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# Enhancing Project Success In Building Construction Projects Through Effective Leadership Behaviour Strategies Of Project Managers In The Federal Capital Territory, Abuja

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**Abstract-** Improving project success in building construction remains a major concern in the Federal Capital Territory, Abuja, due to persistent challenges such as delays, cost overruns, weak coordination, and poor project delivery outcomes. This study examined strategies that could be applied to improve the level of project success by enhancing the effectiveness of leadership behaviour of project managers on building construction projects in FCT, Abuja. A quantitative research design was adopted, and data were collected through a structured questionnaire administered to construction professionals including architects, quantity surveyors, builders, facility managers, and estate surveyors. From a sampling frame of 523 professionals, a sample size of 227 was derived using Yamane's formula, while 185 valid responses were retrieved and analyzed using mean score ranking, Kaiser-Meyer-Olkin and Bartlett's tests, and factor analysis.The findings showed that clearly defined project mission (Mean = 4.5421), proper project schedule and plan (Mean = 4.5157), and top management support (Mean = 4.3750) were the most significant strategies for improving project success. Other important strategies included effective communication (Mean = 3.9813), monitoring and feedback (Mean = 3.8637), and assigning technical tasks to competent hands (Mean = 3.8419). The average total mean score of 3.7323 confirmed that the identified strategies were generally effective. Further analysis revealed that these strategies clustered around leadership dimensions such as planning, communication, team coordination, stakeholder engagement, competence, and decision making. The study concludes that project success in building construction projects in FCT, Abuja can be significantly enhanced when project managers adopt effective leadership behaviour strategies supported by strong organizational structures and stakeholder collaboration. It is recommended that construction firms should strengthen leadership development through training, clear project planning, improved communication systems, competent supervision, and continuous monitoring of project activities. These measures will improve project delivery and overall construction performance in the study area.

**Keywords:** project success, leadership behaviour, project managers, building construction projects, Federal Capital Territory, Abuja.

## I. Introduction

The construction industry serves as a primary catalyst for economic growth and urban development, particularly in rapidly expanding cities such as the Federal Capital Territory (FCT), Abuja. Since Abuja's designation as Nigeria's capital in 1991, the city has experienced sustained growth in construction, activity driven by population growth, government expansion, and rising private-sector investment (Albert et al., 2021; Morse et al., 2023; Olubajo, 2024). As a leading construction center in the country, the FCT hosts a high concentration of built

environment professionals and continues to attract substantial public and private development projects. Despite this expansion, building construction projects in Abuja continue to encounter persistent challenges, including cost overruns, inadequate materials management, insufficient risk control, knowledge gaps, delays, and substandard quality, all of which undermine project success (Albert et al., 2021; Aikpokhio et al., 2024; Mahmud et al., 2021). Project managers hold a strategic role in the delivery of construction projects, and leadership behaviour has increasingly been recognized as a critical determinant of project performance. Effective leadership behaviour shapes communication, coordination, team motivation, decision making, risk management, and stakeholder engagement, all of which are essential for successful project outcomes (Okoro & Ogbuefi, 2021). In the Nigerian construction industry, research indicates that leadership practices such as providing clear instructions, closely monitoring progress, assessing risks, and implementing corrective actions are vital for improving project results (Olasunkanmi et al., 2023). These findings indicate that the success or failure of building construction projects depends not only on technical competence or resource availability, but also on the project manager's ability to lead people and processes effectively.

Project success in construction is multidimensional, encompassing not only time and cost performance but also quality, safety, stakeholder satisfaction, and overall project effectiveness (Aikpokhio et al., 2024; Mahmud et al., 2021). In complex environments such as Abuja, where projects involve multiple stakeholders and operate within unique institutional frameworks, leadership behaviour strategies are increasingly important. Project managers in the FCT are required to manage relationships with government agencies, private developers, contractors, consultants, and host communities while ensuring efficient project delivery and adherence to standards (Nubi et al., 2022; Y.M. & Anuar, 2022). Consequently, leadership behaviour is a critical factor in achieving successful building construction project outcomes in the territory.

While previous research has identified leadership as a critical success factor in construction projects, limited empirical attention has been given to the specific leadership behaviour strategies that can enhance building construction project success in the Federal Capital Territory, Abuja (Okoro & Ogbuefi, 2021; Olasunkanmi et al., 2023; Y.M. & Anuar, 2022). This research gap is significant because ineffective leadership has been linked to recurring project challenges, including cost overruns, weak coordination, poor materials handling, inadequate risk management, and knowledge loss (Mahmud et al., 2021; Albert et al., 2021; Aikpokhio et al., 2024; Olubajo, 2024). In response, this study examines how effective leadership behaviour strategies employed by project managers can improve project success in building construction projects within the Federal Capital Territory, Abuja. The study is significant as it provides practical insights for project managers, construction firms, and policymakers seeking to enhance project delivery and overall performance in one of Nigeria's most prominent construction markets.

## II. Literature Review

### 2.1 Introduction

The construction industry holds a critical role in national development, especially in rapidly urbanizing economies such as Nigeria. Building construction projects are inherently complex, involving diverse professionals, multiple stakeholder interests, limited resources, and changing environmental conditions (Ametepey et al., 2022). In this context, the leadership role of project managers has become a central determinant of project outcomes. Leadership behaviour, defined as the patterns of conduct and strategic approaches adopted by project managers to guide their

teams, is increasingly recognized as a key factor in achieving project success (Liphadzi et al., 2018). This literature review explores the conceptual and empirical dimensions of building construction project success, the significance of leadership behaviour in project management, practical strategies employed by project managers in construction, the relationship between leadership behaviour and project outcomes, and empirical evidence from global, Nigerian, and Federal Capital Territory (FCT), Abuja contexts.

