



Effect of Project Environment on Success of Peat Power Plant Projects in Rwanda

Eric Hakizimana & Ronald Kwena

University of Kigali

Email: hakizieric@gmail.com

Abstract: *This paper investigates the impact of the project environment on the success of peat power plant projects in Rwanda, with a particular focus on the role of project governance policies. The study employed a descriptive research design, combining both quantitative and qualitative methods. The target population consisted of 267 professionals directly involved in the projects, including project managers, agronomists, engineers, environmentalists, and government officials. A total of 245 questionnaires were distributed, and 22 key informants were interviewed. Of the 245 distributed questionnaires, 186 were returned. Inferential analysis was conducted using SPSS software version 21. The findings revealed a statistically significant relationship between project governance policies and project success, with a Pearson correlation coefficient of $r = 0.765$, indicating a strong positive relationship. Regression analysis further supported this, with a standardized beta coefficient of 0.717, demonstrating that project governance policies are a major predictor of project success. This result underscores the significant impact of governance policies on the likelihood of successful project outcomes. Based on these findings, the study recommends enhancing the enforcement of governance policies, providing ongoing training for project staff, and aligning governance policies with Rwanda's political and socio-economic context. These measures are expected to strengthen the effectiveness of governance policies and contribute to more successful project implementation.*

Keywords: Project environment, Peat power plant, Project governance policies, Gisagara District, Rusizi District

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1. Introduction

A peat power plant project refers to the development and construction of a facility designed to produce electricity by utilizing peat as the primary fuel source. This type of project involves several stages, including feasibility studies, environmental assessments, design and engineering, construction, and operational phases. It also requires careful management of resources, compliance with regulations, and alignment with broader energy policies and environmental goals ((Ajayi et al., 2020). The success of a project is heavily influenced by both internal and external factors, which include economic, political,

and social conditions in the project's environment (Gilbert, 2023). For projects like peat power plants, understanding these external factors—such as public affairs, economic situations, and government policies is crucial for alignment with the project's goals and strategies (Belasi & Tukel, 2020). The project environment can significantly affect a project's quality, as risks associated with political instability, bureaucracy, and inadequate infrastructure in developing countries often lead to time and cost overruns (Chikati, 2019). Effective analysis of the project environment helps to mitigate these risks and improve the likelihood of success.

Developing countries face challenges in managing projects due to factors like political instability, inefficient bureaucracy, and a lack of infrastructure. These challenges often lead to significant cost and time overruns even before a project begins. Research suggests that tailored management tools and techniques are necessary to address these specific challenges (Dongier et al., 2021). In such environments, external factors like political, legal, and economic conditions, as well as local community issues and weather conditions, play a critical role in shaping project outcomes (Ajayi et al., 2020). Understanding and addressing these factors is key to successful project management in developing countries.

In developed countries, projects generally aim to optimize resource allocation and create productive assets that drive economic growth (Kisii, 2021). The success of projects in these settings is often evaluated based on clear success criteria such as cost, quality, and time. However, defining project success is more challenging in developing countries, where additional factors such as leadership style, business success, and client acceptability must be considered (Faniran & Smith, 2020; Kaufman & Paulin, 2024). These factors are often underexplored, with previous studies focusing primarily on time, cost, and quality limiting their applicability to a broader range of projects, particularly in developing regions like Africa.

Project success in developing countries, particularly in sectors like energy, often faces unique challenges due to factors like inflation, project complexity, poor planning, and weak project management capacity (Marx, 2022). For example, in sub-Saharan Africa, power project development is fraught with risks leading to significant financial losses (Muller, 2019). Projects like peat power plants in East Africa have faced numerous setbacks due to inadequate planning, corruption, and environmental issues, which hinder the overall success and development goals (World Bank, 2022). The failure of such projects often underscores the need for more effective project management practices tailored to the specific conditions in these regions.

Rwanda's peat power plant projects, aimed at enhancing economic development and alleviating poverty, face significant challenges in their execution. While these projects have the potential to transform rural communities by improving income and livelihoods, they also suffer from high failure rates due to poor planning, inadequate funding, and limited technical capacity (Thochim, 2018). These factors have led to delays and financial losses, affecting the country's development progress. Despite the potential benefits of such projects, including skills development and increased income, the failure of these projects underscores the importance of properly managing the project

environment to ensure success. This study aims to explore how the project environment in Rwanda influences the success of peat power plant projects and provides recommendations for improving project outcomes.

