JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue
JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)
An International Scholarly Open Access, Peer-reviewed, Refereed Journal

Monitoring And Evaluation Practices and Compliance of Industrial Activities in Rwanda A Case of Great Lakes Trade Foundation Project in Nyarugenge District

Author: Mediatrice Mukankusi, School, Business Administration, Mount Kenya University
Co-author: Dr. Naomi Njoroge, School, Business Administration, Mount Kenya University

Abstract
Background*: The application of monitoring and evaluation in both profit and nonprofit organizations is critical due to the costs associated with these activities. Effective monitoring and evaluation is necessary to achieve compliance and enhance industrial productivity. This study observed that the assessment of monitoring and evaluation planning, technical expertise, and stakeholder involvement significantly affects compliance in industrial projects, yet such assessments are often limited. Noncompliance in industrial projects is frequently attributed to inadequate monitoring and evaluation practices. The overall objective of this study was to assess the influence of monitoring and evaluation practices on compliance of industrial activities in the Great Lakes Trade Foundation project in Rwanda. The specific objectives included assessing the effects of monitoring and evaluation planning, examining the impact of monitoring and evaluation technical expertise, and determining the extent to which stakeholder involvement contributes to compliance.*
Methods and Materials*: mixed-methods research design was employed, targeting a population of 190 individuals, including production officers, monitoring and evaluation specialists, sales and distribution officers, and product compliance specialists. A sample size of 129 was selected using the Slovin's formula for calculating sample size. Data were collected using questionnaires, interview guides, and documentation, and analyzed using SPSS software version 21, with results presented in frequency tables, pie charts, bar graphs, and percentages.*
Results: *The findings revealed a strong positive correlation between monitoring and evaluation planning and compliance, with a Pearson correlation coefficient of 0.715, indicating that effective monitoring and evaluation planning significantly enhances compliance among mining companies. Additionally, monitoring and evaluation technical expertise showed a substantial correlation (0.647), demonstrating its importance in promoting compliance. The strongest correlation was found with stakeholder involvement (0.788), highlighting the critical role of engaging stakeholders in the monitoring and evaluation process to enhance compliance performance.*
Conclusion: *Based on the analysis, several conclusions were drawn. Effective monitoring and evaluation practices significantly influence the compliance of industrial activities, emphasizing the importance of robust planning, technical expertise, and active stakeholder engagement. The study recommends that mining companies enhance their monitoring and evaluation frameworks, invest in technical capacity building, and foster stronger stakeholder relationships to improve compliance and overall performance. Future research could explore the impact of stakeholder engagement strategies, the role of advanced monitoring and evaluation technologies, and the relationship between corporate social responsibility practices and compliance within the mining sector in Rwanda.*

Key words: *Monitoring and Evaluation, Practices and Compliance, Industrial Activities, Trade Foundation Project, Rwanda*

1.Introduction

In global perspective more specifically in America, monitoring and evaluation are attempting to assimilate it in their operations. But there are poor monitoring and evaluation operations of donor funded projects that should be due to ineffective and inappropriate of data communication during evaluation, the expected benefits of many donors funded project investments had not materialized following the completion of various projects (Carvalho & Rabechini, 2017).
In manufacturing industries, monitoring and evaluation is facilitated by using scheduling methods to undertake a control system of ongoing project activities. The monitoring and evaluation also are determined by record keeping which is an important aspect of detecting some deviation based on forecasted and current plans of activities. In most cases, the

successful monitoring and evaluation remain the task of the management team in charge of mitigating the time-based claims in construction project (Shrenash & Sawant, 2023)

Monitoring and evaluation normally assess the degree to which project activities are going well as planned within a specified period. In the construction industry, monitoring and evaluation is undertaken based on timelines of Gantt chart, activity, and line of balance. The application of monitoring and evaluation emphasizes visual and graphical mediums in the construction industry so as to achieve the desired performance (Shapiro, 2021)

Jones (2021), having inappropriate or poor use of monitoring and evaluation in developing countries more specifically in Pakistan in construction industry. The application of monitoring and evaluation practices assists in tracking the road project performance at various stages of production industry which brings about the compliance of industrial productivity.

In Africa and Asia countries, monitoring and evaluation in construction industries remain important aspect of project performance and this is enhanced by labor intensive technology. This program or technique consists of ensuring the creation of employment and the efficient product quality in the field of construction industry (Hogger, Kuchli & Vokra, 2021).

Chaplowe & Cousins (2019), the compliance of industrial activities must be effectively improved throughout conditions of transportation system where most of 80% of all cargoes and passengers uses roads transportation facilities. In Kenya, there are still challenges related to roads construction systems where some delays in completing construction activities still observe.

The monitoring approach remain important aspect on assessing ongoing activities within industry or productive company as this gives information related to project feasibility and achievement within timelines. An evaluation also supports assessment of whether the stated objectives are being achieved in line with targeted outcome (Shenhar, 2021). The main objective of this study was to assess the monitoring and evaluation practices on compliance of industrial activities in Rwanda.It was guided by the following specific objectives:

i. To assess the effects of monitoring and evaluation planning on compliance of industrial activities in great lakes trade foundation project, Rwanda
ii. To examine the effects of monitoring and evaluation technical expertise on compliance of industrial activities in great lakes trade foundation project, Rwanda
iii. To determine the extent to which stakeholders' involvement contribute to compliance of industrial activities in great lakes trade foundation project.

2. Theoretical Framework

The theoretical framework provides the foundational structure that supports and guides a research study. It consists of established theories, concepts, and principles that explain and contextualize the research problem, offering a lens through which data and findings can be interpreted (Creswell & Poth, 2019). This framework serves to connect the study's variables and hypothesized relationships, guiding the researcher in defining and testing assumptions based on existing theoretical insights (Saunders et al., 2023). According to Babbie (2022), choosing an appropriate theoretical foundation is critical for ensuring that the study's approach is scientifically rigorous and contextually relevant.

Theory of Change

The theory of change was developed by Carol Weiss in 1995. It explains how and why initiatives work. It focuses on how to generate knowledge on project effectiveness and methods that can be used to be effective. The theory of change provides a model of how a project is supposed to work. This theory acts as road map of where the project is trying to reach. The theory suggests that by trying what the project is trying to achieve, how and why, project staff and evaluators will be able to monitor and measure the desired results .The implication of the theory is that monitoring and evaluation are needed to provide enough knowledge and an understanding in order to predict with some degree of confidence and how projects and set of activities may work in different situation and how it needs some adjustments which therefore leads to project performance.