### 2.2 Building Construction Project Success

Project success is a multifaceted and evolving concept that has attracted significant scholarly attention since its introduction to the project management literature in the 1960s (Zhao et al., 2021). Despite extensive research, a universally accepted definition of project success remains elusive, underscoring the construct's complexity and context-dependent nature (Zhao et al., 2021). Initial definitions focused primarily on the "iron triangle" of time, cost, and quality, referring to the delivery of a project within the specified schedule, budget, and quality parameters (Ali et al., 2021). More recent scholarship has expanded this perspective to include additional dimensions such as client satisfaction, stakeholder value, team performance, and long-term organizational benefits (Ali et al., 2021). Ferreira (2019) identified that project success depends on realistic and well-defined goals, resource availability, customer approval, profitability, competitive advantage, completion on schedule, and the perceived value of the project. This multidimensional perspective highlights the limitations of relying solely on technical or financial metrics to define project success. In the construction industry, project success encompasses not only the physical completion of a structure but also client and end-user satisfaction, worker safety and well-being, and broader social and environmental impacts (Afzal & Tumpa, 2024).

#### 2.2.1 Dimensions and Indicators of Project Success

Contemporary research identifies several key dimensions of project success that are particularly relevant to building construction projects. These include:

(1) Time performance — the extent to which the project is completed within the agreed schedule;

(2) Cost performance — adherence to the approved budget;

(3) Quality performance — conformance to specified standards and client expectations;

(4) Client satisfaction — the degree to which the project meets or exceeds client needs and expectations;

(5) Team satisfaction — the well-being and motivation of the project team; and

(6) Organizational effectiveness — the contribution of the project to the broader strategic goals of the organization

Aga (2016), as cited by Ali et al., (2021) , developed a well-validated project success construct composed of six items addressing time, expense, quality, client use, satisfaction, and efficacy, measured on a five-point Likert scale. This instrument has been widely adopted in subsequent empirical studies, reflecting its robustness and comprehensiveness. Similarly, Zhao et al., (2021), noted that many scholars have defined project success with deepening research, but have not yet come to a consistent conclusion, highlighting the ongoing conceptual debate in the field.

In sustainable construction, (Afzal & Tumpa, 2024) emphasized that project success must also be evaluated against the triple bottom line of economic, social, and environmental performance. This broader conception of success is particularly relevant in the Nigerian context, where construction projects are expected to contribute to

national development goals, infrastructure provision, and social well-being. The Federal Capital Territory, Abuja, as the seat of Nigeria's federal government, hosts a disproportionately large share of major building construction projects, making the achievement of project success in this context a matter of significant national importance.

### 2.3 Leadership Behaviour in Project Management

Leadership is widely recognized as one of the most critical determinants of project success in the construction industry (Liphadzi et al., 2018). Daft, as cited by Liphadzi et al. (2018), stated that the complexity and involvement of many team members in any construction project make management and leadership vital, noting that effective leadership is widely seen as a key success factor in the construction industry. This view is corroborated by Farler and Haan (2021), who argued that understanding how to improve leadership is vital to organizations' success in the engineering, technology, and construction (ETC) industry, a trillion-dollar sector.

The distinction between leadership and management is an important conceptual consideration in the project management literature. While management is primarily concerned with the planning, organizing, and controlling of resources and activities, leadership involves inspiring, motivating, and guiding people towards the achievement of shared goals (Liphadzi et al., 2018). Ekechukwu and Lammers (2019) observed that the emphasis is shifting from project management to project leadership, as professionals need supporting tools not only to manage tasks and activities but also to lead people. This shift reflects a growing recognition that the technical competencies of project managers, while necessary, are insufficient on their own to ensure project success; effective leadership of people is equally, if not more, important (Liphadzi et al., 2018).

The importance of leadership in construction projects is underscored by a substantial body of empirical evidence. Maqsoom et al. (2022) argued that effective leadership fosters creative performance, helping team members achieve project goals by developing novel ideas to improve processes, and that, in the absence of effective leadership, organizational performance and work pace stall, leading to failure to achieve goals. Similarly, Ali et al. (2021) noted that an effective project leadership style is required to enhance team commitment, build trust, and establish efficient working relationships among the team members, and that even if the project team is high-performing with the right skills and techniques, it will not be effective without appropriate leadership.

Farler and Haan (2021) highlighted that project managers play an essential role in motivating the team, meeting project objectives, and reducing time and cost constraints, and in using a specific leadership style depending on the project's nature. This situational dimension of leadership is particularly salient in construction projects, which are characterized by dynamic and often unpredictable conditions that require project managers to adapt their leadership approaches accordingly (Luo et al., 2021). Luo et al. (2021) further emphasized that effective leadership is required to address rapid, complex, and discontinuous changes in complex construction projects, and that leadership measures should consider the characteristics of such projects, such as the ability for situational interaction and systematic thinking.

The growing body of literature on leadership in construction has also highlighted the need for leadership development as a strategic priority for construction organizations. Liphadzi et al. (2018) found that curricula, education and qualification, leadership training courses, taking responsibility as managers, and accepting new challenges were seen as important factors in developing leaders in the South African construction industry.

Manoharan et al. (2022) similarly identified leadership as one of the most important competencies of construction project managers, alongside interpersonal skills and contextual abilities.

### 2.4 Leadership Behaviour Strategies in Construction Projects

Transformational leadership is the most extensively studied leadership style in the construction project management literature and has been consistently identified as a highly effective approach for enhancing project performance (Zhao et al., 2021; Afzal & Tumpa, 2024). Transformational leaders inspire and motivate their followers by articulating a compelling vision, demonstrating high standards of behaviour, and attending to the individual needs and development of team members (Ahmad et al., 2022). Zhao et al. (2021) conducted a meta-analysis of 31 independent studies (N = 6,475) and found that transformational leadership positively affects project success, with leadership charm identified as the primary driver. The study also found that the existence of a mediating mechanism has a more significant impact on the success of the leading project.

Ahmad et al. (2022) demonstrated that a project manager's transformational leadership behaviour positively impacts project success, both directly and indirectly through employee self-leadership. The study, which collected data from 289 project team members in the IT sector, found that transformational leaders who handle complex, dicey, and ambiguous situations and successfully accomplish poorly defined, ill-organized objectives are particularly effective in crisis contexts. Afzal and Tumpa (2024) further noted that transformational leadership contributes significantly to sustainability-based project performance and that leaders with transformational leadership styles are better able to promote sustainability practices than leaders with other styles.