1.1 Problem statement

Peat power plant projects across various sectors, including energy and infrastructure, frequently fail, leading to significant financial losses globally (Murphy, 2021). Studies show that 75% of such projects fail even before implementation (Harrington & Frank, 2019). The key issue lies in inadequate project management strategies, where leaders often lack the tools to successfully manage and execute projects, resulting in wasted resources and reduced profitability (Ramazani & Jergeas, 2019).

In Africa, peat power plant projects are crucial for economic growth, but they often fail due to poor planning, unrealistic expectations, corruption, and a lack of transparency (African Union Report, 2023). Despite billions of dollars invested by organizations like the World Bank, more than 50% of such projects fail in Africa, a rate higher than in other underdeveloped regions (World Bank, 2021). These failures are often attributed to mishandling of funds and insufficient attention to community and team needs.

In Rwanda, despite efforts to improve social and economic well-being through peat power plant projects, poverty has risen due to the poor performance of these projects. Inadequate planning, including governance policies, funding issues, and weak project teams, has led to the failure of several initiatives (Government of Rwanda, 2020; RDB, 2019). These challenges underscore the need for better environmental considerations and management practices to ensure the success of peat power plant projects, such as the HQ Peat power plant in Gisagara District and the Gishoma peat power plant project in Rusizi District.

The success of these projects relies heavily on effective project management, addressing environmental factors, and ensuring that all stakeholders are adequately involved. Well-planned projects tend to have a higher success rate, while those with poor planning often face delays, cost overruns, and failure to meet objectives. This highlights the importance of improving project management practices to avoid the common pitfalls that lead to failure. This study aims to analyze how the project environment impacts the success of peat power plant projects in Rwanda, specifically focusing on one key challenge which is project governance policies. Understanding that factor is crucial for improving project outcomes and ensuring that future peat power plant projects can contribute effectively to Rwanda's economic and social development.

This study sought to achieve the following research objective:

To determine the effect of project governance policies on the success of peat power plant projects in Rwanda

2. Literature Review

The project environment plays a crucial role in determining the success or failure of peat power plant projects, especially in developing regions like Africa. According to Gilbert (2023), understanding the external factors such as political, economic, and social conditions is vital for effective project management. In the case of peat power plants, external challenges such as political instability, economic fluctuations, and legal uncertainties often disrupt project timelines, leading to cost overruns and delays. This aligns with the findings of Belasi and Tukul (2020), who emphasize that a comprehensive understanding of the project environment helps align project objectives and management strategies with the existing contextual conditions. For peat power plants, these external factors significantly influence the availability of resources, project financing, and community support, all of which are essential for project success.

In many developing countries, including those in Africa, the project environment is characterized by risks such as political instability, weak governance structures, and corruption, which often hinder the effective implementation of large-scale infrastructure projects (Dongier et al., 2021). These challenges are particularly evident in the energy sector, where projects like peat power plants face difficulties due to bureaucratic red tape, inadequate infrastructure, and unreliable regulatory frameworks (Ajayi et al., 2020). In Rwanda, for instance, while the potential for peat power plants to contribute to energy production and economic growth is high, the lack of adequate governance and planning often leads to project failure (Government of Rwanda, 2020). According to the African Union Report (2023), the failure rate of energy projects in Africa is disproportionately high compared to other regions, largely due to the project environment's instability and inefficiencies.

A critical aspect of the project environment that affects peat power plant success is the availability of financial and technical resources. Chikati (2019) argues that insufficient funding, poor financial planning, and the lack of technical capacity are major contributors to project failure. In many African countries, financing for large infrastructure projects like peat power plants is often sourced from external institutions, such as international banks and development agencies. However, these funds are typically contingent on the project's ability to meet certain performance standards, which are often unmet due to the unstable project environment (World Bank, 2021). This creates a vicious cycle where delayed or failed projects lead to financial losses, reducing the likelihood of securing future funding for similar initiatives.

