



Impact of Consultant Performance Indicators on Project Success in Public Construction Projects

¹Agboola Shamsudeen Abdulazeez, ²Mustapha Yusuf Faruq, ³Musa Abdulhakeem Kolawole, ⁴Aliyyu Abiola Abdulraheem, ⁵Aliyu Habeeb Dayo, and ⁶Zulfat Muhammad Omobolanle
^{1, 2, 3, 4, 5 & 6}Department of Building and Quantity Surveying, University of Abuja, FCT, Nigeria

Received 10 June 2024; received in revised form 16 June 2024, 01 October 2024, 04 November 2024; accepted 13 November 2024

<https://doi.org/10.15641/jcbm.7.2.1574>

Abstract

This research examines the impact of performance indicators of consultants on the success of construction projects in public tertiary institutions in Bauchi State, Nigeria. The paper adopted a purposive sampling technique, whereby a structured questionnaire was administered to 144 construction professionals to elicit information on consultant project performance factors that impact the successful delivery of projects. A total of 125 (86.8%) participants completed the survey. Descriptive statistics such as mean (M), and standard deviation (SD) were used to interpret the data. The result shows major factors of consultants' performance are *resource adequacy and understanding of client's requirements* (M=4.25, SD=0.73), *competency and experience* (M=4.16, SD=0.66), and *commitment and flexibility* (M=4.10, SD=0.58). However, *adequacy of resources* and *understanding the client's requirements* are the main elements used for evaluating consultant performance and are mostly considered for measuring the project's success. The study, recommends that stakeholders in the delivery of public construction projects should endeavour to implement the findings of research to improve project performance. Also, appropriate professionals should be used on projects to achieve cost effectiveness, quality, and timely delivery of projects. Consultants should also ensure adequate communication and allow the participation of relevant professionals throughout project implementation.

Keywords: construction professionals, consultants, experience, project performance, project success.

1. Introduction

The construction industry produces shelter and infrastructural projects such as transportation, industrial and specialist developments. These trigger significant effects on a nation's economy and economic sustainability of developing nations. However, the industry faces performance issues, which robs off on public perception regarding its success. Project performance (PP) is the extent to which projects are delivered based on client's requirements. PP issues are common in developing countries as well as developed countries. PP encompasses successfully completing projects within allocated budget, specified timeframe, and agreed-upon quality standards (Hassan et al., 2022). Project success can be evaluated based on specific parameters such as performance, management, supervision, aestheticism, stability, safety, and the

quality of service rendered. Further, the successful execution of construction projects requires sound engineering judgment, from design to supervision through planning to production stages.

Contrary to stakeholders' intention, many projects experience extensive overruns (Alaloul, et al., 2016). Traditionally, project success is analysed based on performance and quality in relation to budget and schedule. Additional success criteria stated by Kerzner and Saladis (2017) are efficiency of planned resource utilization and client satisfaction. Society generally desires that all projects be successful and become less tolerant of failure (Shepherd et al., 2011).

Majority of construction projects in Nigeria experience overruns. Where projects are existential to organizations' success, every organization must measure its performance in relation to projects in

¹ Corresponding Author

Email address: shamsudeen.agboola@uniabuja.edu.ng

order to remain competitive. Incidentally, Ogunde et al. (2017) and Auma (2014) have reported performance issues as a global debacle. In developing countries such as Nigeria, the rate of poor performance is higher. Zailani, et al. (2019) reported that less than 50% of the projects studied were successful with regards to time, cost and quality specifications. They found project delivery issues are not limited to inadequate planning and scheduling complexities. This is evident in several abandoned projects that take an extended period to complete and projects that became protracted because of chaotic inflationary trends.

Callistus et al. (2014) stated the need to evaluate critical factors affecting quality performance of project. Sweis et al. (2014) reiterated that improvement can only be ascertained when performance is measured. Performance measurement is a standard for measuring the progress for any organization (Hamidu et al., 2024). According to Aghimien and Aigbavboa (2018), about 86% of the assessed public tertiary institution projects in Nigeria experienced a time overrun of 66% to 86%. Whereas Gambo et al. (2017) revealed that 43% of the projects studied were not completed within their contracted schedule and cost. Further, over 70% of construction projects started in Nigeria are likely exceed their schedule, whilst over 50% will exceed their budget (Okweto, 2012). However, each construction project is unique, and the characteristics and project deliverables differ from one project to another. Points of difference include topography, nature of soil, location, cultural setting, quality, material application and technological requirements amongst others. Project performance now becomes a significant issue for the successful delivery of a project.

A recent study by Masengesho et al. (2021) identified various obstacles hindering the effective management of construction projects. These obstacles include appropriate engagement of project consultants, insufficient knowledge and experience in project consulting, shortage of well-trained project consulting professionals, limited training opportunities for construction project managers, resistance from senior management, and a dearth of local project consulting guidelines and information. Dosumu and Aigbavboa (2019) reported that the level to which construction professionals, especially consultants, render their services to construction clients is below expectation, and this causes performance gaps in terms of accuracy in the cost of construction works estimates and project delivery. Construction project requires a project consultant to enhance its success by minimizing and conserving the overall project lifecycle costs by the client's requirements. The consultant's responsibilities include ensuring the project is completed on time, enhancing the quality of the

project deliverables for current and future needs, dealing with significant deviations that affect the construction project and result in increased costs, and offering advice on required actions. This study evaluates consultant's performance indicators on project success in public construction projects of tertiary institutions in Bauchi State.

2. Literature Review

2.1. Construction Project Success

Success of a construction project is an essential issue for economic development of a country, project owners and users (Oyekunle, et al., 2024a; Ramlee et al., 2016). The outcome of a construction project could either be a success or failure. Therefore, once a project fails to be delivered, it is deemed a failure. Hence, project performance is measured by predicting the project outcome, whether it succeeds or fails (Omran *et al.*, 2012). Project success is often evaluated based on timely completion, estimated cost, and expected quality. In the field of project management, numerous researchers have thoroughly examined the topic of project success. Most research on project success focuses on measuring its success and other specific factors that affect its success (Albert et al., 2017). For architects, project success may be based on aesthetic performance; for contractors, success is achieved when they benefit more (Al-Tmeemy et al., 2011). Rolstadås et al. (2014) pointed out that project success is related to completion time, cost, and quality objectives and requires relevant education to the project management community. Developing project success is setting standards and criteria to help participants complete the project with the best possible outcomes (Castro et al., 2019). Completing cost, time, and quality goals was considered direct project management success. Project success involves meeting the project goal (Sudhakar, 2016).

2.2. Project Success Factors (PSFs)

Various factors influence project performance, with certain factors being more critical to a project's success than others. The achievement of critical success factors directly correlates to a project's success (Naseer et al., 2022). However, measuring project success requires using key performance indicators such as cost, time, quality, health and safety performance, and other relevant factors (Enshassi et al., 2009; Babu, 2015). Project success factors (PSFs) are applied to promote project success. PSF is defined as a limited number of fields in which, if those outcomes are satisfactory, will assure the successful performance of the project organization (Masengesho et al., 2020). However, many factors are beyond the control of project management, and could determine project success or failure. They are called critical success or failure factors (Oyekunle et al., 2024b; Oyekunle, et al., 2023; Alzahrani & Emsley, 2013).

