Influence of Project Manager's Leadership Competencies on Construction Projects' Performance

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ABSTRACT

Leadership often influences organisational performance. The level of competence of a leader determines the impact of leadership on performance criteria. For maximum impact, project managers' leadership competence must extend through all levels of organizational setting. Researches' have been conducted on the influence of leadership on performance. However, focused on factors identified as key performance criteria. More recent work has identified other relevant performance criteria that were left out in previous attestations. This work considers all criteria adjudged to be relevant in literature to establish the level of influence. A questionnaire was administered among construction stakeholders in private and public sectors of the construction industry in Nigeria. Seven performance criteria and five leadership competence were the subject of the research through self-administration of the questionnaires. Both descriptive and correlation analysis were used to analyse the relationship between Project Managers Leadership Competencies and the Performance of construction projects. The results of the study established a significant correlation (0.616) between Project Managers' Leadership Competencies and Project Performance. However, the competency factors indicate different levels of correlation with the project Performance criteria. The factor "Communicate expectations" is the most critical Leadership Competency that influences each performance criteria. The study recommends that clients take competencies of project leaders seriously without abstracting the "communicate expectations" factor in order to improve project success. Wider leadership competence criteria such as, competency profiles, information management, professional development, leadership skills, and strategic leadership roles of project managers be considered in future study.

Keywords: Leadership Competency, Project Manager, Construction Performance

INTRODUCTION

Leadership has great influence in the performance of any group of people that are pursuing a common goal. Ranging from the political organizational, production or services delivery, leadership influences success level. Leadership has been studied and well-articulated in every human endeavor. The persistent under-performance and notorious challenges of the construction characteristics led the subject of leadership and performance become outstanding research interest. Being a key economic sector in every nation (Economy Watch 2010a) yet bedeviled by under-performance, the subject of leadership in construction has taken a center stage. Leadership has been viewed as essential for project success (Ahmed & Anantatmula, 2017). The project manager's competency is a critical determinant in influencing other stakeholders and driving an overall performance of a project (Battilana, Gilmartin, Sengul, Pache and Alexander, 2010). Public and private projects' leaderships have been studied. According to (Chaudhry *et al.*, 2012), project managers' leadership determines the nature of organisational culture, and this has a great impact on fostering creativity, innovation, formulation and execution of systems of human recourse function, activities and policies, flexibility, as well as employees' behaviours and competencies. These are necessary performance criteria in the achievement of project success.

The study of leadership competence and project performance seem to be inadequate in the construction delivery processes. For example, Ahmed and Anantatmula (2017) focused on key performance criteria and touched on schedule performance, cost performance, quality performance and stakeholders' satisfaction. The scholars lumped all the stakeholders together despite the fact that each exhibits unique traits in construction arts (Danja, Gandu and Muhammad, 2021) which is a factor of leadership characteristics. Stakeholders like, construction team members' satisfaction, contractors/subcontractors and suppliers' satisfaction and customers' needs were not expressly considered despite being significant factors as performance indicators that should be considered in any performance study (Yang et al., 2013; Fung, 2014; Loufrani Fedida & Missonier, 2015). By virtue of the paradigm shift towards a more holistic management perspective, it is pertinent to broaden the study subject in order to encompass every significant factor. This study therefore examines the influence of leadership competency on construction projects' performance in broader performance criteria incorporating meeting of customer's needs, contractor or supplier satisfaction, and team members 'satisfaction. The research objectives are to:

- Identify project performance criteria in construction projects
- appraise project manager's leadership competencies
- establish the relationship between project manager's leadership competencies and construction performance

LITERATURE REVIEW

Project leadership and competency

Leadership has been a topic of study for social scientists for much of the twentieth century, yet there has been no agreement upon the general definition (Jyoti and Bhau, 2015; Bass, 1990). Many authors have studied this phenomenon on diverse aspects of life, yet many argue that there is no consensus in the definition of what leadership is, no dominant paradigm for studying it, and little agreement regarding the best strategies for developing and exercising it (Bennis, 2007; Hackman & Wageman, 2007; Vroom & Jago, 2007). Yet, the subject is a leading success factor in organisations. Ngodo (2008) views leadership as a form of direction in which a person gives to a group of people and steering the affairs in such a way that will influence their behaviour. The scholar perceives it to be a reciprocal process of social influence, such that leaders and subordinates influence each other for positive organizational goals. Sun (2002) defines leadership as the process of influencing people to make effort on their own will and enthusiasm towards obtaining group's goals. Leadership has also been descried as a critical management skill, involving the ability to encourage a group of people towards a common goal, focusing on the development of followers, their needs and building their capacity (Klein et al., 2013). In this case, it becomes imperative for managers occupying leadership positions to focus on the development of value system in employees, their motivational level and moralities with the development of their skills (Uchenwamgbe, 2013; Ismail et al., 2009).