Moreover, the social and cultural factors within the project environment also play a significant role in determining the success of peat power plant projects. Larson and Larson (2022) highlight that understanding local community needs and engaging stakeholders are critical components of successful project execution. In the case of peat power plants, projects that fail to consider the environmental concerns and livelihood impacts of local communities are more likely to face resistance and delays (Muller, 2019). In Rwanda, for example, projects that fail to integrate community input and address local needs have seen increased opposition and difficulties in project implementation, which adversely affect overall project outcomes (RDB, 2019).

According to Kelly (2023), the operational environment, including the availability of infrastructure, is a crucial determinant of peat power plant project success. Projects in regions with poor infrastructure often face significant logistical challenges that delay progress and increase costs (Harrington & Frank, 2019). In many African nations, including Rwanda, the lack of reliable transportation networks, energy supply, and telecommunications systems complicates project execution. Without a robust infrastructure framework, even well-funded and well-planned peat power plant projects struggle to maintain their timelines and budgets, leading to failures or suboptimal outcomes (Kisii, 2021). Thus, improving the project environment by addressing infrastructure gaps, enhancing governance, and securing stable financing can substantially increase the chances of success for peat power plant projects in developing countries.

2.1 Project governance policies

Project governance policies are a critical framework for ensuring that projects are managed effectively and in alignment with organizational goals and regulatory requirements. In the context of peat power plant projects, governance policies provide the structure for decision-making, risk management, and stakeholder engagement throughout the project lifecycle. These policies outline the roles, responsibilities, and accountabilities of various stakeholders, including project managers, government agencies, contractors, and local communities. According to Larson and Larson (2022), robust governance frameworks are essential for guiding projects through complex regulatory environments, managing risks, and ensuring transparency in decision-making processes. In developing countries like Rwanda, where peat power plants are being increasingly explored as a source of energy, project governance policies must be particularly well-defined to address the specific challenges of these regions, such as political instability, corruption, and weak institutional capacity (Ajayi et al., 2020).

One of the key aspects of project governance in peat power

plant projects is ensuring the alignment of the project with national development strategies and energy policies. Effective governance policies should integrate the project's objectives with broader environmental and social goals, such as reducing carbon emissions, promoting economic growth, and creating local employment opportunities (Gilbert, 2023). In Rwanda, for example, the government has set ambitious targets for renewable energy development, and peat power plants are seen as a means to meet these targets (Walker, 2019). However, these projects require clear governance policies that manage the allocation of resources, adherence to environmental standards, and the resolution of conflicts among stakeholders. Failure to establish and enforce such policies can result in delays, budget overruns, and failure to meet the intended project outcomes (RDB, 2019).

In addition to aligning with national priorities, project governance policies must ensure transparency and accountability throughout the project's execution. This includes the establishment of clear reporting mechanisms, independent audits, and transparent procurement processes to reduce the risks of corruption and mismanagement of funds (Harrington & Frank, 2019). According to the African Union Report (2023), poor governance in the energy sector has been a major cause of project failure in Africa, as inadequate monitoring and oversight lead to inefficiencies, cost overruns, and project delays. Effective governance policies should therefore emphasize accountability, foster stakeholder collaboration, and provide mechanisms for the timely resolution of conflicts. By implementing strong governance structures, peat power plant projects can achieve their intended goals and contribute to sustainable economic and social development in the regions they serve.

2.1.1 Project Success

The success of peat power plant projects is often defined by their ability to meet specific performance criteria, such as time, cost, and quality. In many cases, success is also evaluated based on the project's contribution to sustainable energy production, economic growth, and social development. Peat, a widely available and inexpensive resource, has been increasingly explored as a renewable energy source in countries with abundant deposits, such as Rwanda. According to Rono (2021), peat power plants have the potential to provide a significant portion of the energy supply, especially in countries with limited access to other energy resources. Successful peat power plant projects can not only reduce dependence on imported fossil fuels but also contribute to poverty alleviation by creating jobs and promoting local economic development (Hakizimana et al., 2020). However, achieving success depends heavily on effective project management,

adequate funding, and alignment with national development goals.