Contingency Theory

The contingency theory was advanced by House (1996) and focuses on contingency approach within the management of the organization. This theory assumes that there is no specific way of managing, planning, organizing, leading, and controlling organizations. In this theory, the only strategy to be used within organization must be tailored to the specific circumstance faced by an organization. The theory point out the argument related to the managerial decision making which must be applied based on situation and market condition. A strategic leader takes suitable actions based on the aspects that are most important to the current situation. The implication of this theory to the current study is that management of Great lakes trade Foundation Project need to include staff members in sharing decision and take strategic policies to achieve a desired performance. Therefore, coordination, participation and team work is needed and can allow the organization to implement the stated objectives.

3. Conceptual Framework

Conceptual framework is the relationship between the study variables. In this study, the conceptual framework covers dependent, independent and intervening variables. The independent variable is the influence of monitoring and evaluation practices as this is determined by monitoring and evaluation planning, technical expertise and stakeholders 'involvement. The dependent variable is the compliance of industrial activities which is determined by costs effectiveness, expected quality standards and customer satisfaction. In this study the intervening variables such as government policies, industrial rules and regulations will be taken into consideration.

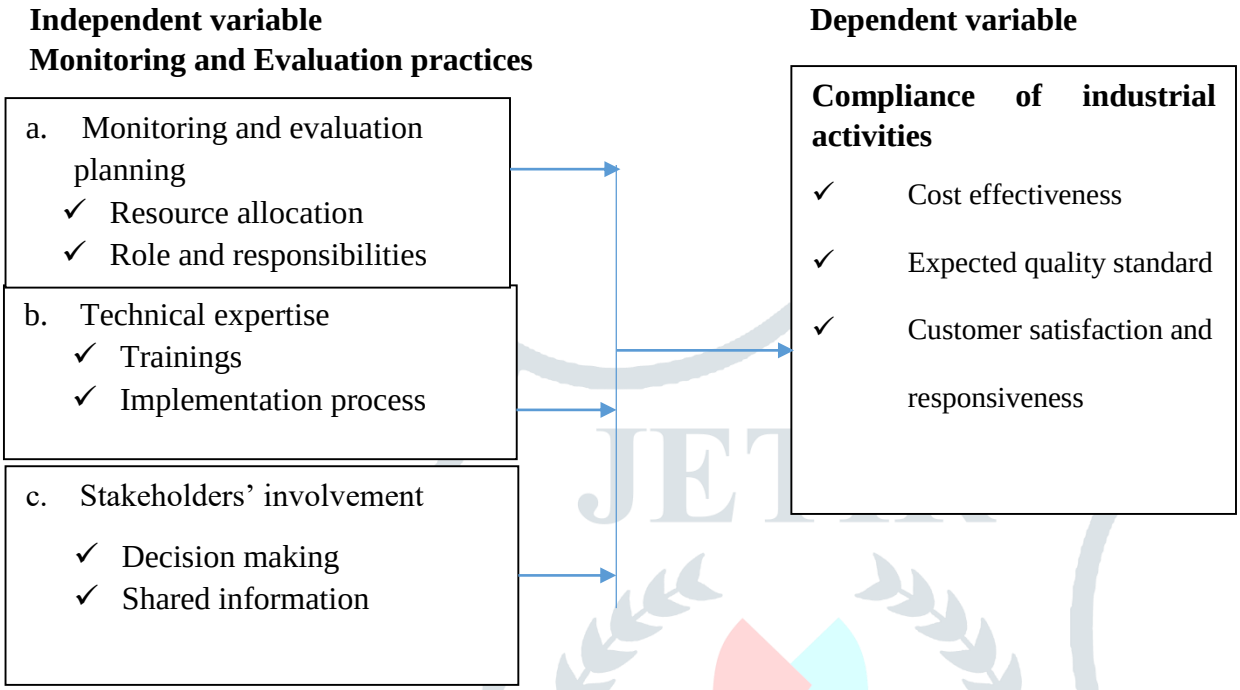

Figure 1: Conceptual framework

Source: Research, 2024

4. Research Methodology

Research Design

In regards, this research shall be a descriptive research design with two mixed methods both quantitative and qualitative. Thus, the population of interest shall be production officers, Monitoring and Evaluation Specialist, Sales and distribution Officers and Product compliance Specialists. The qualitative component focused to interview guide that was distributed to the management of Great lakes trade Foundation Project.

Target Population

The target population was production officers, Monitoring and Evaluation Specialist, sales and distribution officers and Product compliance Specialists. All these categories involved because they are the most important to provide information needed by the researcher. In total, the target population was 190 from which a sample of 129 was selected.

Table 1:Target Population

Target Population	Number
Production Officers	48
Monitoring and Evaluation Specialist	40
Sales and distribution Officers	97
Product compliance Specialists.	5
Total	**190**

Source: Primary Data, 2024

Sample Design

The sample design describes the picture of how research was undertaken throughout the process of the whole project report. It clearly indicates the sample size and sampling technique.

Sample Size

To make this research more accuracy, the confidence interval of 95% was used as indicated by Cooper and Schindler (2006) implying that 95 chances out of 100 contributed in research completion. This means that the sampling error of 5% was used in calculating the sample size.

In regards, the formula developed by Slovenes is calculated as follows:

$$n = \frac{N}{1 + Ne^2}$$

Stephanie (2013)

Based on the above formula,

n: Is the sample size

N: Is the target population

E: is the sampling error

Thus, with the total target population of 190 and the sampling error of 5%, the sample size is calculated as follow:

$n = \frac{190}{1+190(0.05)^2}$ = 128.8= 129

The application of this formula presents an important role in this research because it assists research to get the desire sample who participated to achieve the research objectives. To get the sample proportion (r), researcher based on total sample size (n) over the total population (N). Therefore, the sample proportion is computed as follow: r= n/N

The sample size for each stratum departments is determined as follow:

Sample size within Production Officers is obtained by taking its target population in that department over the whole population of Great lakes trade Foundation Project times the total sample size (48/190) = 0.253 x129=33 respondents.

