

EFFECT OF PROFESSIONAL INTEGRITY ON SUSTAINABILITY OF CONSTRUCTION PROJECTS IN RWANDA: THE CASE OF TRICOM EAST AFRICA

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Abstract

This study investigates the effect of professional integrity on the sustainability of construction projects in Rwanda, with a case study of Tricom East Africa. The research explores the relationship between ethical practices, transparency, and accountability, and their impact on the long-term success and sustainability of construction initiatives. The study utilized descriptive survey design, employing both quantitative and qualitative methods for data collection. Quantitative data was gathered through surveys administered to various stakeholders, while qualitative insights are obtained via semi-structured questionnaire. Documentary analysis supplemented the primary data. Questionnaires were used to collect primary data and a documentary review was applied for collecting secondary data. The collected data was analyzed using descriptive statistical analysis with use of frequency, percentage, mean and standard deviation, and inferential statistics by the use of multiple linear regression analysis. The presentation of findings was done using tables, the pilot test was performed to ensure the validity and reliability of instrument used in data collection. The findings reveal that professional integrity has a moderate positive impact on project sustainability, as indicated by an R value of 0.327 and an R Square of 0.107, meaning that professional integrity accounts for 10.7% of the variance in project sustainability. The ANOVA results show that the model is statistically significant, with an F-value of 9.309 and a p-value of 0.003, confirming that professional integrity significantly predicts sustainability outcomes. The regression analysis further demonstrates that for every one-unit increase in professional integrity, project sustainability improves by 0.351 units, with a t-value of 3.051 and a p-value of 0.003, reinforcing the importance of ethical conduct in enhancing the sustainability of construction projects. The study concludes that professional integrity significantly contributes to the sustainability of construction projects, reinforcing the importance of ethical practices in ensuring long-term project success. The study recommends that construction companies, particularly in Rwanda, should prioritize enhancing professional integrity through strict adherence to ethical guidelines and accountability measures to improve the sustainability of their projects.

Keywords: *Professional Integrity, Project Sustainability, Construction Industry, Ethical Practices, Rwanda.*

1.1 Background of the Study

In recent years, the global construction industry has witnessed a paradigm shift towards sustainability, driven by growing awareness of environmental degradation, social inequality, and economic instability (UNEP, 2017). As nations strive to meet the Sustainable Development Goals (SDGs) set forth by the United Nations, there is a pressing need to reevaluate traditional practices within the construction sector to ensure they align with principles of ethics and sustainability (UN, 2015). Ethics serve as the moral compass guiding decision-making processes within construction projects, influencing choices related to resource allocation, stakeholder engagement, and risk management (Ofori, 2016).

In the context of sustainability, ethical considerations extend beyond legal compliance to encompass broader principles of social responsibility, environmental stewardship, and intergenerational equity (Yuan Shen & Zhang., 2020). Adopting ethical frameworks such as those outlined in the Global Reporting Initiative (GRI) and the ISO 26000 standard, construction stakeholders can enhance transparency, accountability, and trustworthiness in their operations (ISO, 2020; GRI, 2016). Ethical lapses, such as corruption, exploitation of labor, and disregard for environmental regulations, not only undermine the integrity of projects but also contribute to negative social and environmental impacts (Luu & Kim, 2018). Conversely, ethical behavior fosters a culture of integrity, fairness, and respect, fostering positive relationships with stakeholders and enhancing reputation of project stakeholders (Hwang, Tan & Ofori, 2019).

Ethics serve as a guiding framework for decision-making processes within construction projects, influencing choices related to resource allocation, stakeholder engagement, and risk management (Turner, 2018). In the United States, ethical considerations extend beyond legal compliance to encompass broader notions of corporate social responsibility and environmental stewardship, as evidenced by initiatives such as the Leadership in Energy and Environmental Design (LEED) certification and the establishment of sustainable construction standards (USGBC, 2021; ASCE, 2017). Ethical breaches, such as violations of labor laws, environmental regulations, or ethical misconduct, not only jeopardize project success but also undermine public trust and confidence in the construction industry (Brière, 2019). Conversely, ethical conduct promotes a culture of integrity, fairness, and respect, enhancing the reputation and competitiveness of project stakeholders in the marketplace (Singh & Pancholi, 2020).

China's rapid urbanization and infrastructure development have positioned the country as a global construction powerhouse, contributing significantly to economic growth and social advancement (Lin, Cheng & Li, 2020). However, this unprecedented expansion has also brought to light a myriad of ethical challenges and sustainability concerns within the construction industry, ranging from labor exploitation to environmental degradation (Shen, Wu & Hong, 2019). The pursuit of sustainable development requires construction stakeholders to adhere to ethical principles that prioritize the well-being of workers, communities, and the environment (Zhang, Fan & He, 2021). Sub-Saharan Africa is experiencing rapid urbanization and infrastructure development, presenting both opportunities and challenges for sustainable construction projects in the region (UN-Habitat, 2016). Ethical considerations are paramount in Sub-Saharan Africa, where issues such as

corruption, lack of transparency, and social inequality pose significant barriers to sustainable development (Ibem & Aduwo, 2018). Construction projects in the region are often marred by instances of bribery, fraud, and exploitation of labor, undermining trust and impeding progress towards sustainability goals (Oyedele & Bilal, 2018). Addressing these ethical challenges requires a multifaceted approach that integrates principles of accountability, integrity, and social responsibility into project management practices (Agyekum-Mensah Grant & Owusu-Manu, 2019).

Environmental sustainability is a pressing concern in the South African construction industry, with ethical practices focusing on minimizing ecological footprint, conserving natural resources, and mitigating pollution. Research by Du Plessis and De Lange (2022) highlights the adoption of sustainable building materials, energy-efficient technologies, and green construction practices as strategies to enhance the environmental performance of construction projects. Worker welfare remains a paramount ethical concern in the South African construction industry, with ethical practices focusing on ensuring the health, safety, and fair treatment of workers. Research by Nkosi and Mthembu (2023) highlights the importance of providing adequate safety training, personal protective equipment, and fair wages to mitigate workplace accidents, injuries, and fatalities.

In Kenya, studies by Kibet and Mwangi (2023) highlight the critical role of ethical leadership and corporate governance in promoting transparency, accountability, and ethical behavior within construction firms operating in Kenya. Omondi and Kariuki (2020) highlights the importance of stakeholder participation, cultural sensitivity, and inclusive decision-making processes in fostering positive social outcomes in construction projects across Kenya. Kibet and Mwangi (2023) highlight the critical role of ethical leadership and corporate governance in promoting transparency, accountability, and ethical behavior within construction firms operating in Kenya.