In developing countries, particularly in sub-Saharan Africa, the success of peat power plant projects faces considerable challenges. These include insufficient infrastructure, inadequate governance, and weak regulatory frameworks that complicate project implementation (Chikati, 2019). Furthermore, while peat power plants are often seen as a viable energy solution, the successful execution of such projects requires careful planning and coordination among various stakeholders, including government agencies, international partners, and local communities. The success of these projects depends not only on their technical feasibility but also on their social acceptance and environmental sustainability (Muller, 2019). In Rwanda, for example, despite the country's abundant peat resources, the success of peat power plant projects has been hampered by poor planning, financial mismanagement, and lack of technical expertise (Government of Rwanda, 2020).

A comprehensive understanding of success in peat power plant projects requires an evaluation of both short-term and long-term outcomes. While many projects may meet their immediate objectives, such as providing electricity or creating jobs, their long-term sustainability is often compromised by factors such as environmental degradation, insufficient maintenance, and failure to adapt to evolving energy needs. Success, therefore, is not only about completing a project on time and within budget but also about ensuring its long-term viability and contribution to the broader development goals of the country. According to the World Bank (2021), successful peat power plant projects require an integrated approach that includes risk management, capacity building, and stakeholder engagement, ensuring that the projects remain operational and continue to benefit local communities for years to come. Therefore, the true success of peat power plant projects lies in their ability to create lasting value both for the economy and for the environment.

2.2 Empirical Literature

This section reviews existing studies on the impact of project governance policies on the success of peat power plant projects, with a focus on global trends, developed countries, Africa, East Africa, and Rwanda.

2.2.1. Effect of project governance policies on the success of peat power plant projects

Globally, effective project governance policies are widely

recognized as essential to the success of large-scale infrastructure projects, such as peat power plants. Research indicates that countries with robust governance frameworks experience a higher rate of project success, with studies showing that 75% of energy projects in developed countries with clear governance structures meet their objectives within the allocated time and budget (Gilbert, 2023). In contrast, projects in regions with weaker governance policies face significantly higher failure rates. For instance, a study by Harrington and Frank (2019) found that 60% of peat power plant projects worldwide experience significant cost overruns or delays due to poor governance. The gap, however, lies in the limited applicability of governance models across different geopolitical contexts, especially when it comes to countries with unstable political environments or weak regulatory frameworks. The challenge remains in adapting successful governance policies from developed nations to regions with different socio-political realities, where governance issues such as corruption and lack of enforcement remain prevalent.

In developed countries, governance policies have a marked positive impact on the success of peat power plant projects. In countries like Sweden and Finland, where peat has been used for energy generation for decades, nearly 80% of peat power plant projects are completed successfully, meeting both environmental standards and energy production goals (Hakizimana et al., 2020). This high success rate is largely due to well-defined regulatory frameworks, efficient project management practices, and strong institutional oversight, which help mitigate risks associated with financial mismanagement and environmental violations. However, the gap in this context is the underutilization of innovative governance mechanisms that could further streamline project execution. For example, while traditional oversight methods are effective, the integration of newer technologies for monitoring and evaluation, such as real-time data tracking and artificial intelligence, is still relatively underdeveloped. This leaves an opportunity for improvement in enhancing project governance through modern tools, which could further increase the success rate of peat power plant projects.

In Africa, the success of peat power plant projects is hindered by weak governance structures, and this gap is reflected in the high failure rate of energy projects. The African Union Report (2023) found that over 50% of energy projects, including peat power plants, in sub-Saharan Africa fail to meet their intended goals due to issues such as corruption, lack of regulatory enforcement, and poor planning. In particular, governance-related problems lead to delays in project completion, cost overruns, and inadequate stakeholder engagement. For example, in a study of peat power projects in Kenya and Nigeria, 45% of projects experienced delays exceeding 12

months due to governance challenges (Muller, 2019). The key gap here is the need for improved governance frameworks that specifically address the challenges unique to the African context, such as local political instability, and the need for stronger institutional capacity at the national and regional levels.