In construction, leadership is considered a key success factor for any project, and project managers bear this responsibility. Leadership competences in sustainable construction projects, in particular have proven to be among the catalysts of achieving efficiency in the delivery of such project (Tabassi, 2016). The successful completion of every construction project depends largely on good leadership direction where the project manager plays the leading role.

Competencey is related to knowledge, skills, abilities and personality characteristics that directly affect performance (Mirable, 1997). Researchers in construction have investigated competencies of project leaders (Muzio et al, 2007, Thamhain, 2004). Yasin et al. (2019) asserted that the competence of human capital is very influential on improving productivity and performance. Hamel and Prahalad (2003) defined competency related to production organisation as a bundle of skills and technologies that enable companies to provide benefits for their customers. In a more general approach, Mirable (1997) defined competency as knowledge, skill, ability, or characteristic associated with high performance on a job, such as problem solving, analytical thinking or leadership. Westera (2001) provided definition of competency in two perspectives, theoretical and operative. From a theoretical perspective, competency is conceived as a cognitive structure that facilitates specified behaviours. From an operational perspective, competencies cover a broad range of higher-order skills

and behaviours that represent the ability to cope with complex, unpredictable situations. This operational definition includes knowledge, skills, attitudes, with strategic thinking, and presupposes conscious and intentional decision making. Twenty-three (23) project manager's competency key factors that influence the eventual outcome of a project have been identified. Westera, (2001) presented a model of competency as it is in Figure 1.

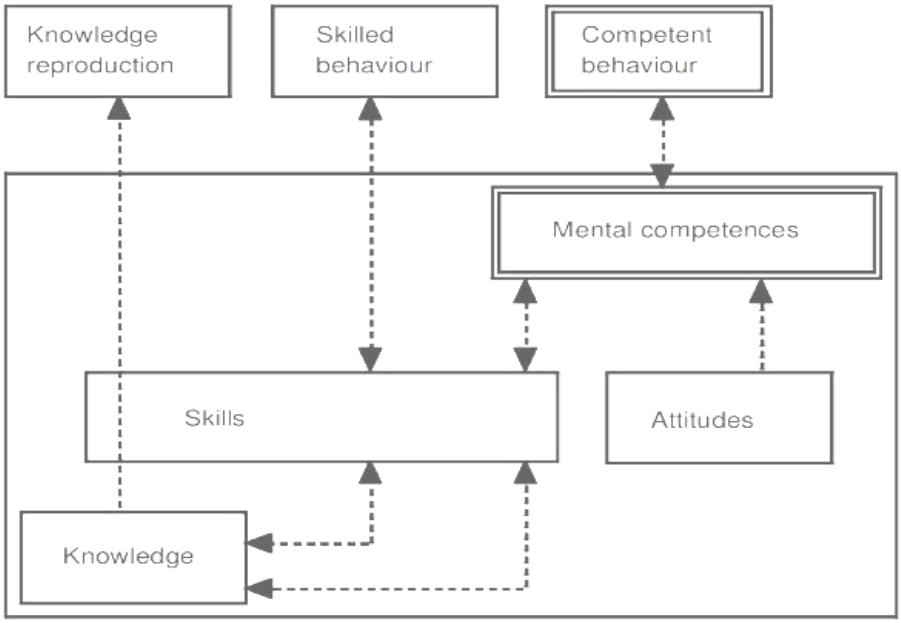

Figure 1: Competence Model (Westera, 2001)

Le Deist and Winterton (2005) argued for a more holistic approach in competence of caring professions, integrating knowledge, understanding, values and skills that 'reside within the person who is the practitioner.' Similarly, Cheetham and Chivers (1996, 1998) developed a holistic model of professional competence, comprising five sets of inter-connected competency criteria as follows:

i. **Cognitive competence**: including underpinning theory and concepts, as well as Informal tacit knowledge gained by experience. Knowledge (know-that), underpinned by understanding (know-why), is distinguished from competence.
ii. **Functional competences** (skills or know-how): those things that 'a person who Works in a given occupational area should be able to do or able to demonstrate'.
iii. **Personal competency** (behavioural competencies; 'know how to behave'): defined as a 'relatively enduring characteristic of a person causally related to effective or superior performance in a job.
iv. **Ethical competencies:** defined as 'the possession of appropriate personal and professional values and the ability to make sound judgments based upon these in work-related situations.
v. **Meta-competencies**: concerned with the ability to cope with uncertainty, as well as with learning and reflection.