2.3. *Critical Success Factors of Construction Project in Nigeria*

There limited literature on CSFs of construction projects in Nigeria. The research conducted by Ihuah et al. (2014) highlights the importance of 22 critical project management success factors (CPMSF) for the successful and sustainable delivery of social housing estates in Nigeria. The performance of a project can be affected by various factors, such as the effectiveness of the project manager, the organization responsible for overseeing the project's development, the attributes of the team members, and the external environment in which the project operates. Ogwuleeka (2011) highlighted the crucial elements that impact project performance in Nigeria. The six necessary key factors include effective management of objectives, design management, technical aspects, strong support from top management, risk management, and mental and financial support. Incredibly, elements such as active involvement from the community, adherence to legal requirements, fostering mutually beneficial relationships, and addressing environmental concerns were deemed less important in achieving project success despite being statistically significant factors. This is particularly noteworthy in today's construction industry, where there is a growing emphasis on collaboration, sustainability, and the implementation of green building practices. Sustainability and implementing green building practices are becoming increasingly popular also (Agboola et al., 2023a). A study conducted by Akintoye et al. (2003) identified critical success factors for projects procured using the private finance initiative. These factors encompass detailed risk allocation, project duration, cost commitment, technical innovation, technology transfer and accountability.

2.4. *Criteria for Evaluating Success or Failure of Projects*

Project success is measured on the bases of time, cost and quality. Sebestyen (2017) identified these three criteria as the "Iron Triangle". Apart from these three basic criteria, Pinto and Pinto, (1991) argued that measures for project success should also include the satisfaction of interpersonal relationship with project team members. The inclusion of satisfaction as a success measure can also be found earlier in the work of Albert et al. (2017). A variety of criteria was elicited in their study. These include meeting budget, schedule, and quality of workmanship, client and project manager's satisfaction, transfer of technology, friendliness of environment, health and safety. The major project performance criteria are explained below.

2.4.1. *Cost*

Cost performance evaluates the degree to which the general conditions promote the completion of a project within the estimated budget (Mir & Pinnington, 2014). Cost is an amount provided for the general in a construction project. Cost is not only confined to the

tender sum or the contract sum only, it is the overall cost that a project incurs from inception to completion. Cost includes any costs arising from fluctuations, variations, modifications during construction and the cost created by legal claims such as litigation and arbitration (Ashworth & Perera, 2018). When this cost exceeds the initial contract or tender sum due to these additional costs, the term 'cost overrun' is often used (Cunningham, 2017).

2.4.2. *Quality*

Quality in the construction industry is defined as the totality of features required by a product or services to satisfy a given need – that is, fitness for purpose (Ansah, 2018). Quality is the assurance of the products that convince the customers or the end users to purchase or use. Specification is one of the criteria that were advocated. Folorunso and Awodele (2015) defined this as the workmanship guidelines provided to contractors by clients or the client's representative at the commencement of project execution. The measure of technical specification is to what extent the technical requirements specified can be achieved. Actually, technical specification is provided to ensure that buildings are erected to good standard and by proper procedure. Fageha and Aibinu (2016) extended the definition of technical performance with scope and quality. So, meeting technical specification is grouped under the 'quality' category and when it falls below the client's expectation or satisfaction upon the completion of a project, it is often referred to as "substandard quality of work". According to Oyekunle et al. (2023) interpersonal relationship among team members lead to quality work and success of any project. Proper communication among team members supports project success as quality is guaranteed (Yu et al., 2021).

2.4.3. *Time*

According to Choo (2014), time is the duration from start to completion of a project. It is scheduled to enable the building or a structure to be used by a date determined by the client's future plans (Baldwin & Bordoli, 2014). Effectiveness is a measure of how well a project is implemented or the degree to which targets of time and cost is determined from the start-up phase to full production. According to Lindhard, et al. (2022), time can be measured in terms of construction time, speed of construction and time overrun. Construction time is calculated as the unit of time taken in a project from start to practical completion (Oso, 2020).

2.5. *Consultants Performance*

In this context, consultants refer to the scenario where an individual or a group of individuals who work as a team are appointed to take responsibility for the design, management and construction of a development project from conception to operation. Consultants must be able to operate effectively on a day-to-day basis to ensure a positive impact on the overall quality of their projects (Dadzie et al., 2012). For this to happen, consultants

must be nurtured and encouraged (Dadzie et al., 2012). Salleh (2009) asserted that stopping or hindering the performance of the consultants will only stop or hinder the team's "chemistry" and project results. To be most efficiently used, it is said that consultants need to be "generalists" rather than specialists. They must "deal with the day-to-day demands of their position while maintaining a strategic vision for the project" (Dadzie, et al., 2012). Studies have shown that work environments that foster creativity and innovation are linked to higher overall productivity and likely significantly influence consultants' effectiveness (Somech & Drach-Zahavy, 2013). A more bureaucratic management style has been found to hinder innovation (Torfing, 2013). Therefore, it is suggested that a balance between well-defined systems that ensure efficient product delivery and the freedom to foster creativity and innovation within those systems be struck, allowing for quick adaptation to changing needs (Knight & Harvey, 2015). Long working hours are also likely to be a significant source of inefficiency amongst consultants. These are increasingly endemic and a significant cause of productivity loss in the construction industry in general (Dadzie et al., 2012).

2.5.1. Consultants Performance Indicator

According to Dadzie, et al. (2012) a project manager should possess skills such as, a high level of leadership and communication skills, ability to manage client issues, authority approval, design and construction processes and risks. Further, a consultant project manager should understand the client, the project, the design, tender processes and construction processes, and technical requirements of a project. They should be able to develop of risk management strategies and communicate effectively. Nitithamyong and Tan, (2007) state that 12 underlying performance

measurement for consultant (PMC) factors formed the PMC success model as presented in Figure 1.

3. Research Methodology

This study sets out to identify the impact of the consultant performance variables on the timely delivery of construction projects in Bauchi, Bauchi State. Respondents targeted were professionals involved as consultants in public construction projects within higher institutions of learning in Bauchi State. Their professional titles include Architects, Civil Engineers, Quantity Surveyors and Builders. Bauchi was considered for this study based on the recommendation of Zailani et al. (2019) that many public projects of tertiary institutions need more space available for teaching and learning with project abandoned and many delayed. The study employed a primary source of data, which is the use of a questionnaire. A self-administered questionnaire was administered to professionals using a purposive sampling technique. Purposive sampling technique was adopted in order to obtain relevant and valid information for the study (Saunders et al., 2016). The basis for selection of respondent was due to the qualities the respondent possesses and the ability to provide relevant information (Alam, 2021). This method was crucial for the research to study sample of population with certain knowledge pertaining to the research. A total of 144 questionnaires were administered to respondents in the study area. However, only 125 questionnaires were completed, returned, and used for analysis because they were filled correctly. These 125 questionnaires represented an 86.8% response rate. This response rate is higher than Emuze's (2011) 25.4% and less than Agboola et al.'s (2023b) 87.1%, being low-end and high-end benchmarks reported in relevant construction research.

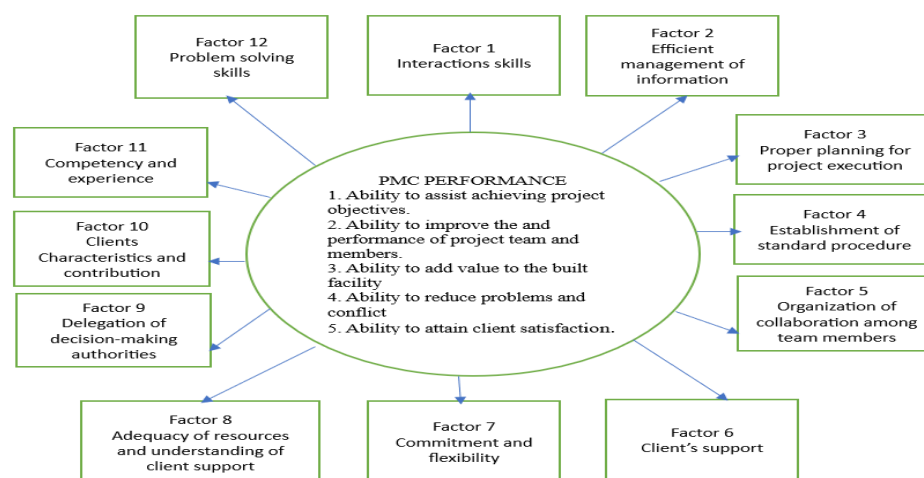


Figure 1: Success Model for Performance Measurement for project Consultants (PMC)