Ali et al. (2021) investigated the impact of transformational leadership on project success through the serial mediation of team-building and teamwork quality, finding that the project manager's transformational leadership style intensifies project success through team-building practices and teamwork quality. The study, which gathered data from 374 professional information system development project managers in Pakistan, demonstrated that transformational leadership boosts teamwork quality in terms of communication, coordination, and cohesion to achieve a successful project (Ali et al., 2021).

Transactional leadership, which is based on the exchange of rewards and punishments for performance, represents another widely studied leadership style in the construction context (Farler & Haan, 2021). Farler and Haan (2021) identified transactional leadership as one of the most effective leadership styles in the engineering, technology, and construction industry, alongside transformational and situational leadership. The Full Range Leadership Theory, as discussed by Ali et al. (2021), highlights three leadership styles: transformational, transactional, and laissez-faire, with the latter considered destructive in project management compared to the former two.

Ahmad et al. (2022) examined the impact of contingent reward leadership (a key component of transactional leadership) on project success, finding that contingent reward leadership, neither directly nor indirectly (through self-leadership), showed no significant relationship with project success. This finding provides a cautionary note to those who would wholeheartedly advocate using certain contingent reward leadership behaviours to improve performance (Ahmad et al., 2022). However, it is important to note that the effectiveness of transactional leadership may be context-dependent, with some studies finding positive effects in specific settings (Farler & Haan, 2021).

### 2.4.1 Situational and Empowering Leadership

Situational leadership, defined as adapting leadership style to the specific demands of a situation and the needs of the team, has been identified as particularly effective in the construction industry (Farler & Haan, 2021). Project managers overseeing engineers, technicians, and construction employees are advised to employ situational leadership, adapting their approach to the group or project and using effective communication (Farler & Haan, 2021). Henkel et al., as cited by Farler & Haan (2021), demonstrated through quantitative analysis that project managers prefer a situational leadership approach over a single, fixed leadership style.

Empowering leadership, characterized by delegating authority and fostering autonomy among team members, has also been shown to positively influence project success (Ahmad et al., 2022). Ahmad et al. (2022) reported that empowering leadership enhances affective self-leadership, which, in turn, contributes to project success. However, the study also indicated that empowering leadership alone does not guarantee project success without the presence of self-leadership behaviours among followers, highlighting the importance of team members' capacity for self-direction (Ahmad et al., 2022).

### 2.4.4 Paternalistic Leadership

Paternalistic leadership, which integrates authoritarian control with benevolent concern for subordinates, has gained increasing attention in construction literature, particularly within Asian and developing countries (Maqsoom et al., 2022). Maqsoom et al. (2022) identified positive associations between authoritarian, benevolent, and moral leadership and employee creativity in the Pakistani construction industry, and demonstrated that leader-member exchange significantly mediates the relationship between benevolent and moral leadership and creativity. Wang et al. (2025) examined the influence of foremen's paternalistic leadership on construction workers' safety behaviours in China, finding that paternalistic leadership significantly enhanced safety behaviours both directly and indirectly through team safety climate and workers' psychological safety.

### 2.4.5 Practical Leadership Behaviour Strategies

In addition to specific leadership styles, the literature highlights a variety of practical leadership behaviour strategies that project managers can implement to improve project outcomes. Ekechukwu and Lammers (2019) identified several people-related leadership factors influencing project performance, such as clear communication, defined roles and responsibilities, explicit expectations, consistent processes, trust-building, support facilitation, and outcome management. Luo et al. (2021) found that stress management ability, team building, and institutional support are key factors affecting project performance in complex construction projects, particularly under resource constraints.

Liphadzi et al. (2018) emphasized that leadership development in the construction industry is driven by actionable information and individual accountability, and that adaptive thinking abilities are essential for leader development. The study found that construction organizations can foster leadership skills by cultivating a culture of teaching, mentoring, and exposure to new challenges (Liphadzi et al., 2018). Similarly, Manoharan et al. (2022) highlighted the importance of competencies such as communication, team leadership, multidisciplinary interaction, proactivity, and self-learning in construction training programs.

### 2.5 Leadership Behaviour and Project Success in Construction

The relationship between leadership behaviour and project success in construction has been widely studied, with consensus that effective leadership significantly predicts positive project outcomes (Ametepey et al., 2022). Ametepey et al. (2022) identified a link between project managers' leadership styles and project performance in the Nigerian construction industry. Lee-Kelley and Leong (2003), as cited by Ametepey et al. (2022), found that project managers' perceptions of project success are influenced by their leadership style. Geoghegan and Dulewicz (2008), also cited by Ametepey et al. (2022), reported that leadership competencies have a considerable impact on project success.

Zhao et al. (2021) demonstrated, through a meta-analysis, that transformational leadership positively affects project success, with leadership charm identified as the primary driver of this effect. The study also found that, compared to Western contexts, countries with Eastern cultures are more likely to adopt a people-oriented philosophy in project management to promote success (Zhao et al., 2021). These findings have important implications for the Nigerian context, where cultural values and norms may influence the effectiveness of various leadership approaches.

Ahmad et al. (2022) found that both project managers' transformational leadership behaviour and employee self-leadership positively impact project success, with self-leadership mediating the relationship between transformational leadership and project success. The study further demonstrated that empowerment significantly moderates the relationships between self-leadership and project success, as well as between transformational leadership and project success (Ahmad et al., 2022). These findings highlight the importance of considering mediating and moderating mechanisms in understanding the relationship between leadership and project success.

#### 2.5.2 Mediating and Moderating Mechanisms

The literature has identified several mediating and moderating mechanisms through which leadership behaviour influences project success. Ali et al. (2021) demonstrated that both team-building and teamwork quality independently and serially mediate the relationship between transformational leadership and project success. The study found that transformational leadership boosts teamwork quality in terms of communication, coordination, and cohesion to achieve a successful project (Ali et al., 2021). Similarly, Ahmad et al. (2022) found that employee self-leadership mediates the relationship between transformational leadership and project success, while empowerment moderates this relationship.