This framework was applied in an analysis of the future skills' needs of managers in the UK at the Department for Education and Skills (Winterton et al., 2000). In a modified version (where ethical competencies were subsumed under personal competency, MCI Personal Competency Model was studied at the Inland Revenue (Winterton & Winterton, 2002). This study identified five project manager's leadership competencies that affect project performance in effort to examine the relationship between leadership competencies and project performance. Five people-related leadership competencies are the most cross referenced by several past research studies and discussed as follows:

Define roles Responsibilities: The right person in the right place at the right time can improve project performance. Defining clear roles and responsibilities is important in projects that steer almost all other factors towards project success, either directly or indirectly (Anantatmula, 2010). Day (1998) suggests that project managers should clearly define the roles and responsibilities of project team members to avoid any conflict.

Unclear roles and responsibilities are one of the key problems in managing project activities (Elonen & Artto, 2003). During the initiation of a project, it becomes crucial to identify and reduce fundamental causes of conflicts, gaps, and duplications in the roles and responsibilities of the project team, which are critical for project performance (Elbarkouky & Fayek, 2011). Improvement in performance of projects is not possible without clear definition of roles and responsibilities (Anantatmula, 2010). Contrasting, unclear roles and responsibilities subdue project performance and may lead to failure**.**

Communicate Expectations: adequate communication among project team members and stakeholders with a clear focus on what is expected and the management of unexpected problems is a reoccurring issue in success researches (Ahmed & Mohamad, 2016; Anantatmula, 2010; Muller *et al.*, 2012; Müller & Turner, 2010a, 2010b; Nixon *et al.*, 2012). In other words, communicating expectations emphasizes the responsibilities of project team members and stakeholders in terms of desired work ethics, deliverables, and work Performance. However, project deliverables must be deliberated with the customer in the early stages to clearly define project boundaries that determine what is included and what is not included in the project scope. The project manager should be efficient in documenting the expectations of stakeholder or customers to achieve desired outcomes and avoid uncertainties. In projects, the process of Managing communication ensures timely collection, generation, storage, and disposition of project information. Nonetheless, it is critical to clarify what is expected from external and internal stakeholders, including project team members (Anantatmula, 2008b).

Employ Consistent Processes: A process is a collection of interconnected tasks or activities undertaken to accomplish specific outcomes. To accomplish project activities, project managers employ project management as an application of knowledge, skills, tools, and techniques during initiating, planning, executing, monitoring and controlling, and closing processes (PMI, 2013). Rad & Anantatmula (2010) identified three factors competent people, project teams, and project-friendly organizations that promote consistent practices and processes essential for achieving sophistication in managing complex projects. The project manager must ensure appropriate selection and deployment of consistent project management processes during project implementation to improve performance, efficiency, risk mitigation, ambiguity reduction, and success of projects.

Clarity in Communication: Communication can affect project performance in the field of project management (Abu-Hussein, Hyassat, Sweis, Alawneh, & Al-Debei, 2016). Clarity in communication is focused on getting the message across to the receiver such that it is received as intended. Communication is considered an important enabling factor (Potts, 2000) and a critical success factor in projects (Day, 1998; Hartman & Ashrafi, 2002). Project managers must possess excellent communication capabilities to create harmony among team members and facilitate stakeholder involvement. Weiss (2001) identified different drivers and barriers of project performance; drivers include project manager's leadership competence while barriers include weak processes and poor communication channels among project stakeholders. Communication directly influences project performance (Katz, 1982), and close communication is required to keep projects on a fast track (Day, 1998). High-level project performance is based on rich project communications that encourage effective and sustainable working relationships (Andersen, Birchall, Jessen, & Money, 2006).

Establish Trust: Trust is the basic element to facilitate human interaction during the initial stages of a project. Communication is an important factor for developing trust among subordinates and project Stakeholders (Burke *et al.*, 2007). Trust is an important influencing factor of project performance to effectively work collaboratively and address identified problems throughout a project efficiently. The project manager must develop an environment of trust in projects, and team members need to display trustworthy behavior (Brewer & Strahorn, 2012). Anantatmula (2010) argues that trust is the most important aspect of leadership to motivate the team, mitigate risks, resolve conflicts among stakeholders, and ensure accomplishment of project objectives. Project managers should develop a relationship of trust among team members and other stakeholders so that team members will perform project tasks more willingly (Brewer & Strahorn, 2012).

Project Performance Measures

Project performance in this study is based on Stakeholder Requirement theory which is defined as the degree of project delivery that meets stakeholders‟ requirements on a negotiated time, within negotiated budget,

meeting specific quality requirements and accepted by customers (Gallegos *et al.*, 2004; Shenhar, 2004; Parsons, 2006). Project performance is used instead of project success because project performance encompasses the stages of planning, production and handover as indicated by Munns & Bjeirmi (1996). The following are performance criteria:

Schedule Performance: Schedule Performance with respect to time has a significant influence on projects (Sunindijo, 2015) and can significantly contribute to overall project performance (Ahadzie, Proverbs, Sarkodie-Poku, 2014). Meng (2012) argues that schedule is a key factor affecting project performance as it requires collaboration among stakeholders across projects, and this collaboration is also time-consuming. Schedule performance can be affected by many factors that lead to revised schedule actions, such as schedule estimates, schedule control mechanisms, quality estimates, design documents, environmental factors, project management, and leadership skills (Sunindijo, 2015).

