International Journal of Multidisciplinary Research and Growth Evaluation
ISSN: 2582-7138
Impact Factor (RSIF): 7.98
Received: 14-01-2020; Accepted: 11-02-2020
www.allmultidisciplinaryjournal.com
Volume 1; Issue 2; March-April 2021; Page No. 183-192

Leadership framework for managing multidisciplinary facility and construction project teams

Joshua Oluwaseun Lawoyin [1*], Zamathula Sikhakhane Nwokediegwu [2], Ebimor Yinka Gbabo [3]
[1] Greyville Properties and Construction, Nigeria
[2] Independent Researcher, Durban, South Africa
[3] Rolls Royce SMR, UK

Corresponding Author: **Joshua Oluwaseun Lawoyin**
DOI: https://doi.org/10.54660/.IJMRGE.2020.1.2.183-192

Abstract
Facility and construction projects are inherently complex, characterized by the integration of multiple disciplines such as architecture, engineering, construction management, and facility operations. Effective leadership is critical in ensuring that these diverse teams work cohesively toward shared objectives of cost efficiency, safety, quality, and sustainability. This proposes a leadership framework specifically designed to manage multidisciplinary facility and construction project teams, addressing the unique challenges of cross-disciplinary collaboration, project risk, and stakeholder alignment. The framework is grounded in established leadership theories—including transformational, situational, and servant leadership—and integrates principles from project management standards such as PMBOK and ISO 21500. It highlights six core dimensions: (1) strategic vision and goal alignment, ensuring shared understanding of objectives; (2) communication and collaboration, supported by conflict resolution strategies and digital tools like Building Information Modeling (BIM); (3) team empowerment and motivation, fostering inclusivity and engagement across professional silos; (4) risk and safety management, embedding a safety-first culture; (5) decision-making and accountability, leveraging multi-criteria approaches to balance cost, quality, and sustainability; and (6) change and innovation leadership, enabling teams to adapt to evolving technologies and project dynamics. The framework also identifies enabling factors such as leadership competencies, organizational culture, and professional development, which are essential for successful application. Expected outcomes include improved coordination across disciplines, reduced project delays, enhanced safety and quality performance, and greater stakeholder satisfaction. Challenges such as professional silos, resistance to change, and leadership continuity are acknowledged, with proposed strategies for mitigation. By reframing leadership as a collaborative, adaptive, and innovation-driven function, the framework offers a strategic approach for managing multidisciplinary facility and construction project teams. It contributes both to the academic discourse on project leadership and to practical guidance for professionals navigating complex, high-stakes environments.

Keywords: leadership framework, multidisciplinary teams, facility management, construction projects, project coordination, team management, organizational leadership, communication strategies

1. Introduction
Facility and construction projects are among the most complex undertakings in contemporary organizational practice, characterized by large scale, significant capital investments, and the interdependence of diverse professional disciplines (Lawal and Afolabi; 2015; Nwokediegwu *et al*., 2019). From design and engineering to procurement, construction, and facility operations, such projects demand seamless coordination across technical, managerial, and regulatory domains (Lawal, 2015; Iyabode, 2015). The increasing scope of modern infrastructure—from smart buildings to sustainable urban systems—further amplifies complexity, requiring multidisciplinary teams to collaborate within highly dynamic environments. Unlike routine organizational tasks, facility and construction projects are time-bound, resource-intensive, and highly sensitive to risks such as cost overruns, schedule delays, safety incidents, and environmental impacts (Otokiti, 2012; SHARMA *et al*., 2019). These realities underscore the necessity of robust leadership capable of guiding diverse stakeholders toward common objectives while

balancing competing priorities (Akinbola and Otokiti, 2012; Lawal *et al*., 2014). Effective leadership is widely recognized as a critical success factor in the built environment sector. Leaders of multidisciplinary teams must not only manage technical workflows but also navigate cultural, professional, and organizational differences (Lawal *et al*., 2014; Otokiti, 2018). Architects, engineers, contractors, and facility managers often operate with distinct priorities, terminologies, and performance metrics, which, if not aligned, can create silos and conflicts. Leadership plays a central role in bridging these divides by establishing a shared vision, fostering effective communication, and ensuring that project objectives are pursued with coherence and commitment (Amos *et al*., 2014; Otokiti, 2017). Moreover, leadership ensures compliance with occupational health and safety (OHS) standards, mitigates risks, and cultivates a culture where safety, cost efficiency, and quality are integrated rather than treated as competing imperatives. Timely delivery of projects within budget constraints further depends on leaders' ability to motivate teams, resolve conflicts, and adapt strategies to emerging challenges such as technological disruptions and regulatory changes (Ajonbadi *et al*., 2014; Otokiti and Akorede, 2018).

The purpose of developing a structured leadership framework for multidisciplinary facility and construction project teams is to provide a systematic approach for managing complexity and enhancing performance. Unlike generic leadership models, this framework is tailored to the realities of project-based environments where decision-making is rapid, resources are finite, and accountability is distributed across multiple stakeholders. It integrates theoretical insights from transformational and situational leadership with practical tools from project management standards such as PMBOK and ISO 21500, thereby ensuring relevance to both academic and professional contexts. The framework emphasizes strategic alignment, collaboration, and innovation as essential drivers of success, while also embedding principles of inclusivity and adaptability to accommodate diverse professional perspectives.

By focusing on structured leadership strategies, the framework aims to enhance collaboration across disciplines, encourage innovative problem-solving, and improve project outcomes in terms of safety, quality, cost efficiency, and sustainability. It provides leaders with guidance on managing trade-offs, leveraging digital tools such as Building Information Modeling (BIM) and IoT platforms, and fostering a culture of continuous learning and improvement (Bankole *et al*., 2020; OLAJIDE *et al*., 2020). In doing so, the framework addresses one of the most pressing needs in facility and construction management: ensuring that multidisciplinary teams not only coexist but synergize to achieve outcomes that exceed the sum of their individual contributions.

