

CONSTRAINTS OF PROJECT MANAGEMENT IN THE NIGERIAN CONSTRUCTION INDUSTRY

LATEEF AKINTOLA¹, OLUFIKAYO ADERINLEWO*¹, SUNMBO AKANDE ¹

¹*Department of Civil and Environmental Engineering, Federal University of Technology,
P.M.B. 704, Akure, Nigeria*

Abstract: This study addresses the various challenges causing the ineffective practice of project management in Nigeria and proffered possible and workable solutions to them. Data were sourced from construction professionals across Nigeria and 71 responses were obtained from the 109 questionnaires that were administered. After applying the Relative Importance Index and Severity Index methods, it was established that the rankings of the critical factors that hamper contract job completion were significantly different, thus underscoring their respective importance. The recommendations, therefore, emphasized training programs, standard regulation protocol, and effective government policy to ensure effective project delivery in the Nigerian construction industry.

Keywords: relative importance index, severity index, critical factors, construction industry

1. INTRODUCTION

The effectiveness of the Nigerian construction industry cannot be ignored as the industry continues to play a key role in the nation's economy [1]. However, the construction industry is limited by several challenging issues such as abandonment, building collapse, cost overrun, incessant delays, which have their roots embedded in sub-standard project management practices [2]. Due to the slow nature of the industry to adopt and implement new technologies required for development, it continues to fuel these challenges. Project management is not being fully utilized as a tool in the construction industry because of the low awareness that has been channeled to it in the country [3]. The current situation requires an improved construction management framework to limit the rate at which construction projects are not being completed within the budgeted cost, material and quality specifications and time frame [4]. However, the improved project management delivery system has practices put in place to avoid the ills that are gradually plaguing the industry.

A project is considered successful if it meets the criteria of cost, quality, resource allocation, safety, and time which are determined by the client or owner [5]. Thus, construction project management seeks to achieve goals by planning the expenditure of resources that meets the requirements of the project's quality, cost, time, scope, and safety. It is the duty of the project manager to control or mitigate the effects of any situation that could have a negative influence on the project's success [6]. Hence, the major tasks in project management include planning, organizing, scheduling, implementing, managing, monitoring, controlling, and tracking construction projects. These are essential for the successful accomplishment of construction activities in an effective and efficient way. It is important that project managers understand the demands that planning and controlling of construction operations place on them, especially in developing countries like Nigeria [7].

This study identifies and ranks the challenges facing the management of construction projects, skills required, and management strategies needed for alleviating those challenges facing construction managers in delivering

* Corresponding author, email: oluade2010@gmail.com
© 2023 Alma Mater Publishing House

<https://doi.org/10.29081/jesr.v29i4.001>

efficient construction projects in Nigeria. It also examines critically the various challenges facing project management in the country and made an attempt at proffering strategies that can improve and protect the sustainability and advancement of project management systems in the Nigerian construction industry.

2. LITERATURE REVIEW

The services provided by construction project management are associated with activities involving construction designs, documentation, procurement, and operation. The approach towards managing construction projects depends on the contractual arrangement established between the client and the firm providing the management services. According to the Project Management Institute, managing a project involves: Recognizing requirements; Setting up clear and achievable goals and objectives; Evaluating the competing demands for cost, quality, scope, and time; Modifying the specifications, plans, and approach to the different expectations and concerns of the various stakeholders.

There are various factors that have significant effects on the efficient performance of the construction site management team, and these include changes in government policies during the process of construction, nature of the project, regulatory bodies, workforce, working conditions among many others. If these factors are not properly managed, the result might be project failure. Most project failures in developing countries are due to inconsistent monitoring and follow-up, lack of planning, lack of efficient management strategy, lapses in communication and coordination, and above all, absence of a methodical approach [8]. Another major cause of project failure is the non-involvement of clients in a project [9]. According to their study, a project is considered to have failed if it does not meet the needs of the client, even though it meets the project requirements of budget and time. The quality of contract documents may be influenced when clients demand the early completion of designs and contracts. Errors and omissions made may result in the remaking of the documents causing overruns in terms of cost and schedule. Aside from these, professionals in the construction industry also need to work on themselves so that they will be able to handle managerial issues [10].