Source: Nitithamyong and Tan (2007)

The questionnaire consisted of two sections. Section 1 covered the demographic background of the respondents such as educational background, professional background, project management experience and number of projects managed. Section 2 asked respondents to rate the importance of each identified project performance variable. IBM Statistical Package for Social Sciences (SPSS) version 25 was used to analyse the data obtained from the questionnaire responses using mean and standard deviation to illustrate the study's descriptive statistics. A literature search was conducted in order to obtain knowledge and identify consultant performance indicators (Nitithamyong & Tan, 2007; Dadzie, et al., 2012). The information obtained from the reviewed studies related to the current study, guided the design of the structured questionnaire (Saunders et al., 2016). Forty (40) identified factors underlying the 12 broad categories of consultant performance indicators were adopted for the study. The main reason for using previous factors is to provide an opportunity of comparing the findings with those from other studies (Sospeter, 2023). Data for the impact of consultant's project performance variables on the timely delivery of construction project, utilized a 5-point Likert scale with 1 being Strongly disagree (SD), 2 being Disagree (D), 3 being Neutral (N), 4 being Agreed (A), and 5 being Strongly Agreed (SA). In describing the data, the study writes out the facts the way they are in transparent and fair descriptive reporting. Also, it filters out those matters which are not relevant to the research problem

4. Result and Discussion

4.1. Respondents Profile

Table 1 below presents the profiles of the respondents. 33.6% were from an architecture background. 23.2% are from a civil engineering background, 24% are

from a quantity surveying background, 11.2% are from a building background, and 8% are from another background. The result shows that the professionals are almost evenly represented. 51.2% have 11-15 years of experience, 28.8% have 6-10 years of experience, 11.2% have 1-5 years of experience, and 8.8% have 15 years and above experience. 45.6% of the respondents have handled 6-10 projects yearly, 28.8% have 1-5 projects, and 25.6% have 11 and above projects yearly. Also, 36.8% of the professionals hold bachelor's degrees, 57.6% hold master's degrees, 3.2% hold higher national diplomas, and 2.2% hold ordinary national diploma certificates. Findings from the professional's demographic profile reveal that respondents are well-experienced and educated enough to respond to this research enquiry.

4.2. Performance of consultants in public construction projects

There are six interaction skills for evaluating consultant performance in public construction projects. Consultants with the needed negotiation skills have a mean (M) of 4.14 and standard deviation (SD) of 0.71. Respondents agreed that negotiation skills measure consultant performance in public construction projects. Consultants who have leadership skills have a mean of 3.97 (SD=0.80). The consultant's requisite leadership skills improve the construction projects' performance. Consultants with the needed team-building skills have a mean of 4.06 (SD=0.73). This means a consultant must have the needed team-building skills to perform in the delivery of a construction project. Consultants with the needed interpersonal skills have a mean of 4.04 (SD=0.75). Result shows interpersonal skills are crucial to consultant performance for successful construction projects. The consultant has political skills and a mean of 4.09 (SD=0.40). This means that political skill is an

Table 1: Respondents' Profile

S/N	Demographic descriptors	Response	Frequency	Per cent
1	Professional background	Architecture	42	33.6
		Civil Engineering	29	23.2
		Quantity Surveyor	30	24.0
		Building	14	11.2
		Others (M&E)	10	8.0
2	Year of experience	1-5 years	14	11.2
		6-10 years	36	28.8
		11-15 years	64	51.2
		15 and above	11	8.8
3	No. of Projects handled yearly	1-5	36	28.8
		6-10	57	45.6
		11 projects and above	32	25.6
4	Highest level of education	OND/NCE	3	2.2
		HND	4	3.2
		BSc.	46	36.8

important attribute to be possessed by a consultant. Consultants can identify that decision-maker skills have a mean of 3.54 (SD=0.56). Respondents felt that this consultant's knowledge of identifying decision-makers would assist the project in being carried out more systematically and organized.

Consultant performance in construction projects was measured through proper planning for project execution. The client clearly defines the project scope and objectives with consultants (M=3.86). This means that respondents agree that a clear definition and understanding of the project scope and objective from

Table 2: Interaction Skills (I.S.)

Interaction Skills (I.S.)	Mean	Std. Deviation	Remark
Aggregate	3.971	0.431	Agreed
Consultants have the needed negotiation skill	4.136	0.711	Agreed
Consultants have the needed leadership skill	3.968	0.803	Agreed
Consultants have the needed team-building skill	4.056	0.733	Agreed
Consultants have the needed interpersonal skill	4.040	0.745	Agreed
Consultants have political skill	4.088	0.402	Agreed
Consultants can identify decision-makers	3.536	0.562	Agreed

Consultant performance in construction projects was measured using efficient management of information. Consultants promptly inform affected parties about decisions made (M=3.68). When decisions are made promptly, activities are done with the required standards. Project participants frequently exchange information with consultants (M=3.97). This enables the consultant to be aware of all activities on site. Affected parties regularly ensure that activities on schedule (M=3.71). A consultant must ensure that activities are carried out within quality specifications and a specific time frame. Project participants provide cooperation with consultants (M=3.78). This enables the consultant to be actively involved in the process of activities, which ensures quality output from the operation and consultant team. Team members have regular meetings with consultants (M=3.69). A consultant is involved in all activities and ensures quality during regular meetings. Consultants can anticipate risks and develop appropriate responses (M=3.66). When the consultant is actively involved, proper risk response is prepared before its occurrence. Clients have frequent consultations with consultants (M=4.10). Quality is assured when frequent consultation and the client's wants and preferences are captured in every project process.

the client to the consultant enhances consultant performance and aids in successfully delivering the construction project. The client clarifies the project's needs and requirements with consultants (M=3.73). Respondents felt that clarifying the needs and requirements of a project with the consultant improves consultant performance and the success of the project. Consultants who have managerial skills and techniques have a mean of 4.17. The result shows that consultant having the requisite management skills and techniques will improve their performance. Consultants understand that the project environment has a mean of 3.59. The result shows that understanding the project environment will enable the consultant to define his scope properly and make decisions for project performance. The client defines the consultant's tasks and responsibilities has a mean of 3.45. The result reflects that defining the task and responsibility of consultant's aids in their performance and successful project delivery. Consultants implement appropriate project management software (M=3.26). Respondents agreed that implementing appropriate project management software is essential for the consultant's quality performance and successful project output.

Table 3: Efficient Management of Information (EMI)

Efficient Management of Information	Mean	Std. Dev.	Remark
Aggregate	3.799	0.410	Agreed
Consultants promptly inform affected parties about decisions made	3.680	0.643	Agreed
Project participants frequently exchange information with consultants	3.968	0.695	Agreed
Affected parties regularly ensure that activities are on schedule	3.712	0.682	Agreed
Project participants cooperate with consultants	3.784	0.799	Agreed
Team members have regular meetings with consultants	3.688	0.615	Agreed
Consultants can anticipate risks and develop appropriate responses	3.664	0.595	Agreed
The client has frequent consultations with consultants	4.096	0.677	Agreed

Table 4: Proper Planning for Project Execution (PPPE)

Proper Planning for Project Execution	Mean	Std. Deviation	Remark
Aggregate	3.676	0.557	Agreed
The client clearly defines the project scope and objectives with the consultants.	3.864	0.892	Agreed
The client clarifies the project's needs and requirements with the consultants.	3.728	0.892	Agreed
Consultants have managerial skills and techniques	4.168	0.821	Agreed
Consultants understand the project environment	3.592	0.794	Agreed
The client defines the consultant's tasks and responsibilities clearly	3.448	0.929	Agreed
Consultants implement appropriate project management software	3.256	0.695	Agreed

Consultant performance in construction projects was measured using established standard procedures. Consultants established standard approach for significant tasks and issues (M=3.87, SD=0.98). This means that consultants have an established standard approach for significant tasks and issues, which makes work done strategically.

enhances team members' collaboration and clarity of project scope and aids in efficiently resolving conflict in project administration and operation.