Luo et al. (2021) proposed a hybrid simulation approach integrating structural equation modeling and system dynamics to examine the impact of leadership dynamics on project performance. The study found that personal ability, relationship atmosphere, and organizational strategy positively correlate with project performance over time. Stress management ability, team building, and institutional support were identified as leading factors influencing project performance in complex construction projects (Luo et al., 2021). These findings underscore the dynamic and multidimensional nature of the relationship between leadership and project success, and the importance of holistic, longitudinal research approaches.

### 2.5.3 Cultural and Contextual Factors

The effectiveness of leadership behaviour in construction projects is also shaped by cultural and contextual factors. Credé et al. (2019) conducted a meta-analytic review of the relationship between transformational leadership and employee performance using data from over 57,000 individuals across 215 samples and 34 countries, finding that cultural values and practices moderate this relationship. The study found that the relationship is much stronger in countries whose culture is incongruent with transformational leadership, and that transformational leadership is most effective in Africa, the Middle East, South America, and parts of Southeast Asia (Credé et al., 2019). This finding is particularly relevant to the Nigerian context, suggesting that transformational leadership may be especially effective in the FCT, Abuja construction industry.

Hartog and Hoogh (2024) observed that societal culture shapes individuals' implicit theories of leadership, influencing interactions between leaders and followers. The study found that empowering leadership is more strongly associated with creativity in low-power-distance countries, whereas supportive leadership is more strongly associated with creativity in high-power-distance countries (Hoogh, 2024). Given Nigeria's relatively high power distance cultural orientation, these findings suggest that leadership strategies emphasizing respect for authority, benevolent concern for subordinates, and moral integrity may be particularly effective in the FCT, Abuja construction context.

Ametepey et al. (2022) found that Ghanaian construction project managers were more relationship-oriented than their expatriate counterparts, and that the participative and directive styles were increasingly common in the Ghanaian construction industry. While no major leadership style was found within the construction space in Ghana, the study highlighted the importance of cultural context in shaping leadership behaviour and its effectiveness (Ametepey et al., 2022). These findings from the West African context are broadly applicable to the Nigerian construction industry, given the shared cultural and institutional characteristics of the two countries.

## 2.6 Empirical Studies in the Construction Industry

A substantial body of empirical research has investigated the relationship between leadership behaviour and project success in construction industries around the world. Zhao et al. (2021) conducted a comprehensive meta-analysis of 31 independent studies (N = 6,475) from multiple countries, finding that transformational leadership positively affects project success across diverse cultural and organizational contexts. The study identified leadership charm as the primary driver of transformational leadership and found that the existence of a mediating mechanism has a more significant impact on the success of the leading project (Zhao et al., 2021).

Ali et al. (2021) gathered data from 374 professional project managers in Pakistan and found that transformational leadership is associated with project success through the serial mediation of team-building and teamwork quality. The study demonstrated that transformational leadership boosts teamwork quality in terms of communication, coordination, and cohesion, and that both team-building and teamwork independently and serially mediate the leadership-project success relationship (Ali et al., 2021). Ahmad et al. (2022) similarly collected data from 289 project team members in the IT sector and found that transformational leadership behaviour and employee self-leadership positively impact project success, with self-leadership mediating the relationship.

Luo et al. (2021) investigated the impacts of leadership dynamics on project performance in complex construction projects using a hybrid simulation approach, finding that personal ability, relationship atmosphere, and

organizational strategy positively correlate with project performance over time. The study identified stress management ability, team building, and institutional support as the leading factors influencing project performance (Luo et al., 2021). Maqsoom et al. (2022) explored the relationship between paternalistic leadership and employee creativity in the Pakistani construction industry, finding positive associations of authoritarian, benevolent, and moral leadership with employee creativity, and demonstrating that leader-member exchange significantly mediates the relationship between benevolent and moral leadership and creativity.

Afzal and Tumpa (2024) conducted a systematic literature review of 31 articles on leadership styles in sustainable construction, finding that no single leadership style is universally applicable in all contexts, but that transformational leadership stands out for its benefits in facilitating sustainable practices. The review provided insights into various leadership approaches and their effectiveness in different scenarios, concluding that transformational leadership is generally more effective for implementing sustainable practices in construction projects (Afzal & Tumpa, 2024).

Farler and Haan (2021) reviewed multiple publications on leadership in the engineering, technology, and construction industries and found that situational, transformational, and transactional leadership are the most effective leadership styles. The study highlighted the importance of communication, personality, behaviour, attitude, and nonverbal cues as key character traits for effective leadership in the ETC industry (Farler & Haan, 2021). Ekechukwu and Lammers (2019) investigated the potential of digital technology as an aid for project leadership development and practice in the Australian civil construction industry, finding that project managers understand the significance of leadership but are often overwhelmed by its complexity, and that they demonstrate a strong willingness to adopt digital technologies as assisting mechanisms for leadership.

Liphadzi et al. (2018) examined leadership development in the South African construction industry and found that curricula and qualifications, leadership training courses, taking responsibility as managers, and accepting new challenges were important factors in developing leaders. The study emphasized that the construction environment has changed and is more complex, unstable, and irregular, and that more adaptive thinking abilities are important for the development of leaders (Liphadzi et al., 2018). Ametepey et al. (2022) assessed the leadership styles of Ghanaian construction project managers compared with those of their expatriate counterparts, finding that Ghanaian project managers were more relationship-oriented, while expatriate project managers were more socio-independent.

### 2.6.2 Empirical Studies in Nigeria

Empirical research on leadership behaviour and project success in the Nigerian construction industry, while relatively limited compared to the global literature, has provided important insights into the local context. Odusami et al. (2003), as cited by Ametepey et al. (2022), found a link between project managers' leadership styles and project performance in the Nigerian construction industry, representing one of the earliest empirical investigations of this relationship in the Nigerian context. This study highlighted the importance of leadership style as a determinant of project performance in Nigeria and laid the groundwork for subsequent research in this area.

