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Reuben Kormla Kornu , Dennis Yao Dzansi * , Victor Yawo Atiase

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Article

Moderating Effect of Ethical Compliance on Team Capability and Project Performance: Evidence from Ghana's Public Sector

Reuben Kormla Kornu [1], Dennis Yao Dzansi [2,*] and Victor Yawo Atiase [3]

[1] Faculty of Management Sciences, Central University of Technology, Free State, South Africa

[2] Entrepreneurship Development Unit, Faculty of Management Sciences, Central University of Technology, Free State, South Africa

[3] Department of Accounting and Finance, Faculty of Business and Law, Leicester Castle Business School, De Montfort University, United Kingdom

* Correspondence: ddzansi@cut.ac.za; Tel.: +27836042292

Abstract

Public-sector project delivery must not only meet time, cost and quality targets but also uphold integrity and accountability. Yet it remains unclear whether ethical compliance simply acts as a direct performance enhancer, or whether it also shapes how effectively project teams convert their skills into outcomes. This study examines the direct effects of team capability and ethical compliance on project performance, and tests whether ethical compliance conditions the capability–performance relationship. A quantitative explanatory survey design was adopted. Structured questionnaires were administered to 320 senior officers involved in project evaluation, procurement, budgeting and technical oversight, and the data were analysed using PLS-SEM to estimate the hypothesized direct and moderating relationships. Team capability and ethical compliance each have a significant positive effect on project performance, and team capability is positively associated with ethical compliance. The moderating effect of ethical compliance is significant and negative, suggesting that higher compliance intensity may dampen the marginal performance gains associated with greater team capability. The findings contribute to public management and organisation studies by conceptualizing ethical compliance as an integrity control architecture that not only shapes performance directly but also acts as a boundary condition on the effectiveness of capabilities. Evidence of a control–flexibility trade-off in public delivery systems refines capability-based explanations of performance by showing that integrity regimes can alter the way capability is converted into outcomes. The results imply that staff capability development programmes should bring together technical capability and ethics or compliance capability rather than treating them as separate tracks. From a policy perspective, the study points to the value of proportionate, risk-based compliance regimes that strengthen accountability while still allowing room for informed discretion in project execution.

Keywords: ethical compliance; team capability; project performance; public sector; governance; Ghana

1. Introduction

Public infrastructure and capital project delivery in local government is a central arena where organisational capability and governance controls jointly determine performance and public trust. Public sector projects have been under increasing levels of scrutiny from stakeholders. Much of the focus is on transparency and accountability because the results of these projects are visible, politically significant and directly impact perceptions of legitimacy (Busco et al., 2024; Oti-Sarpong et al., 2021). As a result, public project performance is typically assessed based on the technical or functional

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outcomes of the project. Additionally, the methods used to acquire, contract, manage and report on public project funds are also considered part of the overall evaluation of the credibility of the project management process (Bello et al., 2024). Despite the existence of numerous governance reforms across many countries, the most common problems associated with public sector projects include excessive costs, prolonged completion times, defects in quality, and unmet stakeholder expectations (Love et al., 2022). Furthermore, there is growing concern about the extent to which governance structures and human and organisational variables influence project implementation outcomes (Demirkesen et al., 2024). Research into project performance measurement has shown that while time–cost–quality outcomes continue to be critical considerations, they must be carefully interpreted within the organisational and governance frameworks in which public sector projects are delivered (Ibrahim et al., 2024; Kerzner, 2023; Aboseif & Hanna, 2023). Therefore, local government projects represent both an important operational environment for assessing how organisational capabilities interact with governance controls to affect (and potentially limit) delivery performance and public trust in the ability of local government to deliver its responsibilities.

In public organisations, ethical compliance as a moral requirement of ethical conduct becomes also a way to design a decision-making process and procurement and implementation processes. Ethical leadership and compliance research indicates that integrity in public and project settings is generated by two types of mechanism: relational (leadership model, fairness, accountability) and formalized (rules, oversight, reporting requirements), which together direct and influence on daily operational choices (Dugan, 2024; Shakeel et al., 2019). Project settings provide additional reflections of ethical compliance including complying with professional standards; procurement transparency; financial and technical decision-making integrity. All of these features of ethical compliance directly shape implementation choices, contracting behaviour and monitoring practices (Sarawa & Mas'ud, 2020; Bello et al., 2024). Where compliance systems are functioning well, they reduce opportunistic behaviours and corruption practices, increase auditability and enhance trust and transparency in project transactions (Leung et al., 2024; Chen et al., 2024; Bello et al., 2024). Therefore, public organisations have no choice but to make ethical compliance central to their organizational routine. The routine of ethical compliance determines how quickly decisions are made; how consistently rules are applied; and how reliably implementation problems are solved, thereby influencing project outcomes (Sarawa & Mas'ud, 2020; Mwelu et al., 2020).

The application of compliant practices no doubt enhance accountability and diminish opportunistic behaviour. However, it is also possible to overdo it and create a rigid framework that inhibits teams' ability to use their own judgment, slows down how quickly an organization can adapt to new situations or challenges, and consequently weakens teams with high levels of capabilities. Research on governance has recognized that formal control systems in areas like procurement and contracting are necessary to limit bad conduct and protect public assets. However, the implementation of these formal control systems creates administrative burden and procedural complexity which limits the speed of action and discourages teams from using adaptive problem-solving strategies (Korea Development Institute/OECD, 2017; Khaled & Gond, 2019). The operational tension in project execution is that teams consistently encounter a wide variety of uncertainties, emergent risk, and coordination issues that require teams to make timely judgments and take flexible actions. Studies on compliance and governance in project governance have shown that integrity frameworks can be used to help improve performance through performance-enhancing governance (Chen et al., 2024; Zhang et al., 2023; Yan & Zhang, 2020). However, the negative effects of having overly rigid ethical and compliance requirements can include reduced flexibility, reduced discretionary space for teams, and diminished team adaptability especially when operating within a constrained bureaucratic environment (Abiemo et al., 2024; Saddique et al., 2023). Therefore, ethical compliance can both contribute to improved organizational performance by reducing misconduct while also potentially decreasing the marginal performance benefits of team capability as the level of compliance increases (Saddique et al., 2023; Abiemo et al., 2024).