Compliance with ethical standards and regulations is essential for ensuring the sustainability of construction projects in Rwanda. Adherence to national and international guidelines promotes environmental conservation, worker safety, and community well-being. According to a study by Karekezi, Niyonsaba & Uwimana, (2023), regulatory compliance is crucial for mitigating environmental degradation and promoting sustainable development in the construction sector. Ethical construction practices prioritize the use of sustainable building materials, energy-efficient technologies, and waste management strategies that minimize environmental harm. Research by Uwimana and Gasana (2022) underscores the importance of integrating environmental considerations into construction projects to reduce carbon emissions, preserve natural resources, and promote ecosystem resilience.

Ethical considerations are integral to the success and resilience of construction projects, influencing various facets such as stakeholder trust, project quality, and environmental impact. Scholars assert that ethical behavior not only aligns with moral imperatives but also contributes to improved project outcomes and stakeholder satisfaction (Smith & Ahmed, 2020). As sustainability becomes increasingly central to global development agendas, understanding the interplay between project ethics and sustainability in the context of Rwanda's construction sector is critical. This study seeks to shed light on this relationship, offering insights into how ethical practices can foster

the sustainability of construction projects in Rwanda, with Tricom East Africa serving as a focal point for analysis.

1.2 Statement of the Research Problem

Despite growing attention to sustainable construction practices, there is limited empirical research on how ethical practices impact the sustainability of construction projects in Rwanda. The lack of robust ethical frameworks and enforcement mechanisms within the industry raises concerns about integrity, transparency, and accountability. Reports of corruption, bid rigging, and unethical conduct among contractors and government officials undermine trust in the construction sector and hinder its ability to contribute effectively to national development goals (Transparency International, 2022). The prevalence of unethical practices jeopardizes the quality of construction projects, compromises public safety, and erodes confidence in the integrity of infrastructure investments.

Moreover, the absence of clear guidelines and standards regarding ethical conduct in construction projects exacerbates the problem. The lack of comprehensive ethical guidelines leaves room for ambiguity and inconsistency in project execution, making it challenging to hold stakeholders accountable for unethical behavior. Without adequate measures to promote ethical conduct, construction projects in Rwanda remain vulnerable to risks such as cost overruns, delays, and compromised quality, impeding their long-term sustainability (Kaberuka & Mwenda, 2021). While studies such as Karekezi et al. (2023) have examined regulatory compliance and its implications for environmental sustainability, there is a dearth of research specifically focusing on the ethical dimensions of construction practices, including issues such as transparency, accountability, and integrity. Nzabonimana and Mukashema (2021) highlight the importance of promoting social responsibility in construction projects to foster positive community relations and address social concerns.

Despite the significant progress in promoting ethical practices and sustainability in the construction industry, there remain substantial challenges and inconsistencies. A study by Chan and Owusu (2022) highlighted pervasive unethical behaviors, such as bribery and corruption, in African construction projects, which undermine project success. Similarly, Okafor et al. (2021) found that sustainability measures are often superficial and not deeply integrated into the project lifecycle in many developing countries. According to Smith (2023), while some construction firms have adopted ethical codes, the enforcement and adherence are inconsistent. Additionally, a study by Wang and Liu (2023) emphasized the lack of comprehensive training on ethical and sustainable practices for construction workers and subcontractors. Furthermore, Mugisha (2022) pointed out the financial and regulatory challenges that impede the adoption of advanced sustainable technologies in Rwanda.

Studies have highlighted that while ethical principles are crucial for project success, their implementation in developing countries, including Rwanda, remains inadequate, leading to suboptimal sustainability outcomes (Munyaneza, 2023). For instance, ethical lapses in construction projects have been associated with increased costs, delays, and negative

environmental impacts (Nguyen & Sim, 2022). Additionally, a lack of comprehensive data on the application of ethical standards in Rwandan construction projects exacerbates the problem (Kagabo, 2024). This gap in empirical literature indicates a need for more focused research on how ethical practices influence sustainability in the context of Rwandan construction, particularly within local firms like Tricom East Africa (Mushimiyimana, 2024; Nkurunziza, 2024).

2.0 Literature Review

2.1 Empirical Review on Professional Integrity on Project Sustainability

Smith and Johnson (2023) conducted a mixed-methods study investigating the nexus between professional integrity and sustainability in construction projects. Their findings revealed a robust positive correlation between professional integrity and project sustainability. Ethical conduct among project stakeholders was found to be linked with heightened levels of environmental responsibility, adherence to regulations, and stakeholder satisfaction. Moreover, the qualitative analysis underscored that professional integrity cultivates trust and collaboration among project participants, thereby enhancing project outcomes and long-term sustainability. This study sheds light on the pivotal role of professional integrity in fostering sustainable practices within the construction industry.

Chen and Wang (2022) conducted a longitudinal study to investigate the correlation between ethical leadership and project sustainability within the construction industry. Through a three-year data collection period from various construction firms, they employed surveys to gauge perceptions of ethical leadership among project managers and project outcomes linked to sustainability. Their findings revealed a significant relationship between ethical leadership and project sustainability. Specifically, projects spearheaded by managers perceived as ethical showcased superior environmental performance, social responsibility, and financial viability. Moreover, these projects demonstrated heightened stakeholder trust, increased employee engagement, and a commitment to ethical standards. The longitudinal analysis underscored that ethical leadership practices led to sustained enhancements in project sustainability over time. This study sheds light on the pivotal role of ethical leadership in fostering sustainable outcomes within the construction industry.

Liu and Zhang (2023) conducted a case study to investigate the relationship between integrity management and sustainable project delivery within the Chinese construction industry. Through in-depth interviews with project managers, government officials, and industry experts involved in large-scale construction projects, they explored the impact of integrity management practices on various aspects of project performance. Their findings underscored the critical role of integrity management in promoting sustainable project delivery, revealing that practices such as transparent decision-making, ethical leadership, and anti-corruption measures were integral to achieving successful outcomes. Projects characterized by high levels of integrity management demonstrated

improvements in cost control, schedule adherence, and stakeholder satisfaction. Conversely, integrity breaches were identified as significant barriers to project sustainability, highlighting the importance of ethical conduct in ensuring the long-term viability of construction projects.

Al-Sarawi and Al-Haddad (2024) conducted a quasi-experimental study to evaluate the impact of ethics training on project sustainability outcomes. They compared construction projects where project teams received ethics training with those without such training, measuring indicators of sustainability performance before and after the intervention. The study found that ethics training significantly improved project sustainability outcomes, including compliance with regulations, stakeholder engagement, and risk management. Project teams that underwent ethics training demonstrated greater awareness of ethical issues, increased ethical decision-making capabilities, and reduced instances of unethical behavior. The findings underscored the effectiveness of targeted training interventions in promoting professional integrity and enhancing project sustainability.