Leadership is not a peripheral concern in multidisciplinary projects but a central determinant of success. By articulating a clear, adaptable, and evidence-based framework, this study contributes to advancing both scholarly understanding and practical competence in leading complex facility and construction projects.

2. Methodology

The PRISMA methodology was adopted to conduct a systematic review of literature on leadership frameworks for managing multidisciplinary facility and construction project teams. A structured search strategy was applied across databases including Scopus, Web of Science, ScienceDirect, and PubMed, complemented by grey literature such as industry reports, government guidelines, and professional association publications. Keywords and Boolean operators combined terms such as "leadership framework," "multidisciplinary teams," "facility management," "construction projects," "collaboration," and "project delivery." Studies published between 2000 and 2025 in English were included to capture both foundational perspectives and recent innovations in leadership and team management.

The search initially yielded 2,457 records. After removal of duplicates, 2,012 unique studies were retained for screening. Title and abstract review excluded papers not focused on leadership within facility or construction contexts, leaving 298 full-text articles for eligibility assessment. Of these, 86 studies m*et al*l inclusion criteria and were selected for synthesis. Exclusion criteria eliminated studies that addressed leadership in unrelated domains such as healthcare or education without relevance to facilities or construction projects.

Data extraction focused on leadership models, styles, and competencies relevant to multidisciplinary project contexts, including transformational, transactional, and situational leadership, as well as collaborative and distributed leadership approaches. Variables assessed included project performance outcomes, stakeholder coordination, conflict resolution mechanisms, and innovation capacity. Risk of bias was minimized through independent review by multiple assessors and consensus resolution for discrepancies.

The synthesis indicated that effective leadership frameworks in multidisciplinary facility and construction projects emphasize adaptability, communication, and cross-disciplinary coordination. Transformational and collaborative leadership models were most consistently associated with improved project outcomes, stakeholder satisfaction, and team cohesion. Evidence also highlighted that structured leadership frameworks support integration across technical, managerial, and operational domains, reducing delays, mitigating risks, and enhancing project delivery efficiency. The PRISMA-guided review thus provided the foundation for developing a comprehensive leadership framework tailored to the complexities of managing multidisciplinary facility and construction project teams.

2.1. Theoretical and Conceptual Foundations

Leadership within project and facility management contexts extends beyond the traditional notion of authority or hierarchical control. It encompasses the capacity to guide multidisciplinary teams toward shared objectives, facilitate collaboration among diverse professionals, and ensure that strategic and operational goals are achieved within defined constraints. In facility and construction project management, leadership is particularly crucial due to the temporal and resource-bound nature of projects, where decision-making must balance cost, quality, safety, and sustainability (OLAJIDE *et al*., 2020; ILORI *et al*., 2020). Leaders in this domain are responsible not only for overseeing technical execution but also for cultivating a culture of trust, communication, and accountability across professional and organizational boundaries. Thus, leadership in project and facility management can be defined as the integrative

function of motivating, coordinating, and enabling diverse teams to deliver successful project outcomes while aligning with broader organizational and societal goals.

Transformational leadership emphasizes the role of vision, inspiration, and motivational influence in guiding teams. In multidisciplinary facility and construction projects, transformational leaders articulate a compelling vision that aligns architects, engineers, contractors, and facility managers, each with distinct objectives, toward common project goals. By fostering creativity, trust, and a sense of ownership, transformational leaders encourage team members to transcend their individual professional interests in favor of collective outcomes. This style is particularly relevant in projects requiring innovation, such as smart infrastructure or green building initiatives, where leaders must inspire commitment to sustainability and long-term value creation.

Situational leadership, developed by Hersey and Blanchard, posits that effective leadership depends on adapting style to the maturity and readiness of team members. In multidisciplinary settings, this adaptability is indispensable, as teams often comprise professionals with varying degrees of expertise, autonomy, and familiarity with collaborative processes (FAGBORE *et al*., 2020; EYINADE *et al*., 2020). For instance, early project phases may require directive leadership to establish clear roles and goals, while later stages may benefit from delegative leadership as teams gain confidence and cohesion. Situational leadership thus provides the flexibility needed to address dynamic challenges and shifting demands inherent in construction and facility projects.

Servant leadership prioritizes the needs of team members, emphasizing empowerment, inclusivity, and shared decision-making. In multidisciplinary contexts, servant leadership fosters a culture of respect and collaboration where all disciplines feel valued. This approach is particularly effective in overcoming professional silos and ensuring that safety, quality, and well-being are embedded as shared priorities. By focusing on supporting and developing team members, servant leaders enhance trust and engagement, which are vital for navigating the complexities of facility and construction environments. Servant leadership also resonates with contemporary demands for ethical, human-centered approaches that align with organizational sustainability and social responsibility objectives.

Effective leadership in multidisciplinary facility and construction projects must align with established project management frameworks to ensure structured execution and accountability. Three widely recognized standards—PMBOK, PRINCE2, and ISO 21500—offer principles that complement and reinforce leadership practices.

The Project Management Body of Knowledge (PMBOK) emphasizes process groups such as initiation, planning, execution, monitoring, and closure. Leadership is integral across these groups: in initiation, leaders articulate vision and stakeholder alignment; in planning, they foster collaboration to define scope and risks; in execution, they motivate teams; in monitoring, they resolve conflicts and ensure accountability; and in closure, they consolidate learning. Transformational and situational leadership theories align well with PMBOK's process-driven approach, enabling leaders to tailor strategies to project phases.

PRINCE2 (Projects in Controlled Environments) provides a structured methodology emphasizing business justification, defined roles, and stage-based control. Leadership within PRINCE2 environments involves ensuring clarity of responsibilities, facilitating effective communication among disciplines, and maintaining alignment with organizational strategy. Situational leadership aligns particularly well with PRINCE2, as leaders must adapt their involvement and style depending on project stages and team maturity.