The broader literature on leadership in developing country construction contexts provides additional relevant evidence. Credé et al. (2019) found that transformational leadership is most effective in Africa, the Middle East, South America, and parts of Southeast Asia, suggesting that transformational leadership behaviour strategies may

be particularly well-suited to the Nigerian construction industry. This finding is consistent with Nigeria's cultural characteristics, including relatively high power distance and collectivist values, which may create conditions in which transformational leadership is especially effective (Hartog & Hoogh, 2024).

The challenges confronting the Nigerian construction industry, such as inadequate infrastructure, skills shortages, and governance deficits, highlight the critical role of effective leadership behaviour in achieving project success. Liphadzi et al. (2018) observed that the construction environment has become increasingly complex, unstable, and unpredictable, and emphasized the need for adaptive thinking abilities in leader development. These insights are particularly pertinent to the Nigerian context, where project managers must navigate a complex and challenging operating environment.

### 2.7 Strategies for Improving Level of Project Success

Projects are routinely conceived and executed to operationalize the strategic objectives of organizations. Consequently, global spending on projects is increasing exponentially, and the project management profession is experiencing rapid growth (Anantatmula, 2015). Despite this growth, many projects fail to meet expectations, and there is no universal solution for enhancing project performance. Strategy is defined as a plan of action designed to achieve a desired outcome (Hellriegel et al., 2009). Projects should serve as active elements in implementing a company's strategic intent. At the corporate level, strategy is embodied in a strategic plan, while business, marketing, and operational strategies are reflected in their respective plans. However, the absence of a distinct project strategy often undermines the alignment between project plans and organizational objectives. Strategic project leadership, which involves a leader with a strong understanding of project management techniques, is a critical approach. This leadership leverages knowledge of strategy as it relates to projects, the execution process, and the ability to inspire and motivate project teams to achieve success (Ugonna, Ochieng, Matipa & Shah, xxxx). Improved site management practices are essential to mitigate challenges and ensure successful project outcomes (Ushie, Muoka, Mogbo, Bamgbade, Obianyo & Mambo, 2024). Countries such as Nigeria face persistent challenges in project adoption, resulting in delays and cost overruns (Olabanji, 2020).

To achieve organizational goals and objectives, managers must consider critical success factors in their decision-making processes (Adnan et al., 2014). These factors facilitate effective organizational planning and serve as valuable tools for communication among managers. Amade (2014) noted that organizations in Nigeria and globally encounter complexities and challenges in meeting construction project deadlines. According to Bob Buttrick, systematic and accurate project direction ensures proper execution. The primary objective is to determine project success based on the guidance provided to individual projects (Nazia et al., 2016). Projects are instrumental in creating economic value, fostering competitive advantage, and generating business benefits for organizations (Gomes, Romão & Caldeira, 2013). The strategic importance of project management in the corporate sector is increasingly recognized (Gomes & Romão, 2016). This recognition is largely due to the belief that aligning project management with business strategy can significantly enhance the likelihood of achieving strategic objectives and improving organizational performance.

A project should prioritize the definition and delivery of products, with particular attention to quality requirements. Projects require effective leadership in addition to management; while both roles share similarities, they are distinct. Managers are responsible for planning, organizing, and coordinating, whereas leaders provide strategy,

vision, and motivation (Mohammed, 2016). In the business context, the concept of "success" is multifaceted and depends on various factors that enable organizations, projects, and programs to achieve their objectives (Nazia, Bilal & Abdul Wahid, 2016). The construction industry faces unique challenges and risks that affect project delivery, quality, productivity, and operations (Ushie et al., 2024). Numerous unpredictable variables further complicate the industry (Ali, 2019). Strategies to improve project success include enhancing the effectiveness of project managers' leadership behaviors. According to Anantatmula (2015), factors such as a clearly defined project mission, top management support, established policies and procedures, effective communication, cohesive project teams, participation in decision-making, adaptability to changes in project goals, a collaborative culture, project size, and project prioritization all contribute to effective leadership in building construction projects.

Nazia et al. (2016) emphasize that projects comprise various critical success factors that, when effectively organized and managed, contribute to project success. Conversely, neglecting these factors can result in project failure. To enhance the likelihood of project success, organizations must identify and systematically assess critical success factors, anticipate their potential effects, and select appropriate strategies to address them (Mobey & Parker, 2002). Nazia et al. (2016) further highlight the importance of elements such as project mission, top management support, project scheduling, client consultation, competent personnel, technical tasks, client acceptance, monitoring and feedback, communication, and troubleshooting. Effective management involves organizing, supervising, and guiding individuals or teams to overcome challenges and achieve organizational objectives. Poor management is reflected in failures related to administrative procedures, task completion, team cohesion, and staff satisfaction (Hamid et al., 2021). Indicators of inadequate management include insufficient preparation, unclear communication, lack of control, inadequate support, and ineffective progress evaluation (Ushie et al., 2024).

The success of the construction industry depends on effective site management, as deficiencies in this area can result in project failure (Hamid et al., 2021). Poor performance by professional teams and contractors, along with communication challenges, are significant contributors to site management failures (Mohammed & Anumba, 2016). Organizations seek to improve performance through various project improvement strategies (Thwala, 2018). However, complex engineering and management issues at job sites, combined with increasing technical and administrative demands, complicate these efforts (Griffith & Watson, 2018). Construction projects in developing countries differ fundamentally from those in developed nations, requiring customized safety strategies (Zamrodah, 2016). Project performance is generally assessed by measuring the achievement of project deliverables, encompassing both financial and non-financial aspects throughout the project life cycle (Afomachukwu, 2021; Onifade et al., 2017). Onifade et al. (2017) further note that project performance encompasses factors that indicate successful project completion.

## III. Research Methods

The research design establishes the foundational framework for planning, implementing, and analyzing data collection processes. Kothari and Gaurav (2014) define it as a strategic plan that guides how research questions are addressed, while Creswell (2014) emphasizes the importance of selecting both the research subject and the most appropriate methodology. In this study, a quantitative research design was employed to examine the

leadership behaviours demonstrated by project managers on building construction projects in the Federal Capital Territory, Abuja. Numerical data were systematically analyzed to identify patterns and relationships, with self-administered questionnaires utilized as the primary data collection instrument. The research targeted construction management professionals, with particular attention to those involved in building maintenance.