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While recent attention has led to expectations for reform, and a desire for increased transparency and accountability in how governments deliver public projects (Busco et al., 2024; Oti-Sarpong et al., 2021), the implementation issues persist in terms of time, cost, quality, and citizen satisfaction (Demirkesen et al., 2024; Love et al., 2022). The impact of these implementation issues remains significant largely because project performance in public settings is judged by time–cost–quality results. However, it is also judged by credible governance and responsible stewardship standards (Aboseif & Hanna, 2023; Ibrahim et al., 2024; Bello et al., 2024). In response, public organisations increasingly rely on ethical compliance mechanisms—codes, rules, oversight and reporting routines—as integrity controls intended to reduce opportunism, strengthen auditability, and improve trust in procurement and implementation (Dugan, 2024; Shakeel et al., 2019; Chen et al., 2024; Leung et al., 2024). However, compliance systems can also introduce procedural density and administrative burden that slow decision-making and reduce adaptive capacity, particularly where governance controls become highly formalised or rigid (OECD/Korea Development Institute, 2017; Khaled & Gond, 2019; Saddique et al., 2023; Abiemo et al., 2024).

The problem, therefore, is that local government delivery systems must simultaneously pursue integrity and performance, yet it is not sufficiently clear how ethical compliance interacts with project team capability to shape delivery outcomes in developing-country public sector contexts. While capability-oriented research indicates that competent teams can improve implementation reliability and time–cost–quality performance (Ahiaga-Dagbui et al., 2020; Eyieyien et al., 2024; Ram, 2023; Wawak, 2024), governance and ethics research shows that ethical environments and compliance arrangements also matter for behaviour and project outcomes (Bello et al., 2024; Yan & Zhang, 2020; Zhang et al., 2023). What remains under-evidenced is whether ethical compliance functions solely as a performance-enhancing integrity mechanism, or whether it can also condition (and potentially constrain) the extent to which capable teams translate their capability into improved project performance under high compliance intensity (OECD/Korea Development Institute, 2017; Khaled & Gond, 2019; Saddique et al., 2023). This unresolved capability–control tension motivates the present study.

Many prior studies have treated capability and integrity/ compliance as separate, rather than as part of an integrated whole. Therefore, the relationship between the two has been relatively under researched for public projects, especially within the context of local governments of developing countries. The majority of capability-related literature — which is often based upon the resource-based approach — provides evidence that a team's technical skills, coordination skills, communication, and problem-solving abilities all positively affect project outcome dimensions time, cost and quality (Eyieyien et al., 2024; Eyieyien et al., 2024; Ahiaga-Dagbui et al., 2020; Wawak, 2024; Ram, 2023; Zaman et al., 2020). In parallel, governance and ethics research demonstrates that ethical environments, integrity mechanisms, and compliance arrangements shape behaviour and influence project outcomes (Bello et al., 2024; Leung et al., 2024; Yan & Zhang, 2020). However, a key public management question remains under-tested: whether compliance operates only as a direct predictor of performance or also as a boundary condition that shapes how effectively capability is converted into delivery performance. Studies increasingly hint at interdependence—ethical work environments and disciplined governance can strengthen capability utilization through knowledge-sharing and structured decision-making (Mwelu et al., 2020; Amoako-Gyampah et al., 2021; Saddique et al., 2023)—yet the combined and interactive effects are still insufficiently evidenced in developing-country public sector delivery settings.

This study tests a capability–integrity–performance model in Ghana's local government project context, focusing on direct effects and the moderating role of ethical compliance. Responding to calls to understand not only "what drives performance" but "how governance conditions performance drivers" in project environments (Demirkesen et al., 2024; Love et al., 2022), the study examines: (i) whether project team capability is positively associated with project performance; (ii) whether ethical compliance contributes directly to performance; (iii) whether team capability is associated with ethical compliance; and (iv) whether ethical compliance moderates the relationship between team

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capability and performance. Prior work in related project contexts suggests that capability improves delivery outcomes through superior coordination and uncertainty management (Ahiaga-Dagbui et al., 2020; Eyieyien et al., 2024), while ethical and compliance mechanisms influence governance quality and performance outcomes (Bello et al., 2024; Yan & Zhang, 2020; Chen et al., 2024). Building on these streams, the model explicitly allows for the possibility that compliance intensity, while beneficial in limiting misbehavior, can constrain discretion and thereby alter the marginal effectiveness of capability in implementation (Saddique et al., 2023; Abiemo et al., 2024) leading to the following hypotheses.

- H1: Project team capability has a positive impact on construction project performance. The expectation is that teams with greater capacity can, in line with RBV be better at coordinating tasks as well as managing risks and adapting to constraints – leading to improved temporal, costing and quality results.
- H2: The capability of the project team affects positively its adherence to ethical precepts. This conjecture emerges from the view that skilled teams have developed a sufficient degree of knowledge and procedural capability (Beamond, 1995) and can thus interpret as well as apply ethical standards correctly, which positions them to internalise ethical standards in their daily work.
- H3: Ethical compliance of projects has a positive relationship with the performance of construction projects. This conjecture is based on the premise that ethical behaviour creates and supports transparency, minimizes opportunism and builds stakeholder confidence, thereby facilitating effective and legitimate delivery of projects.
- H4: Project ethical compliance has a negative moderating effect on the relationship between project team capability and construction project performance i.e., the positive impact of project team capability on performance becomes weaker at higher levels of ethical compliance. That is, project ethical compliance reduces the positive relationship between project team capability and construction project performance. We propose that, by becoming increasingly stiff and procedural in form, compliance inhibits the discretion and adaptive problem-solving from which effective teams typically move to achieve performance gains, thereby attenuating marginal returns to additional capability.

The study advances public management and organisation studies by demonstrating that integrity controls can simultaneously enhance performance and reduce the marginal returns of capability, implying a control–flexibility trade-off in public delivery systems. While capability research consistently highlights the importance of teams as strategic and intangible resources for project outcomes (Zaman et al., 2020; Ram, 2023; Eyieyien et al., 2024), public governance scholarship emphasises the structuring role of integrity mechanisms and regulatory controls in shaping organisational behaviour and decision-making (Khaled & Gond, 2019; OECD/Korea Development Institute, 2017; Sarawa & Mas'ud, 2020). By empirically modelling ethical compliance both as a direct predictor of performance and as a moderator of the capability–performance relationship, the study clarifies a key governance nuance: compliance can be performance-enhancing through improved accountability and reduced misconduct (Yan & Zhang, 2020; Chen et al., 2024; Leung et al., 2024), yet it can also constrain the incremental performance benefits of capability when it becomes rigid and limits adaptive decision-making (Saddique et al., 2023; Abiemo et al., 2024). Thus, in addition to being a normative requirement, ethical compliance should be seen as an organizational control architecture with design implications on how to achieve accountability without inadvertently reducing the utilization of capabilities and performance in the delivery of public services.