Cost Performance: Cost Performance reflect efficiency of a project with significant impact on project stakeholders (Razmdoost & Mills, 2016). Similar to schedule performance, cost performance can be affected by poor project planning, poor cost estimates, and inefficient cost control mechanisms that lead to a revised project budget (Sunindijo, 2015).

Quality Performance: Mir and Pinnington (2014) argued that in addition to schedule and cost performance, quality performance is a critical dimension of project success. Quality Performance is about meeting the aesthetic, functional, and legal requirements of a project and project outcomes. Project requirements may be simple or complex. Quality is accomplished if a completed project conforms to the specified requirements. To improve project performance, project managers should focus on required quality parameters in all project activities and processes.

Stakeholder Satisfaction: Stakeholder engagement is an integral part of all construction projects. Stakeholders are all parties that, directly or indirectly, have an interest in what is being done or in the final result. Stakeholders can be of direct or indirect influence on the construction subject. With platforms like Site Podium, engaging your stakeholders becomes a lot easier. Involving all parties should be common practice. This part of project management is too often ignored. Good stakeholder engagement starts with mapping out all the parties involved in the construction project.

Team satisfaction: team members are those directly involved in the project execution process. In the construction industry, the term 'satisfaction' has become progressively used over the past decade, its increased attention being taken to indicate a positive change from a pure focus on business performance to a greater emphasis on stakeholder performance (Love and Holt, 2000). Team satisfaction was defined as a project manager's perception on how team members feel about events within the project team which includes satisfaction with project works, satisfaction with team members and satisfaction with being part of the project team (Dailey, 1993; Nguyen *et al.*, 2008). In addition to the traditional objective outcome measures of time, cost and quality, measuring satisfaction has become another effective way of helping to improve project performance, especially for large and complex projects (Cheng *et al.*, 2006; Ling *et al.*, 2008; Toor and Ogunlana, 2010). Satisfaction boosts businesses and with long-term profitability (Wirtz, 2001).

Costumers Needs: Becoming more customer-centered has been recognized as an important component of corporate strategy for many years. A worldwide Conference Board study of Chief Executive Officers (CEOs) of multinational corporations found that improving customer needs, satisfaction and loyalty were among the top challenges facing their organizations (Briscoe, 2002). The reason for this is primarily financial, as firms that achieve high levels of customer needs and satisfaction generally out-perform their competitors on a number of financial metrics. Research has found that higher satisfaction and needs leads to increased cash flow, revenue growth, profitability, market share, and stock price (Anderson *et al.*, 2004; Gruca and Rego, 2005; Homburg *et al.*, 2005; Rego and Morgan, 2013; Williams and Naumann, 2011).

Contractor's satisfaction: the unique position of construction contractors is being responsible for the actual production. Contractor's satisfaction is central to maintaining the cohesiveness and level of teamwork needed for a project (Chan *et al.*, 2002). The contractor undertakes site organisation, assembly, cost management,

schedule Management, quality control, etc.). Contractor's performance here becomes critical to the success of projects. Furthermore, replacing a contractor with another during project execution is very costly. Understanding the factors influencing contractor's performance and measuring the degree of satisfaction offer means of achieving success. This as well provides an opportunity to enhance the effectiveness of cooperation between contractors and the project team. Previous satisfaction researches in construction have focussed more on the satisfaction of clients and customers than the contractor.

Supplier Satisfaction: Researches on supplier satisfaction in the buyer–supplier relationships are scarce and have primarily been conceptual in nature (Benton and Maloni, 2005). Few publications have focused on the satisfaction of the suppliers with efforts to measure this. For example, a dissertation proposed a tool for measuring supplier satisfaction (Maunu, 2003). A supplier satisfaction index was developed and tested (Essig and Amann, 2009). Nyaga, Whipple, and Lynch (2010) tested buyer and supplier models, though with very few variables, whereas Paul, Semeijn, and Ernstson (2010) tested techniques that buyers can use to influence supplier satisfaction. These reports often were not linked to a clear theoretical foundation; as a result, they regarded satisfaction as a stand-alone construct and did not relate it to its potential antecedents and consequences of attractiveness and preferred customer status, respectively. A social exchange perspective can establish links between these concepts. The summary of factors of leadership and competence interplay in Figure 1.