Consultant performance in construction projects was measured in terms of client support. The client assists consultants in resolving problems (M=3.42). The

Table 5: Establishment of Standard Procedures (ESP)

Establishment of Standard Procedures	Mean	Std. Deviation	Remark
Consultants establish a standardized approach for major tasks and issues	3.872	0.984	Agreed

Consultant performance in construction projects was measured in terms of the organization of collaboration among team members. Team members have a proper line of communication with consultants (M=3.98). All project participants clarify the project's objectives with consultants (M=3.90). Consultants can coordinate project participants (M=3.72). Consultants can resolve conflicts and problems (M=3.98). This result reflects that proper organizational leadership

client provides support to facilitate efforts by consultants (M=3.54). Respondents agreed that client support is essential for contractors' performance in a construction project. This will ensure projects are delivered on time, within budget and with the required quality.

Table 6: Organization of Collaboration among Team Members (OCT)

Organization of Collaboration Among Team Members	Mean	Std. Dev.	Remark
Aggregate	3.894	0.466	Agreed
Team members have a proper line of communication with consultants	3.976	0.466	Agreed
All project participants clarify the project's objectives with consultants	3.896	0.579	Agreed
Consultants can coordinate project participants	3.720	0.867	Agreed
Consultants can resolve conflicts and problems	3.984	0.695	Agreed

Table 7: Client's Support (CS)

Client Support	Mean	Std. Dev	Remark
Aggregate	3.480	0.755	Agreed
The client assists consultants in the resolution of problems	3.416	0.844	Agreed
The client provides support to facilitate efforts by consultants	3.544	0.778	Agreed

Consultant performance in construction projects was measured through commitment and flexibility. Consultants are strongly committed to achieving the project's objectives (M=4.10). Consultants can adapt to new situations flexibly (M=4.10). These findings confirmed that commitment and flexibility are essential to measuring consultant performance for a successful project.

consultants (M=3.41). The client clarifies the responsibilities and authority of each member (M=3.18). Client ensures that consultants receive decisions on time (M=3.45). Consultants agreed on elements of delegation of decision-making upon authority as an indicator of performance, except for the client clarifying the responsibilities and authority of each member with the consultants with a moderate

Table 8: Commitment and Flexibility (CF)

Commitment and Flexibility	Mean	Std. Dev.	Remark
Aggregate	4.104	0.583	Agreed
Consultants have a solid commitment to achieving project objectives.	4.216	0.691	Agreed
Consultants can adapt to new situations with flexibility	3.992	0.641	Agreed

Consultant performance in construction projects was measured through the adequacy of resources and understanding of the client's requirements. Consultants have adequate expertise and resources (M=4.17). Consultants can understand clients' requirements and needs (M=4.33). These findings confirmed that the adequacy of resources and understanding of the client's requirements lead to successful project delivery as project construction meets the client's demands and satisfaction.

response. Delegating authority to a capable individual can give the client confidence that the project will be carried out efficiently, resulting in high performance and reducing the risk of failure.

The client's characteristics and contribution measured consultant performance in construction projects. The client has full trust in consultants (M=4.00). 'Financially stable clients' has a mean of 3.55. Client financial stability influences consultant performance

Table 9: Resources Adequacy and Understanding of Client Requirements (RA&UCR)

Resource adequacy and understanding of Client Requirements	Mean	Std. Dev.	Remark
Aggregate	4.248	0.729	Agreed
Consultants have adequate expertise and resources	4.168	0.820	Agreed
Consultants can understand client's requirements and needs	4.328	0.749	Agreed

Table 10: Client Delegation of Decision-Making Authority (CDDMA)

Client Delegation of Decision-Making Authority	Mean	Std. Dev.	Remark
Aggregate	3.478	0.641	Agreed
The client carefully selects a qualified and capable consultant	3.880	1.013	Agreed
Client delegates sufficient decision-making authority to consultants	3.408	0.862	Agreed
The client clarifies the responsibilities and authority of each member with the consultants	3.176	0.934	Moderate
Client ensures that consultants receive decisions on time	3.448	0.724	Agreed

Consultant performance in construction projects was measured through the ability to delegate decision-making authority. The client carefully selects a qualified and capable consultant (M=3.88). Client delegates sufficient decision-making authority to

and successful delivery of construction projects. The client conducts a thorough feasibility study of the project with consultants (M=3.43). The feasibility of a project influences consultant performance and the successful delivery of the project.

Table 11: Client's Characteristics and Contribution (CCC)

Client's Characteristics and Contribution	Mean	Std. Dev.	Remark
Aggregate	3.661	0.667	Agreed
The client has full trust in the consultants	4.000	0.898	Agreed
The client is financially stable	3.552	0.756	Agreed
The client conducts a thorough feasibility study of the project with consultants	3.432	0.797	Agreed

Consultant performance in construction projects was measured through competency and experience. Consultants who are competent in multidisciplinary fields have a mean of 4.18. Consultants with substantial experience handling similar projects have a mean of 4.13. Competence and substantial experience in similar projects will aid consultant performance in ensuring the successful delivery of construction projects.

requirements (M=4.23, SD=0.73) ranks first. Competency and experience (M=4.16, SD=0.66) ranks second. Commitment and flexibility (M=4.10, SD=0.58) ranks third. Interaction skills (M=3.97, SD=0.43) ranks fourth. Organizational collaboration among team members (M=3.89, SD=0.47) ranks fifth. Establishment of Standard Procedures (M=3.87, SD=0.98) ranks sixth. Efficient Management Information (M=3.79, SD=0.41) ranks seventh.

Table 12: Competency and Experience (CE)

Competency and Experience	Mean	Std. Dev	Remark
Aggregate	4.156	0.656	Agreed
Consultants are competent in multidisciplinary fields	4.184	0.797	Agreed
Consultants have substantial experience in handling similar projects	4.128	0.718	Agreed

Consultant performance in construction projects was measured through problem-solving skills. Consultants who can deal with unanticipated problems (M=3.63). For a consultant to perform excellently, he must have problem-solving skills and knowledge. This will bring about performance and a risk-free project.

Proper Planning for Project Execution (M=3.68, SD=0.56) ranks eight. Clients Characteristics and Contribution (M=3.66, SD=0.76) ranks ninth. Problem Solving Skill (M=3.63, SD=0.76) ranks tenth. Clients' Support (M=3.48, SD=0.76) ranks eleventh. Delegation of Decision-Making Authority (M=3.48, SD=0.64) ranks twelfth. Resource adequacy

Table 13: Problem-Solving Skill

Problem-Solving Skill	Mean	Std. Dev.	Remark
Consultants can deal with unanticipated problems	3.632	0.757	Agreed

Table 14 presents the results of consultant performance indicators. The result shows that adequacy of resources and understanding of client's

and understanding of client's requirements ranks first as significant criteria for evaluating consultant performance in a construction project.