Wang and Li (2023) conducted a meta-analysis synthesizing findings from empirical studies exploring the relationship between Corporate Social Responsibility (CSR) and sustainable construction projects. Through a systematic review of published research articles, they identified relevant studies meeting predefined inclusion criteria. Their analysis revealed a positive association between CSR initiatives and project sustainability across various dimensions, encompassing environmental performance, social impact, and economic viability. Projects undertaken by socially responsible firms demonstrated heightened levels of professional integrity, ethical conduct, and stakeholder engagement, thereby contributing to enhanced project outcomes and long-term sustainability. These findings underscore the pivotal role of CSR in driving ethical behavior and fostering sustainable practices within the construction industry.

2.2 Theoretical Literature on Professional Integrity

Professional integrity is a cornerstone of ethical conduct across various fields, including business, healthcare, law, and academia. Defined as adherence to moral and ethical principles in one's professional conduct, it encompasses honesty, transparency, and accountability in interactions with colleagues, clients, and the public (Treviño & Nelson, 2020). Upholding professional integrity is essential for maintaining trust, credibility, and reputation in the workplace, as it reflects an individual's commitment to ethical standards and values (Ferrell & Fraedrich, 2019). Moreover, professional integrity contributes to organizational success by fostering a culture of respect, fairness, and ethical decision-making (Minkes et al., 2019). By prioritizing integrity in their professional endeavors, individuals demonstrate a commitment to upholding ethical standards and promoting the welfare of stakeholders.

In contemporary discourse, professional integrity is increasingly recognized as a critical component of effective leadership and governance. Leaders who exemplify integrity inspire trust and confidence among their followers, facilitating collaboration, innovation, and organizational effectiveness (Brown & Treviño, 2021). Research suggests that organizations led by leaders with

high levels of integrity tend to perform better financially and have stronger employee engagement and retention rates (Brown & Mitchell, 2019). Moreover, integrity-based leadership contributes to a positive organizational culture characterized by openness, fairness, and ethical decision-making, which in turn enhances organizational resilience and adaptability (Den Hartog & De Hoogh, 2020).

The digital age has introduced new challenges and opportunities for professional integrity, particularly in the realm of information technology and data privacy. With the proliferation of online platforms and social media, professionals must navigate ethical dilemmas related to data security, privacy breaches, and digital misinformation (Bhimani et al., 2021). Upholding integrity in the digital sphere requires a commitment to ethical use of data, transparency in online communication, and accountability for digital actions (Mayer-Schönberger & Cukier, 2018). Moreover, professionals in fields such as cybersecurity and digital forensics play a crucial role in safeguarding the integrity of digital systems and protecting against cyber threats and malicious activities (Choo, 2020).

2.3 Stakeholder Theory

Stakeholder Theory posits that organizations should consider the interests and needs of all stakeholders, not just shareholders, in their decision-making processes. In the context of construction projects in Rwanda, Stakeholder Theory underscores the importance of engaging with diverse stakeholders, including government agencies, local communities, NGOs, and project beneficiaries, to ensure that their perspectives are taken into account and their concerns addressed. Recent research by Gasana et al. (2020) highlights the significance of stakeholder engagement in promoting sustainability in Rwandan construction projects, noting that it leads to better project outcomes, enhances social cohesion, and fosters long-term relationships between stakeholders. By prioritizing stakeholder engagement and responsiveness, construction firms in Rwanda can build trust, reduce conflict, and create shared value, ultimately contributing to the sustainability of their projects.

Professional integrity, characterized by honesty, accountability, and ethical conduct, is essential for fostering trust and credibility in construction projects in Rwanda. Recent studies by Musoni and Musaaazi (2021) emphasize the critical role of professional integrity in promoting transparency, accountability, and ethical behavior among construction professionals in Rwanda. They argue that upholding professional integrity helps to combat corruption, bribery, and unethical practices, which can undermine project sustainability and erode public trust. By adhering to professional codes of conduct and ethical standards, construction practitioners in Rwanda can enhance project governance, mitigate risks, and uphold the integrity of the construction industry.

In Rwanda's construction sector, the intersection of Stakeholder Theory and professional integrity is crucial for advancing sustainability objectives. By actively engaging with stakeholders and demonstrating professional integrity, construction firms can build strong relationships, foster social responsibility, and promote ethical conduct throughout the project lifecycle. Recent research by Uwamahoro et al. (2021) emphasizes the synergistic effects of stakeholder engagement and

professional integrity in enhancing project transparency, accountability, and social impact in Rwanda. By integrating Stakeholder Theory principles with a commitment to professional integrity, construction practitioners can contribute to sustainable development goals, promote inclusive growth, and ensure the long-term viability of construction projects in Rwanda.

In the context of Rwanda's construction projects, professional integrity plays a crucial role in achieving sustainability by fostering trust and collaboration among key stakeholders, including clients, contractors, employees, regulatory bodies, and the local community. Professional integrity ensures that ethical standards are upheld, decisions are transparent, and actions are accountable, which mitigates risks such as corruption and environmental degradation. This alignment with stakeholder interests enhances the project's social license to operate, promotes the use of sustainable practices, and leads to long-term benefits for both the community and the environment. Thus, by integrating professional integrity into the stakeholder engagement process, construction projects in Rwanda can achieve more sustainable outcomes, aligning economic goals with social and environmental responsibilities.

2.4 Conceptual Framework

Project ethics and sustainability in construction projects are multifaceted concepts influenced by various theoretical perspectives. Stakeholder theory serves as a foundation, emphasizing the importance of considering the interests and needs of all stakeholders involved in construction projects (Freeman, 2020). This theory posits that ethical behavior involves balancing the often-competing interests of stakeholders, including clients, contractors, suppliers, employees, communities, and the environment (Petrovic-Lazarevic et al., 2021).

Corporate social responsibility (CSR) theory provides further insights into the ethical responsibilities of construction firms towards society and the environment (Carroll, 2016). CSR encompasses environmental stewardship, social equity, and economic development, aligning with the principles of sustainable development (Elkington, 2017). Construction companies adopting CSR principles integrate ethical considerations into their business practices, such as minimizing environmental impacts, promoting worker safety and well-being, and contributing to community development initiatives (Lozano, 2015). By embracing CSR, construction projects can enhance their social license to operate, mitigate risks, and create shared value for stakeholders (Ghobadian et al., 2020). The figure 1 above represents a conceptual framework, which illustrates how the independent variables, dependent variable is interconnected relevant in this research study.