2. Theory and Hypotheses Development

2.1. Conceptualising Public Project Performance

Most literature reviews on public project performance utilize traditional project management performance measures including time, cost and quality (Ibrahim et al., 2024). From the perspective

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of stakeholders, time, cost and quality are generally viewed as practical and quantifiable measures of project performance (Ibrahim et al., 2024). In terms of the degree to which an implementation meets the planned schedule, budget, and technical requirements of a project, project performance can also be conceptualized as the degree to which a project has achieved the desired objectives (Aboseif & Hanna, 2023). Nonetheless, because many public projects are assessed in conjunction with institutional and community goals and governance-related expectations regarding credibility and accountability (Unegbu et al., 2022), performance in public projects cannot always be measured solely by technical outputs. It has been increasingly acknowledged in recent literature that performance in projects is multi-dimensional and context-specific (Kerzner, 2025; Unegbu et al., 2022). Consequently, in the context of local government project implementation systems, such as the Metropolitan, Municipal and District Assemblies (MMDAs) in Ghana, public project performance can be conceptualized as the balance between the achievement of the delivery targets associated with the implementation of a project (i.e., time, cost and quality) and achieving the ethical and accountable implementation of these projects (Unegbu et al., 2022; Ibrahim et al., 2024).

2.2. Project Team Capability as Administrative Capability for Public Project Delivery

Project team capability refers to the collective capacity of project team members to work together efficiently and cohesively to achieve project goals, through the application of technical skills, professional experience and leadership skills, and to facilitate collaboration and communication among team members to coordinate and accomplish interdependent and complex tasks (Sacks et al., 2018; Adham & Sukkar, 2024). Collaboration and communication skills are critical as they assist in minimizing misunderstandings and ambiguity, promote mutual understanding, and allow for the sharing of knowledge and information among team members (Borrmann et al., 2018).. Additionally, project team capability involves responsible management of available resources, since effective resource management ensures efficiency and prevents unnecessary waste of limited resources (Fewings & Henjewele, 2019). Finally, the last component of project team capability is the ability to adapt and learn as a team to address unexpected challenges and limitations that arise during the course of implementation (Sacks et al., 2018). Adaptability is particularly significant in public sector project environments, where teams must continually respond to emerging uncertainties, institutional barriers, and other forms of unpredictability (Adham & Sukkar, 2024). Thus, project team capability embodies an organizational-administrative-technical capacity through which local governments mobilize competent personnel, coordination, and judgment to successfully complete project deliveries under governance-related constraints.

2.3. Ethical Compliance as Integrity Control Architecture

Ethical compliance in public project delivery refers to the extent to which project participants act morally and responsibly in all of their stakeholder interactions, and adhere to the principles of fairness, transparency, accountability, and respect (Somachandra & Sylva, 2018; Foster, 2020; Oluwatosin, 2024). Although compliance is most directly associated with adhering to formal rules and regulations, it encompasses the broader integrity norms that define the justification of project decisions, conflict of interest resolutions, and relationships with stakeholders (Foster, 2020). Therefore, ethical compliance can be observed in a variety of ways including fair and transparent procurement practices, unbiased and neutral contracting decisions, and the integrity of project decisions regarding funding and technology (Oluwatosin, 2024). Establishing a set of clearly defined ethical guidelines that are embedded into an organization's practices and processes will help create a culture of accountability and limit unethical behavior within organizations (Akintola et al., 2020; Alkhatib & Abdou, 2018). However, achieving compliance with these guidelines in practice is not always easy, and may require some trade-offs when it comes to performance. If there are no systems in place to monitor and enforce compliance, then codes of conduct become nothing more than symbols (with no real ability to influence behavior) (Akintola et al., 2020; Alkhatib & Abdou, 2018). Conversely, if ethical monitoring and reporting becomes overly burdensome due to excessive

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bureaucracy and procedural complexity, then compliance may begin to negatively affect the efficiency and flexibility of public organizations, especially those with limited administrative capacity (Khaled & Gond, 2019; OECD/Korea Development Institute, 2017). The challenge of balancing compliance with the need for discretion and flexibility in order to respond to changing circumstances and minimize delays and inefficiencies related to coordination failures is particularly salient in Ghana's Metropolitan Municipal District Assemblies (MMDAs), which continue to develop their capacity for ethical governance as they face increasing demands for greater transparency and accountability, while still needing to be able to act with the level of flexibility required to prevent delays and coordination problems (OECD/Korea Development Institute, 2017).

2.4. The Theoretical Lense Adopted

To establish a theoretical framework for the relationship between capability, integrity and performance, this study used two complementary theories: the Resource-Based View (RBV), and Ethical Leadership Theory (ELT) (Barney, 1991; Brown et al., 2005). The RBV serves as an explanation for why some organisations undertaking similar delivery activities achieve better performance than others. Based on RBV, the difference in performance is attributed to the organisation's ability to create valuable, rare, difficult-to-imitate, and non-substitutable resources, which will eventually generate long-term sustainable competitive advantages (Barney, 1991; Barney et al., 2021). Current RBV literature highlights the significance of organisational capability development, continuous learning, and adaptability for achieving performance in uncertain and complex institutional contexts (Wuebker et al., 2023; Miller, 2019; Pereira & Bamel, 2021). Furthermore, RBV demonstrates how organisational and institutional factors may affect resource configuration (Nayak et al., 2023; Dubey et al., 2019). In addition, based on the above view, the capability of the project team can be considered as an intangible organisational resource, which is formed from the cumulative experience, technical knowledge, communication skills, and problem solving skills of team members, and it can contribute to the successful accomplishment of project delivery by facilitating coordination and making decisions (Adham & Sukkar, 2024; Pereira & Bamel, 2021). Nevertheless, RBV also accepts that the application of capabilities is conditional, and can be constrained by bureaucratic structures, procurement processes and ethical environment (Barney et al., 2021; Wuebker et al., 2023).