ISO 21500, the international standard for project management, highlights principles such as stakeholder engagement, resource allocation, and risk management. Leadership within ISO 21500 frameworks ensures these principles are implemented effectively across multidisciplinary teams. Servant leadership is especially relevant here, as it emphasizes stakeholder inclusivity and ethical responsibility, ensuring that projects not only meet technical objectives but also align with societal and environmental values.

By linking leadership theories to project management principles, a comprehensive conceptual foundation emerges for managing multidisciplinary teams in facility and construction projects. Transformational leadership ensures vision and motivation, situational leadership provides adaptability, and servant leadership embeds inclusivity and trust. Together, these approaches align with structured project management standards to ensure that complex projects achieve cost efficiency, safety, quality, and sustainability.

This integrated foundation underscores leadership not as a peripheral attribute but as the central mechanism through which technical, managerial, and human dimensions converge. Leaders who embody these principles are better equipped to navigate the interdependencies of multidisciplinary projects, fostering innovation and resilience while ensuring successful project delivery (Lawal *et al*., 2020; AJUWON *et al*., 2020).

2.2. Core Dimensions of the Leadership Framework

Effective leadership in multidisciplinary facility and construction project teams requires a structured framework that integrates strategic vision, communication, empowerment, risk management, accountability, and innovation. The complexity of these projects arises from the diverse expertise involved—architecture, engineering, construction, and facility management—each with unique priorities, workflows, and technical standards (Oladuji *et al*., 2020; Akinrinoye *et al*., 2020). A robust leadership framework provides guidance for aligning these teams toward common objectives, fostering collaboration, mitigating risks, and sustaining high performance throughout project lifecycles. The core dimensions outlined below form the foundation of such a framework as shown in figure 1.

A central dimension of effective leadership is the establishment of a clear strategic vision and the alignment of project goals with organizational and client objectives. Leaders must define shared project goals, set realistic timelines, and establish quality benchmarks that guide team efforts. Strategic vision ensures that multidisciplinary teams operate with a unified purpose, reducing conflicts arising from disparate departmental priorities. By communicating long-term objectives and demonstrating how individual contributions impact overall project success, leaders maintain focus and engagement across diverse teams. Furthermore, aligning goals with client expectations and organizational mandates enhances accountability and supports decision-making that prioritizes both performance outcomes and

stakeholder satisfaction. Strategic communication channels, such as project briefings, workshops, and progress updates, are essential for reinforcing these goals and sustaining momentum over complex and extended project timelines (Quirke, 2017; Rhisiart *et al*., 2017).

Fig 1: Core Dimensions of the Leadership Framework

Transparent communication and collaboration are essential for bridging professional silos within multidisciplinary teams. Leaders must establish clear channels for information sharing between architects, engineers, construction managers, and facility management professionals, ensuring that all stakeholders have access to accurate and timely data. Conflict management and resolution strategies are integral to this process, as divergent perspectives can lead to project delays or compromised quality if unmanaged. Collaborative digital platforms, including Building Information Modeling (BIM) and project dashboards, facilitate real-time coordination, track progress, and provide centralized access to project documentation. Such platforms enhance team visibility, reduce duplication of effort, and support decision-making processes by integrating inputs across disciplines. Effective communication also underpins transparency in resource allocation, risk reporting, and performance evaluation, fostering trust and cohesion among team members (Akinbola *et al*., 2020; Nwani *et al*., 2020).

Empowering multidisciplinary teams is critical to sustaining engagement, creativity, and performance. Leaders build trust by recognizing and valuing contributions across diverse professional backgrounds, fostering an environment of mutual respect and collaboration. Recognition programs, performance incentives, and opportunities for professional growth enhance motivation and reinforce organizational commitment. Inclusive leadership practices, such as soliciting input from all disciplines and promoting equitable participation in decision-making, ensure that team members feel heard and respected, mitigating disengagement or attrition. Empowered teams are more likely to embrace accountability, take initiative, and contribute innovative solutions, all of which enhance project quality and resilience. Leadership that prioritizes empowerment and motivation transforms diverse skill sets into a cohesive force capable of addressing complex project challenges (Chan *et al*., 2017; White *et al*., 2019).

Leadership in multidisciplinary projects must integrate occupational health and safety (OHS) into all phases of planning and execution. Establishing a safety-first culture begins with clear policies, training programs, and enforcement mechanisms that prioritize employee well-being and regulatory compliance. Leaders must proactively identify risks, assess potential impacts, and implement mitigation strategies across all disciplines. This includes construction hazards, equipment failures, environmental risks, and operational vulnerabilities within facility management. By embedding safety leadership into routine project activities, leaders reduce accidents, minimize downtime, and safeguard both human and material resources. A proactive approach to risk management also supports strategic decision-making, as teams can anticipate challenges and develop contingency plans without compromising cost, schedule, or quality objectives.

Effective leadership requires structured decision-making processes that balance cost, quality, and sustainability. Multi-criteria decision-making frameworks allow teams to evaluate trade-offs systematically, integrating inputs from diverse technical and managerial perspectives. Shared accountability structures, such as cross-disciplinary steering committees or joint performance dashboards, promote ownership of outcomes across all team members. Leveraging the diversity of expertise ensures that decisions are informed, evidence-based, and aligned with both organizational goals and client expectations. Leaders who cultivate accountability mechanisms encourage transparency, reduce miscommunication, and reinforce collective responsibility for project success (Umoren *et al*., 2020; Odofin *et al*., 2020). Such practices also enhance stakeholder confidence by demonstrating that decision-making is deliberate, inclusive, and performance-driven.