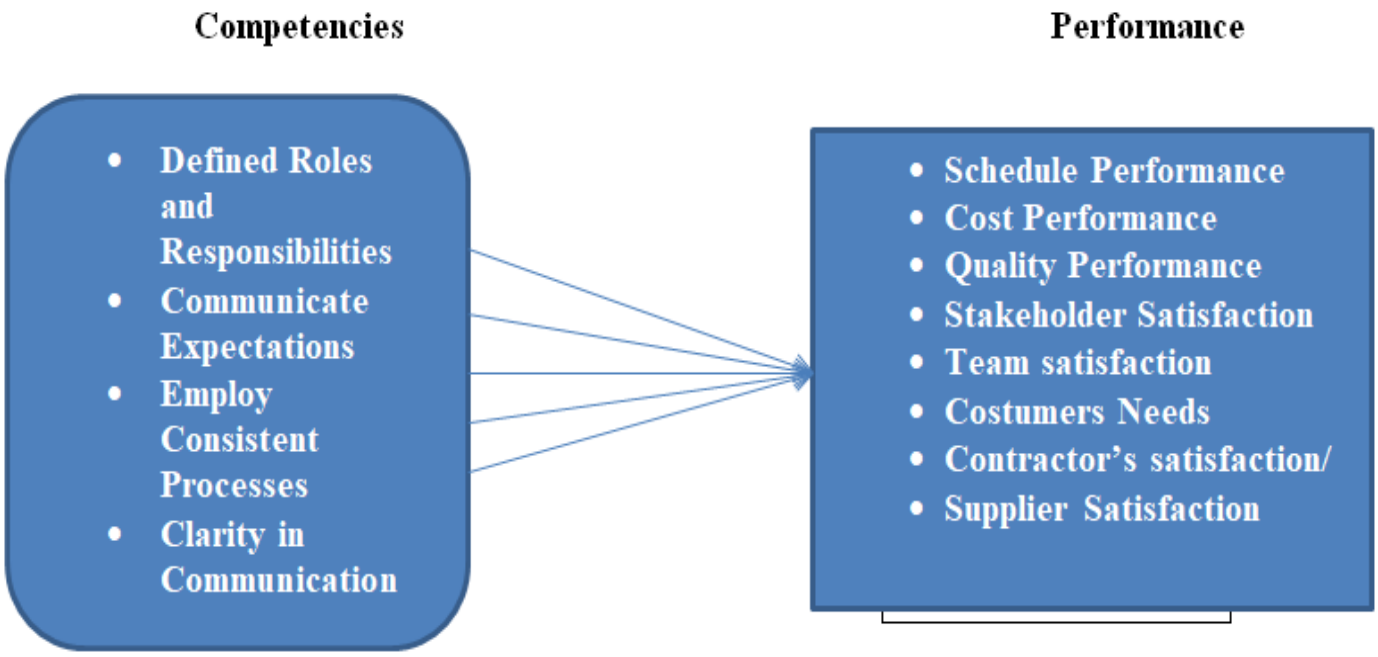

Figure 2. Leadership Competence and Project Performance Model

Leadership Competencies and influence on project performance

Some studies have focused on project manager leadership competencies and the influence on project performance. Müller and Turner (2010) studied "Leadership competency profiles of successful project managers". Key findings were that, different types of projects require different leadership styles and competencies; emotional intelligence was particularly important across all project types and intellectual and managerial competencies varied in importance depending on project complexity. Geoghegan and Dulewicz (2008) queried, "Do Project Managers' Leadership Competencies Contribute to Project Success?" the researchers found a significant relationship between a project manager's leadership competencies and project success and also identified specific leadership dimensions that were most strongly correlated with project success, including resource management, empowering, and developing.

Further, Anantatmula (2010) considered "Project Manager's Leadership Role in Improving Project Performance". The study identified the impact of some specific leadership roles on project performance. The

research emphasized the importance of clear communication of expectations and creating an environment of trust and motivation. Yang *et al*. (2011) studied "The association among project manager's leadership style, teamwork and project success". The transformational leadership style was found with positively influence on teamwork and project success; and developing both task-oriented and relationship-oriented leadership skills was important.

Other researchers like Nixon *et al.* (2012) studied the significance of leadership performance to project success by undertaking a critical analysis. Key leadership performance factors including communication, credibility, and problem-solving abilities were identified; a highlight on the importance of adapting leadership style to the project environment was presented. Galvin *et al.* (2014) rather looked at "Building Project Management Competence for IT Success. The scholars identified specific competencies that contribute to IT project success, including stakeholder management and benefits realization. Emphasis was laid on a need for technical and interpersonal skills. Kerzner (2011) in research titled "Using the Project Management Maturity Model: Strategic Planning for Project Management" proposed a model for assessing and developing project management competencies at an organizational level. The research highlighted the link between leadership competencies, organizational project management maturity, and project performance. And yet, Clarke (2010) studied "Emotional intelligence and its relationship to transformational leadership and key project manager competences". The work found a significant correlation between emotional intelligence abilities and transformational leadership, and also project manager competences. The work suggested that developing emotional intelligence could enhance project leadership effectiveness.