ELT offers an additional perspective, focusing on the moral and relational context that influences the application of capabilities (Dugan, 2024; Brown et al., 2005). Ethical leadership is generally defined as demonstrating and reinforcing behaviour and attitude that support an ethical culture with integrity, fairness, accountability, and transparency in decision making (Ko et al., 2018; Brown et al., 2005). Ethical leadership reinforces responsible behaviour and collective accountability among team members through consistent ethical behaviour and reinforcement (Lemoine et al., 2019; Dugan, 2024). ELT also provides a normative foundation for explaining how ethical compliance influences the quality of decision-making, stakeholder confidence and trust, and the behavioural discipline that contributes to the successful implementation of projects (Somachandra & Sylva, 2018; Palanski et al., 2021; Price, 2018). Moreover, ELT makes possible the identification of governance trade-offs: while ethical climates and compliance mechanisms can reduce the likelihood of misconduct and improve the quality of decision-making, overly formalized or rigid systems can diminish the discretion and flexibility of public organizations with limited resources (Khaled & Gond, 2019; OECD/Korea Development Institute, 2017). Consequently, the combined RBV-ELT framework supports both the direct relationship between capability and compliance and the claim that ethical compliance affects the effectiveness with which capability contributes to project performance.

2.5. Hypotheses Development

2.5.1. Project Team Capability and Public Project Performance

Project team capability is a strategic intangible resource that provides organisations with the ability to convert input into reliable implementation outcomes (Barney, 1991; Zaman et al., 2020; Ram,

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2023). Capability exists through coordination capability, communication, technical expertise and problem solving that improve planning discipline and help to execute projects effectively under uncertain conditions (Sacks et al., 2018; Eyieyien et al., 2024; Wawak, 2024). Empirical evidence shows that capable teams are better able to coordinate stakeholders, manage uncertainty, control time, cost, and quality parameters which are core components of project performance (Ahiaga-Dagbui et al., 2020; Eyieyien et al., 2024). In local government delivery environments where projects often involve inter-functional dependencies and procedural constraints, capability should be positively associated with project performance. Thus, *H1: project team capability has a significant positive effect on project performance.*

2.5.2. Project Team Capability and Ethical Compliance

RBV suggests that capability is not only productive for technical outcomes but also supports disciplined organisational routines and process execution (Barney et al., 2021; Miller, 2019). In public project contexts, ethical compliance requires procedural capability — interpreting rules, documenting decisions, managing procurement steps and coordinating oversight expectations — activities that are likely to be stronger in capable teams (Sacks et al., 2018; Adham & Sukkar, 2024). ELT further suggests that ethical climates and responsible conduct are reinforced through consistent behaviours and shared accountability, which may be more likely when teams possess the capability to translate ethical expectations into practice (Brown et al., 2005; Ko et al., 2018; Somachandra & Sylva, 2018). While findings are mixed, most of the empirical evidence generally supports a positive association between team capability and ethical compliance (Adham & Sukkar, 2024; Halder & Batra, 2024; Amoah & Steyn, 2023; Perez Rave et al., 2022; Wohlrab et al., 2020). However, some studies report no significant linkage suggesting contextual sensitivity and institutional conditions (Bhatti et al., 2021). Since there is a need for further evidence in developing-country public sector environments, this study hypothesizes a positive association in Ghana's local government project context. Therefore, *H2: project team capability has a significant positive effect on ethical compliance.*

2.5.3. Ethical Compliance and Public Project Performance

ethical compliance can function as a governance mechanism that shapes behaviour, decision quality and accountability in project implementation (Somachandra & Sylva, 2018; Oluwatosin, 2024). Ethical compliance can strengthen transparency, reduce opportunism and enhance trust among stakeholders, all of which support performance in procurement, supervision and resource utilization (Akintola et al., 2020; Alkhatib & Abdou, 2018; Bello et al., 2024). Furthermore, empirical work suggests that ethical frameworks and compliance systems can be positively associated with performance-enhancing governance outcomes (Yan & Zhang, 2020; Chen et al., 2024; Zhang et al., 2023). While ethical tools are usually introduced to minimize misconduct that undermines delivery performance, their operational influence can extend beyond preventing wrongdoing to provide behavioural clarity and structured decision-making that supports implementation reliability (Leung et al., 2024; Oluwatosin, 2024). Therefore, ethical compliance is expected to have a positive association with public project performance. Hence, *H3: ethical compliance has a significant positive effect on project performance.*

2.5.4. The Moderating Role of Ethical Compliance

A central tension that emerges from this literature is that capability and compliance pull performance in different directions: RBV suggests that capable teams create value by exercising judgement, adapting to uncertainty, and flexibly deploying their skills whereas ethical governance often operates through formal rules and oversight that restrict discretion to prevent misconduct. The challenge for public-sector construction projects is that the same ethical controls intended to safeguard transparency, and accountability can, when applied too rigidly, limit the room for capable teams to solve problems creatively and respond quickly to on-site realities. H4 is therefore positioned

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as the core test of this capability – compliance tension, examining whether higher levels of ethical compliance weaken the positive relationship between project team capability and project performance.

In an integrated RBV – ELT framework, ethical compliance can be conceptualized as a contextual force that shapes how team capabilities are translated into performance outcomes (Barney, 1991; Brown et al., 2005; Dugan, 2024). Ethical systems and compliance mechanisms could potentially create an environment for a stronger connection to be established between capabilities and performance -- as well as create an environment for better decision-making -- through discipline, good judgment and a responsible use of discretion in sharing knowledge (Bello et al., 2024; Mwelu et al., 2020; Amoako-Gyampah et al., 2021) . Some research suggests that high levels of ethical climates in work and the level of maturity in organizations are able to enhance the value of capability in terms of decision-making through creating structured decision processes and supporting consistent behavioral patterns (Saddique et al., 2023; Abiemo et al., 2024). On the other hand, regulatory and compliance systems can introduce procedural burdens that limit flexibility and reduce the marginal performance benefits that capable teams would otherwise generate — particularly when compliance tools become highly formalized and constraining (OECD/Korea Development Institute, 2017; Khaled & Gond, 2019). This suggests that ethical compliance is not merely a direct predictor of performance but may act as a boundary condition on the capability – performance relationship. Thus, this study hypothesizes a moderation effect of ethical compliance on the relationship between team capability and project performance. Therefore, *H4: ethical compliance moderates the relationship between project team capability and project performance.*

2.6. Conceptual Framework

The conceptual framework (see Figure 1) illustrates the ethical – behavioural and governance context in which performance is shaped in public sector project environments. It specifies four proposed paths linking project team capability, ethical compliance and project performance. Firstly, project team capability is expected to improve project performance (H1). Secondly, project team capability is proposed to positively influence ethical compliance (H2). Thirdly, ethical compliance is anticipated to have a direct positive relationship with project performance (H3). Fourthly, ethical compliance is expected to moderate the relationship between team capability and project performance (H4).