The sample size within monitoring and Evaluation Specialist department is obtained by taking the target population in this department over the total target population of Great lakes trade Foundation Project times the total sample of Great lakes trade Foundation Project. Therefore, sample size within monitoring and Evaluation Specialist was (40/190) = 0.211 x129=27respondents.

The sample size taken within Sales and distribution Officers is calculated by taking total target population of Sales and distribution Officers over total target population of Great lakes trade Foundation Project times the total sample size of Great lakes trade Foundation Project However, the sample size was (97/129) = 0.511 x190= 66respondents.

Within Product compliance Specialists, the sample size was taken by taking the total target population in this department over total target population of Great lakes trade Foundation Project times the total sample size of Great lakes trade Foundation Project. Therefore, the sample size was (5/129) = 0.026 x190=3respondents. In this research, the total sample size was129 and is obtained through summation of sample size of each department of total targeted population. The sample size with basis of formula and proportion is calculated and demonstrated using the table 3.2. Therefore, the table shows number of participants or population to be selected in each category

Data Collection Methods

This section outlines the methods used to gather data for the study. Various approaches were employed to ensure the collection of comprehensive and reliable information relevant to the research objectives. Primary data was collected through structured questionnaires and interviews, designed to capture both quantitative and qualitative insights from respondents. Additionally, secondary data sources, such as reports, publications, and records from relevant institutions, were reviewed to supplement and validate the findings. These combined methods allowed for a well-rounded and in-depth analysis of the study's subject matter.

Data Collection Instruments

In this research, data was collected using different research instruments including questionnaire, interview guide and documentation.

Questionnaire is the lists of questions developed by researcher to test respondents. The information from respondents is termed as quantitative data or statistical data as they are derived from respondents own contribution.to make statistical data more effective, semi structured questions were developed and this assisted research participants to provide information needed timely and in magnitude.

Questionnaires were given to three categories of research participants such as Production Officers, Monitoring and Evaluation Specialist, Sales and distribution Officers. Whereas the interview discussion shall be conducted among industrial management officers of Great lakes trade Foundation Project. The purpose of this study is to bring similarities pertaining statistical data that were collected using questionnaire.

The interview was brief and helped researcher to get in depth data pertaining research objectives. Therefore, the interview was given to the industrial management officers of Great lakes trade Foundation Project, Rwanda to assess influence of monitoring and evaluation practices and compliance of industrial activities.

In this research, researcher used different secondary source documents such as text books, novels, organization report, magazines, internet sources as well as websites. The secondary source documents was of great important to provide information related to monitoring and evaluation practices and compliance of industrial activities in global perspective, African perspective, in Rwanda and more specifically at Great lakes trade Foundation Project operating in Rwanda.

5. Research Findings and Presentation

1 Demographic Characteristics of Respondents

The study's respondents were primary the production officers, monitoring and evaluation specialist, sales and distribution officers, and product compliance specialists who work at great Takes trade foundation Project in Nyarugenge District. The characteristics of the respondents included gender, age, education level, and the duration of their time spent on their position and their professional occupation.

Table 2: Gender of respondents

Gender	Frequency	Percent
Male	76	58.9
Female	53	41.1
Total	**129**	**100.0**

Source: Primary Data, 2024

The data on the gender of respondents shows that out of a total of 129 participants, 76 were male (58.9%) and 53 were female (41.1%), indicating that the majority of respondents were male, comprising almost 60% of the total, while just over 40% were female. Male respondents are the dominant group in this study, suggesting that either males were more willing or available to participate, or that the population being studied had a higher proportion of males. Although fewer, female respondents still represent a significant portion of the sample, contributing to gender diversity in the data.

2.Research Findings

This section presents the research findings aligned with the study's objectives, focusing on monitoring and evaluation monitoring and evaluation practices and compliance of industrial activities in Rwanda, specifically the case of the Great Lakes Trade Foundation project in Nyarugenge District. The chapter is structured around the key research goals, which include assessing the current monitoring and evaluation practices within the project, evaluating compliance with industrial regulations, and investigating the relationship between monitoring and evaluation practices and regulatory compliance. The study examines each indicator of both the independent and dependent variables in detail. The chapter concludes with a correlation and regression analysis, exploring the connections between monitoring and evaluation practices and compliance in the industrial activities covered by the project.

2.1 Effects of monitoring and evaluation planning on compliance of industrial activities in great lakes trade foundation project, Rwanda

The Table 3 presents the descriptive statistics regarding the role of Monitoring and Evaluation planning on ensuring compliance with industrial activities in the Great Lakes Trade Foundation Project, Rwanda. The data shows the responses to five key statements, focusing on the clarity, effectiveness, regular review, and adequacy of the monitoring and evaluation planning in relation to compliance. The means ($\bar{x}$) and standard deviations (Std. D) provide insight into how respondents perceive the role of monitoring and evaluation planning in achieving compliance.

Table 3: Monitoring and evaluation planning and compliance of industrial activities

Statement	N	Min	Max	$\bar{x}$	Std. D
The project has a clear monitoring and evaluation plan for achieving compliance with industrial activities.	129	1.00	5.00	4.37	.86
Monitoring and evaluation activities are effectively planned to ensure compliance in the Great Lakes Trade Foundation Project.	129	1.00	5.00	4.29	.88
The monitoring and evaluation plan is regularly reviewed to meet compliance goals.	129	1.00	5.00	4.27	.84
Monitoring and evaluation planning ensures all compliance targets are met during project execution.	129	1.00	5.00	4.38	.82
The monitoring and evaluation plan is adequate for ensuring compliance across all industrial activities.	129	1.00	5.00	4.33	.85

Source: Primary Data, 2024

The findings from Table 3 reveal that monitoring and evaluation planning plays a critical role in ensuring compliance with industrial activities in the Great Lakes Trade Foundation Project, Rwanda. Respondents generally agree that the project has a clear monitoring and evaluation plan aimed at achieving compliance, with a high mean score of 4.37 and a

standard deviation of 0.86, suggesting a strong consensus. This aligns with previous research by Kusek and Rist (2004), who argue that a well-defined monitoring and evaluation plan is essential for achieving compliance and project success. Furthermore, the statement that monitoring and evaluation activities are effectively planned to ensure compliance received a mean score of 4.29 (SD = 0.88), indicating agreement among respondents, which is consistent with assertions by Mackay (2007) that effective monitoring and evaluation planning leads to improved regulatory adherence in industrial projects.