Kothari and Gaurav (2014) define a research population as all relevant elements within a study field, while Singh (2006) describes it as the total number of individuals possessing pertinent characteristics. The target population for this study included architects, quantity surveyors, builders, facility managers, and estate surveyors operating in FCT Abuja. To achieve manageability and representativeness, a sampling frame was established by the respective professional bodies. Singh (2006) emphasizes the importance of appropriate sample size, whereas Kothari and Gaurav (2014) highlight that sample quality depends on its reflection of the target population. The sampling frame comprised 523 professionals, and the sample size of 227 participants was determined using Yamane's (1967) formula at a 0.10 precision level, with distribution across each professional group.

A simple random sampling technique was applied to guarantee equal selection chances and minimize bias, as recommended by Creswell (2014). Data were collected through a structured, closed-ended questionnaire, validated for consistency and reliability in line with Kothari and Gaurav (2014). The instrument included two sections: Section A (demographic information) and Section B (Enhancing Project Success in Building Construction Projects through Effective Leadership Behaviour Strategies of Project Managers**)** Respondents were assured of confidentiality to encourage honest responses. The study achieved a 84% response rate, surpassing the 20–30% average in management research (Creswell 2014). Data were analyzed using correlation analysis.

## IV. Analysis Of Results And Discussion Of Finding

Table 1 below shows the respondents demographic information. 8(4.3%) of the respondents have 21–28years of age, 48(26%) have 29–35years of age, 44(23.8%) have 36–42years of age, 52(28.1%) have 43–49years of age, and 33(17.8%) have above 50years of age. 7(3.8%) of the respondents have Higher National Diploma (HND) level of education, 53(28.6%) have Bachelor of Science (BS.c), 70(37.8%) have Postgraduate Diploma (PGD), 48(26%) have Master's (MS.c), and 7(3.8%) have Doctor of Philosophy (Ph. D) level of education. 30(16.3%) of the respondents are from Architecture profession, 50(27%) are from Building profession, 50(27%) are from Civil Engineering profession, 55(29.7%) are from Quantity surveying profession. 178(96.2%) of the respondents are registered with their respective professional body, while 7(3.8%) are not registered. 29(16.3%) of the respondents are registered with NIA body, 48(27%) are registered with NIOB body, 48(27%) are registered with NSE body, and 53(29.7%) are registered with NIQS body. 142(76.8%) of the respondents are male and 43(23.2%) are female. 19(10.3%) of the respondents have 6–10years of experience, 32(17.3%) have 11–15years of experience, 31(16.8%) have 16–20years of experience, 61(32.9%) have 21–25years of experience and 42(22.7%) have above 25years of experience.

**Table 1: Respondent's Demographic Information**

| Respondent's variables | Frequency (F) | Percentage (%) |
|---|---|---|
| Age: | | |
| 21–28years | 8 | 4.3 |
| 29–35years | 48 | 26.0 |
| 36–42years | 44 | 23.8 |
| 43–49years | 52 | 28.1 |
| > 50years | 33 | 17.8 |
| Total | 185 | 100.0 |
| Level of education: | | |
| Higher National Diploma (HND) | 7 | 3.8 |
| Bachelor of Science (B.Sc.) | 53 | 28.6 |
| Postgraduate Diploma (PGD) | 70 | 37.8 |
| Master's (M.Sc) | 48 | 26.0 |
| Doctor of Philosophy (Ph.D) | 7 | 3.8 |
| Total | 185 | 100.0 |
| Profession: | | |
| Architecture | 30 | 16.3 |
| Building | 50 | 27.0 |
| Civil Engineering | 50 | 27.0 |
| Quantity Surveying | 55 | 29.7 |
| Total | 185 | 100.0 |
| Are you Registered with your professional body? | | |
| Yes | 178 | 96.2 |
| No | 7 | 3.8 |
| Total | 185 | 100.0 |
| Professional body registered with: | | |
| NIA | 29 | 16.3 |
| NIOB | 48 | 27.0 |
| NSE | 48 | 27.0 |
| NIQS | 53 | 29.7 |
| Total | 178 | 100.0 |
| Gender: | | |
| Male | 142 | 76.8 |
| Female | 43 | 23.2 |
| Total | 185 | 100.0 |
| Years of experience: | | |
| 6 – 10years | 19 | 10.3 |
| 11 – 15years | 32 | 17.3 |

| | | |
|---|---|---|
| 16 – 20years | 31 | 16.8 |
| 21 – 25years | 61 | 32.9 |
| > 25years | 42 | 22.7 |
| Total | 185 | 100.0 |