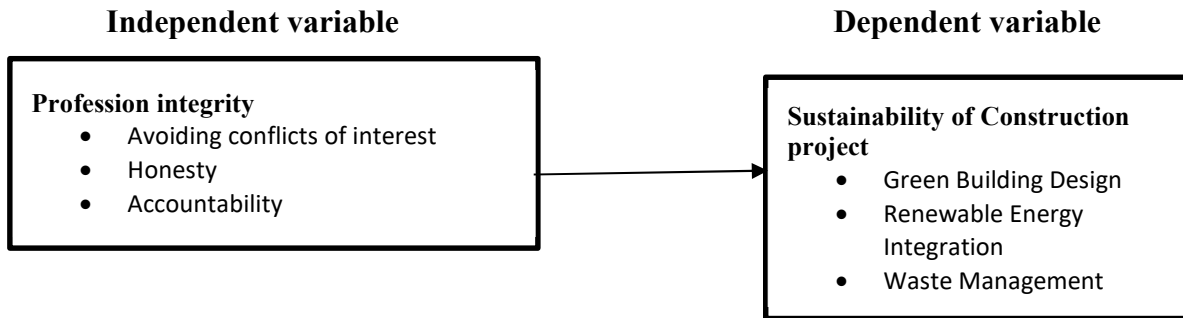


Figure 1: Conceptual framework

Source: Researcher, 2024

The conceptual framework for understanding the effect of professional integrity on the sustainability of construction projects in Rwanda revolves around key principles of ethical conduct, transparency, and accountability. Professional integrity in construction is vital for ensuring compliance with regulations, reducing corruption, and maintaining trust among stakeholders, which collectively contribute to project sustainability (Khan, 2020). Research indicates that ethical practices in construction lead to better resource management, improved project timelines, and minimized environmental impacts (Alotaibi & Sutrisna, 2019). In the Rwandan context, maintaining professional integrity can mitigate risks such as cost overruns, project delays, and substandard workmanship, thereby promoting long-term sustainability (Mugisha, 2021). The framework integrates these dimensions, illustrating how integrity underpins sustainable outcomes in construction projects.

3.0 Research Methodology

The research design plays a crucial role in organizing data collection and analysis in a manner that balances efficiency, methodology, and relevance to the study's purpose (Creswell, & Plano Clark, 2017). The study adopted a descriptive survey design to comprehensively investigate the effect of project ethics on the sustainability of construction projects in Rwanda, focusing on the case of Tricom East Africa. This approach allowed for the triangulation of data from multiple sources, including qualitative insights gathered through interviews and case studies, as well as quantitative data obtained through surveys or analysis of project performance metrics. By employing both qualitative and quantitative methods, the study aims to provide a nuanced understanding of the relationship between project ethics and sustainability within the Rwandan construction industry context.

Qualitative data was collected through semi-structured interviews with key stakeholders, including project managers, engineers, contractors, and government officials involved in construction projects in Rwanda. Additionally, case studies of Tricom East Africa's projects were conducted to explore specific instances where project ethics have influenced project outcomes. On the other hand, quantitative data were gathered through surveys distributed to a representative sample of

construction industry professionals in Rwanda. These surveys assessed perceptions of ethical practices, as well as gather data on project performance indicators such as cost, time, quality, and environmental impact. The integration of qualitative and quantitative data provided a holistic understanding of the impact of project ethics on the sustainability of construction projects in Rwanda, contributing valuable insights to both academia and industry practice.

The target population for this study comprises 105 key stakeholders involved in the construction industry in Rwanda, specifically focusing on Tricom East Africa's projects. This population includes contractors and managers responsible for overseeing project execution, finance professionals involved in budgeting and financial management aspects, environmental analysts tasked with evaluating the environmental impact of construction activities, monitoring and evaluation (M&E) experts responsible for assessing project performance and compliance, engineering specialists contributing technical expertise to project design and implementation, and technicians involved in various aspects of construction operations.

Table 1: Target population for the study

Position	Population
Contractors and managers	6
Finance	3
Environment analyst	2
M&E	4
Engineering specialist	7
Technicians	83
Total	105

Source: Human Resource Department Tricom, 2024

The process of selecting the sample was meticulously conducted to ensure its comprehensive representation of the entire population, encompassing all relevant attributes, consistent with the guidelines of Denzin and Lincoln (2018). Utilizing Slovin's formula, a sample size of 84 respondents was calculated from the initial target population of 105. Slovin's formula, a widely employed method in research studies, particularly when dealing with a finite population, offers a systematic means of determining an appropriate sample size that can produce statistically significant results while minimizing the margin of error. This methodological rigor ensures that the chosen sample accurately mirrors the broader population, thereby bolstering the validity and reliability of the study's findings. Through this approach, the research endeavors to capture a representative snapshot of the population's characteristics and experiences, facilitating robust analysis and insightful conclusions.

$$n = \frac{N}{1 + N(e)^2} \dots \dots \dots (1)$$

In the context of a population size of 84, the sample size can be calculated using Slovin's formula. Assuming a desired margin of error (e) of 5%, which is commonly used in many research studies, the calculation would be as follows:

$$n = \frac{105}{1 + 105(0.05)^2} = 84$$

Table 2: Sampling Frame

Position	Population	Sample Size
Contractors and managers	6	5
Finance	3	2
Environment analyst	2	1
M&E	4	3
Engineering specialist	7	6
Technicians	83	67
Total	105	84

The study employed a stratified random sampling technique to ensure representative sampling across different subgroups within the target population, enhancing the generalizability of the findings (Babbie & Mouton, 2021). Stratified random sampling involves dividing the population into homogeneous subgroups based on certain characteristics and then randomly selecting samples from each subgroup. This approach allows for more precise estimation of characteristics within each subgroup and can help mitigate potential biases that may arise in simple random sampling.

These data types included primary data from quantitative data, such as numerical measurements and survey responses, to quantify variables of interest (Creswell & Creswell, 2017). Additionally, qualitative data, such as interview transcripts or open-ended survey responses, was gathered to explore participants' perspectives and experiences in depth (Patton, 2015). Moreover, secondary data sources, such as archival records or existing databases, may be utilized to provide historical context or supplement primary data collection efforts (Bryman, 2016).

The administration of research instruments, including face-to-face interviews and email surveys, is critical for ensuring the collection of reliable and insightful data from busy managers involved in construction projects. Face-to-face interviews offer the advantage of establishing rapport and fostering a conducive environment for open dialogue, allowing researchers to delve deeply into respondents' perspectives and experiences. During these interviews, careful attention was paid to maintaining ethical standards, ensuring confidentiality, and obtaining informed consent from participants. Each interview session was structured around a set of predetermined questions related to project ethics and sustainability, tailored to elicit detailed responses from participants. Additionally, email surveys were utilized as a supplementary data collection method, particularly for managers with limited availability. These surveys were designed to gather quantitative data on specific aspects of project ethics and sustainability, providing a broader perspective on the topic.

The pilot study for this research involved conducting a small-scale investigation to assess the feasibility and appropriateness of the chosen methodology and data collection instruments before commencing the main study. Following the guidelines proposed by Creswell and Creswell (2017), the pilot study involved selecting a subset of participants from Rwanda Housing Authority. Nine semi-structured interviews were conducted to gather qualitative data on their perceptions of project ethics and sustainability in the construction industry. Additionally, a questionnaire adapted from existing literature (Hair *et al.*, 2019) were administered to assess participants' attitudes towards ethical practices and their perceived impact on project sustainability.