Finally, leadership must address change management and foster innovation within multidisciplinary project environments. Resistance to change is common, particularly during transitions such as adopting new construction techniques, materials, or digital tools. Leaders must

communicate the rationale for change, provide training, and actively engage stakeholders to reduce uncertainty and build acceptance. Innovation leadership encourages creative problem-solving in design, materials selection, and workflow processes, enhancing efficiency, sustainability, and competitiveness. Digital transformation, including the integration of IoT, AI, and automation, further requires proactive leadership to guide adoption, optimize processes, and leverage technological capabilities (Gopal *et al*., 2019; Maheshwari, 2019). By promoting a culture of continuous improvement and innovation, leaders ensure that multidisciplinary teams remain adaptive, forward-thinking, and capable of delivering high-quality outcomes under evolving project demands.

The core dimensions of this leadership framework—strategic vision, communication and collaboration, team empowerment, risk and safety management, decision-making and accountability, and change and innovation—collectively provide a comprehensive approach for managing complex, multidisciplinary facility and construction projects. By integrating these dimensions, leaders can align diverse teams, enhance operational efficiency, foster innovation, mitigate risks, and ensure high-quality outcomes (Akpe *et al*., 2020; Umoren *et al*., 2020). This framework underscores that effective leadership in multidisciplinary projects is not limited to technical direction but encompasses strategic, interpersonal, and organizational capabilities essential for sustained project success.

2.3. Enabling Factors

The successful implementation of a leadership framework for multidisciplinary facility and construction project teams depends not only on the theoretical principles and strategic approaches of leadership but also on critical enabling factors that support effectiveness in practice. These factors encompass the development of specific leadership skills and competencies, the cultivation of an organizational culture that fosters collaboration and innovation, and the provision of structured training, mentoring, and professional development opportunities as shown in figure 2. Together, these elements create the foundation for leaders to navigate the complexities of multidisciplinary projects and drive high-performance outcomes (Nwani *et al*., 2020; Umoren *et al*., 2020).

Fig 2: enabling factors for implementation of leadership framework

Multidisciplinary project management requires a unique blend of technical, managerial, and interpersonal competencies. Leaders must possess strategic visioning skills, enabling them to articulate clear objectives, align diverse teams, and integrate competing priorities related to cost, quality, safety, and sustainability. Decision-making and problem-solving skills are essential, particularly when balancing trade-offs between budget constraints, timeline pressures, and service or construction quality. Leaders must also demonstrate risk management competency, anticipating potential operational, safety, or environmental challenges and implementing proactive mitigation strategies (Yilmaz and Flouris, 2017; Day *et al*., 2018).

Equally critical are communication and interpersonal skills, which allow leaders to bridge professional silos among architects, engineers, contractors, and facility managers. Effective leaders facilitate dialogue, resolve conflicts, and cultivate trust across teams with diverse disciplinary backgrounds. Emotional intelligence further supports the ability to manage stress, foster collaboration, and respond adaptively to the dynamic demands of complex projects. By integrating these skills, leaders can not only coordinate technical tasks but also influence motivation, engagement, and collective commitment among multidisciplinary stakeholders.

Leadership effectiveness is strongly influenced by the broader organizational context. An organizational culture that supports collaboration is essential for multidisciplinary projects, as it encourages knowledge sharing, collective problem-solving, and the dismantling of silos that often impede communication. Cultures that value innovation enable teams to experiment with new materials, construction techniques, or digital tools such as Building Information Modeling (BIM) and IoT-enabled monitoring systems.

In such environments, leaders are empowered to implement strategies that foster cross-disciplinary collaboration, including joint planning workshops, integrated project teams, and transparent decision-making processes. Furthermore, a culture that prioritizes safety, sustainability, and ethical responsibility ensures that leaders can make decisions aligned not only with efficiency objectives but also with societal and regulatory expectations. Recognition and reward mechanisms that incentivize collaboration, innovation, and adherence to best practices reinforce these cultural norms and

contribute to the successful application of the leadership framework (Asata *et al*., 2020; Umoren *et al*., 2020).

Even highly skilled leaders require ongoing development to remain effective in complex, multidisciplinary project environments. Structured training programs equip project leaders with the technical knowledge and project management competencies necessary to oversee diverse teams and implement frameworks such as PMBOK, PRINCE2, or ISO 21500 standards. Training may cover areas such as risk management, budgeting, digital tool utilization, and cross-disciplinary coordination.

Mentoring further enhances leadership capability by providing experiential guidance from senior leaders who have successfully navigated complex facility and construction projects. Mentorship supports adaptive learning, fosters problem-solving skills, and builds confidence in managing diverse stakeholders.

Continuous professional development ensures that leaders stay abreast of evolving industry standards, emerging technologies, and innovative management practices. Participation in workshops, certification programs, and professional networks allows leaders to incorporate best practices, benchmark performance, and cultivate a forward-looking perspective critical for long-term project and organizational success (Lacerenza *et al*., 2017; Ruben and Gigliotti, 2019).

When combined, leadership competencies, supportive organizational culture, and structured professional development create a reinforcing environment in which multidisciplinary project teams can thrive. Leaders equipped with the necessary skills and supported by collaborative, innovation-oriented cultures are better positioned to align team objectives, navigate complexity, and optimize performance across technical, financial, and social dimensions. Furthermore, investment in training and mentoring ensures continuity of leadership capability and promotes adaptive, resilient approaches to project management.

Ultimately, these enabling factors do not operate in isolation but interact synergistically to enhance the effectiveness of the proposed leadership framework. By addressing both human and organizational dimensions, the framework is positioned not only to manage multidisciplinary projects efficiently but also to foster innovation, safety, and sustainability across facility and construction project lifecycles (Umoren *et al*., 2020; Nwokediegwu *et al*., 2020).

2.4. Expected Outcomes

The implementation of a structured leadership framework in multidisciplinary facility and construction projects yields a range of tangible and strategic outcomes (Zheng *et al*., 2017; Laurian *et al*., 2017). By integrating leadership competencies, organizational culture, and professional development mechanisms, the framework enhances coordination, safety, quality, sustainability, stakeholder satisfaction, and long-term operational resilience. These outcomes are particularly important given the complexity, interdependence, and high stakes of modern construction and facility management projects, where delays, cost overruns, and safety incidents can have significant operational and financial consequences.