**N = 185.**

4.1

Table 2 above shows the strategies that could be applied to improve the level of project success. Clearly defined project mission is determined as highly effective strategy with a mean score of 4.5421 and standard deviation of 1.85431, ranked 1st. Project schedule/plan should be ensured is determined as highly effective strategy with a mean score of 4.5157 and standard deviation of 1.84353, ranked 2nd. Top management support to improve the project success is determined as effective strategy with a mean score of 4.3750 and standard deviation of 1.78609, ranked 3rd. Communication should be properly observed without assumption is determined as effective strategy with a mean score of 3.9813 and standard deviation of 1.62536, ranked 4th. Monitoring and feedback of all the project stages is determined as effective strategy with a mean score of 3.8637 and standard deviation of 1.57735, ranked 5th. Technical tasks to be carried out by competent hands is determined as effective strategy with a mean score of 3.8419 and standard deviation of 1.56845, ranked 6th. Client acceptance with the project team is determined as effective strategy with a mean score of 3.8109 and standard deviation of 1.55579, ranked 7th. Policies and procedures should be properly observed is determined as effective strategy with a mean score of 3.7475 and standard deviation of 1.52990, ranked 8th. Change in project goals to suit the project at hand is determined as effective strategy with a mean score of 3.7319 and standard deviation of 1.52354, ranked 9th. Collaborative culture to incorporate all stakeholders is determined as effective strategy with a mean score of 3.7297 and standard deviation of 1.52264, ranked 10th. Priority of the project should be the focus of all the team is determined as effective strategy with a mean score of 3.6842 and standard deviation of 1.50407, ranked 11th. Participation in decision making so as to hear from of all the team is determined as effective strategy with a mean score of 3.6541 and standard deviation of 1.49178, ranked 12th. Project size to be given more consideration is determined as effective strategy with a mean score of 3.5407 and standard deviation of 1.44549, ranked 13th. Cohesive project team to ensure goal achievement is determined as effective strategy with a mean score of 3.4328 and standard deviation of 1.40144, ranked 14th. Competent personnel to supervise all stages of work is determined as effective strategy with a mean score of 3.3129 and standard deviation of 1.35249, ranked 15th. Client consultation to ensure the project team are on the same page with the client is determined as effective strategy with a mean score of 3.2103 and standard deviation of 1.31098, ranked 16th. Collective meetings with other subordinates (project team members) at each stage of work before execution is determined as effective strategy with a mean score of 3.2083 and standard deviation of 1.30978, ranked 17th. Trouble shooting of any stage of work be resolve to ensure project success is determined as effective strategy with a mean score of 2.9989 and standard deviation of 1.22430, ranked 18th.

Average total mean score (ATMS) reveals a value of 3.7323 which means that, these strategies when effectively practiced can improve the level of project success by enhancing the effectiveness of leadership behaviours of project managers on building construction projects in FCT, Abuja.

**Table 2: Strategies that could be applied to improve the level of project success**

| Strategies to be applied to improve the level of project success | Mean | St. D | Decision | Ranking |
|---|---|---|---|---|
| Clearly defined project mission | 4.5421 | 1.85431 | Effective | 1st |
| Project schedule/plan should be ensured | 4.5157 | 1.84353 | Effective | 2nd |
| Top management support to improve the project success | 4.3750 | 1.78609 | Effective | 3rd |
| Communication should be properly observed without assumption | 3.9813 | 1.62536 | Effective | 4th |
| Monitoring and feedback of all the project stages | 3.8637 | 1.57735 | Effective | 5th |
| Technical tasks to be carried out by competent hands | 3.8419 | 1.56845 | Effective | 6th |
| Client acceptance with the project team | 3.8109 | 1.55579 | Effective | 7th |
| Policies and procedures should be properly observed | 3.7475 | 1.52990 | Effective | 8th |
| Change in project goals to suit the project at hand | 3.7319 | 1.52354 | Effective | 9th |
| Collaborative culture to incorporate all stakeholders | 3.7297 | 1.52264 | Effective | 10th |
| Priority of the project should be the focus of all the team | 3.6842 | 1.50407 | Effective | 11th |
| Participation in decision making so as to hear from of all the team | 3.6541 | 1.49178 | Effective | 12th |
| Project size to be given more consideration | 3.5407 | 1.44549 | Effective | 13th |
| Cohesive project team to ensure goal achievement | 3.4328 | 1.40144 | Effective | 14th |
| Competent personnel to supervise all stages of work | 3.3129 | 1.35249 | Effective | 15th |
| Client consultation to ensure the project team are on the same page with the client | 3.2103 | 1.31098 | Effective | 16th |
| Collective meetings with other subordinates (project team members) at each stage of work before execution | 3.2083 | 1.30978 | Effective | 17th |
| Trouble shooting of any stage of work be resolve to ensure project success | 2.9989 | 1.22430 | Not Effective | 18th |
| **Average Total Mean Score (ATMS) = ∑Mean Score /10 = 67.1819 / 18** | **3.7323** | | **Effective** | |

N = 185.

Table 3 below show the test of the appropriateness of the data for further analysis, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (MSA) and Bartlett test of sphericity (BTS) was conducted as shown in Table 8 below. These two tests provide the minimum standard that the data should meet to be considered adequate for further analysis. The value of the KMO can vary between 0 and 1, with 0.50 suggested as a minimum (Hair et al., 2010). The Bartlett test indicates whether the correlation matrix is significantly different from the identity matrix (i.e., matrix in which all of the diagonal elements are 1 and other elements are 0). The Bartlett test indicates the strength of the relationship among variables and the significant level of Bartlett's test is a requirement for the data to be considered suitable for analysis. The KMO value was 0.831 which is above 0.50 and the BTS value was found to be significant at p = 0.001. The KMO value of 0.831 is greater than the recommended value of 0.600 (Kaiser, 1970; 1974) and Bartlett's Test of Sphericity (Bartlett, 1954) reached statistical significance, supporting the factorability of the data.

**Table 3: KMO and Bartlett's Test for Strategies that could be applied to improve the level of project success**

| **KMO and Bartlett's Test** | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy | | .831 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 2427.093 |
| | Df | 448 |
| | Sig. | .001 |

N = 185.

Table 4 below shows the summary of the Rotated Factor Matrix for the strategies that could be applied to improve the level of project success by enhancing the effectiveness of leadership behaviour of project managers on building construction projects. The factor analysis was performed following Principal Component Solution with a Varimax Rotation (Kaiser, 1958). The data fed into Factor analysis consisted of the data obtained from 185 respondents. The eighteen (18) strategies that could be applied to improve the level of project success by enhancing the effectiveness of leadership behaviour of project managers on building construction projects were extracted into seven fixed components. To retain different factors from the variable taken in this study, the cutting point of eigenvalue was taken are equal to one. These component factors were further rotated by varimax solution (Olanrewaju et al., 2020a). The discussion of the result has been based on the varimax rotated factor matrix. To discuss the result of the factor matrix, the factor loading of **≥ 0.50** is considered to be significant.