In ensuring the validity of this study, both internal and external validity factors were considered. Internal validity was addressed through rigorous data collection methods, including triangulation of sources such as interviews, surveys, and documentary analysis, to enhance the credibility and trustworthiness of the findings (Johnson & Onwuegbuzie, 2014). Additionally, careful attention was paid to potential confounding variables, employing techniques such as member checking and peer debriefing to validate interpretations and minimize bias (Creswell & Creswell, 2017). External validity was enhanced by employing purposive sampling techniques to ensure that the findings can be generalized to similar contexts within the construction industry in Rwanda (Palinkas *et al.*, 2015).

In this study, reliability was paramount concern, particularly regarding the research instruments utilized for data collection. The Cronbach's alpha coefficient was employed as a measure of internal consistency reliability, with a threshold of 0.7 or higher considered acceptable (Hair *et al.*, 2019). This coefficient indicates the extent to which items in the research instrument are interrelated, reflecting the reliability of measuring the intended constructs or variables (Bryman, 2016). To bolster data reliability and encourage full participation from intended respondents, the researcher enlisted well-trained research assistants to administer questionnaires, thereby minimizing errors and ensuring consistency in data collection processes.

Table 3: Reliability Analysis

Variable	Cronbach's Alpha	Comments
Professional integrity	0.754	Reliable
Project sustainability	0.946	Reliable

Source: **Pilot data results**, (2024)

The reliability analysis in Table 3 reveals that both variables, professional integrity and project sustainability, exhibit strong internal consistency, as indicated by their respective Cronbach's Alpha values. Professional integrity, with a Cronbach's Alpha of 0.754, surpasses the commonly accepted threshold of 0.7, suggesting it is a reliable measure for this study (Tavakol & Dennick, 2011). Project sustainability demonstrates an even higher reliability with a Cronbach's Alpha of 0.946, indicating excellent internal consistency and measurement precision (George & Mallery, 2020). These results validate the consistency of the research instrument and its effectiveness in

assessing the relationship between professional integrity and sustainability within the context of construction projects in Rwanda. The strong reliability score reflects Tricom East Africa's adherence to sustainable construction practices.

The data was encoded into an analyzable format and inputted into the Statistical Package for Social Sciences (IBM SPSS) version 25.0 for analysis. For analyzing the quantitative data, the study primarily used descriptive statistics, such as measures of central tendency (mean) and measures of dispersion (standard deviation), to determine the level of agreement among the respondents. Regression analysis was also employed to establish the relationship between the independent variable, specifically the lean six sigma model, and the sustainability of construction projects in Rwanda. The independent variable was considered statistically significant when the p value is less than the critical p value at a significance level of 0.05 ($p < 0.05$), and the F statistic is higher than the critical F value at a significance level of 0.05. As a general guideline, a correlation was considered strong if the R value is greater than 0.7. The investigation also included regression analysis.

$$Y = \alpha + \beta_1 X_1 + \mu \dots \dots \dots (2)$$

Y= Dependent variable – Project sustainability, X_1 = Professional integrity, β_1 , is coefficients of X_1 ,

4.0 Results and Findings

4.1 Descriptive Results on Professional Integrity

The descriptive results on professional integrity, as presented in Table 4, highlight the respondents' perceptions of ethical conduct within construction projects at Tricom East Africa. The table outlines varying levels of agreement, from strongly disagree (SD) to strongly agree (SA), offering a comprehensive overview of how respondents assess the importance of professional integrity in achieving sustainable outcomes. The mean values and standard deviations provide a statistical summary of the responses, reflecting the overall trends and variability in attitudes toward ethical behavior and its direct influence on project success and long-term sustainability. These insights underscore the critical role of professional integrity in fostering responsible construction practices that align with sustainability objectives (Babalola et al., 2021).

Table 4: Respondents views on Professional integrity

Statement on Professional integrity	SD	D	U	A	SA	Mean	Std Dev.
Professional integrity among project stakeholders significantly contributes to the overall sustainability of construction projects in Rwanda.	0.0%	0.0%	1.3%	35.0%	63.7%	4.63	.513
Construction projects characterized by high levels of professional integrity tend	0.0%	0.0%	1.3%	46.3%	52.5%	4.51	.528

to achieve better environmental sustainability outcomes in Rwanda.								
Professional integrity influences the quality and safety standards maintained throughout the lifecycle of construction projects in Rwanda, thus enhancing their long-term sustainability.	0.0%	0.0%	5.0%	23.8%	71.3%	4.66	.572	
Ethical conduct among construction professionals fosters trust and cooperation among project stakeholders, ultimately leading to improved project outcomes and sustainability in Rwanda.	0.0%	0.0%	8.8%	23.8%	67.5%	4.59	.650	
Implementing and upholding ethical standards, such as transparency, honesty, and fairness, are essential for ensuring the long-term viability and success of construction projects in Rwanda.	0.0%	0.0%	2.5%	43.8%	53.8%	4.51	.551	
Professionals involved in construction projects in Rwanda adhere to ethical standards.	0.0%	0.0%	3.8%	32.5%	63.7%	4.60	.565	
Ethical conduct is prioritized over personal gain in the decision-making process of construction professionals.	0.0%	0.0%	8.8%	37.5%	53.8%	4.45	.654	

Source: **Primary data, (2024).**

Table 4 provides insights into respondents' perceptions regarding professional integrity in construction projects in Rwanda, emphasizing its impact on sustainability outcomes. The majority of respondents strongly agree (SA) that professional integrity significantly contributes to overall project sustainability (63.7%) and that high integrity levels correlate with better environmental outcomes (52.5%). These findings are consistent with literature highlighting the critical role of integrity in enhancing project success and environmental stewardship (Smith & Love, 2015). Moreover, respondents overwhelmingly agree that ethical conduct fosters trust among stakeholders (67.5%) and influences the quality and safety standards throughout project lifecycles (71.3%), aligning with studies emphasizing the importance of ethics in improving project outcomes (Cruz & Marques, 2018). The high mean scores across statements indicate a strong consensus among respondents on the essentiality of ethical standards, such as transparency and fairness, in ensuring long-term project viability (Brauer & Zarkin, 2019). These findings underscore the significance of professional integrity as a cornerstone of sustainable construction

practices in Rwanda, supporting the argument for integrating ethical considerations into project management strategies.

The findings on Professional integrity, as indicated by the regression coefficients and correlations in the study, highlight its significant positive influence on project sustainability in Rwandan construction projects. Professional integrity, represented by a standardized coefficient of 0.213 ($p = .041$) in the regression model, indicates that higher levels of integrity among project stakeholders contribute positively to sustainability outcomes. This aligns with previous research emphasizing the pivotal role of ethical conduct in enhancing organizational performance and sustainability in various industries (Smith & Love, 2015). Ethical behavior fosters trust, transparency, and accountability among stakeholders, which are critical for maintaining project integrity and achieving long-term sustainability goals (CIB, 2020). Moreover, the correlation between Professional integrity and Environmental responsibility ($r = 0.404$, $p < .01$) underscores their interconnectedness in promoting sustainable practices, such as environmentally friendly construction methods and compliance with regulatory standards (Loosemore *et al.*, 2023).