In East Africa, the impact of governance policies on peat power plant projects is similarly mixed, with countries like Kenya and Uganda showing varying success rates. Research by the World Bank (2021) suggests that approximately 60% of energy projects in East Africa experience challenges related to governance, such as lack of coordination between government agencies and insufficient technical expertise. However, 40% of projects have successfully met their objectives, driven by stronger governance policies and better alignment with national energy goals. The gap in East Africa lies in the insufficient application of regional governance frameworks that could enhance cross-border collaboration and improve project success rates. For instance, while individual countries may have some successful peat projects, there is a lack of integrated governance policies that address regional energy needs and challenges in a coordinated manner. This presents an opportunity to create stronger regional governance structures that can ensure the success of energy projects, including peat power plants, across East Africa.

In Rwanda, project governance policies have a critical impact on the success of peat power plant projects, but significant gaps remain. Despite efforts by the government to harness peat for energy production, studies have shown that only 35% of peat power plant projects in Rwanda have been successful, with delays and cost overruns being the primary issues (RDB, 2019). The Government of Rwanda has implemented several policies aimed at improving governance in the energy sector, but a lack of adequate coordination between government bodies, limited stakeholder engagement, and insufficient project management capacity have hindered success (Government of Rwanda, 2020). The gap in Rwanda's project governance policies lies in the need for more comprehensive frameworks that integrate local communities into decision-making processes and provide mechanisms for better monitoring and accountability. The lack of focus on local stakeholder participation in planning and execution is a significant factor contributing to the high failure rate of projects. Strengthening governance policies to include community-based approaches and better financial oversight could substantially increase the success rate of peat power plant projects in Rwanda.

3. Methodology

This study adopted a descriptive research design, combining both qualitative and quantitative methods. The

descriptive design is ideal for portraying attributes of specific groups and understanding relationships, patterns, and trends in data (Muathe, 2010; Kothari, 2004). The research aimed to examine the effect of the project environment on the success of peat power plant projects in Rwanda, providing a comprehensive overview of factors influencing project implementation. By using this approach, the study systematically captured the environment surrounding the projects, offering insights into key variables such as governance policies, funding structure, and project team dynamics.

The target population for the study included 267 individuals directly involved in managing peat power plant projects in Gisagara and Rusizi Districts, as per the MININFRA report (2023). This population consisted of various professionals, including project managers, agronomists, engineers, environmentalists, and government officials. Given the focus on those directly engaged in the projects, a census method was employed, meaning all 267 individuals were included in the study to ensure comprehensive data capture and representation of the target group. The following table gives details:

Table 1: Table representing target population

Category	Population
Project Manager (Coordinator)	2
Agronomist	2
Socio economist	2
Environmentalist	2
Accountant	2
Electrical engineers	4
Procurement Specialist	2
Government officials	6
Rural sector support project staff	245
Total	267

Source: MININFRA annual report, 2023

This study employed a census approach, where the entire population of 267 respondents was included, rather than selecting a sample. According to Kothari (2019), the census method involves studying every unit within a defined population, ensuring a comprehensive analysis. The researcher chose this approach because the population was homogeneous, reducing the need for sampling to capture diverse perspectives.

Data collection for the study relied on a combination of questionnaires, interviews, and documentary review. Questionnaires were distributed to project staff to gather quantitative data using a Likert scale format, enabling easy statistical analysis (Kothari, 2019). Interviews were conducted with key personnel such as project managers and government officials to obtain qualitative insights into their experiences and evaluations of project success. Additionally, secondary data from project reports, feasibility studies, and environmental assessments provided contextual background and further enriched the data analysis process.

This study used pilot testing to establish the validity and reliability of the research instrument, aiming to improve the clarity, readability, and understanding of the questionnaire. The pilot involved 5 project staff and 10 rural support staff who were not included in the final study, and led to the

elimination of vague items, rephrasing of similar concepts, and removal of irrelevant items. Content validity was adopted to ensure the questionnaire effectively addressed the research questions and accurately represented the topic under study. The reliability of the instrument was measured using Cronbach's alpha, which yielded a value of 0.78, indicating good consistency and dependability.

Data analysis in this study employed both qualitative and quantitative techniques. Descriptive statistics, including means and standard deviations, were used to summarize and describe the characteristics of the data. Inferential statistics, such as Pearson correlation and ANOVA, were applied to explore relationships between key variables and draw conclusions regarding the factors influencing project success. To assess the impact of project governance policies on project success, a regression model was used, represented by the equation:

$$\text{Where: } Y = \beta_0 + \beta_1 X_1 + \varepsilon$$

Y = Project Success

β_0 is the intercept (the value of Y when X_1 is 0)

X_1 = Project governance policies

The analysis was conducted using a 95% confidence level, with regression analysis used to determine the extent to which changes in project governance policies (X_1) affect

project success (Y). The results helped identify significant predictors of project success and provided insights into how governance policies influence project outcomes.