Table 14: Consultants Performance Indicators (CPIs)

CPIs	Mean	Std. Dev.	Rank	Remark
ARU Adequacy of Resource and Understanding of Client's Requirements	4.23	0.729	1 st	Agreed
CE Competency and Experience	4.16	0.655	2 nd	Agreed
CF Commitment and Flexibility	4.10	0.583	3 rd	Agreed
IS Interaction Skills	3.97	0.431	4 th	Agreed
OCT Organizational Collaboration Among Team Members	3.89	0.466	5 th	Agreed
ESP Establishment of Standard Procedures	3.87	0.984	6 th	Agreed
EMI Efficient Management Information	3.79	0.410	7 th	Agreed
PPPE Proper Planning for Project Execution	3.68	0.557	8 th	Agreed
CCC Client Characteristics and Contribution	3.66	0.667	9 th	Agreed
PSS Problem-Solving Skill	3.63	0.757	10 th	Agreed
CS Clients' Support	3.48	0.755	11 th	Agreed
CDM Delegation of Decision-Making Authority	3.48	0.641	12 th	Agreed
Aggregate	3.83	0.401		Agreed

5. Discussion of Findings

5.1. Interaction skills

Interaction skill is an essential factor for measuring consultant performance. From the findings, a high level of leadership, communication skills, and the ability to manage client issues and negotiate tasks are essential for successful project delivery. The findings of this study are related to Toor and Ogunlana (2008), who state that leadership skills, interpersonal skills, teamwork, and competencies are central elements to be considered for successful construction projects. According to Al-Kazaz and Shibani (2016), interaction and leadership skills are critical for construction project performance. According to Dainty et al. (2005), adequate resources for obtaining information held off-site, careful assembling of a multi-skilled team with managerial, technological, and analytical abilities, and use of management tools to ensure programming and progress data is continually revised and available to all parties, are critical factors for project performance.

5.2. Efficient Management of Information

To measure consultant performance efficient management of information. Consultants promptly inform affected parties about decisions made, and Project participants frequently exchange information with consultants. Affected parties regularly ensure that activities are on schedule. Project participants provide cooperation with consultants. Team members have regular meetings with consultants. Consultants can anticipate risks and develop appropriate responses. Clients have frequent consultations with consultants, which are all factors of efficient information management; however, efficient information management is required to measure consultant performance in a construction project. This study is in line with the assertion of Nitithamyong and Tan (2007) that effective performance in any project must involve effective management of information and interaction. According to Cheng et al. (2006), to manage a construction project and perceive the performance of a consultant to be good, there would be an efficient transition of information. Efficiency in the role of a consultant involves the organizational process of managing, technical and risk management, and efficient dissemination of information (Dadzie et al., 2012).

5.3. Proper Planning for Project Execution (PPPE)

Consultant performance was measured in terms of proper planning for project execution (PPPE). Consultants have managerial skills and techniques. The client clearly defines the project scope and objectives with the consultants. The client clarifies the project's needs and requirements with the consultants. Consultants understand the project environment. The client defines the consultant's tasks and responsibilities clearly. Consultants implement

appropriate project management software are all major factors for proper planning for project execution. According to Cheng et al. (2006), to manage a construction project and perceive the performance of a consultant to be good, there would be an efficient and proper planning for project execution. There should be a clear expectation for a consultant to be able to define a task and plan for project activities (Belkhodja et al., 2012).

5.4. Established Standard Procedures

Consultant performance was measured using established standard procedures. Consultants establish a standardized approach for significant tasks and issues. This means that consultants have an established standard approach for primary tasks and issues, which makes work done strategically. A detailed understanding of the established standard procedures is essential to define significant tasks and minimize the construction and issues leading to consultant performance and successful delivery of construction projects. If established mechanisms exist, challenges and issues will be reduced ahead, and issues will be tackled as they surface (Ambos & Schlegelmilch, 2009). Creating and diffusing activities and adapting to the framework in approach reduced problems in project performance and improved consultants' ability (Apostolou & Mentzas, 1999). Professionals should have an established ethical standard for carrying out project activities (Agboola et al., 2021). Consultants solve problems created by powerful forces and create change, roles and tasks to promote project success (Verlander, 2012).

5.5. Organisation Collaboration among Team Members

Consultant performance was measured in terms of organization and collaboration among team members. Team members have a proper line of communication with consultants. All project participants clarify the project's objectives with consultants. Consultants can coordinate project participants. Consultants can resolve conflicts and problems. This result reflects that proper organizational leadership enhances team members' collaboration and clarity of project scope and aids in efficiently resolving conflicts in project administration and operation. Collaboration among team members requires a favourable organizational arrangement and a favourable environment for performance (Assbeihat, 2016). Process, systems tools and, most importantly, cultural organization must foster collaboration among team members (Rosen, 2007). Supporting collaboration and communication among team members with proper organization leads to contractor performance in a construction project (De-Vreede et al., 2016).

5.6. Client Support

Consultant performance was measured in terms of client support. The client assists consultants in the

resolution of problems. The client provides support to facilitate efforts by consultants. Respondents agreed that client support is essential for contractors' performance in a construction project; this will ensure projects are delivered on time, within budget and with the required quality. The result reflects a good relationship between the client and the consultant. Client and consultant have a strong correlation and the prospect of making the project successful (Park & You, 2021). According to Dadzie et al. (2012) client support as a performance indicator is critical in making a project successful.

5.7. Commitment and Flexibility

Consultant performance was measured through commitment and flexibility. Consultants have a solid commitment to achieving the project's objectives. Consultants can adapt to new situations with flexibility. These findings confirmed that commitment and flexibility are essential to measuring consultant performance for a successful project. Robinson et al. (2015) state that consultant commitment and flexibility improve measures to sustain organizational performance and project success. Constructive changes depend on leaders' vision and flexibility, which aid project performance (Naik, 2012). According to Banai and Tulimieri (2013) the consultant's knowledge, skills, commitment and personality will make the project effective and successful.

5.8. Adequacy of Resources and Understanding of Client's Requirements

Consultant performance was measured through the adequacy of resources and understanding of the client's requirements. Consultants have adequate expertise and resources. Consultants can understand client's requirements and needs. These findings confirmed that adequate resources and understanding of the client's requirements lead to successful project delivery as project construction will meet the demand and satisfaction of the client. Adequate use and sharing of information and the knowledge of managing resources will improve project performance (Lindhard & Larsen, 2016). Consultant adequacy in terms of personal and resources measures project success (Dosumu & Aigbavboa, 2019). In evaluating the performance of a consultant, there should be an adequate set of resources, an understanding of project requirements, and time management (Kärnä & Junnonen, 2017).

5.9. Delegation of Decision-Making Authority

Consultant performance was measured through the ability to delegate decision-making authority. The client carefully selects a qualified and capable consultant. The client delegates sufficient decision-making authority to consultants. The client clarifies the responsibilities and authority of each member with the consultants. The client ensures that consultants receive decisions on time. Consultants agreed on

elements of delegation of decision-making authority as an indicator for client performance, except for the client clarifying the responsibilities and authority of each member with the consultants with a moderate response. When the client delegates authority to a capable individual, they can be confident that the project will be successfully executed without any performance issues. Focal decision-making structure, delegation to experts, representing setting an informed team of construction members, and improving construction project success (Csaszar & Eggers, 2013). Critical decision-making authority, knowledge and skills in handling critical issues and values in structures will enable consultant performance in successful project delivery (Doctor, 2015). The ability to establish the structural organization, decision-making process, and delegation of authority improves consultant performance (Badi et al., 2022).

5.10. Client's Characteristics and Contribution

Consultant performance was measured through the client's characteristics and contribution. The client has complete trust in consultants. Clients are financially stable. Client financial stability influences consultant performance and successful delivery of construction projects. The client conducts a thorough feasibility study of the project with consultants. They conduct the feasibility of a project to influence consultant performance and successful project delivery. Also, for a project to be successful, project resources must be free from constraint. For consultant performance to improve, the client must improve their attitude, learn to trust and appreciate advice from the consultant and contribute to the process through value addition (El-Dine & Taher, 2020). Knowledge transfer between consultant and client improves project performance (Martinez et al., 2016). Constructive relationships between client and management consultant improve the project's performance and add value to organizational structure. Client contribution and consultant characteristics of managing information are among the measures of evaluation consultant performance (Lam, 2017).