These studies collectively emphasize the importance of leadership competencies in project management and the significant impact on project performance. Highlights on effective project leadership requires a combination of technical skills, managerial abilities, and emotional intelligence. Specific competencies required may vary depending on the project type, complexity, and context

How Leadership Affects Performances

There have been numerous studies on how leadership affects performance as outlined in some key research findings in the area: A meta-analysis by Wang et al. (2012) found that transformational leadership was positively related to individual, team, and organizational performance across various contexts. A longitudinal study by Boerner et al. (2007) found that transformational leadership enhanced organizational performance through organizational learning and innovation. Bass et al. (2003) then showed how transformational leadership predicted unit performance in military settings. On Leader-Member Exchange (LMX) Theory, Gerstner and Day (1997) a meta-analysis revealed that high-quality leader-member relationships were associated with better performance ratings, organizational commitment, and job satisfaction. Hoch et al. (2018) showed that servant leadership explained variance in employee performance beyond transformational leadership.

Ethical Leadership has also been studied in which Brown and Treviño (2006) found that ethical leadership was positively related to follower job satisfaction, organizational commitment, and work performance. A study by Walumbwa et al. (2008) showed that authentic leadership was positively related to follower job satisfaction and job performance. And yet, regards situational Leadership, Thompson and Vecchio (2009) found some support for Hersey and Blanchard's situational leadership theory, showing that leader adaptability to follower readiness impacts performance. Lee et al. (2018) rather showed that empowering leadership positively affects employee’s creativity and performance, especially in knowledge-intensive work settings. On Leadership and Team Performance, Burke et al. (2006) found that task-focused and person-focused leadership behaviours were related to perceived team effectiveness and team productivity. Leadership across cultures has established that certain leadership attributes are universally endorsed as contributing to outstanding leadership and performance (House et al., 2004).

These studies collectively demonstrate that effective leadership does significantly impact individual, team and organizational performance across various contexts and cultures. However, it's important to note that the specific leadership behaviors that are most effective can vary depending on the situation, follower characteristics, and organizational context.

RESEARCH METHODS

In this study, questionnaire was administered but focused on construction project managers in private and public sectors in Nigeria. Most projects are managed by construction professionals like the architects, quantity surveyors, builders and engineers. Respondents who identified themselves as project managers with relevant experience are classified as such. Seven performance criteria and five leadership competence factors formed the subject of the research. The survey questionnaire was developed to collect data aimed at establishing how leadership competencies of project managers affect project performance and self-administered. The first section of the questionnaire focused on the demography of respondents. The other section focused on assessment of the leadership competencies of a project manager as affecting construction performance. Respondents were requested to tick a Likert's scale of 1-low to 5-high rating. The total number returned were assessed to eliminate invalid returns. A total of 210 questionnaires were distributed among construction professionals in which 175 returned while 144 sorted for the research, i.e., 69% of the total distribution forming the basis for the analysis. Respondents were derived from Abuja and Kaduna in a random sampling method. The choice of the two cities was informed by the concentration of projects and professionals relevant to project management.

Quality of respondents

Project Managers here are Architects, Builders, Engineers and Quantity Surveyors who indicated as having managed construction with cogent management experience. The sample frame was derived from Tale 1 drawn primarily from the register of the professional bodies.

Table 1 Sampling Frame and Sample size

S//No	Professional	Sampling Frame	Sample size
1	Architects	3,651	44
2	Builders	2,609	43
3	Engineers	42,835	44
4	Quantity Surveyors	3,558	44
	Total	**52,653**	**175**

Source: Field survey (2021)

Using Yamane (1967), a sample size of 175 construction practitioners (Cps) was determined but 210 were distributed in the study. Respondents were both from client, contractor and consultants' organisations. Correlation analysis was conducted to determine the degree of association between leadership competency factors and the performance criteria. The correlation factor depicts how close one factor is to another or rather, the extent to which one factor will change and the direction of the changed if the other changes.

PRESENTATION OF RESULTS

Demography of respondents

Table 2 presents the quality of respondents that returned their responses. Section A sought to know the respondents' basic discipline; qualification, years of experience, number of projects served as a project manager, size of project handled, types of organisations, and management level, see Tale 2.