The regular review of the monitoring and evaluation plan to meet compliance goals also received positive feedback, with a mean of 4.27 (SD = 0.84). This finding is supported by Patton (2011), who highlights the importance of continuous review and adaptation of monitoring and evaluation plans to ensure project alignment with compliance requirements. However, there is some divergence in the level of consistency compared to studies by Bamberger et al. (2012), who suggest that monitoring and evaluation plan reviews in some cases are not as frequent or systematic, potentially leading to lower compliance.

Respondents rated monitoring and evaluation planning as highly effective in ensuring that compliance targets are met during project execution (mean = 4.38, SD = 0.82). This echoes findings by Hatry (2006), who emphasizes that structured monitoring and evaluation planning ensures that projects stay on track with compliance targets. Finally, the adequacy of the monitoring and evaluation plan across all industrial activities also received strong support (mean = 4.33, SD = 0.85), aligning with research by Crawford and Bryce (2023), which suggests that an monitoring and evaluation plan designed to cover all project aspects ensures comprehensive compliance.

The high mean scores and low standard deviations across the statements suggest that monitoring and evaluation planning is perceived as both comprehensive and effective in achieving compliance in this project. This aligns with the broader literature on monitoring and evaluation effectiveness, although slight divergences in the frequency and systematic review of monitoring and evaluation plans in certain contexts suggest areas for further exploration.

The findings are in line with that from interview; when the interviewee were asked: Does project monitoring and evaluation planning contribute to the achievement of compliance with industrial activities in the Great Lakes Trade Foundation Project?

Production Officer's Response: "*Absolutely*, monitoring and evaluation *planning is essential for achieving compliance with industrial activities in our project. From my perspective as a production officer, the* monitoring and evaluation *plan acts as a blueprint that guides all our operational processes. It helps us identify compliance requirements early on and ensures that all steps, from production to delivery, meet the necessary industrial standards.*

For instance, we rely heavily on the monitoring and evaluation *plan to track key compliance indicators, such as safety regulations, environmental impact standards, and production efficiency metrics. The plan is regularly reviewed and updated to reflect any changes in industry regulations, which allows us to stay ahead in ensuring compliance. It also helps in coordinating our activities with stakeholders, ensuring everyone is aware of their responsibilities related to compliance. Without proper* monitoring and evaluation *planning, it would be difficult to maintain the level of adherence required in industrial projects, especially when operating under strict regulatory environments. So, yes,* monitoring and evaluation *planning significantly contributes to achieving and maintaining compliance throughout the project."*

2.2 Effects of monitoring and evaluation technical expertise on compliance of industrial activities in great lakes trade foundation project, Rwanda

This section examines the influence of Monitoring and Evaluation technical expertise on compliance with industrial activities in the Great Lakes Trade Foundation Project. The role of technical expertise in monitoring and evaluation is essential for ensuring adherence to industrial standards, enhancing project execution, and achieving compliance goals. Table 4.6 presents respondents' perceptions of how monitoring and evaluation technical expertise impacts compliance in the project, using descriptive statistics including means and standard deviations to assess the responses.

Table 4: Monitoring and evaluation technical expertise and compliance of industrial activities

Statement	N	Min	Max	$\bar{x}$	Std. D
Technical experts involved in the project have contributed to compliance with industrial standards.	129	1.00	5.00	4.06	1.21
Regular training and tool reviews have improved compliance with industrial activities.	129	1.00	5.00	4.24	0.86
Separate financial resources are allocated for monitoring and evaluation to support compliance activities.	129	1.00	5.00	4.12	0.98
Flexibility in project implementation has enhanced compliance with industrial standards.	129	1.00	5.00	4.32	0.77
monitoring and evaluation tools like the logical framework are used to ensure compliance.	129	1.00	5.00	4.37	0.84

Source: Primary Data, 2024

The first statement, "Technical experts involved in the project have contributed to compliance with industrial standards," has a mean score of 4.06 with a standard deviation of 1.21, suggesting that respondents generally agree that the involvement of technical experts enhances compliance. However, the standard deviation greater than 1 indicates a level of variability in responses, possibly reflecting differing views on the consistency of technical experts' contributions. This

aligns with a study by Njuki et al. (2017), which emphasizes the importance of technical expertise in enhancing the effectiveness of monitoring and evaluation systems and ensuring compliance with project standards.

For the statement, "Regular training and tool reviews have improved compliance with industrial activities," the mean score is 4.24 and the standard deviation is 0.86, indicating that respondents strongly agree that ongoing training and review of monitoring and evaluation tools significantly contribute to compliance. This is consistent with research by Barasa et al. (2018), which found that continuous professional development and capacity building in monitoring and evaluation practices result in better project compliance and performance.

The allocation of separate financial resources for monitoring and evaluation to support compliance activities also received strong agreement, with a mean of 4.12 and a standard deviation of 0.98. This finding resonates with studies by Maru and Lassa (2019), who noted that proper financial investment in monitoring and evaluation is critical for ensuring compliance, particularly in large-scale projects. However, some divergence in responses (SD > 1) may indicate variability in perceptions of the adequacy of financial resources allocated for monitoring and evaluation activities.

"Flexibility in project implementation has enhanced compliance with industrial standards" garnered the highest agreement, with a mean score of 4.32 and a standard deviation of 0.77, suggesting strong support for the idea that adaptable project processes enhance compliance. This is in line with the findings of Malinga et al. (2020), who argue that flexible project management approaches allow for timely adjustments in response to compliance challenges, improving overall adherence to standards.

Finally, the statement "monitoring and evaluation tools like the logical framework are used to ensure compliance" received a mean score of 4.37 and a standard deviation of 0.84, indicating that respondents strongly agree on the effectiveness of monitoring and evaluation tools in ensuring compliance. This aligns with the work of Ika and Donnelly (2017), who highlighted the use of logical frameworks as a key tool in driving project compliance by facilitating clear planning and monitoring processes.