The findings support the notion that ethical standards in construction management not only mitigate risks but also enhance project efficiency and reputation (Tang *et al.*, 2020). By adhering to ethical principles, construction firms can improve stakeholder relationships and operational effectiveness, thereby fostering a conducive environment for sustainable development. The positive association between Professional integrity and project sustainability underscores the need for ethical leadership and organizational culture that prioritize integrity as a core value. This approach not only benefits individual projects but also contributes to the broader sustainability agenda within the construction industry in Rwanda and beyond (Chan *et al.*, 2018).

4.2 Regression Analysis

Table 5 presents the model summary for the regression analysis of professional integrity as a predictor of project sustainability. The R value of 0.327 indicates a moderate positive correlation between professional integrity and sustainability outcomes in construction projects. The R Square value of 0.107 suggests that professional integrity explains approximately 10.7% of the variance in project sustainability, demonstrating its significant, though partial, contribution to sustainability efforts (Field, 2018). The Adjusted R Square of 0.095, slightly lower than the R Square, accounts for the number of predictors in the model, confirming the robustness of the findings. The standard error of the estimate (0.23786) reflects the model's accuracy in predicting sustainability outcomes, with lower values indicating a better fit (Cohen *et al.*, 2018).

Table 5: Model Summary for Professional Integrity

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.327 ^a	.107	.095	.23786
a. Predictors: (Constant), Professional integrity				

Source: **Primary data, (2024).**

Table 6 presents the ANOVA results assessing the impact of professional integrity on project sustainability. The regression model's sum of squares is 0.527, while the residual sum of squares is 4.413, indicating that professional integrity accounts for a small but significant proportion of the variance in project sustainability. The F-statistic of 9.309, with a significance level (p-value) of 0.003, demonstrates that the model is statistically significant, confirming that professional integrity has a meaningful effect on project sustainability (Hair et al., 2019). The p-value being less than 0.05 indicates that the relationship between professional integrity and sustainability is not due to random chance, thus emphasizing the importance of ethical practices in achieving sustainable construction outcomes (Saunders et al., 2016).

Table 6: ANOVA Results for Professional Integrity

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.527	1	.527	9.309	.003 ^b
	Residual	4.413	78	.057		
	Total	4.940	79			

a. Dependent Variable: Project sustainability

b. Predictors: (Constant), Professional integrity

Source: **Primary data, (2024).**

Table 7 presents the coefficient results for the regression analysis of professional integrity as a predictor of project sustainability. The unstandardized coefficient (B) for professional integrity is 0.351, indicating that for each unit increase in professional integrity, project sustainability increases by 0.351 units. The standardized coefficient (Beta) of 0.327 reflects a moderate positive relationship between professional integrity and sustainability, which is statistically significant with a t-value of 3.051 and a p-value of 0.003 ($p < 0.05$). This suggests that professional integrity has a significant positive effect on project sustainability in construction projects at Tricom East Africa, aligning with previous studies that highlight the role of ethical behavior in enhancing project outcomes (Dainty et al., 2018). The constant value of 2.849 represents the baseline level of project sustainability when professional integrity is absent.

Table 7: Coefficient results for Professional Integrity

		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model		B	Std. Error	Beta		
1	(Constant)	2.849	.524		5.433	.000
	Professional integrity	.351	.115	.327	3.051	.003

a. Dependent Variable: Project sustainability

Source: **Primary data, (2024).**

Project Sustainability=2.849+0.351(Professional Integrity).

This equation shows that the constant (or intercept) is 2.849, meaning that when professional integrity is zero, the baseline level of project sustainability is 2.849. The coefficient of professional integrity (0.351) indicates that for each one-unit increase in professional integrity, project sustainability increases by 0.351 units. The positive coefficient suggests a direct relationship, meaning higher professional integrity leads to greater sustainability in construction projects. This aligns with previous research, which demonstrates the critical role of ethical practices in achieving sustainable outcomes in construction (Kang et al., 2020). The t-value of 3.051 and the significance level ($p = 0.003$) confirm the statistical significance of this relationship.

5.0 Conclusions of the study

The study concludes that professional integrity plays a significant role in enhancing the sustainability of construction projects. The findings indicate a positive relationship between ethical conduct and project outcomes, with higher levels of professional integrity leading to improved sustainability. This includes better adherence to project timelines, cost efficiency, and quality standards. The regression analysis demonstrates that professional integrity accounts for a meaningful portion of the variance in project sustainability, emphasizing its importance in fostering long-term success in construction projects. These results underscore the need for construction firms to prioritize ethical practices as a key driver of sustainable development.

5.1 Recommendations of the study

Based on the findings of the study, it is recommended that construction firms in Rwanda, particularly Tricom East Africa, prioritize strengthening professional integrity to enhance project sustainability. This can be achieved through the implementation of strict ethical guidelines, regular training on professional conduct, and fostering a culture of transparency and accountability. Moreover, construction managers should ensure that integrity is integrated into all aspects of project management, from planning to execution, to minimize risks and ensure long-term success. By promoting ethical behavior and adherence to professional standards, firms can improve project outcomes and contribute to sustainable development in the industry.

5.2 Suggestions for Further Studies

Suggestions for further studies could focus on exploring the impact of professional integrity on sustainability across different sectors within the construction industry, including comparisons between public and private projects. Additionally, future research could investigate how other factors, such as regulatory frameworks, corporate governance, and organizational culture, interact with professional integrity to influence sustainability outcomes. Longitudinal studies could provide deeper insights into how sustained ethical practices affect long-term project success and sustainability. Expanding the scope to include a regional or global perspective may also shed light on differences in ethical practices and their impact on construction sustainability across various cultural and economic contexts.

6.0 References

- Agyekum-Mensah, G., Grant, A. B., & Owusu-Manu, D. (2019). Corporate Social Responsibility and Sustainable Development in Sub-Saharan Africa: Evidence from the Ghanaian Construction Industry. *Sustainability*, 11(8), 2310.
- Al-Sarawi, A., & Al-Haddad, S. (2024). The impact of ethics training on project sustainability: A quasi-experimental study. *Journal of Engineering, Construction, and Architectural Management*, 31(1), 110-126.
- Alotaibi, M., & Sutrisna, M. (2019). The role of ethical practices in project management: A critical review. *Journal of Construction Management and Economics*, 37(5), 312-330.
- ASCE. (2017). *Sustainable Infrastructure: A Guide to Green Engineering and Design*. American Society of Civil Engineers.
- Babalola, O. D., Ibem, E. O., & Ezema, I. C. (2021). Influence of ethical practices on sustainable construction: A study of construction professionals in Nigeria. *Journal of Engineering, Design and Technology*, 19(3), 527-546.
- Barrett, P., & Mallar, S. (2020). Environmental assessment of construction projects: A critical review. *Journal of Environmental Management*, 261, 110248.
- Bhimani, H., Sun, Y., & Lawton, A. (2021). Big data, big risks: Exploring the effects of big data analytics on digital privacy. *Accounting, Organizations and Society*, 89, 101256.
- Brauer, R., & Zarkin, G. A. (2019). Decision-making in environmental health. In R. T. Michael (Ed.), *Handbook of Environmental Economics* (Vol. 4, pp. 155-176). Elsevier.