5.11. Competency and Experience

Consultant performance was measured through competency and experience. Consultants are competent in multidisciplinary fields. Consultants have substantial experience in handling similar projects. Competence and substantial experience in similar projects will aid consultant performance in ensuring the successful delivery of construction projects. Park & You (2021) suggest consultants must be experienced professionals to perform project activities. The target of the period, budget, scope and quality can be met with consulting project maturity from the consultant (Park & Lee, 2021). Consultants with knowledge, competence, experience, and capacity will successfully handle a less risky project within the budget and quality required (Kim & You, 2022). Professionals should be selected based on

established competence and experience (Agboola, et al., 2023c). Skill and experience managing time, budget, and quality and a continued learning process in managing resources improve consultant performance (Hong, et al., 2021).

5.12. Problem-Solving Skill

Consultant performance was measured through problem-solving skills. Consultants can deal with unanticipated problems. For a consultant to perform excellently, he must have problem-solving skills and knowledge; this will bring about performance and a risk-free project. Experience in consulting and competency in problem-solving processes improve the performance of projects (Park & You, 2021). Knowledge and experience in time and budget management are tools for measuring consultant performance (Kim & You, 2022). Consultant competence in managing resources is essential to project performance (Hong et al., 2021). Competency in managing resources and problem-solving skills is measured for evaluating project success (Lee et al., 2016). When problems persist in a construction project, they may cause project delays, undermine team spirit, increase project costs, and damage continuing business relationships (Abdul-Rahman et al., 2010).

5.13. Consultant Performance Indicators in Construction Project

Evaluating consultant performance indicators in a construction project, the study shows that adequacy of resources and understanding of client's requirements, competency and experience, commitment and flexibility are key to measuring consultants' performance in construction projects. Other considerations include interaction skills, organizational collaboration among team members, the establishment of standard procedures, efficient management information, proper planning for project execution. Further, client characteristics and contribution, problem-solving skill, clients' support, delegation of decision-making authority are also critical. According to Oda et al. (2022), key performance indicators for measuring consultants are experience, interaction and communication skills, organizational collaboration among team members and establishment of standard procedure. Problem-solving skills and BIM use are critical indicators of consultant performance (Sarkar et al., 2015). To achieve project performance, design, experience, competence, proper project planning, and organizational collaboration are key performance indicators (Budawara, 2009). Benchmarking Project performance can be achieved through experience, competence skills, communication and collaboration among team members (Kärnä & Junnonen, 2016).

6. Conclusion

This research evaluates the consultant's performance indicators on project success in public construction projects. The research found interaction skills, efficient management information, proper planning for project execution, the establishment of standard procedures, organization of collaboration among team members, clients' support, commitment and flexibility, adequacy of resources and understanding of client's requirements, delegation of decision-making authority, clients characteristics and contribution, competency and experience and problem-solving skill were agreed to be the fundamentals consultants performance indicators of construction project success. Furthermore, the consultants' performance indicators (CPIs) significantly influenced the timely success of public construction projects. Therefore, project success can be improved by improving on the quality consultants' performance indicators. Competent and experienced consultant professionals should be entertained in awarding such projects to achieve good and quality work projects. In order to achieve better performance and minimize issues; consultant should be able to state in details the project objectives which will assist the contractor to achieve desired performance level. The study recommends that Consultants should communicate effectively and involve clients at every stage of the project cycle to achieve project success. Consultants should ensure adequate communication and allow the participation of every professional during the implementation of public projects.

6.1. Limitations and areas for further studies

The study was restricted to consultant handling public construction project in Bauchi State Nigeria, however the findings may not be generalized to different countries with contradicting management, planning, political and economic settings and practices. Similar research can be replicated in other area since the findings in Bauchi might not be generalizable to other areas. The study did not look beyond public higher institution of learning the extent at which performance affect other public and private project was not assessed. The study did not look at how major performance factors influence consultant performance indicators. Future study should focus on assessment of project performance factors on consultant and contractor performance indicators. The research is also limited to quantitative approach, future studies may explore the problem further using the qualitative research approach or using the mixture of both quantitative and qualitative approaches known as mixed approach. The study should also assess how project stakeholders' roles influence project performance factors in public-infrastructure projects.

References

Abbasianjahromi, H., Rajaie, H., Shakeri, E., & Chokan, F. (2014). A new decision-making model

for subcontractor selection and its order allocation. *Project Management Journal*, 45(1), 55–66. <https://doi.org/10.1002/pmj.21394>

- Abdul-Rahman, H., Wang, C. & Yap, X. W. (2010). How professional ethics impact construction quality: Perception and evidence in a fast-developing economy. *Scientific Research and Essays*, 5(23), 3742-3749.
- Agboola, S. A., Idowu, F. A., Yusuf, F. M. & Musa, A. K. (2023a). Barriers to Sustainable Green Building Practice in Nigeria. *FUDMA Journal of Sciences*, 7(6), 157-163.
- Agboola S.A., Abbas K.I., Sati D.T., Zakari A. & Sanusi R.F. (2023b). Assessing Contractor's Selection Criteria for Improved Project Delivery. *FUOYE Journal of Engineering and Technology*, 8(3), 397–402.
- Agboola S.A., Uzoma N.C., Daniel T. S., Abdulrahmon N. & Musa A.K. (2023c). Challenges Associated with Contractor Selection Strategy in Construction Project Delivery, *LAUTECH Journal of Civil and Environmental Studies*, 11(1), 100 – 106.
- Agboola S.A., Musa A.K., Solomon W.P. & Amina O.S. (2021). Effect of Unethical Conduct of Professionals on Construction Project. *International Journal of Engineering Applied Sciences and Technology*, 6(6), 36–43.
- Aghimien, D. & Aigbavboa, C. (2018). Performance of Selected Funding Schemes Used in Delivering Educational Buildings in Nigeria. Proceedings of the International Conference on Industrial Engineering and Operations Management, Washington DC, USA, 108-119.
- Akintoye, A., Hardcastle, C., Beck, M., Chinyio, E. & Asenova, D. (2003). Achieving the best value in private finance initiative project procurement. *Construction Management and Economics*, 21(5), 461–470.
- Alaloul, W. S., Liew, M. S. & Zawawi, N. A. W. A. (2016). Identification of coordination factors affecting building project performance. *Alexandria Engineering Journal*, 55(3), 2689-2698.
- Alam, M. K. (2021). A systematic qualitative case study: questions, data collection, NVivo analysis and saturation, *Qualitative Research in Organizations and Management: An International Journal*, 16(1), 1-31.
- Albert, M., Balve, P. & Spang, K. (2017). Evaluation of project success: a structured literature review. *International journal of managing projects in business*, 10(4), 796-821.
- Al-Kazaz, M. & Shibani, A. (2016). The impact of managers' leadership skills on construction project performance in Dubai. *International Journal of Managerial Studies and Research (IJMSR)*, 4(6), 73-94.
- Al-Tmeemy, S. M. H. M., Abdul-Rahman, H. & Harun, Z. (2011). Future criteria for success of building projects in Malaysia. *International journal of project management*, 29(3), 337-348.
- Alzahrani, J. I. & Emsley, M. W. (2013). The impact of contractors' attributes on construction project success: A post construction evaluation. *International Journal of Project Management*, 31(2), 313-322.
- Ambos, T. C. & Schlegelmilch, B. B. (2009). Managing knowledge in international consulting firms. *Journal of Knowledge Management*, 13(6), 491-508.
- Ansah, S. K. (2018). *An integrated total quality management model for the Ghanaian construction industry*. Doctoral Thesis, in Engineering Management, University of Johannesburg, South Africa. <http://hdl.handle.net/102000/0002>.
- Apostolou, D. & Mentzas, G. (1999). Managing corporate knowledge: a comparative analysis of experiences in consulting firms (Part 1), *Knowledge and Process Management*, 6(3), 129-138.
- Ashworth, A. & Perera, S. (2018). *Contractual procedures in the construction industry*. Routledge, London. <https://doi.org/10.1201/9781315529059>.
- Assbeihat, J. M. (2016). The impact of collaboration among members on the team's performance, *Management and Administrative Sciences Review*, 5(5), 248-259.
- Auma, E. (2014). Factors affecting the performance of construction projects in Kenya: A survey of low-rise buildings in Nairobi Central Business District. *The International Journal of Business and Management*, 2(10), 115–140.
- Babu, A. K. S. & Meena, V. A. (2015). Study on time delay analysis for construction project delay analysis. *International Journal of Engineering Research & Technology*. Vol. 4 (3), 1076-1083.
- Badi, S., Ji, H. & Ochieng, E. G. (2022). Information seeking and collaborative decision-making behaviour in consultancy project teams: a network theoretic viewpoint, *International Journal of*