Table 2: Respondent's demography

	Category	Frequency	Percent (%)
Basic Discipline	Architecture	25	20.7
	Building	45	35.9
	Engineering	36	27.4
	Quantity surveying	22	16.0
	Total	141	100.0
Qualification	PhD	7	5.0
	MSc	22	15.7
	BSc / B-tech	51	36.4
	HND	49	35.0
	Other	11	7.9
	Total	140	100.0
Types of Organisations	Client	36	25.3
	Consulting	55	38.7
	Contractor	51	35.9
	Total	142	100.0
Size of the Organisation	Small	33	38.6
	Medium	70	38.6
	Large	41	24.8
	Total	144	100.0
Kind of Projects Handled	Small	15	10.9
	Medium	76	55.5
	Large	46	33.6
	Total	137	100.0
Years of Experience	1-5 yrs	26	18.4
	6-10 yrs	39	27.7
	11-15 yrs	37	26.2
	16 yrs and above	39	27.7
	Total	141	100.0
Management Level	Top management	89	61.8
	Middle management	35	24.3
	Lower management	11	7.6
	None management	9	6.3
	Total	144	100.0
The number of projects served as a project manager	1-3	10	7.0
	4-6	24	16.8
	7-9	33	23.1
	10-12	37	26
	13 and above	39	27
	Total	143	100

Table 2 shows that respondents are 17.7%, 31.9%, 25.5%,15.6% and 9.2% from Architecture, Building, Engineering and Quantity surveying as basic discipline respectively. Majority of the respondents' studied Building followed by Architecture, Engineering, and then Quantity Surveying. Most respondents had BSC/B-TECH, HND (36.40 and 35.0) respectively which is 71.40% of total respondents. The type of organization was 25.3% representing client, 38.7% represent consulting, and 35.9% representing contractor which indicates fair representation of each. Regards the Size of the Organisation 38.6% represented medium organisation, 38.6% represented small organisation and 22.8% represented large organisation. The Table shows that majority of the responds were from the small and medium organizations then the large organization. Similarly, the questionnaire asked of kind of project handled and 10.9% of respondents have handled small projects, 55.5% handled medium project and 33.6% responds as large project. This shows that most of the projects handled by

the respondents are either medium size or large size over 80%. The respondents were asked of Years of Experience and 18.4% represent 1-5yrs, 27.7% represent 6-10yrs, 26.2% represent 11-15yrs and 27.7% represent 16yrs-above. Over 50% of respondents have more than 10years of construction experienced. About 61.8% were at top management level, 24.3% represent medium management, 7.6% represent lower management level and 6.3% represent none management level. This simply shows that most of the respondents are in top management level of their organisations. This corresponds with the long term spent in the industry to have risen to those positions. The last on the table is the number of projects respondents served as a project manager. It shows 7.0% have experience as project managers in 1-3 projects, 16.8% have been project managers in 4-6 projects. Others are 23.1% in 7-9 projects and 26% in 10-12 projects served as project manager. Those that have served as project managers in 13 and above are 27%.

Appraisal of Leadership Competence

Tale 3 reports correlation analysis between leadership competence factors and project performance criteria. The essence is to depict micro-relationship, i.e., how individual factors in one group affect each factor in the other group contributory to the overall influence.

Table 3: Micro Relationship between Leadership Competencies and Project Performance

			Project Managers Leadership Competencies				
			Clarity in communication	**Defined roles and responsibilities**	**Communicate expectations**	**Employ consistent processes**	**Establish trust**
Project Performance	Schedule performance	Pearson Correlation	.374**	.391**	.316**	.463**	.302**
	Cost performance	Pearson Correlation	.403**	.334**	.333**	.408**	.325**
	Quality performance	Pearson Correlation	.367**	.412**	.254**	.425**	.294**
	Stakeholders' satisfaction	Pearson Correlation	.480**	.503**	.301**	.467**	.412**
	Team satisfaction	Pearson Correlation	.302**	.293**	.262**	.293**	.393**
	Contractors or suppliers Satisfaction	Pearson Correlation	.350**	.358**	.405**	.361**	.437**
	Customer needs	Pearson Correlation	.326**	.358**	.216**	.362**	.456**

**. Correlation is significant at the 0.01 level (2-tailed).

Interpreting correlation coefficient: $0.7 \leq \alpha \leq 1$ = Very strong correlation; $0.5 \leq \alpha \leq 0.7$= Strong correlation; $0.3 \leq \alpha \leq 0.5$= moderately correlation; $0 \leq \alpha \leq 0.3$ = Weak correlation

