procured by private corporate organisation projects in the study area. The decision-making component of factors influencing SM in the study area is higher in value compared to sustainable support and external project relationship awareness components, but lower in value compared to project relationship, information input and stakeholder estimation components. The decision-making component consists of FP23, FP24, FP18 and FP22 (Table 7).

The sustainable support component of factors influencing SM on private corporate organisation project only accounts for 4.49% of the total variance. This component is the smallest penultimate to external project relationship awareness. This component though not as important as the first four components, the component could also be regarded as an important component. The sustainable support component of the factors influencing SM on private corporate organisation projects are FP20, FP21 and FP25. The respondents for this survey perceived that the external project relationship *awareness* component is the least important component among factors influencing SM in private corporate organisation projects in the study area. The component accounts for 4.22% of the total variance of factors influencing SM in the study area. The components relating to external project relationship awareness are FP8 and FP4.

5. Conclusion

The study has focused on assessing the factors influencing SM on building projects procured by private corporate organizations in Southwestern Nigeria. It offers three main conclusions. The first is that the most important factors influencing SM in the study area comprise of 'maintaining good relationships with stakeholders', 'addressing stakeholders' concerns and needs' and 'avenue for communicating project impacts'. The implication of this conclusion is that communication lies at the very core of stakeholder management on projects procured by private corporate organisations. Interestingly, this also supports the finding from a related study that examined the factors influencing stakeholder management of public projects (Oyeyipo et al., 2019). The implication of this study is that a project manager needs to maintain very good communication in order to have a good relationship with stakeholders. In addition, he also needs to maintain good communication in order to be able to address stakeholders' needs and concerns as they arise.

The second conclusion emanating from this study is that project managers and client representatives were mostly unanimous in their scoring of factors influencing SM in the study area. The implication is that the rank-ordered listing of the factors influencing SM in the study area could be relied on by the project manager for making an informed decision on the significant factors to focus on in order to achieve improved construction project delivery.

Table 5. Total variance explained of factors influencing stakeholder management

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.90	39.59	39.59	9.90	39.59	39.59	3.95	15.80	15.80
2	2.42	9.69	49.28	2.42	9.69	49.28	3.14	12.54	28.34
3	1.45	5.81	55.10	1.45	5.81	55.10	2.81	11.23	39.57
4	1.21	4.85	59.95	1.21	4.85	59.95	2.80	11.20	50.76
5	1.12	4.49	64.44	1.12	4.49	64.44	2.56	10.25	61.01
6	1.06	4.22	68.67	1.06	4.22	68.67	1.91	7.66	68.67

Extraction Method: Principal Component Analysis.

Eigenvalues of the 6-component factor groupings greater than 1.00 only were extracted

Table 6. Rotated component matrix of factors influencing stakeholder management

Coding	Factors	Component					
		1	2	3	4	5	6
FP1	Promoting good relationships with stakeholders	0.810					
FP3	Addressing stakeholders' concerns and needs	0.807					
FP2	Maintaining good relationships with stakeholders	0.753					
FP5	Avenue for communicating project impacts	0.618					
FP6	Comprehensive identification of stakeholders	0.611					
FP4	Awareness of project benefits	0.556					0.500
FP11	Medium for resolving conflicts among stakeholders		0.787				
FP10	Medium for understanding stakeholders' interest in the project		0.750				
FP12	Avenue for predicting the influence of stakeholders		0.547				
FP19	Avenue for classifying project goals and objectives		0.536				
FP17	Avenue for assessing stakeholders' reactions to the implementation of strategies		0.512				
FP14	Medium for assessing stakeholders' attributes (power, urgency and proximity)			0.752			
FP16	Avenue for analysing stakeholders' interest/power			0.722			
FP15	Avenue for defining a clear statement of the project mission			0.653			
FP13	Avenue for formulating strategies for managing stakeholders			0.553			
FP23	Platform for changing project resistant stakeholders to project supporters				0.773		
FP24	Avenue for building trust among project coalition				0.659		
FP18	Medium for analysing change in stakeholders' interest and relationships				0.635		
FP22	Avenue for diagnosing stakeholders' potential for cooperation				0.578		
FP20	Avenue for selecting adequate procurement method					0.765	
FP21	Medium for assessing stakeholder behaviour					0.730	
FP25	Avenue for keeping all stakeholders informed during the life of the project	0.501					0.514
FP8	Corporate social responsibility awareness						0.796