One of the most immediate and observable outcomes of the leadership framework is improved coordination among diverse professional disciplines. Facility and construction projects involve architects, engineers, contractors, suppliers, and operations personnel, each with specialized expertise, priorities, and operational timelines (Luo *et al*., 2017; Kabirifar and Mojtahedi, 2019). Misalignment among these groups often results in delays, inefficiencies, and duplicated efforts.

The proposed framework addresses these challenges through strategic visioning, clear communication channels, and structured decision-making processes. Leaders equipped with transformational and situational competencies can articulate project objectives, assign clear responsibilities, and facilitate information flow across teams. By promoting collaboration and trust, leaders minimize conflicts, streamline workflows, and reduce bottlenecks. The use of collaborative digital platforms, such as Building Information Modeling (BIM) and integrated project dashboards, further supports real-time coordination and transparency. The combined effect is a significant reduction in project delays and a smoother execution of tasks across disciplinary boundaries.

Another critical outcome of the leadership framework is the enhancement of safety, quality, and sustainability performance. Construction and facility management projects inherently carry safety risks, including on-site accidents, equipment failures, and environmental hazards. Leaders who prioritize risk management, safety culture, and proactive oversight ensure that teams adhere to occupational health and safety (OHS) standards, regulatory requirements, and quality benchmarks (Weaver and Edrees, 2017; Kontogiannis *et al*., 2017).

Quality is reinforced through the integration of service-level standards, performance monitoring, and continuous improvement processes. Leaders facilitate consistent adherence to design specifications, regulatory compliance, and operational best practices. Additionally, sustainability outcomes are improved through leadership-driven strategies such as energy-efficient building designs, environmentally responsible material selection, and waste reduction initiatives. By embedding safety, quality, and sustainability into the project culture, the framework ensures that organizational objectives are achieved without compromising social or environmental responsibility.

The leadership framework also contributes to elevated satisfaction among key stakeholders, including clients, regulators, and end-users. Clients benefit from timely project completion, budget adherence, and high-quality deliverables that align with expectations. Regulatory bodies observe improved compliance with building codes, safety standards, and environmental regulations, reducing the risk of sanctions or project delays due to non-compliance (Ahmed *et al*., 2019; Nwadike *et al*., 2019). End-users—such as occupants of facilities—experience enhanced safety, comfort, and functionality, contributing to productivity, satisfaction, and overall well-being.

Effective stakeholder satisfaction is achieved through participatory leadership, transparent reporting, and multi-criteria decision-making that balances competing priorities. Leaders act as intermediaries, ensuring that the needs and concerns of all parties are addressed and integrated into the project workflow. This holistic, stakeholder-centered approach strengthens trust and long-term relationships, which are crucial for future project opportunities and organizational reputation (Yusuf *et al*., 2019; Nicholson and Kurucz, 2019).

Beyond immediate project outcomes, the leadership framework supports long-term resilience and operational

efficiency. Resilience is reinforced by proactive risk management, scenario planning, and adaptive decision-making, allowing organizations to respond effectively to unforeseen challenges such as supply chain disruptions, regulatory changes, or environmental events. Leaders equipped with situational and servant leadership skills guide teams in anticipating risks, implementing preventive measures, and maintaining continuity of operations.

Operational efficiency is enhanced through optimized workflows, coordinated resource allocation, and integration of digital tools such as predictive maintenance systems, IoT monitoring, and data-driven analytics. These technologies, combined with leadership-driven coordination and decision-making, enable long-term cost savings, reduced downtime, and sustained asset performance. Moreover, the framework fosters a culture of continuous improvement, ensuring that lessons learned from each project cycle inform future initiatives.

In aggregate, the expected outcomes of the leadership framework extend across organizational, operational, and stakeholder dimensions. Improved cross-disciplinary coordination reduces inefficiencies and project delays. Safety, quality, and sustainability outcomes are elevated through proactive leadership and adherence to standards. Stakeholder satisfaction is strengthened through participatory decision-making, transparency, and alignment with expectations. Finally, long-term resilience and operational efficiency are achieved by embedding risk management, adaptive leadership, and digital integration into project workflows.

These outcomes demonstrate that leadership in multidisciplinary facility and construction projects is not merely an administrative function but a strategic enabler of performance, innovation, and sustainability. By systematically applying the proposed framework, organizations can transform complex projects into opportunities for excellence, resilience, and value creation (Greenhalgh *et al*., 2017; Cha *et al*., 2018).

2.5. Challenges and Mitigation Strategies

Leadership in multidisciplinary facility and construction project teams presents a unique set of challenges due to the diversity of professional backgrounds, organizational cultures, and project demands. Effective mitigation of these challenges is critical to ensure that projects are delivered on time, within budget, and at the expected quality (Asiedu *et al*., 2017; Mainga, 2017). Three primary challenges—managing professional silos and cultural differences, balancing authority and autonomy, and ensuring continuity of leadership across project life cycles—require strategic attention and structured approaches as shown in figure 3.

One of the most persistent challenges in multidisciplinary projects is the tendency for professional silos to form. Architects, engineers, construction managers, and facility management professionals often operate within their own technical and cultural paradigms, which can lead to miscommunication, conflicting priorities, and inefficiencies. These silos can hinder collaboration, reduce knowledge sharing, and compromise integrated decision-making. Mitigation strategies include fostering a culture of interdisciplinary engagement through joint workshops, cross-functional teams, and collaborative platforms such as Building Information Modeling (BIM). Transparent communication channels, regular status meetings, and shared performance metrics help align objectives across disciplines. Leadership practices that value and integrate diverse perspectives encourage mutual respect, reduce conflicts, and build cohesion, enabling teams to work synergistically despite cultural and professional differences.