The unhealthy situations in the management of construction projects in Nigeria were attributed to the project's poor analysis and management [11]. The traditional building procurement system embodies the concept of managing construction projects. The emergence of new methods that can be used in managing construction projects often generates newer kinds of challenges for construction practitioners. Any project implementation process will be successful depending on the attitude of the project manager towards the appointment and control of staff members, strict monitoring of cost, material, quality, time, and environmental constraints [12]. Conversely, the management of complex, multi-disciplinary projects in developing countries presents some special problems which vary from one project to another [8]. Still, most projects are not easily managed due to uncertainties and commitment to the budget, content, and due date [13]. It does not matter if an organization manages single or multiple projects or whether the projects are on a small or large scale, whether there are internal or external customers or whether the nature of the work performed is construction, design, IT, product development, or service. The task becomes more challenging if the organizations attempt to manage several concurrent projects using common or shared resources. An attempt at this may cause managers to find themselves in a situation referred to as "project overload" where there are continual resource shortages and the inability to determine the most truly important tasks.

2.1. Project management system in Nigeria and the attendant problems

The limitations of the traditional procurement method include delays, high-cost overruns and problems with the organizational structure. The system of project management was developed to solve the various problems that can be identified in the traditional contract procurement and management system [14]. Project management was first practiced in the United States of America in the early 1950s and was later adopted in Western Europe in the early 1960s [15]. It is now being practiced throughout the world and Nigeria is not an exception. A lot of Project Managers in Nigeria learn and gain experience on the job, and most professionals claiming the title of project managers do not have adequate knowledge and skill regarding project management [4]. In addition to this, there exists no professional body to regulate their practice. It is noted that in Nigeria there are no regulatory or professional bodies to review and control skill requirements for the management of construction projects [4].

In developing countries such as Nigeria, the constraints to effective project management are peculiar to each society in terms of its administrative, economic and political system. The obstacles facing project management implementation in public agencies in developing countries include bribery and corruption, change of authority,

lack of commitment towards leadership, lack or inadequate knowledge about project management, and rigid organizational structure [16]. Likewise, the constraints facing the implementation of project management can be attributed to insufficient communication, lack of management support, lack of planning, low technical know-how, non-involvement of clients, poor conflict management, poor monitoring and feedback system, poor selection of personnel and project mission not defined [3].

Project management practices are yet to attain development in developing African countries partly due to cultural and religious beliefs, difficult social and economic circumstances, shortage of skilled staff, and weak political institutions [17]. Difficulties in communication among professionals is another major constraint that is limiting the practice of project management [15]. To achieve high team performance among stakeholders in construction projects, an open and effective communication system was recommended to that effect [7]. The professionalism of the designer may be considered ineffective or weak when errors or omissions made during design cause the excessive occurrence of variation orders [5]. Oftentimes, the workers are discouraged to put in their best efforts in situations where they must demolish and reconstruct. The management should put all things in place that will aid in raising the morale of the workers and these include sincere concern about the environment, supply of appropriate tools, welfare and worksite [6].

Effective project management requires skill application [7]. These skills are garnered not just from training but also from experience obtained through frequent practice, such that when they are applied to project activities, the project requirements are always met. The roles of a project manager are inexhaustible in a project. It is thus important that the project manager does not remain passive in taking absolute control of the construction project. One of the duties of the project manager is the creation of a cordial environment that will encourage consultants, contractors, and other site operators to work together in order, to achieve a common goal [3]. Furthermore, the success of a project depends largely on the input of the project manager [18]. It is therefore important that a project manager takes a stance in kicking against the use of substandard materials, as this has been identified to be one of the causes of building collapse in Nigeria.

3. METHODOLOGY

The purposive sampling method, also known as the deliberate or non-probability sampling method, was adopted for this study. This method involves a deliberate selection of particular units of the population and this represents the total population. In most cases, this sampling method is used to assess professionals who are known to have in-depth knowledge about topics relating to their professional experience, network, or role.

The source of primary data used in this study is the structured questionnaires administered to professionals in construction companies in Nigeria. These professionals include civil engineers, estate managers, quantity surveyors, architects, and project managers working in either indigenous or expatriate construction companies in the country. 105 questionnaires were administered but only 72 responses were obtained, processed and analyzed. The secondary data were obtained by reviewing past researches, online articles, and publications on the study. The data obtained are analyzed using mean item scores, percentile, pie chart, relative important index (RII) and severity index (SI).