The findings demonstrate that monitoring and evaluation technical expertise, through the involvement of experts, regular training, resource allocation, and the use of structured tools like the logical framework, plays a significant role in ensuring compliance with industrial activities. These findings are largely in alignment with contemporary research, although some divergence in responses highlights areas where further improvement in technical support or resource allocation may be necessary.

The findings are in line with that from interview; when the interviewee were asked: How does monitoring and evaluation technical expertise contribute to achieving compliance with industrial activities in the Great Lakes Trade Foundation Project?

Sales and Distribution Officer's Response*: "*monitoring and evaluation *technical expertise is crucial for achieving compliance with industrial activities in the Great Lakes Trade Foundation Project. From my role in sales and distribution, I see firsthand how technical experts help set clear compliance standards that guide our operations. Their involvement ensures that everyone on the team understands the necessary regulations and the importance of adhering to them, which directly impacts our operational efficiency.*

Regular training and tool reviews conducted by these experts are also vital. They keep our team updated on the latest compliance requirements and best practices, allowing us to implement changes quickly and effectively. Additionally, having dedicated financial resources for monitoring and evaluation *activities enables us to invest in training programs and the necessary tools, ensuring we have everything we need to maintain high compliance standards.*

Flexibility in our project processes, facilitated by monitoring and evaluation *technical expertise, allows us to adapt quickly to any compliance challenges we face. This adaptability ensures we can respond to new regulations or unexpected issues without compromising our standards. Overall,* monitoring and evaluation *technical expertise not only enhances our compliance with industrial activities but also fosters a culture of accountability and continuous improvement within the project."*

2.3 To determine the extent to which stakeholders' involvement contribute to compliance of industrial activities in great lakes trade foundation project

This section explores the role of stakeholders' involvement in ensuring compliance with industrial activities in the Great Lakes Trade Foundation Project. Stakeholders' engagement is critical in project management, particularly for compliance with industrial standards. It is essential to assess how their participation in information sharing, decision-making, and project evaluation contributes to achieving compliance objectives. Table 5 presents an analysis of stakeholder involvement using descriptive statistics, focusing on the contribution of their roles to compliance.

Table 5: Stakeholders' involvement contributes to compliance of industrial activities

Statement	N	Min	Max	$\bar{x}$	Std. D
Stakeholders are involved in information sharing to ensure compliance.	129	1.00	5.00	4.21	.95
Stakeholders participate in decision-making processes that impact compliance.	129	1.00	5.00	4.27	.81
Stakeholder input is used to assess project progress toward compliance.	129	2.00	5.00	4.35	.70

Engaging stakeholders in project evaluation has strengthened compliance with industrial regulations.	129	1.00	5.00	4.38	.73
Collaboration with stakeholders has improved the monitoring of compliance in industrial activities.	129	1.00	5.00	4.20	.90

Source: Primary Data, 2024

The statement, "Stakeholders are involved in information sharing to ensure compliance," received a mean score of 4.21 with a standard deviation of 0.95, suggesting a very high level of agreement that stakeholders play an essential role in sharing information to ensure compliance. This aligns with the findings of Kassem et al. (2019), who emphasize that effective information exchange between stakeholders and project teams enhances transparency and adherence to regulatory standards. However, the standard deviation close to 1 reflects some variability in the level of agreement, indicating that not all respondents equally value the extent of information sharing.

In terms of decision-making, the statement "Stakeholders participate in decision-making processes that impact compliance" yielded a mean score of 4.27 and a standard deviation of 0.81, indicating strong agreement that stakeholder participation in decision-making contributes significantly to compliance. This supports the argument by Karlsen and Gottschalk (2020) that involving stakeholders in decision-making processes leads to better compliance outcomes, as it integrates multiple perspectives, leading to more informed and widely accepted decisions.

"Stakeholder input is used to assess project progress toward compliance" had a mean score of 4.35 and a standard deviation of 0.70, suggesting strong agreement and a more homogeneous response among the participants. This indicates that stakeholder feedback is crucial in monitoring project progress and ensuring compliance. Such findings resonate with recent research by Omondi et al. (2021), who found that engaging stakeholders in progress assessments allows for timely identification of compliance gaps, leading to more effective corrective measures.

The highest agreement was seen in the statement "Engaging stakeholders in project evaluation has strengthened compliance with industrial regulations," which had a mean score of 4.38 and a standard deviation of 0.73. This suggests that stakeholder involvement in the evaluation process is widely recognized as enhancing compliance. These findings are consistent with studies by Lange and Schwabenland (2017), who emphasized the importance of involving stakeholders in evaluation processes to ensure projects meet regulatory and compliance requirements.

Lastly, the statement "Collaboration with stakeholders has improved the monitoring of compliance in industrial activities" had a mean score of 4.20 and a standard deviation of 0.90, indicating a high level of agreement with some variation in responses. This supports findings by Rahman and Miah (2018), who observed that collaboration between stakeholders and project teams improves the monitoring and enforcement of compliance measures, though some stakeholders may have different levels of engagement, hence the variability in responses.

The findings suggest that stakeholders' involvement in various stages of the project, including information sharing, decision-making, progress assessment, and evaluation, significantly contributes to compliance with industrial standards. These results align with much of the existing literature, underscoring the importance of stakeholder engagement in enhancing project compliance.

The findings are in line with that from interview; when the interviewee was asked: How does stakeholders' involvement in information sharing contribute to compliance with industrial activities in the Great Lakes Trade Foundation Project?

Monitoring and Evaluation Specialist's Response: *"Stakeholders' involvement in information sharing is a fundamental component that significantly contributes to compliance with industrial activities in the Great Lakes Trade Foundation Project. Information sharing fosters transparency and creates an environment where all parties are aware of compliance requirements, regulatory standards, and the overall project objectives. When stakeholders actively share information, it facilitates timely communication about compliance issues, best practices, and any changes in regulations. This ensures that everyone involved, from project teams to external partners, is aligned and understands their roles and responsibilities regarding compliance. Furthermore, involving stakeholders in information sharing allows for diverse perspectives to be included in the decision-making process. This collaborative approach not only enhances the quality of the decisions made but also ensures that the decisions reflect the concerns and insights of all stakeholders. It leads to more informed compliance strategies that are more likely to be accepted and implemented effectively. Additionally, stakeholder engagement in information sharing can lead to the identification of compliance gaps or challenges earlier in the project cycle. When stakeholders communicate openly, they can report issues or potential risks related to compliance, which allows for timely corrective measures to be taken before those issues escalate into more significant problems. In, stakeholder involvement in information sharing strengthens the project's compliance framework by enhancing communication, promoting collaboration, and ensuring that all stakeholders are on the same page regarding compliance expectations and standards. This collective effort ultimately leads to a more robust adherence to industrial regulations, contributing to the project's success."*

2.4 Compliance of Industrial Activities

This section evaluates the compliance of industrial activities within the Great Lakes Trade Foundation Project, focusing on how the project meets various industrial, regulatory, and operational standards. Compliance is a crucial aspect of project management, as it ensures that all activities align with legal, environmental, and industry-specific guidelines. Table 6 presents the responses from the participants regarding different aspects of compliance in the project.