Table 3 here established that the entire leadership competency factors have positive correlation at 0.01 level of significance with all the project performance criteria. Each competency factor has positive effect on each performance criteria. It implies that, for each leadership competency exhibited in a project, there's the likelihood to improve schedule performance, cost performance, quality, customer's needs and satisfaction of participants. However, the leadership competency factors influence performance criteria differently. Each factor impacts more on some particular performance criteria than on others. For example, if a leader communicates so clearly, there's more impact on the stakeholders becoming satisfied with (.480) with resultant

reduced cost (.403)' but less influence on the team, possibly where the leadership domiciles. Conversely, if the roles and responsibilities are well defined by a leader, it is stakeholder's satisfaction (.50) with resultant quality performance (.412). Where the expectations are communicated clearly, the contractors'/suppliers are better satisfied (0.405) with improved cost performance (.333). Comparatively, the table seems to suggest that the 'stakeholders' satisfaction' as a performance criterion is influenced significantly by many leadership competencies. The factor of clarity in communication as leadership competency seems to rank first in influence. It has moderate correlation with all the performance factors. The entire correlation coefficients range between 0.3 to 0.48. Defined roles and responsibilities correlate moderately with all the performance factors except Team Satisfaction (0.293) which is weak. Communicate expectations has weak correlation with quality performance, team satisfaction and customers' needs. A consistent process has moderate correlation with all except team satisfaction (0.293) which is weak also. Establish trust has weak correlation with quality performance but moderately correlate with cost, schedule and satisfactions of team and stakeholders.

The next section aimed to measure the strength of relationship between competence and performance. This is a focus on the macro relationship and therefore the correlation coefficient between the entire leadership competency factors with the entire project performance criteria is establish in Tale 4. It reveals, to what extent as well as which direction to which project performance increases if leadership competence improves?.

Table 4: Macro Relationship between Leadership Competencies and Project Performance

		Leadership Competencies	**Project Performance**
Leadership Competencies	Pearson Correlation	1	.616**
	Sig. (2-tailed)		0.000
	Remarks		Strong
Project Performance	Pearson Correlation	.616**	1
	Sig. (2-tailed)	0.000	
	Remarks	Strong	
**. Correlation is significant at the 0.01 level (2-tailed).			
Interpreting correlation coefficient: $0.7 \leq \alpha \leq 1$ = Very strong correlation; $0.5 \leq \alpha \leq 0.7$= Strong correlation; $0.3 \leq \alpha \leq 0.5$= moderately correlation; $0 \leq \alpha \leq 0.3$ = Weak correlation			

In Table 4, Project Manager's leadership competence correlate with project performance at a value of 0.616 at 0.01 level of significance. This is a strong correlation and the linear relationship is positive. It implies that as competency of a project manager becomes better, there is the likelihood that project performance will increase. Performance in terms of schedule, quality, cost, satisfaction and customer's need will increase.

DISCUSSION

This research was set to establish the level of influence of leadership competencies on construction projects performance. Five leadership competencies and seven project performance criteria were identified. Correlation was use to compute coefficients, the essence of which was to find which of the five competency factors influence which of the performance criteria. This research established that all the leadership competencies influence each of the seven performance criteria. It underscores the need for a project leader to acquire every competency as prerequisite for project performance. Should a leader lags in any of the competencies, it will affect negatively all the performance measures of a project, even though at different degree. Notably, the correlation of competency factors on performance criteria were not uniform. Each competency correlated better with some performance criteria than others. Table 5 depicts two highest effects of competence on the performance criteria.

Table 5 Summary of the effect of leadership competence on performance

		Project Managers Leadership Competencies				
		Clarity in communication	**Defined roles and responsibilities**	**Communicate expectations**	**Employ consistent processes**	**Establish trust**
Project Performance	Schedule performance	.		.	● .	
	Cost performance	●		●		
	Quality performance	.	● .			
	Stakeholders' satisfaction	●	● .		● .	.
	Team satisfaction					.
	Contractors or suppliers Satisfaction			●		●
	Customer needs					●

One of the implications is that- if the project schedule is under-performing, it is an indication that a consistent process may be lacking. Again, where the cost of a project is under-performing, the leader should ensure clear communicate at all project levels. What to communicate must not abstract clear objectives including the need to ensure project cost objective. Likewise, the quality criteria is sustained when roles and responsibilities of every project participant are defined well.

Table 5 indicates that the stakeholders' satisfaction is influenced more by three competency factors. These are clarity in communication, defined roles and responsibilities and also process consistency. When stakeholders are satisfied with a process, there is greater likelihood of better commitment. This is a major factor that contributes to project success.

CONCLUSION AND RECOMMENDATION

There is a significant influence of leadership competence on construction projects performance. Where leadership of a construction work is weak, there is great likelihood of failed contract. The competency factors affect individual performance criteria at different levels. When a particular performance is lagging, some particular leadership factors should be addressed first as presented in Table 5. Appointments of leaders for construction contracts must pass through competency assessment so as to ensure performance.

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