3.1. Design of questionnaires

The questionnaire was divided into three sections. The first section captures demographic information about the respondents while the second section contains questions relating to the challenges of managing construction practice, skills and strategies used in management respectively. The questions were based on a five-point scale (as shown in Table 1) ranging from 1 to 5, corresponding to “Strongly Disagree”, “Disagree” “Neutral”, “Agree”, and “Strongly Agree” respectively. The third section is about the participant's perceptions of the strategies that boost the quality management practice within the construction industry. The responses were measured on a five-point scale from 1 to 5, just like the second section.

Table 1. Likert scale showing ranking and rating.

ITEM	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
DESCRIPTION	Not very important	Not important	Moderately important	Important	Very important
SCALE	1	2	3	4	5

3.1.1. Relative importance index

The Relative Importance Index (RII) method was used to determine the perception of the respondent as regarding the relative importance of quality in highway construction projects.

$$R.I.I. = \frac{5n_5 + 4n_4 + 3n_3 + 2n_2 + 1n_1}{A*N} \quad (1)$$

where A is the highest weight (equal to 5), N is the total number of respondents, n_5 is the number of respondents for very important, n_4 is the number of respondents for important, n_3 is the number of respondents for moderately important, n_2 is the number of respondents for not important and n_1 is the number of respondents for not very important.

The item with the highest RII value was ranked first (1), the next second (2), and so on.

The rating of all the factors for the degree of significance was based on the value of their respective relative importance index (RII). The interpretation of the RII values is as follows:

- An item is considered to have low significance if the $RII < 0.60$;
- The item is of high significance when $0.6 \leq RII \leq 0.80$;
- While items having $RII > 0.80$ are assessed to have very high significance.

3.1.2. Severity index

The Severity Index (I) was calculated to interpret the degree of severity at which the identified factors influence the practice of project management in the Nigerian construction industry. The categorizations reflect the scale of the respondents' answers to the administered questionnaires. This index was calculated as follows:

$$SeverityIndex(I) = R.I.I. \times 100\% \quad (2)$$

The severity index was categorized into five levels:

- 0-49 % was categorized as non-severe;
- 50-69 % was categorized as fairly severe;
- 70-74 % was categorized as moderately severe;
- 75-79 % was categorized as severe;
- 80-100 % was categorized as most severe.

4. ANALYSIS AND INTERPRETATION OF RESULTS

Table 2 shows the relationship between the number of questionnaires distributed across Nigeria and the number of responses received.

Table 2. Respondent's data.

Number of questionnaires distributed	105
Number of responses	72
Percentage of responses	69 %

Figure 1 shows the classification of the respondents by profession. It is shown that 32 % of the total respondents are civil engineers, 26 % are project managers, 17 % are architects, 15 % are estate managers and 10 % are quantity surveyors.

Figure 2 shows the classification of the respondents by their designation. 27 respondents work for Government, 25 work as contractors, 11 are users of infrastructures and 5 are private clients. However, there were no funding bodies or personnel.

Figure 3 displays the classification of the respondents by years of experience. 33 % of the respondents have 0-5 years of experience, 32 % have 6-10 years of experience, 25 % possess 10-20 years of experience and 10 % have more than 20 years of experience.

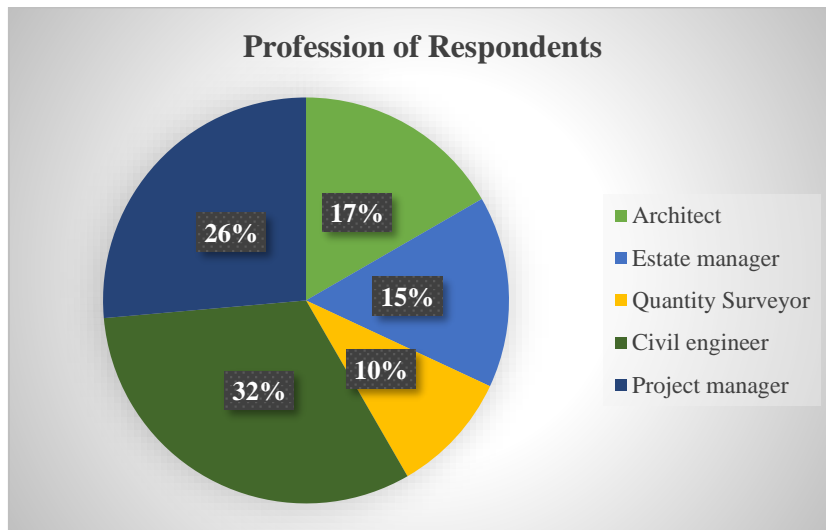


Fig. 1. Classification of respondents by profession.