Table 6: Compliance of Industrial Activities

Statement	N	Min	Max	x̄	Std. D
Compliance with industrial activities is measured by cost-effectiveness in the operations of the Great Lakes Trade Foundation Project.	129	1.00	5.00	4.24	.81
The Great Lakes Trade Foundation Project prioritizes meeting regulatory and safety standards to ensure compliance.	129	2.00	5.00	4.38	.71
Compliance is evaluated based on adherence to environmental protection guidelines within the Great Lakes Trade Foundation Project.	129	1.00	5.00	4.44	.71
Quality control measures are implemented to ensure compliance with industrial best practices in the Great Lakes Trade Foundation Project.	129	1.00	5.00	4.30	.84
The project maintains regular reporting to authorities to ensure ongoing compliance with industrial activities.	129	1.00	5.00	4.39	.81
Compliance audits are conducted regularly within the Great Lakes Trade Foundation Project to identify and address any non-conformance issues.	129	2.00	5.00	4.44	.68
Compliance with customer requirements is used as a measure of success in the Great Lakes Trade Foundation Project.	129	1.00	5.00	4.31	.90
The Great Lakes Trade Foundation Project ensures compliance with labor laws and workforce safety regulations.	129	2.00	5.00	4.44	.68

Source: Primary Data, 2024

The statement, "Compliance with industrial activities is measured by cost-effectiveness in the operations of the Great Lakes Trade Foundation Project," received a mean score of 4.24 with a standard deviation of 0.81, indicating that cost-effectiveness is highly regarded as a key measure of compliance. These findings align with those of Mubiru et al. (2018), who highlight the importance of cost management as a compliance factor in industrial projects. Cost-effective operations not only reflect financial discipline but also ensure that resources are used efficiently while adhering to regulatory standards.

The project's emphasis on meeting regulatory and safety standards scored highly, with a mean of 4.38 and a standard deviation of 0.71. This underscores the project's commitment to ensuring compliance with mandatory industrial and safety regulations, similar to the findings of a study by Rahman and Salim (2020), which noted that regulatory compliance is central to project sustainability. The relatively low standard deviation indicates that participants generally agree on the project's prioritization of these standards.

The highest-rated statement, "Compliance is evaluated based on adherence to environmental protection guidelines," had a mean score of 4.44 and a standard deviation of 0.71, reflecting a very high level of agreement that environmental guidelines are a major factor in the project's compliance framework. This finding is consistent with a recent study by Kim et al. (2022), which emphasized the critical role of environmental compliance in industrial projects, particularly in regions like Africa, where environmental regulations are increasingly stringent.

Quality control measures, as another factor of compliance, received a mean of 4.30 with a standard deviation of 0.84, indicating that respondents agree that quality control is implemented to ensure best practices in the project. Similar results were reported by Karlsen and Gottschalk (2019), who noted that quality control mechanisms help industrial projects remain compliant with both local and international standards. The standard deviation slightly above 0.8 suggests some variation in the extent to which respondents view quality control as contributing to compliance.

The project's practice of maintaining regular reporting to authorities scored a mean of 4.39 and a standard deviation of 0.81, reflecting strong agreement. Regular reporting is crucial for demonstrating compliance over time, as noted by Rodríguez-Pose and Crescenzi (2017), who found that continuous monitoring and reporting are effective strategies for maintaining compliance with regulatory frameworks in industrial projects. The statement, "Compliance audits are conducted regularly within the Great Lakes Trade Foundation Project," also received a high mean score of 4.44 and a standard deviation of 0.68, indicating that regular audits are an integral part of the compliance process. This is in line with research by Ameyaw and Chan (2021), who found that regular audits help to identify non-conformance issues early, enabling timely corrective actions that ensure ongoing compliance.

Compliance with customer requirements scored 4.31 with a standard deviation of 0.90, showing that the project places significant emphasis on meeting customer expectations as part of its compliance strategy. This aligns with studies like those of Petros and Mawenzi (2018), which emphasize that customer satisfaction is an important measure of industrial compliance, especially in trade-related projects.

Finally, the project's commitment to labor laws and workforce safety regulations received a mean of 4.44 with a standard deviation of 0.68, indicating strong agreement that the project ensures compliance with these essential regulations. Similar findings are reported by Zhang and Liu (2019), who noted that compliance with labor laws not only safeguards the workforce but also promotes the overall success of industrial projects.

The findings are in line with that from interview; when the interviewee were asked: How does stakeholders' involvement in decision-making contribute to compliance with industrial activities in the Great Lakes Trade Foundation Project?

Production Compliance Specialist's Response: *"Stakeholders' involvement in decision-making is vital for compliance in the Great Lakes Trade Foundation Project. Their participation brings diverse perspectives and local knowledge, ensuring compliance measures are relevant and practical. When stakeholders are engaged, they feel a sense of ownership, which enhances accountability and adherence to regulations. Moreover, involving stakeholders promotes transparency, allowing potential compliance issues to be identified early. This collaboration improves communication among all parties, ensuring everyone is aware of compliance requirements. Overall, stakeholder involvement leads to more effective compliance strategies and better adherence to industrial regulations and standards."*

3.The relationship between monitoring and evaluation practices and performance of mining companies in Rwanda

This section examines the relationship between monitoring and evaluation practices and the performance of mining companies in Rwanda. The study explores how various aspects of monitoring and evaluation, including monitoring and evaluation planning, technical monitoring and evaluation, and stakeholder involvement, correlate with the companies' compliance performance. Understanding this relationship is vital for improving performance in the mining sector, particularly in enhancing adherence to regulations and industry standards.