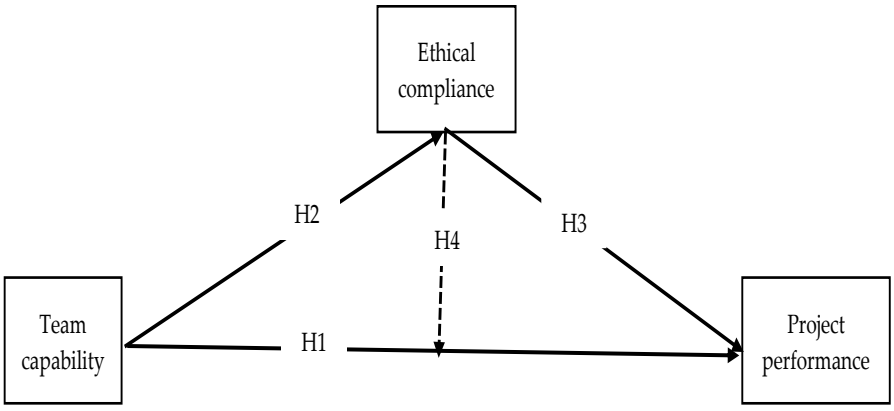

Figure 1. The research model.

3. Materials and Methods

This study employed a quantitative explanatory cross-sectional survey design to assess the hypothesized relationship among project team capability, ethical compliance in project implementation, and performance in construction projects implemented in the public sector in Ghana. The empirical context of the study comprised Metropolitan, Municipal and District

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Assemblies (MMDAs) in the Volta Region. MMDAs consistently contract and supervise infrastructure projects and thus provide a suitable empirical context to examine project governance, ethical practices, and project performance. The data were collected at one point in time, and as such, are best suited to analyse associations among the variables rather than causality.

The target population of this study included senior officers responsible for evaluating, procuring, budgeting, and providing technical oversight for all projects implemented by the 18 MMDAs in the Volta Region. The senior officer roles included consultants, engineers, procurement and budget officers, internal auditors, finance officers, work sub-committee chairpersons and environmental health officers. Since the study required respondents who have firsthand experience in the project evaluation/implementation and ethical practices of the MMDAs, a purposeful sampling strategy was applied to identify and contact senior officers holding these positions. The dataset analysed in this paper is part of the empirical study conducted for the PhD study of the corresponding author (Kornu), yet to be published, and has been utilized in other papers, but in those cases, applying alternative theoretical models.

An online questionnaire was developed and distributed to respondents via a Google Forms link. An alternative hard copy of the questionnaire was also available and could be mailed to respondents upon request. Respondents were requested to answer questions based on their most recent construction projects that they either directly evaluated or supervised. Of the 432 targeted senior officers from the 18 MDAs, 320 returned a completed questionnaire after being screened for completeness and consistency, resulting in a valid response rate of 74.1%. The 320 responses are higher than the 300 minimum required to perform PLS-SEM (Mahmoud et al., 2022; Hair, Babin & Krey, 2017).

The constructs were measured using multi-item scales adapted from established peer-reviewed studies in project and construction management. Constructs were measured on a 5-point Likert type scale ranging from “Strongly Disagree” (1) to “Strongly Agree” (5). Project team capability (PTC) was assessed using five items adapted from Ribeiro et al. (2021), Moradi et al. (2020), and Kalan and Ozbek (2020). Construction project performance (CPP) was measured using a 10-items based on Unegbu et al. (2022), Assaad et al. (2020), and Ingle and Mahesh (2022). Finally, project ethical compliance was measured using items adapted from Adeniyi et al. (2020) and Sarawa and Masud (2020).

The data collected were analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM), which is a methodology that is particularly suited for assessing theoretically driven models with multiple latent constructs and smaller to medium-sized sample sizes. The methodology is suitable due to the objectives of the study to evaluate the relationships among intangible capabilities, ethical variables and performance outcomes. The analysis of the data was performed according to the two-stage approach commonly used with PLS-SEM.

In the first stage, the measurement model was evaluated for internal consistency reliability, convergent validity, and discriminant validity. All of the Cronbach’s alpha and composite reliability coefficients for all constructs were higher than 0.70, indicating acceptable internal consistency. The average variance extracted (AVE) values for all constructs were higher than 0.50 and thus indicate acceptable convergent validity. Although several indicator loadings were slightly lower than 0.708, they were maintained since they represented critical theoretical dimensions of the constructs and removing them would not have greatly improved the fit of the model nor the reliability metrics.

Discriminant validity was assessed using the Heterotrait-Monotrait Ratio (HTMT). For each construct, the square root of the AVE was greater than the correlation with the other constructs, and all HTMT values were less than 0.85, which indicates that discriminant validity was acceptable.

In the second stage, the structural model was evaluated. Full collinearity variance inflation factor (VIF) was calculated and assessed for potential multicollinearity and common method bias; all VIF values were less than 3.3, and thus, there were no concerns with either of these issues in relation to estimating the parameters of interest. The model fit was evaluated using the *standardized root mean square residual* (SRMR), which was equal to 0.081. This SRMR is within the commonly accepted range of 0.08 to 0.10 for an approximate fit. The predictive relevance of the model was evaluated using the

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Stone-Geisser Q2 statistic, which indicated that the model has small but significant predictive power for project performance.

All of the path coefficients, including the interaction terms capturing the moderation effect of ethics, were estimated using a bootstrap procedure with 5,000 replications. This approach allowed for the calculation of standard error, t-values and p-values for all of the hypothesized paths, thereby enabling formal statistical tests of the direct effects of project team capability, project ethical compliance and construction project performance, as well as the moderating effect of project ethical compliance.