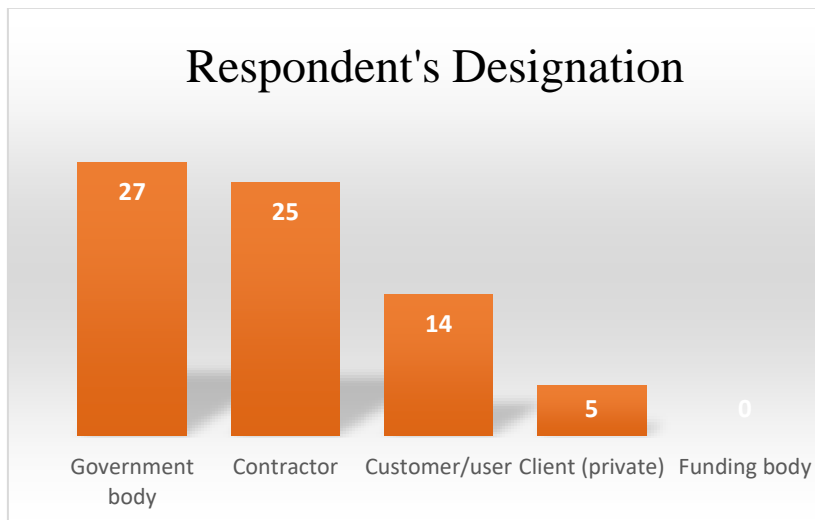


Fig. 2. Designation of respondents.

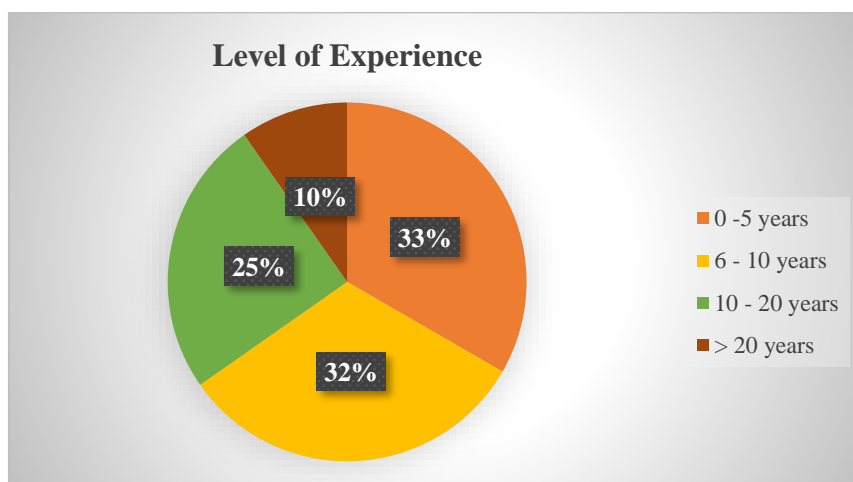


Fig. 3. Years of experience of respondents.

Numerical data from which Figures 1 to 3 were deduced are shown in Table 3.

Table 3. The demography of the respondents.

Category	Classification	Frequency	Percentage (%)
Roles/positions	Architects	12	17
	Estate manager	11	15
	Quantity surveyor	7	10
	Civil engineer	23	32
	Project manager	19	26
	Total	72	100
Designation	Government body	27	38
	Contractor	25	35
	Customer/user	14	19
	Client (private)	5	7
	Funding body	0	0
	Total	72	100
Level of Experience	0 -5 years	24	33
	6 - 10 years	23	32
	10 - 20 years	18	25
	> 20 years	7	10
	Total	72	100

4.1. Qualifications for project management

Table 4 shows the perception of respondents on the qualifications of a project manager.

Table 4. Analysis of respondents' opinion on the qualifications of the project manager.