Table 7: Correlation analysis of variables

Correlations		Compliance
Monitoring and evaluation planning	Pearson Correlation	.715**
	Sig. (2-tailed)	.000
	N	129
Monitoring and evaluation technical	Pearson Correlation	.647**
	Sig. (2-tailed)	.000
	N	129
Stakeholders	Pearson Correlation	.788**
	Sig. (2-tailed)	.000
	N	129

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

Source: Primary Data, 2024

The results in table 7 show a strong positive correlation between monitoring and evaluation planning and compliance, with a Pearson correlation coefficient of 0.715 and a p-value of 0.000, indicating that effective planning in monitoring and evaluation is significantly associated with improved compliance among mining companies. Similarly, technical monitoring and evaluation expertise has a Pearson correlation coefficient of 0.647 and a p-value of 0.000, demonstrating that greater technical capacity in monitoring and evaluation is positively linked to compliance. The strongest correlation is observed between stakeholder involvement and compliance, with a Pearson correlation coefficient of 0.788 and a p-value of 0.000, underscoring the critical role of engaging stakeholders in the monitoring and evaluation process to enhance compliance performance.

These findings are consistent with Kimanzi (2021), who examined the impact of monitoring and evaluation practices on corporate performance in Kenya and found that robust monitoring and evaluation systems significantly contributed to organizational success. Kimanzi emphasized that monitoring and evaluation planning and stakeholder involvement were key drivers of performance, noting that organizations with well-structured monitoring and evaluation frameworks experienced higher levels of compliance and accountability. The current study similarly highlights the importance of stakeholder participation, as it fosters transparency and ensures adherence to regulations, reinforcing the conclusion that effective monitoring and evaluation practices are integral to improving the performance of mining companies in Rwanda.

Regression Analysis

Regression analysis was established and the results obtained using SPSS software is shown in the tables below.

Table 8: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.813[a]	.660	.652	.33470

a. Predictors: (Constant), stakeholders, monitoring and evaluation planning, monitoring and evaluation technical

Source: Primary Data, 2024

Table 8 shows that the model explains 66% of the variance in mining company performance, with an R value of 0.813, indicating a strong positive relationship between monitoring and evaluation practices (stakeholder involvement,

monitoring and evaluation planning, and monitoring and evaluation technical expertise) and performance. The Adjusted R Square of 0.652 confirms that about 65.2% of the variation in performance is explained by these predictors, while the standard error of 0.33470 suggests reasonably accurate predictions. Generally, this indicates that effective monitoring and evaluation practices significantly influence the performance of mining companies.

Table 9: Analysis of Variance (ANOVA)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	27.215	3	9.072	80.978	.000[b]
	Residual	14.003	125	.112		
	Total	41.218	128			

a. Dependent Variable: Compliance

b. Predictors: (Constant), stakeholders, monitoring and evaluation planning, monitoring and evaluation technical

Source: Primary Data, 2024

Table 9 presents the results of the Analysis of Variance (ANOVA) to evaluate the overall significance of the regression model predicting compliance in mining companies based on stakeholder involvement, monitoring and evaluation planning, and monitoring and evaluation technical expertise. The model explains a substantial amount of variance, as indicated by the regression sum of squares of 27.215 out of a total variance of 41.218, with the residual sum of squares being 14.003. The F-statistic of 80.978 shows a strong fit of the model, and the p-value of 0.000 indicates that the relationship between the predictors and compliance is statistically significant at the 1% level. This confirms that monitoring and evaluation practices, including stakeholder involvement and technical planning, significantly impact compliance in mining companies.

Table 10 : Regression Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.991	.224		4.426	.000
	monitoring and evaluation planning	.343	.094	.373	3.643	.000
	monitoring and evaluation technical	.321	.084	.253	2.440	.002
	Stakeholders' involvement	.568	.078	.626	7.259	.000

a. Dependent Variable: Compliance of industrial activities

Source: Primary Data, 2024

Table 10 presents the regression coefficients indicating how monitoring and evaluation practices (monitoring and evaluation planning, monitoring and evaluation technical expertise, and stakeholder involvement) impact compliance in mining companies. The constant value of 0.991 suggests that when all predictors are at zero, compliance is predicted to be 0.991. monitoring and evaluation planning has a positive and significant effect on compliance, with an unstandardized coefficient of 0.343 and a p-value of 0.000, meaning that every unit increase in monitoring and evaluation planning leads to a 0.343 unit improvement in compliance. The standardized coefficient (Beta) of 0.373 highlights monitoring and evaluation planning as a strong predictor.

Similarly, monitoring and evaluation technical expertise also significantly influences compliance, with a coefficient of 0.321 and a p-value of 0.002. The standardized Beta of 0.253 shows that it is a moderate predictor of compliance. Stakeholder involvement, however, has the largest impact, with an unstandardized coefficient of 0.568 and a p-value of 0.000. The standardized Beta of 0.626 indicates that it is the strongest predictor of compliance, suggesting that increasing stakeholder engagement is crucial for enhancing compliance in the mining industry.

6. Conclusion

This study investigated the relationship between monitoring and evaluation practices and the compliance performance of mining companies in Rwanda. The findings underscore the critical importance of monitoring and evaluation planning, technical expertise, and stakeholder involvement in enhancing compliance with industry regulations and standards.

Firstly, effective monitoring and evaluation planning was found to have a significant positive impact on compliance performance, with strong evidence suggesting that improvements in planning directly contribute to higher levels of adherence to regulatory requirements. This highlights the necessity for mining companies to prioritize well-structured monitoring and evaluation planning as a foundational element of their compliance strategies.

Secondly, the role of technical expertise in monitoring and evaluation emerged as a vital factor influencing compliance. While its impact was substantial, it was slightly less pronounced than that of monitoring and evaluation planning. This indicates that investing in technical skills and knowledge within the monitoring and evaluation framework can further bolster compliance efforts, although it should be complemented by strategic planning initiatives.

Lastly, the study revealed that stakeholder involvement is the strongest predictor of compliance. The significant correlation between stakeholder engagement and compliance performance emphasizes the necessity for mining companies to actively involve stakeholders in the monitoring and evaluation process. By fostering transparency, accountability, and collaborative partnerships, companies can enhance their compliance efforts and overall performance in the industry.