4. Results

4.1. Respondent Profile

As can be seen in Table 1, out of the 320 respondents, the majority (77.8%) are males and (22.2%) females. Regarding age, 58.1% are between 25 and 45, indicating a substantial portion of working-age individuals in the sample. Additionally, most respondents (53.4%) held graduate degrees, indicating a well-educated group. Most of the respondents (68.1%) are married, 28.1% single, and 3.8% are divorced. With respect to the various roles the respondents play in the district/municipal assemblies, (24.1%) are project engineers, (23.1%) are budget officers, (20%) are procurement officers, (11.3) are planning officers, project consultants (7.2%), finance officers (5.3%), work sub-committee chairmen (4.7%) and the remaining (4.4%) constitute environmental health and safety officers.

Table 1. Demographic Characteristics.

Profile	Frequency	Percentage
Gender		
Male	249	77.8
Female	71	22.2
Total	**320**	**100**
Age		
25-35	72	22.5
35-45	117	36.6
45-55	88	27.5
Above 55	43	13.4
Total	**320**	**100**
Education		
Undergraduate	83	25.9
Postgraduate	171	53.4
Professionals	29	9.1
Doctorate	24	7.5
Others	13	4.1
Total	**320**	**100**
Marital Status		
Single	90	28.1
Married	218	68.1
Divorced	12	3.8
Total	**320**	**100**
Role		
Employee health & safety officer	14	4.4
Project Engineer	77	24.1
Procurement Officer	64	20
Budget officer	74	23.1

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Planning Officer	36	11.3
Project consultant	23	7.2
Sub-committee chairperson	15	4.7
Finance Officer	17	5.3
Total	**320**	**100**

4.2. Construct Validity

Table 2 shows that construct validity is satisfactory across all study variables. The indicators measuring project team capability display strong loadings, with most items exceeding the recommended threshold of 0.70, indicating that the construct is well captured by its measurement items. Project performance also demonstrates robust construct validity, as most of its indicators load above 0.70, with one item slightly below the threshold but still within acceptable limits. Similarly, the indicators for ethical compliance show high loadings, all exceeding 0.67, confirming adequate convergent validity.

Table 2. Construct validity.

Variable	Team capability	Project performance	Ethical compliance
ETH1			0.670
ETH4			0.846
ETH5			0.769
PJP2		0.907	
PJP3		0.870	
PJP7		0.599	
PTC1	0.814		
PTC2	0.871		
PTC3	0.848		
PTC4	0.623		
PTC5	0.698		

4.3. Reliability and Convergent Validity

Table 3 presents the results for reliability and convergent validity of the study constructs. All three scales demonstrate internal consistency reliability. Specifically, the Cronbach's Alpha for the Team Capability scale is .92, and the composite reliabilities for Team Capability, Construction Performance and Ethical Compliance are .98, .87 and .83, respectively. Therefore, it can be reasonably inferred that each of the scales measured team capability, project performance and ethical compliance consistently. The average variance extracted (AVE) for each of the scales was calculated and found to be greater than .5 for all three scales. The AVE is an indicator of convergent validity, i.e., whether or not each item loads on its intended construct. Therefore, it can be concluded that each of the items measured the same constructs as the other items. For example, the items measuring team capability measured the same aspects of capability (i.e., technical competency, collaboration, etc.) as the other items. Similarly, the items measuring construction performance measured the same aspects of performance (e.g., time, cost, quality, etc.). Thus, the results support the notion that there exists both convergent and discriminant validity among the various constructs measured by the scales. Finally, the internal consistency reliability coefficients provide evidence that each scale measured what it was supposed to measure and did so in a consistent manner. That is, if an individual scored high on the team capability scale, then they would have likely scored high on all the subscales of the capability scale, and conversely, if an individual scored low on the ethical compliance scale, then he/she would have likely scored low on all the subscales of the compliance scale. Overall, therefore, the results

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demonstrate strong psychometric properties for each of the three scales. The data suggests that the scales are reliable, valid and sensitive to changes in the constructs being measured.

Table 3. Reliability and convergent validity.

Variable	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Project team capability	0.847	0.899	0.882	0.603
Project performance	0.710	0.761	0.842	0.646
Project ethical compliance	0.653	0.677	0.808	0.585

4.4. Discriminant Validity

The discriminant validity is shown in Table 4 with the Heterotrait – Monotrait Ratio (HTMT). The HTMTs for all the combinations are below the conservatively set limit of 0.85 and confirm empirical differences between the studied constructs. The HTMT for the constructs of project performance and project team capability (0.403) clearly demonstrates a differentiability between the two. Similarly, the low HTMT for the constructs of project ethical compliance and project team capability (0.162) indicates strong discriminant validity. Additionally, the HTMT for the constructs of project ethical compliance and project performance (0.643) is still within the acceptable range.

Table 4. Discriminant validity.

Path	Heterotrait-monotrait ratio (HTMT)
Project performance <-> Project Team capability	0.403
project ethical compliance <-> Project Team capability	0.162
project ethical compliance <-> Project performance	0.643

4.5. R-Square

Table 5 shows that moderate explanatory power (approximately 31.4%) exists between project team capability (as evidenced by an R-squared of 0.314) and construction project performance. However, an extremely low explanatory power (approximately .18%) exists between project team capability (as evidenced by an R-squared of 0.018) and ethical compliance during construction projects. These results suggest that the project team's capabilities are a good indicator of the outcomes in terms of performance during a construction project, but that other factors beyond just the project team's capabilities impact ethical compliance during construction projects.

Table 5. R-Square statistics.

Variable	R-square
Project performance	0.314
project ethical compliance	0.018

4.6. F-Square (Effect Size)

The F^2 values for the structural relationships shown in Table 6 demonstrate that project ethical compliance has a large effect (F^2=0.259) on project performance, which indicates it is a major contributor to the explanation of performance variance. However, the interaction between project ethical compliance and project team capability also has a small effect size (F^2=0.020), and while it represents a moderate degree of moderation, its effect is limited. The effect of project team capability on project ethical compliance is very weak (F^2=0.018). Therefore, while it may have some explanatory

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power, it is not practically relevant. The effect size for project team capability on project performance was found to be small to moderate (F^2=0.114), which supports its relevance in improving the performance of projects.

Table 5. R-Square statistics.