Extraction Method: Principal Component Analysis; Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 7 iterations

Table 7. Categorisation of factors influencing stakeholder management

Category	Coding	Factors
Project relationship	FP1	Promoting good relationships with stakeholders
	FP3	Addressing stakeholders' concerns and needs
	FP2	Maintaining good relationships with stakeholders
	FP5	Avenue for communicating project impacts
	FP6	Comprehensive identification of stakeholders
	FP4	Awareness of project benefits
Information inputs	FP25	Avenue for keeping all stakeholders informed during the life of the project
	FP11	Medium for resolving conflicts among stakeholders
	FP10	Medium for understanding stakeholders' interest in the project
	FP12	Avenue for predicting the influence of stakeholders
	FP19	Avenue for classifying project goals and objectives
Stakeholder estimation	FP17	Avenue for assessing stakeholders' reactions to the implementation of strategies
	FP14	Medium for assessing stakeholders' attributes (power, urgency, and proximity)
	FP16	Avenue for analysing stakeholders' interest/power
	FP15	Avenue for defining a clear statement of the project mission
Decision-making	FP13	Avenue for formulating strategies for managing stakeholders
	FP23	Platform for changing project resistant stakeholders to project supporters
	FP24	Avenue for building trust among project coalition
	FP18	Medium for analysing change in stakeholders' interest and relationships
Sustainable support	FP22	Avenue for diagnosing stakeholders' potential for cooperation
	FP20	Avenue for selecting adequate procurement method
	FP21	Medium for assessing stakeholder behaviour
External project relationship awareness	FP25	Avenue for keeping all stakeholders informed during the life of the project
	FP8	Corporate social responsibility awareness
	FP4	Awareness of project benefits

The last conclusion emanating from this study is that the 25 factors identified as influencing SM in the study area could be grouped into six components: project relationship, information inputs, stakeholder estimation, decision-making, sustainable support and external project relationship awareness. It is noteworthy that the project relationship component is the most important component while external project relationship awareness is the least important component on factors influencing SM on private corporate organisations' building projects. This conclusion further strengthens the earlier one indicating that communication is at the core in achieving a healthy project relationship and by implication, effective stakeholder management.

It should however be noted that the results of this study are limited to building projects procured by private corporate organizations in Southwestern Nigeria and could be of little applicability to projects procured by public organizations as private and public organisations have different characteristics. Further study could be instituted to compare the factors influencing SM on construction projects procured by public and private organisations. Furthermore, a regional comparison of factors influencing SM in different regions and countries could be embarked on as a culture and the environment of respondents could have impacts on the way they rated the factors.

References

- Aaltonen, K., Kujala, J., and Oijala, T. (2008). Stakeholder salience in global projects. *International Journal of Project Management*, 26(5), 509–516.
- Aleamoni, L. M. (1976). The relation of sample size to the number of variables in using factor analysis techniques. *Educational and Psychological Measurement*, 36, 879–883.
- Asma, P. and Sunny, R. (2018). Factors affecting the stakeholder management process in construction project. *International Journal of Engineering Research & Technology*, 7(4), 271-274.
- Bakens, W., Foliente, G., and Jasuja, M. (2005). Engaging stakeholders in performance-based building: lessons from the performance-based building (PeBBu) network. *Building Research & Information*, 33 (2), 149–158.
- Bartlett, M. S. (1954). A note on the multiplying factors for various chi square approximations. *Journal of the Royal Statistical Society*, 16(B), 396–398.
- Cole, R. J. (2005). Building environmental assessment methods: redefining intentions and roles. *Building Research & Information*, 33 (5), 455–467.
- Costello, A. B. and Osborne, J. W. (2003). Exploring best practice in Factor Analysis: Four mistakes applied researchers make. Paper presented at the annual meeting of the American Educational Research Association, Chicago, III, April.