Statement	Strongly disagree (1)	Disagree (2)	Indifferent (3)	Agree (4)	Strongly agree (5)	RII	Severity Index
Efficient management skills	3	2	1	30	36	0.86	86
Academic qualification	2	1	9	44	16	0.80	80
Organizational effectiveness	4	2	9	35	22	0.79	79
Leadership skill	0	3	19	26	24	0.80	80
Knowledge in related fields	0	6	5	30	31	0.84	84
Ability to work under pressure	2	1	10	39	20	0.81	81
Flexibility	1	2	6	49	14	0.80	80
Good communication skill	3	4	5	36	24	0.81	81
Decision-making ability	7	5	3	23	34	0.80	80
Problem-solving skills	3	0	5	36	28	0.84	84
Experience	1	5	3	39	24	0.82	82

Based on the table, Efficient management skills (has RII = 0.86), Knowledge in related fields (RII = 0.84), Problem-solving skills (RII = 0.84), Experience (RII = 0.82), Ability to work under pressure (RII = 0.81), Good

communication skills (RII = 0.81), Academic qualification (RII = 0.80), Leadership skill (RII = 0.80), Flexibility (RII = 0.80), Decision-making ability (RII = 0.80) are assessed to be of very high significance to project management because each of their RII values is greater than or equal to 0.80. They are also regarded as most severe to project management because each qualification has its severity index value greater than or equal to 80%. Organizational effectiveness (RII = 0.79) is of high significance to project management because its RII value is greater than 0.60 but lower than 0.80 and it is also categorized as severe because its severity index value falls in between the range of 75 % and 79 %.

This result suggests that a project manager must possess all qualifications - ability to work under pressure, academic qualification, decision-making ability, efficient management skill, experience, flexibility, good communication skill, knowledge in related fields, leadership skills, organizational effectiveness, and problem-solving skills in order to be competent and efficient.

4.2. Project management reliability

Table 5 shows the events that can cause the ineffective management of projects.

Table 5. Events hindering effective project management.

Statement	Strongly Disagree (1)	Disagree (2)	Indifferent (3)	Agree (4)	Strongly Agree (5)	RII	Severity Index
Time management limitations	2	6	8	29	27	0.80	80
Cost management challenges	5	3	9	23	33	0.82	82
Poor communication	1	3	11	21	36	0.84	84
Risk management constraints	0	13	14	24	21	0.75	75
Shortage of skilled staff	2	7	4	27	32	0.82	82
Organization management limitations	0	9	12	29	22	0.78	78
Quality management constraints	2	6	13	27	24	0.78	78
Harsh economic situation	3	7	10	20	32	0.80	80
Unfavourable political and administrative system	2	11	13	23	23	0.75	75
Complex and multiple projects challenges	3	11	9	30	20	0.76	76
Inability to adapt to change	5	9	1	31	26	0.78	78
Resources allocation constraints	1	9	15	27	20	0.76	76
Safety management limitations	1	14	7	30	20	0.75	75
Design error	2	4	5	27	34	0.84	84
Poor workmanship	0	13	9	21	32	0.83	83
Unfriendly site environment	1	15	17	21	18	0.71	71
Poor atmospheric condition	4	17	13	12	26	0.71	71
Bribery and corruption	2	5	10	30	25	0.80	80

Table 5 further shows the opinion of the respondents about each event. Design error (RII = 0.84), Poor communication (RII = 0.84), Poor workmanship (RII = 0.83), Cost management challenges (RII = 0.82), Shortage of skilled staff (RII = 0.82), Time management limitations (RII = 0.80), Harsh economic situation (RII = 0.80), and Bribery and corruption (RII = 0.80) are assessed to have very high significance to ineffective project management because each of their RII value is greater than or equal to 0.80. They are further categorized as most severe to project management because each of them has a severity index value greater than or equal to 80%.

Organization management limitations (RII = 0.78), Quality management constraints (RII = 0.78), Complex and multiple projects challenges (RII = 0.76), Resources allocation constraints (RII = 0.76), Risk management constraints (RII = 0.75), Unfavourable political and administrative system (RII = 0.75), Safety management limitations (RII = 0.75) are assessed to have high significance as each of their RII values is greater than 0.60 but lower than 0.80. They are also categorized as severe to project management because their severity index values fall in between the range of 75 % and 79 %. Although Unfriendly site environment (RII = 0.71) and Poor atmospheric condition (RII = 0.71) are of high significance to ineffective project management, they are however categorized as moderately severe to project management because their severity index value falls in between the range of 70 % and 74 %.

This result indicates that the events stated above should not be allowed to occur or if they do, critical attention should be paid to them early enough so that they do not give rise to ineffective project management.

4.3. Project management scheme

Table 6 shows the scheme for ensuring effective project management.