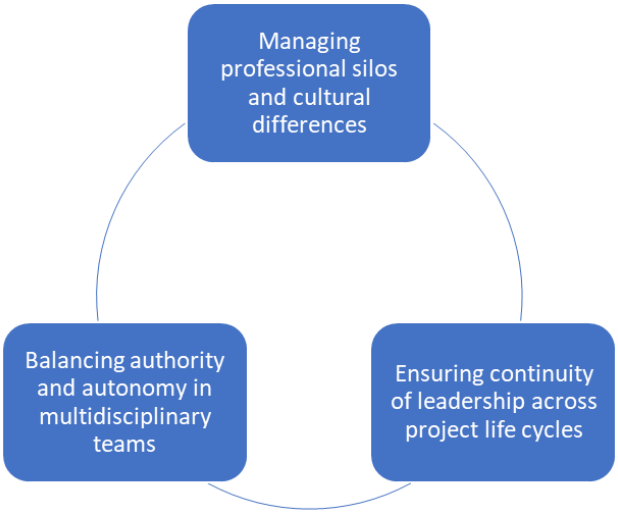

Fig 3: Challenges and Mitigation Strategies

Another significant challenge is balancing authority and autonomy within multidisciplinary teams. Leaders must provide clear direction, establish accountability, and make strategic decisions while simultaneously empowering team members to exercise professional judgment within their domains. Excessive centralization can stifle innovation and reduce engagement, whereas too much autonomy may result in misalignment with project objectives or conflicting actions. Mitigation involves implementing structured governance frameworks that define roles, responsibilities, and decision-making boundaries. Multi-tiered decision-making approaches allow technical experts to make domain-specific choices, while strategic oversight ensures alignment with overarching project goals. Regular feedback mechanisms and collaborative decision forums enable continuous adjustment of authority and autonomy, fostering both empowerment and accountability.

Multidisciplinary projects often extend over months or years, involving multiple phases from design to construction to operational handover. Continuity of leadership across these phases is essential for maintaining consistency in vision, standards, and team performance. Leadership transitions or turnover can disrupt workflows, reduce stakeholder confidence, and undermine knowledge retention. Mitigation strategies include developing succession planning protocols, documenting processes and decisions, and maintaining detailed project knowledge repositories. Embedding leadership continuity within governance structures—such as steering committees or cross-phase leadership teams—ensures that institutional memory is preserved and strategic objectives remain consistent. Additionally, mentoring programs and leadership development initiatives cultivate internal talent capable of assuming leadership roles as projects evolve, reducing the impact of personnel changes on project performance (Tingle *et al*., 2019; Moldoveanu and Narayandas, 2019).

Addressing these challenges requires an integrated approach that combines cultural, structural, and operational strategies. Leaders should actively cultivate a collaborative culture,

reinforced through policies, recognition systems, and digital tools that promote transparency and shared accountability. Governance and decision-making frameworks must balance oversight with flexibility, enabling teams to respond effectively to evolving project demands. Continuous capacity-building and knowledge management strategies ensure that leadership effectiveness is sustained throughout the project life cycle. When these strategies are implemented collectively, they reduce the risk of delays, conflicts, and suboptimal performance, while enhancing resilience, innovation, and team cohesion.

Challenges inherent in managing multidisciplinary facility and construction project teams—professional silos, balancing authority and autonomy, and continuity of leadership—can significantly affect project outcomes if not strategically addressed. Effective mitigation strategies encompass fostering interdisciplinary collaboration, implementing structured governance, balancing empowerment with accountability, and maintaining leadership continuity through planning and knowledge management. By proactively addressing these challenges, organizations can create an environment in which diverse teams work cohesively, maintain high performance standards, and deliver complex projects successfully. Strategic leadership, supported by cultural alignment and structured processes, thus becomes a critical determinant of project success in multidisciplinary contexts.

3. Conclusion

Leadership is a pivotal determinant of success in multidisciplinary facility and construction projects, where complexity, interdependence, and uncertainty are intrinsic features. Effective leaders bridge diverse professional disciplines—including architecture, engineering, construction, and facility management—ensuring that project objectives are achieved within constraints of cost, time, quality, and safety. By guiding collaboration, fostering trust, and aligning diverse priorities, leadership transforms complex project environments into cohesive, high-performing systems. The framework presented in this study underscores that leadership is not merely an administrative or supervisory function, but a strategic mechanism for driving coordination, innovation, and resilience across multidisciplinary teams.

Central to the framework is the emphasis on collaborative, adaptive, and innovative leadership. Collaborative leadership facilitates communication, conflict resolution, and knowledge sharing among professionals with varied expertise. Adaptive leadership equips project managers to respond effectively to dynamic challenges, including changing regulations, technological disruptions, and stakeholder expectations. Innovative leadership encourages creative problem-solving, digital adoption, and continuous process improvement, enabling teams to optimize performance while enhancing safety, sustainability, and service quality. Together, these leadership dimensions ensure that projects are executed efficiently, safely, and with long-term value creation in mind.

Looking forward, the framework requires empirical validation across industries and project contexts to assess its effectiveness, scalability, and adaptability. Comparative studies across healthcare facilities, commercial infrastructure, and industrial construction projects can illuminate best practices and context-specific adaptations. Additionally, integrating quantitative metrics for coordination, safety, quality, and stakeholder satisfaction will provide objective evidence of impact, refining the framework for broader adoption.

Leadership remains the cornerstone of multidisciplinary project success. By cultivating collaborative, adaptive, and innovative leadership practices, organizations can navigate complexity, enhance project outcomes, and achieve sustained operational and strategic excellence. The proposed framework offers both a conceptual foundation and a practical roadmap for realizing these objectives, setting the stage for future research and applied implementation in diverse facility and construction environments.