- Productivity and Performance Management*, 71(8), 3655-3682.
- Baldwin, A. & Bordoli, D. (2014). Handbook for construction planning and scheduling. *John Wiley & Sons*.
- Banai, M. & Tulimieri, P. (2013). Knowledge, skills and personality of the practical business consultant. *Journal of Management Development*, 32(8), 886-900.
- Belkhodja, O., Karuranga, É. & Morin, G. G. (2012). Reflections on the Client—Consultant Relationship: Challenges and Opportunities in a Context of Organisational Change. *Journal of General Management*, 37(3), 1-19.
- Budawara, N. (2009). Key performance indicators to measure design performance in construction. *Doctoral dissertation*, in Building Engineering, Concordia University.
- Callistus, T., Felix, A.L., Ernest, K., Stephen, B. & Andrew, A.C (2014). Factors Affecting Quality Performance of Construction Firms in Ghana: Evidence from Small-Scale Contractors. *Journal of Civil and Environmental Research*, 6(5), 18-23.
- Castro, M. S., Bahli, B., Farias Filho, J. R. & Barcaui, A. (2019). A contemporary vision of project success criteria. *Brazilian Journal of Operations & Production Management*, 16(1), 66-77.
- Cheng, J., Proverbs, D. G. & Oduoza, C. F. (2006). The satisfaction levels of U.K. construction clients based on the performance of consultants: Results of a case study. *Engineering, Construction and Architectural Management*, 13(6), 567-583.
- Choo, A. S. (2014). Defining problems fast and slow: The u-shaped effect of problem definition time on project duration. *Production and Operations Management*, 23(8), 1462-1479.
- Csaszar, F. A. & Eggers, J. P. (2013). Organizational decision making: An information aggregation view. *Management Science*, 59 (10), 2257-2277.
- Cunningham, T. (2017). What Causes Cost Overruns on Building Projects. -An Overview. Technological University Dublin, doi:10.21427/4hhv-ma36. 1-29.
- Dadzie, J., Abdul-Aziz, A. R., & Kwame, A. (2012). Performance of consultants on government projects in Ghana: client and contractor perspective. *International Journal of Business and Social Research*, 2(6), 256-267.
- Dainty, A. R., Ison, S. G. & Briscoe, G. H. (2005). The construction labour market skills crisis: the perspective of small-medium-sized firms. *Construction Management and Economics*, 23(4), 387-398.
- De-Vreede, G. J., Antunes, P., Vassileva, J., Gerosa, M. A. & Wu, K. (2016). Collaboration technology in teams and organizations: Introduction to the special issue, *Information Systems Frontiers*, 18, 1-6.
- Doctor, R. (2015). *Leaders' Risk Propensity and Delegating Critical Decision-Making Authority*, Doctoral dissertation, Walden University.
- Dosumu, O. S. & Aigbavboa, C. (2019). Assessing clients' satisfaction with the service quality of construction consultants in Lagos, Nigeria. *African Journal of Science, Technology, Innovation and Development*, 11(6), 771-779.
- El-Dine, N. A. A. & Taher, A. (2020). Knowledge transfer and management consulting: The effect of consultant and client characteristics. *Management*, 8(3), 215-231.
- Emuze, F. A. (2011). Performance Improvement in South African Construction. South Africa: PhD Thesis, Nelson Mandela Metropolitan University.
- Enshassi, A., Mohamed, S. & Abushaban, S. (2009). Factors affecting the performance of construction projects in the Gaza Strip. *Journal of Civil Engineering and Management*, 15(3), 269-280.
- Fageha, M. K. & Aibinu, A. A. (2016). Identifying stakeholders' involvement that enhances project scope definition completeness in Saudi Arabian public building projects. *Built Environment Project and Asset Management*, 6(1), 6-29.
- Folorunso, T. A. & Awodele, O. A. (2015). Assessment of client's needs and satisfaction at various stages of building projects delivery process in Lagos State. *International Journal of Emerging Engineering Research and Technology*. 3(6), 163-175.
- Gambo, S., Ibrahim, K., Iliyasu, M. A., Winston, M. W. & Ibrahim, M. L. (2017). Stakeholders' Perception of the Success of Tertiary Education Trust Fund Construction Projects. *ATBU Journal of Environmental Technology*, 10(2), 117-128.
- Hamidu M.Z., Agboola S.A., Mustapha M. Y. and Falade A.A. (2024). Determinants of Poor Planning in Public Sector Construction Projects in Nigeria. *Interdisciplinary Journal of Management Sciences*, Vol. 1, Pp. 1 – 16. DOI: <https://doi.org/10.38140/ijms-2024.vol1.10>.

- Hassan, B., Yusuf, A. W., Usman, H. & Ibrahim Y. (2022). The Influence of Construction Project Team Effectiveness in Higher Institutions' Building Projects: A Case from Nigeria. *International Journal of Real Estate Studies* 16(1), 37-50.
- Hong, Y. K., You, Y. Y. & Kim, S. B. (2021). The Effect of Consultant competence on the Project performance and Social-relational competence: focus on ICMCI competence framework. *Ilkogretim Online*, 20(3), p805. 10.17051/ilkonline.2021.03.86.
- Ihuah, P. W., Kakulu, I. I. & Eaton, D. (2014). A review of Critical Project Management Success Factors (CPMSF) for sustainable social housing in Nigeria. *International Journal of Sustainable Built Environment*, 3(1), 62-71.
- Kärnä, S. & Junnonen, J. M. (2017). Designers' performance evaluation in construction projects. *Engineering, Construction and Architectural Management*, 24(1), 154-169.
- Kerzner, H. & Saladis, F. P. (2017). *Project management workbook and PMP/CAPM exam study guide*. John Wiley & Sons.
- Kim, T. Y. & You, Y. Y. (2022). The influence of consultant competency and consulting service quality on small-medium enterprise's management performance. *Cognitive Computing for Risk Management*, 137-148. https://doi.org/10.1007/978-3-030-74517-2_10.
- Knight, E. & Harvey, W. (2015). Managing exploration and exploitation paradoxes in creative organizations. *Management Decision*, 53(4), 809-827.
- Lam, T. (2017). Prediction of performance outcomes for procurement of public-sector construction consultants for property management. *Property Management*, 35(4), 433-447.
- Lee, O. G., Kim, J. R., & You, Y. Y. (2016). The Effect of PM Competency on Consultant Competency and Consulting Performance: From the Perspective of Consulted Companies. *Indian Journal of Science and Technology*, 9(41), 1-9.
- Lindhard, S. M., Neve, H., Terje Kalsaas, B., Møller, D. E. & Wandahl, S. (2022). Ranking and comparing key factors causing time-overruns in on-site construction. *International Journal of Construction Management*, 22(14), 2724-2730.
- Lindhard, S. & Larsen, J. K. (2016). Identifying the critical process factors affecting project performance. *Engineering, Construction and Architectural Management*, 23(5), 657-673.
- Martinez, L. F., Ferreira, A. I. & Can, A. B. (2016). Consultant-client relationship and knowledge transfer change processes in small and medium-sized enterprises. *Psychological Reports*, 118(2), 608-625.
- Masengesho, E., Wei, J., Niyirora, R., & Umubyeyi, N. (2020). Relationship between project consultants' performance and project success in the Rwandan construction industry. *World Journal of Engineering and Technology*, 9(1), 138-154.
- Mir, F. A. & Pinnington, A. H. (2014). Exploring the value of project management: linking project management performance and project success. *International Journal of Project Management*, 32(2), 202-217.
- Naik, N. A. (2012). *Organizational culture and commitment in a consulting firm*, Doctoral dissertation, in Industrial and Organisational Psychology, University of South Africa.
- Naseer, S., Abbass, K., Asif, M., Hashmi, H. B. A., Naseer, S., & Achim, M. V. (2022). Impact of Critical Success Factors on Project Success Through the Mediation of Knowledge Creation. *Frontiers in Psychology*, 13, 892488. 2-17. doi: 10.3389/fpsyg.2022.892488
- Nitithamyong, P. & Tan, Z. (2007). Determinants for Effective Performance of External Project Management Consultants in Malaysia. *Engineering, Construction and Architectural Management*, 14(5), 463-478.
- Oda, M. M. A., Tayeh, B. A., Alhammadi, S. A. & Aisheh, Y. I. A. (2022). Critical indicators for evaluating the performance of construction companies from the perspective of owners and consultants. *Results In Engineering*, 15. <https://doi.org/10.1016/j.rineng.2022.100596>.
- Ogunde, A. O., Olaolu, O., Afolabi, A., Owolabi, J. & Ojelabi, R. (2017). Challenges confronting construction project management system for sustainable construction in developing countries: Professionals perspectives (a case study of Nigeria). *Journal of Building Performance*, 8(1), 1-11. <http://spaj.ukm.my/jsb/index.php/jbp/index>.
- Ogwueleka, A. (2011). The critical success factors influencing project performance in Nigeria. *International Journal of Management Science and Engineering Management*, 6(5), 343-349.