Table 6. Scheme for ensuring effective project management.

Statement	Strongly Disagree (1)	Disagree (2)	Indifferent (3)	Agree (4)	Strongly Agree (5)	RII	Severity Index
Early assignment of the project team	7	3	1	32	29	0.80	80
Ensuring documented procedure to be used as reference	2	8	12	30	20	0.76	76
Right delivery of project strategy	6	0	3	44	19	0.79	79
Development of realistic estimates and forecasting	6	1	3	38	24	0.80	80
Active management of project risks	0	4	7	39	22	0.82	82
Development of specific project policies and procedures	2	7	7	29	27	0.80	80
Assignment of specific roles and responsibilities in a project	6	0	1	36	29	0.83	83
Monthly inspection by a regulatory body to ensure standard practice	9	1	3	28	31	0.80	80
Commitment of team members to pre-established project objectives	1	3	5	35	28	0.84	84
Frequent team meetings	0	7	2	26	37	0.86	86
Adequate supervision of works	2	2	5	33	30	0.84	84
Continuous effective communication of project objectives	5	1	5	37	24	0.81	81
Improvement of the quality of performance through stakeholders' development and training	1	1	4	38	28	0.85	85

From Table 6, it can be observed from respondents' opinion that Frequent team meetings (RII = 0.86), Improvement of the quality of performance through stakeholders' development and training (RII = 0.85), Commitment of team members to pre-established project objectives (RII = 0.84), Adequate supervision of works (RII = 0.84), Assignment of specific roles and responsibilities in a project (RII = 0.83), Active management of project risks (RII = 0.82), Continuous effective communication of project objectives (RII = 0.81), Early assignment of the project team (RII = 0.80), Development of realistic estimates and forecasting (RII = 0.80), Development of specific project policies and procedures (RII = 0.80), Monthly inspection by a regulatory body to ensure standard practice (RII = 0.80) are assessed to have very high significance to effective project management as each of their RII values is greater than or equal to 0.80. Also, since each of their severity index values is greater than or equal to 80 %, they are most severe to effective project management. Right delivery of project strategy (RII = 0.79) and ensuring documented procedure to be used as reference (RII = 0.76) are assessed to have high significance to effective project management. Their respective severity index values fall in between the range of 75-79 %. Hence, they are categorized as severe to effective project management.

This result suggests that events in the scheme shown in Table 6 are not to be handled with levity.

4.4. Discussion of results

The study identifies the importance of acquiring the necessary management skills as they are required qualifications in project management. This study postulates that in order to achieve success in the implementation of project management, the construction professional must understand and acquire management skills in planning, organization and coordination as these will help him in meeting the client's requirements of producing functional and financially-viable projects. Also, this study also suggests that ability to work under pressure, academic qualification, decision-making ability, experience, flexibility, good communication skill, knowledge in related fields, leadership skills, organizational effectiveness, and problem-solving skills are

important qualities to be possessed by a project manager in order to be effective and efficient. The study also reveals that the project manager needs to be actively involved in construction projects so as to be able to tackle problems that may occur on the construction site in an effective and efficient manner.

This study examined the impediments of project management systems in the Nigerian construction industry. The effective management of construction projects is often hindered by challenges such as bribery and corruption, complex and multiple projects challenges, constraints in the allocation of resources, cost management, design error, harsh economic situation, limitations in organization and quality management, limitations in safety management, poor communication, poor workmanship, risk management constraints, shortage of skilled staff, time management limitations, unfavourable political and administrative system (0.75), unfriendly site environment and poor atmospheric condition. However, when these challenges are reduced or eliminated, a successful project management system would emerge in the construction industry.

This study shows that the management of construction projects will be more effective if the team members are committed to pre-established project objectives and if there are active management of project risks, frequent team meetings, adequate supervision of works, assignment of specific roles and responsibilities in the project, continuous effective communication of project objectives, development of realistic estimates and forecasting, development of project-specific policies and procedures, early assignment of the project team, ensuring documented procedures to be used as reference, improvement of the quality of performance through stakeholders' development and training, monthly inspection by a regulatory body to ensure standard practice and right delivery of project strategy.