- DeVellis, R. F. (2003). *Scale development: Theory and applications* (2nd ed). Thousand Oaks, California: Sage.
- El-Naway, O., Mahdi, I., Bawdy, M., and Al-Deen, A. G. (2015). Developing methodology for stakeholder management to achieve project success. *International Journal of Innovative Research in Science, Engineering and Technology*, 4(11), 10561-10660.
- Eskerod, P. and Jepsen, A. L. (2013). *Project Stakeholder Management (Fundamentals of Project Management)*. Farnham, Surrey, England: Gower.
- Eyiah-Botwe, E., Aigbavboa, C. O., and Thwala, W. D. (2016a). Critical success factors for enhanced stakeholder management in Ghana. *The Scientific Journal for Theory and Practice of Socio-economic Development*, 5(10), 153-170.
- Freeman, E. (1984). *Strategic Management: A Stakeholder Approach*, Boston, MA: Pitman.
- Jepsen, A. L. and Eskerod, P. (2009). Stakeholder analysis in projects: challenges in using current guidelines in the real world. *International Journal of Project Management*, 27, 335–343.
- Jergeas, G. F., Erin, W., Gregory, J. S., and Janice, T. (2000). Stakeholder management on construction projects. *ACE International Transaction*, 12, 1-12.
- Landin, A. (2000). *Impact of Quality Management in the Swedish Construction Process*. PhD thesis, Department of Construction Management, Lund University.
- Li, B., Akintoye, A., Edwards, P. J., and Hardcastle, C. (2005). Critical success factors for PPP/PFI projects in the UK construction industry. *Construction Management and Economics*, 23, 459–471.
- Ling, F. Y. Y. and Li, S. (2012). Using social network strategy to manage construction projects in China. *International Journal of Project Management*, 30, 398–406.
- Lock, D. (2007). *Project Management* (9th ed.). Burlington, VT: Gower.
- Loosemore, M. (2006). Managing Project Risks. In *The Management of Complex Projects: A Relationship Approach*, Pryke, S and Smyth, H.(eds). UK: Blackwell.
- Macau Daily Times (2011). Pearl River Delta Bridge Work Begins. Macau Daily Times (MDT), Macau. December 15th.
- Missonier, S. and Loufrani-Fedida, S. (2014). Stakeholder analysis and engagement in projects: From stakeholder relational perspective to stakeholder relational ontology. *International Journal of Project Management*, 32, 1108–1122.
- Mok, K. Y, Shen, G. Q., and Yang, J. (2015). Stakeholder management studies in mega construction projects: A review and future directions. *International Journal of Project Management*, 33, 446–457.
- Ogunseemi, D. R. and Jagboro, G. O. (2006). Time and cost model for building projects in Nigeria. *Construction Management and Economics*, 24 (3) 253-258.
- Olander, S. and Landin, A. (2005). Evaluation of stakeholder influence in the implementation of construction projects. *International Journal of Project Management*, 23(4), 321-328.
- Olander, S. and Landin, A. (2008). A comparative study of factors affecting the external stakeholder management process. *Construction Management and Economics*, 26 (6), 553-562.
- Olatunde, N. A. (2015). Evaluation of the contributions of construction team members to project time overrun. *1st University of Benin Annual Research Day (UBARD) Conference*, 1, 692-69.
- Olatunde, N. A., Ogunsemi, D. R., and Oke, A. E. (2017). Impact of team members' composition on construction projects delivery in selected higher institutions in Nigeria. *Journal of Engineering Design and Technology*, 15(3), 355-377.
- Olatunde, N. A. and Alao, O. (2017). Quantitative appraisal of cost and time performance of construction projects in public and private universities in Osun State, Nigeria. *Journal of Engineering, Design and Technology*, 15(5), 619-634.
- Opawole, A. (2016). Performance of project objectives in donor funded infrastructure in Nigerian Universities. *Nigerian Institute of Quantity Surveyor*, 61, 21-27.
- Oyeyipo, O., Odeyinka, H., Owolabi, J., and Ojelabi, R. (2019). Factors promoting stakeholder Management of public building projects. *International Journal of Mechanical Engineering and Technology*, 10(4), 42-49.
- Pallant, J. (2011). *SPSS Survival Manual: A Step by Step Guide to Data Analysis Using SPSS*, 4th ed., Australia: Allen&Unwin.
- Project Management Institute (2016). *A Guide to the Project Management Book of Knowledge (PMBOK)*, 6th ed. Project Management Institute: Newtown Square, PA.
- Sutrisna, M. (2009). Research methodology in doctoral research: Understanding the meaning of conducting qualitative research, Working Paper presented in ARCOM Doctoral Workshop, Liverpool, John Moores University, 12 May.
- Tabachnick, B. G. and Fidell, L. S. (1996). *Using Multivariate Statistics (3rd ed)*. New York: HarperCollins.
- Tabachnick, B. G. and Fidell, L. S. (2007). *Using multivariate statistics* (5th ed). Boston: Pearson Education.
- Waghmare, Y. M., Bhalerao, N., and Wagh, S. V. (2016). Analysis of the factors affecting the stakeholder management process in building construction project. *International Journal of Innovative Studies in Sciences and Engineering Technology*, 2(7), 48-56.
- Winch, G. M. and Bonke, S. (2002). Project stakeholder mapping: analyzing the interests of project stakeholders. In: Slevin, D. P., Cleland, D. I., Pinto, J. K. (Eds.). *The Frontiers of Project Management Research*. Project Management Institute, BA Mills, Newton Square, 385–403.
- Yang, J., Shen, Q. G., Ho, M., Drew, D. S., and Xue, X. (2011a). Stakeholder management in construction: An empirical study to address research gaps in previous studies. *International Journal of Project Management*, 29, 900–910.
- Yang, J., Shen, Q., and Ho, M. (2009b). An overview of previous studies in stakeholder management and its