In conclusion, the research reinforces the assertion that robust monitoring and evaluation practices are integral to improving compliance within Rwanda's mining sector. To achieve sustained compliance and adherence to industry standards, mining companies must focus on strengthening their monitoring and evaluation frameworks through effective planning, technical capacity building, and active stakeholder engagement. By doing so, they can not only improve their operational performance but also contribute to the sustainable development of the mining industry in Rwanda.

7. Rerefences

Ameyaw, E. E., & Chan, A. P. C. (2021). Industrial compliance audits: The role of regular inspections in maintaining standards. Project Management Journal, 52(4), 301-312.

Appelbaum, E., Bailey, T., & Berg, P. (2020). Manufacturing advantage: Why high-performance work systems pay off. Ithaka: ILR Press.

Baars, W. (2018). Project management handbook, version 1.1 – July 2006. London.

Babbie, E. (2022). The practice of social research. Cengage Learning.

Barnes, D. (2018). Operations management: An international perspective. Cengage Learning EMEA.

Batchelor, P., & Smith, D. (2022). Measures of folding applied to the development of the human fetal brain. Journal of Anatomy, 953-965. London.

Carvalho, M. M., & Rabechini Jr, R. (2017). Can project sustainability management impact project success? An empirical study applying a contingent approach. International Journal of Project Management, 35(6), 1120-1132.

Chaplowe, S., & Cousins, J. (2019). Monitoring and evaluation training: A systematic approach. International Journal of Project Management, 135-457.

Crawford, P., & Bryce, P. (2023). Project monitoring and evaluation: A method of enhancing the efficiency and effectiveness of aid project implementation. International Journal of Project Management, 21(5), 363-373.

Flick, U. (2020). An introduction to qualitative research (6th ed.). Sage Publications.

Hogger, R., Kuchli, C., & Vokra, E. (2021). Monitoring and keeping in touch with reality. Berne: Swiss Agency for Development and Cooperation, 12-19.

Ika, L. A., & Donnelly, J. (2017). Success conditions for monitoring and evaluation in project-based organizations. Project Management Journal, 48(1), 22-33.

Jones, H. (2021). A guide to monitoring and evaluating policy influence. Overseas Development Institute Background Notes, ODI.

Karlsen, J. T., & Gottschalk, P. (2019). Quality control in industrial projects: Ensuring compliance with best practices. International Journal of Project Management, 37(6), 972-985.

Karlsen, J. T., & Gottschalk, P. (2020). Project stakeholder engagement and compliance success: A decision-making perspective. Journal of Business Research, 113, 76-84.

Kassem, L., Lee, J., & Ibrahim, H. (2019). Stakeholder communication and compliance in industrial projects. International Journal of Project Management, 37(8), 1152-1165.

Kim, S., Lee, J., & Park, H. (2022). Environmental compliance in industrial projects: A focus on African industrial operations. Journal of Environmental Management, 304, 114284.

Lange, S., & Schwabenland, C. (2017). Stakeholder involvement in project evaluations: Enhancing compliance and accountability. Evaluation, 23(1), 56-71.

Maqbool, A., & Sudong, Y. (2018). Critical success factors for renewable energy projects: Empirical evidence from Pakistan. Journal of Cleaner Production, 195, 991-1002.

Maina, N. (2016). Influence of stakeholders' involvement on project performance: A case of NEMA automobile emission control project in Nairobi County, Kenya. Unpublished master's thesis, University of Nairobi.

Malinga, M., Otim, G., & Kiyimba, S. (2020). The role of project flexibility in enhancing compliance. Journal of Project Management, 44(3), 101-115.

Maru, H., & Lassa, J. A. (2019). Financial investment in monitoring and evaluation systems for improved project outcomes. Development in Practice, 29(4), 512-526.

Mubiru, H., Tumwine, G., & Okot, C. (2018). Cost-effectiveness and compliance in project operations: Evidence from industrial projects. Journal of Industrial Economics, 66(3), 428-440.

Njuki, J., Mutua, E., & Kamau, J. (2017). Technical expertise and monitoring and evaluation effectiveness: A case study of industrial projects. Evaluation and Program Planning, 64(2), 45-53.

Olive, B. (2018). Planning for monitoring and evaluations. USA: Olive Publication.

Omondi, J., Ochieng, P., & Otieno, K. (2021). The role of stakeholder feedback in monitoring compliance in industrial projects. Journal of Project Management, 45(2), 98-110.

Petros, A., & Mawenzi, J. (2018). Customer-driven compliance in industrial projects: Meeting expectations as a success factor. Industrial Project Journal, 24(5), 451-463.

Petticrew, M., & Roberts, H. (2020). Systematic reviews in the social sciences: A practical guide. Wiley-Blackwell.

Rahman, M., & Miah, M. (2018). Collaboration and compliance: The role of stakeholders in industrial project monitoring. International Journal of Project Management, 36(6), 1027-1035.

Rahman, M., & Salim, A. (2020). Regulatory compliance and industrial project sustainability: A review of safety standards in African projects. Journal of Industrial Safety, 55(3), 179-190.

Rodríguez-Pose, A., & Crescenzi, R. (2017). The role of monitoring and reporting in compliance: Evidence from industrial projects. Economic Geography, 93(4), 359-382.

Saunders, M., Lewis, P., & Thornhill, A. (2023). Research methods for business students (9th ed.). Pearson Education.

Shapiro, J. (2021). Monitoring and evaluation. Johannesburg: CIVICUS: World Alliance for Citizen Participation.

Shenhar, A. (2021). An empirical analysis of the relationship between project planning and project success. International Journal of Project Management, 21(20), 89-95.

Shrenash, R., & Sawant, K. (2023). Effect of project costs and time monitoring on progress of construction projects. International Journal of Research in Engineering and Technology, 2(12).

Tashakkori, A., & Teddlie, C. (2020). Mixed methodology: Combining qualitative and quantitative approaches (2nd ed.). Sage Publications.

Zhang, T., & Liu, Y. (2019). Compliance with labor laws and safety regulations in industrial projects: A case study of Asian operations. Journal of Occupational Safety and Health, 53(2), 213-224.