5. CONCLUSION

The challenges facing construction practice in Nigeria are growing at an alarming rate. These challenges are not just mere technical and environmental issues but have grown to highly dynamic management challenges. These constraints are contributing factors to the high number of construction failures in Nigeria. Therefore, they require a high sense of capabilities, management acumen, skills and strategies in order to tackle them. This study has identified and ranked the challenges facing the management of construction projects in Nigeria, the skills required and management strategies for eliminating the challenges facing construction project managers in delivering efficient construction projects in Nigeria.

The study, therefore, recommends that training programs that can enhance the management abilities, skills and knowledge should be made compulsory for construction professionals. These programs can be held yearly in order to keep the professionals abreast of all global developments and improvements in construction methods. In addition, regulatory bodies in the industry should regularly inspect projects in order to ensure that they are being constructed according to specifications by professionals. Finally, the government should enact policies that will promote standards in project management and also ensure that erring professionals are penalized.

REFERENCES

- [1] Bowen, P.A., Cattel, K.S., Hall, K.A., Edwards, P.J., Pearl, R.G., Perceptions of time, cost and quality management on building projects, *Australian Journal of Construction Economics and Building*, vol. 2, no. 2, 2002, p. 48-56.
- [2] Mutchler, R., Widener, C., Construction management, *The Architect's Handbook of Professional Practice. Supplemental Architectural Services*, 2000, p. 1-9.
- [3] Nwachukwu, C., Emoh, F., Building construction project management success as a critical issue in real estate development and investment, *American Journal of Social and Management Sciences*, vol. 2, no. 1, 2011, p. 56-75.
- [4] Odusami, K., Iyagba, R., Omirin, M., The relationship between projects leadership, team composition and construction project performance in Nigeria, *International Journal of Project Management*, vol. 21, no. 7, 2003, p. 519-527.
- [5] Ndiokubwayo, R., Haupt, T.C., Uncovering the origins of variation orders, 5th Postgraduate Conference - Construction Industry Development Board Bloemfontein - South Africa, 2008.
- [6] Hickson, B., Ellis, L., Factors affecting construction labour productivity in Trinidad and Tobago, *Journal of the Association of Professional Engineers of Trinidad and Tobago*, vol. 42, no. 1, 2014, p. 4-11.

- [7] Project Management Institute, A guide to the project management body of knowledge, 4th ed., Project Management Institute, Newtown Square, 2008.
- [8] Kar, D., Implementing construction projects on schedule: challenge in a developing economy, *Journal of Economics and International Finance*, vol. 1, no. 4, 2009, p. 88-92.
- [9] Iman, A., Siew, H., Project management practices: the criteria for success or failure, *Communications of the International Business Information Management Association*, vol. 1, 2008, p. 234-241.
- [10] Arditi, D., Balci, G., Managerial competencies of female and male construction managers, *ASCE Journal of Construction Engineering and Management*, vol. 135, no. 11, 2009, p. 1275-1278.
- [11] Fapohunda, J.A., Stephenson, P., Optimal construction resources utilization: Reflections of site managers' attributes, *The Pacific Journal of Science and Technology*, vol. 11, no. 2, 2010, p. 353-365.
- [12] Jacob, D.B., McClelland, W.T., *Theory of constraints project management: a brief introduction into the basics*, Goldratt Institute, 2001, p. 1-12.
- [13] Hai, T.K., Yusof, A.M., Ismail, S., Wei, L.F., A conceptual study of key barriers in construction project coordination, *Journal of Organizational Management Studies*, vol. 2012, 2012, p. 1-14.
- [14] Idoro, G., Patunola-Ajayi, J., Evaluating the strategies for marketing project management system in the Nigerian construction industry, *Nordic Journal of Surveying and Real Estate Research*, vol. 6, no. 2, 2009, p. 25-36.
- [15] Kissi, E., Ansah, S., Professional project management practices and its constraints in developing African countries: a literature review, *Covenant Journal of Research in the Built Environment*, vol. 1, no. 2, 2013, p. 28-40.
- [16] Olateju, O., Abdul-Azeez, I., Alamutu, S., Project management practice in Nigerian public sector: An empirical study, *Australian Journal of Business and Management*, vol. 1, no. 8, 2011, p. 1-7.
- [17] Irefin, I., Effects of project management on the performance of a construction firm in Nigeria, *American International Journal of Contemporary Research*, vol. 3, no. 6, 2013, p. 54-58.
- [18] Windapo, A.O., Rotimi, J.O., Contemporary issues in building collapse and its implications for sustainable development, *Buildings*, vol. 2, no. 3, 2012, p. 283-299.