Variable	R-square
Project performance	0.314
project ethical compliance	0.018

4.7. Collinearity

The collinearity diagnostics for measurement indicators using variance inflation factor (VIF) values are reported in Table 7. All values fall within the 1.119 and 2.395 ranges. Thus, both the suggested limit of 3.3 and the conservative limit of 5.0 are above these values, so multicollinearity will not be an issue amongst the measurement indicators. Therefore, it is confirmed that every single item provides unique contributions to its corresponding constructs without excessively overlapping with the remaining measurement indicators. Thus, the estimation of the path coefficients will not be influenced by multicollinearity, and the stability and reliability of the measurement and structural model results are provided.

Table 7. Collinearity statistics.

Variable	VIF
ETH1	1.401
ETH4	1.593
ETH5	1.193
PJP2	2.395
PJP3	2.317
PJP7	1.119
PTC1	1.844
PTC2	2.129
PTC3	2.095
PTC4	1.635
PTC5	1.797

4.8. Hypotheses Testing Results

The structural modelling and hypotheses testing results (see Figure 2 and Table 8) indicate that team capability has a significant positive effect on project performance ($B = 0.283$, $t = 7.080$, $p < 0.001$). These demonstrate that higher levels of team capability are associated with improved project outcomes. Hypothesis 1 was therefore supported. The results further show that project team capability has a significant positive relationship with project ethical compliance ($B = 0.134$, $t = 2.238$, $p = 0.025$), indicating that more capable project teams are more likely to adhere to ethical standards and compliance requirements. Hypothesis 2 was supported. In addition, project ethical compliance exhibits a strong and significant positive effect on construction project performance ($B = 0.426$, $t = 8.407$, $p < 0.001$), suggesting that higher ethical compliance substantially enhances project efficiency, effectiveness, and overall performance. Hypothesis 3 was therefore supported. Finally, the interaction effect between project ethical compliance and project team capability on construction project performance is statistically significant ($B = -0.107$, $t = 2.533$, $p = 0.011$). This indicates that project ethical compliance significantly moderates the relationship between project team capability and project performance. Specifically, the negative interaction coefficient suggests that as ethical

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compliance increases, the marginal effect of team capability on project performance weakens. Hypothesis 4 was therefore supported.

Table 8. Hypotheses testing results.

Hypotheses	B-value	T-statistic	P-value	Decision
H1: Team capability -> project performance	0.283	7.080	0.000	Supported
H2: Team capability -> ethical compliance	0.134	2.238	0.025	Supported
H3: Ethical compliance -> project performance	0.426	8.407	0.000	Supported
H4: Ethical compliance x team capability -> project performance	-0.107	2.533	0.011	Supported

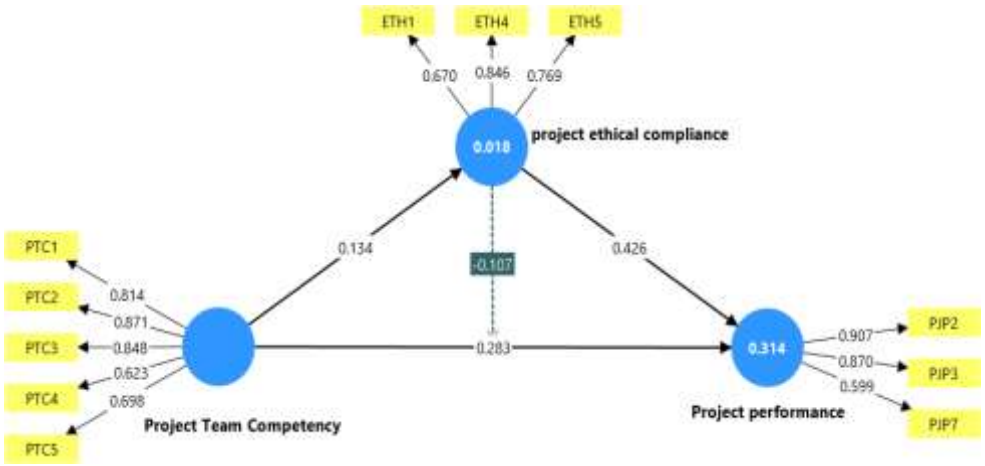

Figure 2. Structural model.

5. Discussion

The findings that project team capabilities have a significantly positive effect on construction project performance are well-supported by prior empirical research and consistent with the Resource-Based View (RBV). Empirical studies confirm that capable teams with resources like effective communication, problem-solving, and psychological empowerment achieve improved schedule reliability and operational efficiency (Malik et al., 2021). Likewise, effective communication within a team has been associated with improved coordination and cost, time and quality performance (Huang et al., 2020). Coronado-Maldonado and Benítez-Márquez (2023) also found emotional intelligence has a positive effect on the ability of leaders to create cohesive teams that increase performance Collectively, these findings reinforce the argument that project capability constitutes a valuable and inimitable intangible resource.

The observed positive effect of project ethical compliance on project performance is consistent with ELT. From an ELT perspective, ethical leadership may foster fairness, accountability, shaping the ethical behavioural norms among project teams. Empirical results confirm this normative assertion. For instance, an empirical study (Liu et al., 2022) confirmed that when a project's ethical culture encourages compliance and transparency, participants are more likely to engage in ethical behaviours that support effective project execution. Similar empirical results from Kenya and Ghana indicate that the ethical conduct improves project outcomes (Kuoribo et al., 2023; Dindi, 2022). Further research indicates that well-established compliance and ethical environment strengthen project outcomes (Chen et al., 2024). Studies further note that trust-based governance and corporate social responsibility initiatives build stakeholder confidence, increasing both cooperation and overall performance (Yan & Zhang, 2020; Zhang et al., 2023).

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Empirical work likewise supports the positive association between project team capability and project ethical compliance. For instance, recent works of Amoah and Steyn (2023), Halder and Batra (2024) Adham and Sukkar (2024) confirm that project teams with capabilities such as higher technical proficiency and experience uphold ethical codes and professional standards. Empirical evidence also indicates that more capable teams are more transparent in communication, are better at shared decision-making, are more accountable and ethical (Bhatti et al., 2021). Also, teams with high dynamic capabilities are better at rejecting ethical risk and respond without compromising integrity (Perez Rave et al., 2022). In line with ELT, Wohlrab et al. (2020) found that capable teams operating under ethical leadership tend to engage in knowledge sharing that sustain collective integrity.