4. References

1. Ahmed K, Gajendran T, Brewer G, Maund K, von Meding J, Kabir H, et al. Opportunities and challenges of compliance to safe building codes: Bangladesh and Nepal. 2019.
2. Ajonbadi HA, Lawal AA, Badmus DA, Otokiti BO. Financial control and organisational performance of the Nigerian small and medium enterprises (SMEs): A catalyst for economic growth. Am J Bus Econ Manag. 2014;2(2):135-43.
3. Ajuwon A, Onifade O, Oladuji TJ, Akintobi AO. Blockchain-Based Models for Credit and Loan System Automation in Financial Institutions. 2020.
4. Akinbola OA, Otokiti BO. Effects of lease options as a source of finance on profitability performance of small and medium enterprises (SMEs) in Lagos State, Nigeria. Int J Econ Dev Res Invest. 2012;3(3):70-6.
5. Akinbola OA, Otokiti BO, Akinbola OS, Sanni SA. Nexus of born global entrepreneurship firms and economic development in Nigeria. Ekonomicko-manazerske Spektrum. 2020;14(1):52-64.
6. Akinrinoye OV, Kufile OT, Otokiti BO, Ejike OG, Umezurike SA, Onifade AY. Customer segmentation strategies in emerging markets: a review of tools, models, and applications. Int J Sci Res Comput Sci Eng Inf Technol. 2020;6(1):194-217.
7. Akpe OE, Ogeawuchi JC, Abayomi AA, Agboola OA, Ogbuefi E. A Conceptual Framework for Strategic Business Planning in Digitally Transformed Organizations. Iconic Res Eng J. 2020;4(4):207-22.
8. Amos AO, Adeniyi AO, Oluwatosin OB. Market based capabilities and results: inference for telecommunication service businesses in Nigeria. Eur Sci J. 2014;10(7).
9. Asata MN, Nyangoma D, Okolo CH. Strategic communication for inflight teams: closing expectation gaps in passenger experience delivery. Int J Multidiscip Res Growth Eval. 2020;1(1):183-94.
10. Asiedu RO, Adaku E, Owusu-Manu DG. Beyond the causes: Rethinking mitigating measures to avert cost and time overruns in construction projects. Constr Innov. 2017;17(3):363-80.
11. Bankole AO, Nwokediegwu ZS, Okiye SE. Emerging cementitious composites for 3D printed interiors and exteriors: A materials innovation review. J Front Multidiscip Res. 2020;1(1):127-44.
12. Cha J, Newman M, Winch G. Revisiting the project management knowledge framework: Rebalancing the framework to include transformation projects. Int J Manag Proj Bus. 2018;11(4):1026-43.
13. Chan WC, Chen PC, Hung SW, Tsai MC, Chen TK.

Open innovation and team leaders' innovation traits. Eng Manag J. 2017;29(2):87-98.
14. Day RM, Demski RJ, Pronovost PJ, Sutcliffe KM, Kasda EM, Maragakis LL, et al. Operating management system for high reliability: leadership, accountability, learning and innovation in healthcare. J Patient Saf Risk Manag. 2018;23(4):155-66.
15. Eyinade W, Ezeilo OJ, Ogundeji IA. A Treasury Management Model for Predicting Liquidity Risk in Dynamic Emerging Market Energy Sectors. 2020.
16. Fagbore OO, Ogeawuchi JC, Ilori O, Isibor NJ, Odetunde A, Adekunle BI. Developing a Conceptual Framework for Financial Data Validation in Private Equity Fund Operations. 2020.
17. Gopal G, Suter-Crazzolara C, Toldo L, Eberhardt W. Digital transformation in healthcare–architectures of present and future information technologies. Clin Chem Lab Med. 2019;57(3):328-35.
18. Greenhalgh T, Wherton J, Papoutsi C, Lynch J, Hughes G, Hinder S, et al. Beyond adoption: a new framework for theorizing and evaluating nonadoption, abandonment, and challenges to the scale-up, spread, and sustainability of health and care technologies. J Med Internet Res. 2017;19(11):e8775.
19. Ilori O, Lawal CI, Friday SC, Isibor NJ, Chukwuma-Eke EC. Blockchain-Based Assurance Systems: Opportunities and Limitations in Modern Audit Engagements. IRE J. 2020;4(1):166-81.
20. Iyabode LC. Career development and talent management in banking sector. Texila Int J. 2015.
21. Kabirifar K, Mojtahedi M. The impact of engineering, procurement and construction (EPC) phases on project performance: a case of large-scale residential construction project. Buildings. 2019;9(1):15.
22. Kontogiannis T, Leva MC, Balfe N. Total safety management: principles, processes and methods. Saf Sci. 2017;100:128-42.
23. Lacerenza CN, Reyes DL, Marlow SL, Joseph DL, Salas E. Leadership training design, delivery, and implementation: A meta-analysis. J Appl Psychol. 2017;102(12):1686.
24. Laurian L, Walker M, Crawford J. Implementing environmental sustainability in local government: The impacts of framing, agency culture, and structure in US cities and counties. Int J Public Adm. 2017;40(3):270-83.
25. Lawal AA, Ajonbadi HA, Otokiti BO. Leadership and organisational performance in the Nigeria small and medium enterprises (SMEs). Am J Bus Econ Manag. 2014;2(5):121.
26. Lawal AA, Ajonbadi HA, Otokiti BO. Strategic importance of the Nigerian small and medium enterprises (SMEs): Myth or reality. Am J Bus Econ Manag. 2014;2(4):94-104.
27. Lawal CI, Afolabi AA. Perception and practice of HR managers toward talent philosophies and its effect on the recruitment process in both private and public sectors in two major cities in Nigeria. Perception. 2015;10(2).
28. Lawal CI. Knowledge and awareness on the utilization of talent philosophy by banks among staff on contract appointment in commercial banks in Ibadan, Oyo State. Texila Int J Manag. 2015;3.
29. Lawal CI, Ilori O, Friday SC, Isibor NJ, Chukwuma-Eke EC. Blockchain-based assurance systems: Opportunities and limitations in modern audit engagements. IRE J. 2020;4(1):166-81.
30. Luo J, Zhang H, Sher W. Insights into architects' future roles in off-site construction. Constr Econ Build. 2017;17(1):107-20.
31. Maheshwari A. Digital transformation: Building intelligent enterprises. Hoboken: John Wiley & Sons; 2019.
32. Mainga W. Examining project learning, project management competencies, and project efficiency in project-based firms (PBFs). Int J Manag Proj Bus. 2017;10(3):454-504.
33. Moldoveanu M, Narayandas D. The future of leadership development. Harv Bus Rev. 2019;97(2):40-8.
34. Nicholson J, Kurucz E. Relational leadership for sustainability: Building an ethical framework from the moral theory of 'ethics of care'. J Bus Ethics. 2019;156(1):25-43.
35. Nwadike A, Wilkinson S, Clifton C. Improving disaster resilience through effective building code compliance. In: Proc., 9th Int. i-Rec Conf.; 2019.
36. Nwani S, Abiola-Adams O, Otokiti BO, Ogeawuchi JC. Building Operational Readiness Assessment Models for Micro, Small, and Medium Enterprises Seeking Government-Backed Financing. J Front Multidiscip Res. 2020;1(1):38-43.
37. Nwani S, Abiola-Adams O, Otokiti BO, Ogeawuchi JC. Designing inclusive and scalable credit delivery systems using AI-powered lending models for underserved markets. IRE J. 2020;4(1):212-4.
38. Nwokediegwu ZS, Bankole AO, Okiye SE. Advancing interior and exterior construction design through large-scale 3D printing: A comprehensive review. IRE J. 2019;3(1):422-49.
39. Odofin OT, Agboola OA, Ogbuefi E, Ogeawuchi JC, Adanigbo OS, Gbenle TP. Conceptual framework for unified payment integration in multi-bank financial ecosystems. IRE J. 2020;3(12):1-13.
40. Oladuji TJ, Nwangele CR, Onifade O, Akintobi AO. Advancements in financial forecasting models: Using AI for predictive business analysis in emerging economies. Iconic Res Eng J. 2020;4(4):223-36.
41. Olajide JO, Otokiti BO, Nwani S, Ogunmokun AS, Adekunle BI, Efekpogua J. Designing a Financial Planning Framework for Managing SLOB and Write-Off Risk in Fast-Moving Consumer Goods (FMCG). 2020.
42. Olajide JO, Otokiti BO, Nwani S, Ogunmokun AS, Adekunle BI, Efekpogua J. Designing Integrated Financial Governance Systems for Waste Reduction and Inventory Optimization. 2020.
43. Otokiti BO, Akorede AF. Advancing sustainability through change and innovation: A co-evolutionary perspective. In: Innovation: Taking creativity to the market. Book of Readings in Honour of Professor SO Otokiti. 2018;1(1):161-7.
44. Otokiti BO. Mode of entry of multinational corporation and their performance in the Nigeria market [dissertation]. Ota: Covenant University; 2012.
45. Otokiti BO. A study of management practices and organisational performance of selected MNCs in emerging market-A Case of Nigeria. Int J Bus Manag Invent. 2017;6(6):1-7.
46. Otokiti BO. Business regulation and control in Nigeria. In: Book of readings in honour of Professor SO Otokiti.