However, the factor loading (except those less than 0.5) of the critical success factors are categorized based on components. Component 1 consists of five significant factors with factor loadings ranging from 0.344 – 0.859; Component 2 consists of three significant factors with factor loadings ranging from 0.343 – 0.986; Component 3 consists of three significant factors with factor loadings ranging from -0.676 – 0.850; Component 4 consists of four significant factors with factor loadings ranging from -0.693 – 0.743; Component 5 consists of four significant factors with factor loadings ranging from -0.333 – 0.838; Component 6 consists of five significant factors with factor loadings ranging from -0.306 – 0.785; and, Component 4 consists of five significant factors with factor loadings ranging from -0.317 – 0.865. To better contextualize the components, the components are re-write based on the factors under each of them as shown below:

1. Component 1 which include: Clearly defined project mission (0.859), Project schedule/plan should be ensured (0.831), Top management support to improve the project success (0.680), Communication should be properly observed without assumption (0.624), and, Cohesive project team to ensure goal achievement (0.344)
2. Component 2 which include: Monitoring and feedback of all the project stages (0.986), Technical tasks to be carried out by competent hands (0.986), and, Trouble shooting of any stage of work be resolve to ensure project success (0.343).
3. Component 3 which include: Client acceptance with the project team (0.850), Policies and procedures should be properly observed (0.835), and, Change in project goals to suit the project at hand (-0.676).

4. Component 4 which include: Communication should be properly observed without assumption (0.523), Collaborative culture to incorporate all stakeholders (0.743), Priority of the project should be the focus of all the team (-0.693), and, Participation in decision making so as to hear from of all the team (0.547).
5. Component 5 which include: Collaborative culture to incorporate all stakeholders (-0.333), Project size to be given more consideration (0.838), Cohesive project team to ensure goal achievement (-0.612), and Client consultation to ensure the project team are on the same page with the client (0.407).
6. Component 6 which include: Client acceptance with the project team (-0.309), Change in project goals to suit the project at hand (-0.306), Participation in decision making so as to hear from of all the team (-0.476), Competent personnel to supervise all stages of work (0.785), Client consultation to ensure the project team are on the same page with the client (0.770).
7. Component 7 which include: Priority of the project should be the focus of all the team (0.474), Cohesive project team to ensure goal achievement (-0.317), Competent personnel to supervise all stages of work (0.311), Collective meetings with other subordinates (project team members) at each stage of work before execution (0.865), Trouble shooting of any stage of work be resolve to ensure project success (0.480).

| | **Component** | | | | | | |
|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Clearly defined project mission | .859 | | | | | | |
| Project schedule/plan should be ensured | .831 | | | | | | |
| Top management support to improve the project success | .680 | | | | | | |
| Communication should be properly observed without assumption | .624 | | | .523 | | | |
| Monitoring and feedback of all the project stages | | .986 | | | | | |
| Technical tasks to be carried out by competent hands | | .986 | | | | | |
| Client acceptance with the project team | | | .850 | | | -.309 | |
| Policies and procedures should be properly observed | | | .835 | | | | |
| Change in project goals to suit the project at hand | | | -.676 | | | -.306 | |
| Collaborative culture to incorporate all stakeholders | | | | .743 | -.333 | | |
| Priority of the project should be the focus of all the team | | | | -.693 | | | .474 |
| Participation in decision making so as to hear from of all the team | | | | .547 | | -.476 | |
| Project size to be given more consideration | | | | | .838 | | |
| Cohesive project team to ensure goal achievement | .344 | | | | -.612 | | -.317 |
| Competent personnel to supervise all stages of work | | | | | | .785 | .311 |
| Client consultation to ensure the project team are on the same page with the client | | | | | .407 | .770 | |
| Collective meetings with other subordinates (project team members) at each stage of work before execution | | | | | | | .865 |
| Trouble shooting of any stage of work be resolve to ensure project success | | .343 | | | | | .480 |

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 11 iterations.

**4.2 Enhancing Project Success in Building Construction Projects through Effective Leadership Behaviour Strategies of Project Managers in the Federal Capital Territory, Abuja**

Factor analysis, as presented in Table 4, identified and consolidated key strategies to enhance project success by improving the effectiveness of project managers' leadership behaviour in building construction projects. These strategies include establishing a clearly defined project mission, ensuring comprehensive project scheduling and planning, securing top management support, maintaining effective and assumption-free communication, implementing regular monitoring and feedback at all project stages, assigning technical tasks to competent personnel, fostering client acceptance within the project team, adhering to established policies and procedures, promoting a collaborative culture that involves all stakeholders, encouraging participation in decision-making from all team members, giving due consideration to project size, appointing qualified supervisors for all work stages, facilitating client consultation to align project teams with client expectations, and conducting collective meetings with project team members at each stage prior to execution. The findings are consistent with those of Anantatmula (2015), Hamid et al. (2021), Nazia et al. (2016), and Ushie et al. (2024). Thwala (2018) also noted that organizations seek to enhance performance through project improvement strategies. Accordingly, project managers must provide strategic direction, vision, and motivation (Mohammed, 2016). Consequently, building construction organizations that fail to improve project performance risk losing competitiveness, as project performance encompasses factors critical to successful project completion (Onifade et al., 2017).

## V. Conclusions and Recommendations

The study concludes that effective leadership behaviour strategies among project managers are essential for improving the success of building construction projects in the Federal Capital Territory, Abuja. The findings indicate that a clearly defined project mission, comprehensive project scheduling and planning, top management support, effective communication, and regular monitoring and feedback are the most critical strategies for enhancing project success. These results suggest that project managers' ability is their capacity to implement sound leadership practices throughout the project lifecycle.

The study further demonstrates that leadership strategies are interrelated, encompassing planning, coordination, communication, stakeholder engagement, and technical competence. Therefore, project success is achieved through the integration of multiple effective leadership behaviours rather than a single action. Based on these findings, it is recommended that construction firms enhance leadership development through targeted training and professional development for project managers. Project managers should prioritize clear project objectives, effective communication, comprehensive planning, and continuous monitoring of project activities. Additionally, top

management should provide adequate support and resources, while construction organizations should foster collaboration, encourage stakeholder participation, and employ competent personnel to improve project performance and overall success within the Federal Capital Territory construction industry.

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