Finally, in light of extant literature, the negative moderating effect of project ethical compliance on the relationship between project team capability and construction project performance is quite revealing. The problem is that some studies indicate that ethical compliance enhances trust, transparency, and procedural fairness. (Abiemo et al., 2024; Bello et al., 2024). ELT accounts for this effect by stating that strong ethical leadership ensures compliance, fairness and procedural control. While the enhancement of compliance has a positive effect on performance, contradictory empirical evidence indicates that as team capability increases, the diminishing returns of compliance on performance lead to a negative moderation effect. Thus, it appears that once a certain threshold is met, compliance substitutes for team capability as a driver of construction project performance (Mwelu et al., 2020).

Our research makes several theoretical contributions to the field of management in general and project management research specifically in at least four ways namely, RBV and team capability, team capability and ethical compliance, ethical compliance as governance mechanism, and boundary condition and tradeoffs. Firstly, talking about RBV and team capability, the observed positive relationship between project team capability and performance reinforces a central claim of the RBV which states that capabilities embedded in teams can function as strategically valuable and hard-to-imitate resources (Kero & Bogale, 2023). Secondly, in line with RBV, the evidence here suggests that it is not only individual expertise but also the collective learning and routines of project teams that underpin performance differences (Newbert, 2007). Thirdly, from an RBV perspective, our research results extend existing arguments by shifting attention from firm-level assets to the day-to-day capability present within project teams (D'Oria, Crook, Ketchen Jr, Sirmon, & Wright, 2021). Further contributions relate to team capability and ethical compliance. By linking project team capability and ethical compliance the research adds a fresh layer to ELT (Li, Yin, Xiong & Yin, 2022). In this regard, the association between capable teams and higher levels of ethical compliance suggest that competence may be a quiet but necessary condition for turning ethical standards into routine practice (Cheng, Zhang, Lin, Guo, & Zhang, 2022). Rather than viewing ethics purely as a matter of leaders' intentions, the findings hint that the skills, confidence, and coordination capacity of project teams also shape how ethical expectations are interpreted and enacted on project site (Li, Yin, Xiong & Yin, 2022). In terms of ethical compliance as governance mechanism, the positive influence of ethical compliance on project performance lends empirical weight to the idea that ethics can operate as a form of governance rather than an abstract ideal (Isingwe & Gathiru, 2024). The results also appear to align with work suggesting that clear ethical expectations and fair processes can shape judgment, strengthen collective responsibility, and, over time, contribute to better performance outcomes (Oluwatosin, 2024). Thirdly, ethical compliance does more than prevent wrongdoing; it seems to offer a behavioural compass and a structural frame within which project decisions are made and resources are deployed. Lastly, as a boundary condition and trade-offs, the negative moderating effect of ethical compliance introduces an important note of caution and suggests a boundary condition for ELT in project settings (Khale & Gond, 2019). While ethical frameworks can promote discipline and fairness, the findings here hint that highly formalized or rigid systems may inadvertently blunt the performance benefits that capable teams would otherwise generate (Black, 2007). This tension reflects a familiar governance dilemma: too little control risks opportunism, yet too much can restrict the flexibility and experimentation that complex projects often require (OECD/Korean development

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institute, 2017). The results, read in this light, suggest that ethical leadership may be most effective when procedural clarity is balanced with enough autonomy for teams to adapt to evolving project realities (Khale & Gond, 2019).

To sum up, overall, the study offers a nuanced picture of how RBV and ELT intersect in project contexts, highlighting that resources, ethics, and governance mechanisms work together rather than in isolation (Kero & Bogale, 2023). Secondly, by foregrounding the interplay between team capability, ethical compliance, and performance, the findings invite a more context-sensitive understanding of how control and adaptability are balanced in public construction project (OECD/Korean development institute, 2017).

The results of this research generate several meaningful implications for public sector project practitioners and project managers, and policymakers. The strong positive relationship identified between project team capability and project performance suggests that systematic investment in workforce development remains essential. Public sector organisations involved in construction project implementation are encouraged to design training programs that strengthen both technical and interpersonal skills, acknowledging that team effectiveness depends as much on communication, collaboration, and adaptability as on technical expertise. Structured mentoring and experiential learning could also help institutionalize these capabilities within project teams. Public sector project managers should select competent teams and support them throughout the life cycle of the project. Enhanced technical expertise, communication, problem-solving, and leadership capabilities will result in improved cost, time, quality and safety outcomes in construction projects. Secondly, the positive relationship between project team capability and project ethical compliance suggests that capable teams can improve the ethical behaviour in construction projects. Public sector organisations should train their project team employees in ethics and combine this with competency-based training initiatives so that teams can interpret and apply ethical standards and contractual requirements effectively. Thirdly, the strong positive effect of project ethical compliance on project performance indicates that public sector organisations should establish clear guidelines for ethical behaviour in project implementation, open and fair procurement processes and effective compliance monitoring systems. Finally, the moderating role of ethical compliance highlights the importance of balance. It shows that overly rigid regulatory structures may unintentionally limit team initiative and problem-solving capacity. Policymakers should therefore aim to cultivate compliance systems that set clear ethical expectations but allow project teams sufficient autonomy to adapt and innovate within established boundaries. Such a balance appears crucial for sustaining both ethical integrity and performance excellence in public sector project delivery.

6. Conclusions

Based on the findings, the following conclusions are drawn.

- Capable teams and credible ethical compliance both contribute positively to performance, yet their combined influence is conditioned by how compliance frameworks are designed and enforced.
- Project success is not driven by capability alone but emerges from the alignment of team skills, ethical climates, and governance arrangements. This highlights the need for trade-offs between control and adaptability in complex project environments. It also indicates the need for project environments that are balanced enough to permit competent teams to work in an ethical system that supports accountability and flexibility to support sustainable performance in public sector construction projects.
- Capacity-building strategies and compliance systems are pre-requisites because they reinforce each other rather than operate as opposing forces.

This research is not without limitations. The first obvious limitation is the structured questionnaire used which limited respondents' opportunity to provide detailed explanations of their perceptions concerning the variables studied. The sample was confined to one respondent from each

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of the construction firms participating in the study. This limits generalization of the findings to the entire target population of public sector project organisations. The purely quantitative approach adopted also limits generalizability of the findings. Nonetheless, the study provides a bird's view of the realities of the interplay among team capability, ethical compliance and construction project performance. As a result of these limiting factors, subsequent research should adopt mixed methods or qualitative approaches to allow respondents to provide more complete information about project methodologies, vendor financial strength, and construction project performance.

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