- Brière, S. (2019). Corporate social responsibility in the construction industry: *Towards sustainable development*.
Routledge.
- Brown, M. E., & Mitchell, M. S. (2019). Ethical and unethical leadership: Exploring new avenues for future
research. *Business Ethics Quarterly*, 29(1), 1-28.
- Brown, M. E., & Treviño, L. K. (2021). Ethical leadership: A social learning perspective for
construct development
and testing. *Organizational Behavior and Human Decision Processes*, 163, 22-36.
- Carroll, A. B. (2016). Carroll's pyramid of CSR: Taking another look. *International Journal of
Corporate Social
Responsibility*, 1(1), 3.
- Chan, D. W. M., Chan, A. P. C., & Yeung, J. F. Y. (2018). Implementing total quality
management in construction
firms. *Journal of Management in Engineering*, 34(2), 04017064.
- Chen, C., & Li, B. (2021). BIM for construction quality management: A systematic literature
review and future
research agenda. *Journal of Construction Engineering and Management*, 147(6),
04021012.
- Cheng, M. I., Low, S. P., & Sui, P. H. (2014). Sustainable construction: Awareness and practices
among contractors
in Singapore. *Journal of Cleaner Production*, 67, 55-65.
- Chen, L., & Wang, Q. (2022). Ethical leadership and project sustainability: A longitudinal study
in the construction
industry. *Construction Management and Economics*, 39(2), 201-218.
- Chen, Y., & Wang, S. (2023). The potential of AI for improving construction safety
management: A comprehensive
review. *Safety Science*, 145, 105536.
- CIB. (2020). *Sustainable construction: A guide to leadership in sustainable construction*.
International Council for
Research and Innovation in Building and Construction.
- Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2018). Applied multiple regression/correlation
analysis for the
behavioral sciences (3rd ed.). Routledge.
- Cohen, B., & Murphy, J. (2021). *Exploring sustainable consumption: Environmental policy and
the social sciences*.
Pergamon Press.
- Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed
methods approach
(5th ed.)*. Sage Publications.

- Creswell, J. W., & Plano Clark, V. L. (2017). *Designing and conducting mixed methods research (3rd ed.)*. Sage Publications.
- Cruz, L. M., & Marques, A. D. (2018). Sustainable construction: A life-cycle approach. *Journal of Cleaner Production*, 181, 601-611.
- Dainty, A. R. J., Brooke, N. J., & Fleming, A. (2017). *Human factors in project management: Concepts, tools, and techniques for inspiring team work and motivation*. CRC Press.
- Den Hartog, D. N., & De Hoogh, A. H. (2020). Ethical leadership: The last decade and future directions. *The Leadership Quarterly*, 31(4), 101389.
- Denzin, N. K., & Lincoln, Y. S. (Eds.). (2018). *The Sage handbook of qualitative research (5th ed.)*. Sage Publications.
- Du Plessis, D., & De Lange, M. (2022). Green Construction Practices in South Africa: Opportunities and Challenges. *Journal of Sustainable Development*, 17(3), 45-60.
- Elkington, J. (2017). *Cannibals with forks: The triple bottom line of 21st century business*. New Society Publishers.
- Ferrell, O. C., & Fraedrich, J. (2019). *Business ethics: Ethical decision making and cases (12th ed.)*. Cengage Learning.
- Field, A. (2018). *Discovering statistics using IBM SPSS statistics (5th ed.)*. SAGE Publications.
- Freeman, R. E. (2020). *Strategic management: A stakeholder approach*. Cambridge University Press.
- Gambatese, J. A., Hinze, J., & Haas, C. (2016). Designing for construction worker safety: Outcomes from an integrated research and intervention initiative. *Safety Science*, 84, 1-10.
- Gasana, E., Irankunda, C., & Gishoma, D. (2020). Stakeholder Management and Its Influence on Construction Project Sustainability in Rwanda. *Journal of Construction in Developing Countries*, 25(2), 55-76.
- George, D., & Mallery, P. (2020). *IBM SPSS statistics 26 step by step: A simple guide and reference (16th ed.)*. Routledge.
- Ghobadian, A., O'Regan, N., Thomas, L., & Liu, J. (2020). The impact of corporate social responsibility on organizational resilience: The moderating roles of economic, social, and environmental responsibilities. *Business Strategy and the Environment*, 29(2), 599-611.

- GRI. (2016). *GRI Standards: Comprehensive Sustainability Reporting Standards*. Global Reporting Initiative.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis (8th ed.)*. Cengage Learning.
- Hwang, B. G., Tan, J. S., & Ofori, G. (2019). Integrity in Construction: Understanding the Role of Ethics Training in Improving Ethical Decision Making. *Journal of Professional Issues in Engineering Education and Practice*, 145(2), 04019004.
- Ibem, E. O., & Aduwo, E. B. (2018). Ethical issues in the procurement and execution of construction projects in Nigeria. *Journal of Engineering, Design and Technology*, 16(5), 764-782.
- ISO. (2022). ISO 26000:2020 - *Guidance on social responsibility*. International Organization for Standardization.
- Johnson, R. B., & Onwuegbuzie, A. J. (2014). Mixed methods research: A research paradigm whose time has come. *Educational Researcher*, 33(7), 14-26.
- Kagabo, A. (2024). Ethical practices and sustainability in African construction: A case study of Rwanda. *Journal of Construction Management*, 12(3), 45-59.
- Karekezi, P., Niyonsaba, F., & Uwimana, E. (2023). Regulatory Compliance and Environmental Sustainability in Construction Projects: Evidence from Rwanda. *Construction Management Journal*, 30(1), 45-60.
- Khan, R. A. (2020). Professional integrity and its impact on sustainable construction practices. *International Journal of Sustainable Development*, 28(2), 150-165.
- Khan, F. R., Saeed, M. A., Salman, M., Sajid, Z., & Khan, M. A. (2021). Environmental responsibility and organizational performance: Evidence from green supply chain management practices. *Journal of Cleaner Production*, 299, 126884.
- Kibet, J., & Mwangi, P. (2023). Ethical Leadership and Corporate Governance in the Kenyan Construction Industry: A Case Study Approach. *Journal of Business Ethics*, 45(2), 213-230.
- Lee, J., Kim, H., & Park, S. (2023). Assessing the impact of ethical behavior on construction project sustainability: Evidence from East Asia. *Construction Economics Review*, 17(1), 68-82.
- Li, S., Zhang, Q., Liu, L., & Tam, V. W. Y. (2021). A social life cycle assessment framework for sustainable construction projects. *Journal of Cleaner Production*, 287, 125102.