2018;1(2):201-15.
47. Quirke B. Making the connections: Using internal communication to turn strategy into action. London: Routledge; 2017.
48. Rhisiart M, Störmer E, Daheim C. From foresight to impact? The 2030 Future of Work scenarios. Technol Forecast Soc Change. 2017;124:203-13.
49. Ruben BD, Gigliotti RA. The excellence in higher education model: A Baldrige-based tool for organizational assessment and improvement for colleges and universities. Glob Bus Organ Excell. 2019;38(4):26-37.
50. Sharma A, Adekunle BI, Ogeawuchi JC, Abayomi AA, Onifade O. IoT-enabled Predictive Maintenance for Mechanical Systems: Innovations in Real-time Monitoring and Operational Excellence. 2019.
51. Tingle E, Corrales A, Peters ML. Leadership development programs: Investing in school principals. Educ Stud. 2019;45(1):1-16.
52. Umoren N, Odum MI, Jason ID, Jambol DD. Artificial intelligence applications in seismic data processing: Leveraging machine learning for enhanced imaging. IRE J. 2020;4(6):454-7.
53. Umoren N, Odum MI, Jason ID, Jambol DD. Deep learning-based seismic attribute classification: Enhancing subsurface feature identification in complex geologies. IRE J. 2020;4(6):393-9.
54. Umoren N, Odum MI, Jason ID, Jambol DD. High-resolution spectroscopy for fracture identification in geological studies: A comprehensive exploration. IRE J. 2020;4(6):246-50.
55. Umoren N, Odum MI, Jason ID, Jambol DD. Multi-domain signal processing for stratigraphic refinement and velocity model accuracy. IRE J. 2020;4(6):302-6.
56. Umoren N, Odum MI, Jason ID, Jambol DD. Seismic imaging techniques and their impact on exploration efficiency: Advanced methods for enhancing exploration in oil and gas projects. IRE J. 2020;4(6):327-31.
57. Weaver S, Edrees HH. Organizational safety culture. In: Leading Reliable Healthcare. 2017;1-24.
58. White JMV, Guthrie KL, Torres M. Thinking to transform: Reflection in leadership learning. Charlotte: IAP; 2019.
59. Yilmaz AK, Flouris T. Enterprise risk management in terms of organizational culture and its leadership and strategic management. In: Corporate risk management for international business. Singapore: Springer; 2017. p. 65-112.
60. Yusuf JE, St. John III B, Rawat P, Covi M, Nicula JG, Considine C. The Action-oriented Stakeholder Engagement for a Resilient Tomorrow (ASERT) framework: An effective, field-tested approach for engaging stakeholders. J Environ Stud Sci. 2019;9(4):409-18.
61. Zheng J, Wu G, Xie H. Impacts of leadership on project-based organizational innovation performance: The mediator of knowledge sharing and moderator of social capital. Sustainability. 2017;9(10):1893.