- Okweto, A. N. (2012). An assessment of the organization structure and leadership effects on construction projects' performance in Kenya: A case study of public building projects within Nairobi region. Master's Thesis, University of Nairobi, Nairobi, Kenya. <http://erepository.uonbi.ac.ke/handle/11295/6952>.
- Omran, A., Abdulbagei, M. A. & Gebril, A. O. (2012). An evaluation of the critical success factors for construction projects in Libya. *International Journal of Economic Behaviour*, 2(1), 17-25.
- Oso S. B. (2020). Management of time overrun in a selected building projects in Auchi Polytechnic, Auchi, Edo State. *International Journal of Innovative Research and Advanced Studies*, 7, 246-253.
- Oyekunle, D., Abbey, T.I. & Ibeh, F. (2024a). Project Management Dynamics: Shaping Success in UK construction projects, *Open Journal of Business and Management*, 12(4), 2099–2117.
- Oyekunle, D., Amodu, O. & Lateef, O. (2024b). Cultural Dynamics in UK Project Environments: Exploring the impact of individualistic and collectivist cultures on Project Outcomes, *Open Access Library*, 11(5), 1–21.
- Oyekunle, D., Preston, D. & Ibeh, F. (2023), 'Project Performance and the Effects of Human Activity: A Case Study of the University of Salford', *International Journal of Scientific Research and Management (IJSRM)*, 11(11), 5313–5326.
- Park, G. & Lee, S. K. (2021). Influence of consultant job competency and CRM on partnership. *Turkish Online Journal of Qualitative Inquiry*, 12(3), p3332.
- Park, G. & You, Y. Y. (2021). Study the Effect of Consultant communication skills and job competency on Executive Support and Nonfinancial Company Performance in the Consulting Industry. *Ilkogretim Online*, 20(3), p 766.
- Pinto, M. B. & Pinto, J. K. (1991). Determinants of Cross-functional Cooperation in the Project Implementation Process. *Management Journal*, 12(2), 13-20.
- Ramlee, N., Tammy, N. J., Raja Mohd Noor, R. N. H., Ainun Musir, A., Abdul Karim, N., Chan, H. B. & Mohd Nasir, S. R. (2016). Critical success factors for construction projects. International Conference on Advanced Science, Engineering and Technology (ICASET) In: *AIP Conference Proceedings*, AIP Publishing. 1774(1). 1-6. <https://doi.org/10.1063/1.4965067>.
- Robinson, D. G., Robinson, J. C., Phillips, J. J., Phillips, P. P. & Handshaw, D. (2015). Performance consulting: A strategic process to improve, measure, and sustain organizational results, Berrett-Koehler Publishers. Broadway, Oakland.
- Rolstadås, A., Tommelein, I., Morten Schiefloe, P. & Ballard, G. (2014). Understanding project success through analysis of project management approach. *International Journal of Managing Projects in Business*, 7(4), 638–660.
- Rosen, E. (2007). The culture of collaboration, *San Francisco: Red Ape*.
- Salleh, R. (2009). Critical success factors of project management for Brunei construction projects: improving project performance, Doctoral dissertation, Faculty of Built and Environmental Engineering. Queensland University of Technology. Australia.
- Sarkar, D., Raghavendra, H. B. & Ruparelia, M. (2015). Role of key performance indicators for evaluating the usage of BIM as a tool for facility management of construction projects, *International Journal of Civil & Structural Engineering*, 5(4), 370–378.
- Saunders, M, Lewis, P. & Thornhill, A. (2016). Research Methods for Business Students, 7th Ed, Pearson Education Limited, Harlow.
- Sebestyen, Z. (2017). Further considerations in project success. *Procedia engineering*, 196, 571-577.
- Shepherd, D. A., Patzelt, H. & Wolfe, M. (2011). Moving forward from project failure: Negative emotions, affective commitment, and learning from the experience. *Academy of Management Journal*, 54(6), 1229-1259.
- Somech, A. & Drach-Zahavy, A. (2013). Translating team creativity to innovation implementation: The role of team composition and climate for innovation. *Journal of Management*, 39(3), 684-708.
- Sospeter, N. G. & Awuzie, O. B. (2023). Capital Budgeting implementation by Public Sector Construction Firms in Tanzania's housebuilding Industry: An Exploratory study. *Journal of Construction in Developing Countries*, 29(1), 87-109.
- Sweis, R.J., Bisharat, S.M., Bisharat, L. & Sweis, G. (2014). Factors Affecting Contractor Performance

on Public Construction Projects. *Journal of Life Science*, 11(4), 28-39.

Sudhakar, G. P. (2016). Understanding the meaning of "Project Success". *Binus Business Review*, 7(2), 163–169.

Toor, S. U. R. & Ogunlana, S. O. (2008). Leadership skills and competencies for cross-cultural construction projects. *International Journal of Human Resources Development and Management*, 8(3), 192-215.

Torring, J. (2013). Collaborative innovation in the public sector. *Handbook of Innovation in Public Services*, pp. 301–316. Edward Elgar Publishing.

Verlander, E. G. (2012). *The practice of professional consulting*. John Wiley & Sons. Hoboken, New Jersey. United States.

Yu, W., Cormican, K., Wu, Q. & Sampaio, S. (2021). In whom do we trust? Critical success factors impacting intercultural communication in multicultural project teams. *International Journal of Information Systems and Project Management*, 9(3), 21-40.

Zailani, M. B., Kolo, B. A. & Abubakar, M. (2019). The Role of Project Management in TETFund Construction Projects. In: Laryea, S. and Essah, E. (Eds), *Proceedings, West African Built Environment Research (WABER) Conference held in Accra, Ghana, 5-7 August 2019*, 1116-1125.