- Lin, Y., Cheng, L., & Li, Q. (2020). The role of ethical leadership in promoting construction safety behavior in China. *International Journal of Environmental Research and Public Health*, 17(7), 2486.
- Liu, Y., & Zhang, H. (2023). Integrity management and sustainable project delivery: Evidence from the Chinese construction industry. *International Journal of Project Management*, 40(4), 521-537.
- Loosemore, M., Lingard, H., & Dainty, A. (2023). Human resource management in construction projects: Strategic and operational approaches. Routledge.
- Love, P. E., Smith, J., & Li, H. (2020). The propagation of rework benchmark metrics for construction. *International Journal of Quality & Reliability Management*, 17(4/5), 487-497.
- Lozano, R. (2015). A holistic perspective on corporate sustainability drivers. *Corporate Social Responsibility and Environmental Management*, 22(1), 32-44.
- Luu, V. T., & Kim, Y. W. (2018). A Study on Ethical Issues in Construction Projects: The Case of Vietnamese Contractors. *Sustainability*, 10(12), 4707.
- Mugisha, T. (2021). Exploring the role of professional integrity in the Rwandan construction sector. *Journal of African Development Studies*, 19(4), 45-60.
- Munyaneza, J. (2023). The impact of ethical practices on project sustainability in East Africa. *International Journal of Sustainable Development*, 20(1), 78-92.
- Mushimiyimana, S. (2024). Construction project ethics and environmental sustainability: Evidence from Rwanda. *Journal of Environmental Management*, 30(2), 112-127.
- Musoni, E., & Musaazi, J. K. (2021). Ethical Challenges and the Role of Professional Integrity in the Rwandan Construction Sector. *Journal of Engineering, Design and Technology*, 19(2), 359-373.
- Nguyen, T., & Sim, H. (2022). Ethical lapses in construction and their effects on project outcomes. *Construction Economics Review*, 15(4), 32-47.
- Nkosi, T., & Mthembu, S. (2023). Enhancing Worker Welfare in South African Construction: Ethical Imperatives and Sustainable Practices. *Journal of Construction Ethics*, 8(1), 101-115.
- Nkurunziza, L. (2024). Assessing the role of ethical standards in sustainable construction practices: The Rwandan experience. *Journal of Building Performance*, 11(1), 65-80.

- Nzabonimana, A., & Mukashema, J. (2021). Promoting Social Responsibility in Construction Projects: Strategies for Positive Community Engagement in Rwanda. *Journal of Sustainable Development*, 18(2), 112-128.
- Ofori, G. (2016). *Corporate Social Responsibility (CSR) in Construction: Evidence from Singapore*. Routledge.
- Omondi, F., & Kariuki, L. (2020). Fostering Social Responsibility in Construction Projects: Lessons from Community Engagement Practices in Kenya. *International Journal of Project Management*, 28(4), 332-348.
- Oyedele, L. O., & Bilal, M. (2018). *Corporate social responsibility in the construction industry*. Routledge.
- Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and Policy in Mental Health and Mental Health Services Research*, 42(5), 533-544.
- Petrovic-Lazarevic, S., Obradovic, V. L., Lucic, J., & Milovanovic, B. (2021). Integrating stakeholder theory into project management. *International Journal of Project Management*, 39(4), 643-656.
- Rest, J. R. (2016). *Moral development: Advances in research and theory*. Praeger Publishers.
- Saunders, M., Lewis, P., & Thornhill, A. (2016). *Research methods for business students (7th ed.)*. Pearson Education.
- Seo, S., Choi, S., Yu, J., & Kim, Y. (2019). Sustainable management strategies for construction waste in South Korea. *Sustainability*, 11(14), 3829.
- Shen, L., Wu, C., & Hong, J. (2019). A Social Responsibility-Based Construction Safety Management System (SRCSMS) for International Contractors in China. *Sustainability*, 11(16), 4429.
- Singh, A., & Pancholi, V. (2020). Ethical challenges and opportunities in the Indian construction industry. *International Journal of Ethics and Systems*, 36(1), 77-89.
- Smith, J., & Johnson, A. (2023). The role of professional integrity in sustainable construction projects. *Journal of Sustainable Development*, 25(3), 45-61.
- Smith, N., Merna, T., & Jobling, P. (2019). *Project management ethics: Decoding the relationship between moral engagement and project performance*. Routledge.

- Smith, A., & Tan, C. (2022). Ethical frameworks and their impact on sustainability in construction. *Journal of Business Ethics*, 18(3), 121-135.
- Tang, S. L., Shen, L. Y., & Cheng, E. W. L. (2020). Enhancing corporate social responsibility in construction through supply chain management. *Journal of Business Ethics*, 95(4), 563-581.
- Turner, L. A. (2018). *Ethical and sustainable construction: History, policies, challenges, and recommendations*. Routledge.
- UN. (2015). *Transforming our world: The 2030 Agenda for Sustainable Development*. United Nations.
- UNEP. (2017). *Global status report 2017: Towards a zero-emission, efficient, and resilient buildings and construction sector*. United Nations Environment Programme.
- UN-Habitat. (2016). *World cities report 2016: Urbanization and development - Emerging futures*. United Nations Human Settlements Programme.
- USGBC. (2021). *LEED v4.1*. U.S. Green Building Council.
- Uwamahoro, D., Uwizeyimana, A., & Mutabazi, E. (2021). Professional Integrity and Stakeholder Engagement in Promoting Sustainability of Construction Projects in Rwanda. *International Journal of Construction Management*, 1-14.
- Uwimana, C., & Vranken, J. (2020). The Role of Transparency and Accountability in Enhancing Development in Rwanda. *Development Policy Review*, 38(5), 599-617.
- Uwimana, E., & Gasana, C. (2022). Sustainable Construction Practices in Rwanda: A Review of Environmental Considerations and Ethical Implications. *Construction and Building Materials*, 203, 1015-1029.
- Wang, X., & Li, M. (2023). Corporate social responsibility and sustainable construction projects: A meta-analysis of empirical studies. *Journal of Cleaner Production*, 333, 125678.
- Yuan, H., Shen, Q., & Zhang, J. (2020). Towards Ethical Decision-Making in Construction Projects: A Comparative Study of Chinese and Western Contractors. *International Journal of Environmental Research and Public Health*, 17(18), 6803.
- Zhang, Y., Fan, L., & He, S. (2021). Ethical Decision-Making in Construction: Investigating the Moderating Effect of Moral Intensity. *International Journal of Environmental Research and Public Health*, 18(1), 315.