implications for the construction industry. *Journal of Facilities Management*, 7(2), 159-175.

Yang, J., Shen, G. Q., Ho, M., Derek, S. D., and Chan, A. P. C. (2009a). Exploring critical success factors for stakeholder management in construction projects. *Journal of Civil Engineering and Management*, 15(4), 337-348.

Young, T. L. (2006). *Successful Project Management (2nd Ed)*. London: Kogan Page.



Nathaniel Ayinde Olatunde holds a PhD in Quantity surveying from the Obafemi Awolowo, Ile- Ife, Nigeria. He is currently a lecturer and researcher in the Department of Quantity Surveying, University of Benin, Edo State, Nigeria. Prior to his employment in the institution, he has worked as Lecturer in the Department of Quantity Surveying, Federal Polytechnic Ede, Osun State as well as a Quantity Surveyor with a private developer in Abuja, Nigeria. He is a member of the Nigerian Institute of Quantity Surveyors (MNIQS) as well as a Registered Quantity Surveyor (RQS). He has presented conference papers in few national conferences and published about 20 peer-reviewed journal articles both at the national and international arena. His research interest is in the area of project performance and project management.



Henry A. Odeyinka is a Chartered Quantity Surveyor and a Professor of Quantity Surveying and Project Management. He holds a PhD in Construction Management and Economics from Glasgow Caledonian University in the United Kingdom. He is a member of the UK based Royal Institution of Chartered Surveyors (MRICS), Association for Project Managers (MAPM), Fellow of the Higher Education Academy (FHEA) and a member of the Association of Researchers in Construction Management (ARCOM). He is also a Fellow of the Nigerian Institute of Quantity Surveyors (FNIQS) and a Registered Quantity Surveyor with the Quantity Surveyors Registration Board of Nigeria (QSRBN). Prof. Odeyinka commenced his professional career as a Quantity Surveyor with QU-Ess Partnership, Ibadan, Nigeria. He has at various times been the Head, Department of Quantity Surveying, Obafemi Awolowo University, Ile-Ife. He was a Senior Lecturer at Nottingham Trent University and the Course Director for the MSc Commercial Management in Construction programme at the University of Ulster, Belfast, United Kingdom. He is currently a professor of Quantity Surveying and Construction Project Management at Obafemi Awolowo University, Ile-Ife, Nigeria. He is also a peer reviewer for many national and international journals. His research interests include construction risk management, cash flow and financial management, construction contracts and construction project management.

Copyright of Journal of Engineering, Project & Production Management is the property of Association of Engineering, Project & Production Management and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.