The data collected included both qualitative and quantitative components. Qualitative data were analyzed through thematic coding and narrative analysis, based on interview transcripts and field notes. This allowed the researcher to identify recurring themes and patterns related to the project environment and governance. Quantitative data from the questionnaires were organized and analyzed using the Statistical Package for Social Sciences (SPSS), facilitating a detailed examination of relationships between variables and the application of statistical tests.

Throughout the research process, ethical considerations were strictly adhered to. Informed consent was obtained from all participants, ensuring they understood the purpose and nature of the study. Anonymity and confidentiality were maintained, with all responses treated with professionalism and used solely for research purposes. These ethical standards ensured the integrity and credibility of the study, promoting trust and transparency in the research process.

4. Results and Discussion

4.1. Results

This section presents the analysis and interpretation of the findings of the study in relation to the research hypothesis.

Table 2: Level of agreement on how project governance policies affect project success

Views of respondents	N	M	SD
Stakeholder management policies play a critical role in project success	186	4.6828	.46664
Human resource policies are integral to project success as they govern the management of people within the project team	186	4.1129	.31733
Procurement policies establish guidelines for budgeting, bidding, and negotiation processes	186	4.0806	.74902
Procurement policies define standards and requirements for evaluating vendor qualifications, performance, and deliverables	186	4.2581	.43875
Procurement policies establish timelines and milestones for procurement activities to ensure timely delivery of goods and services	186	4.5699	.63922
Project corruption policies play a crucial role in maintaining transparency, accountability, and ethical conduct within projects	186	4.0108	.85966
Valid N (listwise)	186		

Source : Field Data, 2024, **Key:** M – Mean; SD – Standard Deviation

The table presents the views of respondents regarding the impact of various project governance policies on the success of peat power plant projects in Rwanda. The responses are summarized using mean (M) and standard deviation (SD) scores based on a Likert scale ranging from 1 to 5, where 5 indicates "Strongly Agree" and 1 indicates "Strongly Disagree." Each policy area is evaluated in terms

4.1.1 Response rate

The study aimed to include 267 respondents from Peat power plant projects. Initially, 245 questionnaires were distributed, and 22 additional individuals were interviewed. Out of the 245 distributed questionnaires, 186 were returned, resulting in a response rate of 75.9% among the rural sector support project staff. The study also included 22 key informants who participated in interviews. The final analysis encompassed responses from all 186 questionnaire respondents and 22 interviewees, totaling 208 participants. Thus, the study achieved an overall response rate of 94.5% from the 208 participants involved.

4.1.2 Descriptive Statistics on Project Governance Policies

This section examines the research hypothesis regarding the impact of project governance policies on the success of peat power plant projects in Rwanda. It also explores the perceptions of respondents based on the survey questions. Descriptive statistics were used to analyze the data, providing a meaningful summary and presentation of the results. In this study, a Likert scale ranging from 1 to 5 was employed: 5 representing "Strongly Agree," 4 for "Agree," 3 for "Neutral," 2 for "Disagree," and 1 for "Strongly Disagree." This scale enables a clear interpretation of respondents' attitudes and perceptions. The findings from the descriptive analysis are presented in Table 2 below.

of its perceived importance to project success. Firstly, stakeholder management policies were seen as a critical element for project success, with the highest mean score of 4.6828. This suggests that respondents strongly agree on the importance of managing stakeholders effectively throughout the project lifecycle. The standard deviation of 0.46664 indicates that there was a relatively high level of

consensus on the importance of this governance aspect, with little variation in the responses. Stakeholder engagement is often cited as a fundamental factor in ensuring project alignment with community and external expectations, which could explain its strong recognition. Secondly, human resource policies also received a high mean score of 4.1129, demonstrating respondents' agreement on the integral role of human resource management in the success of peat power plant projects. Human resource policies govern the management of people within the project team, including recruitment, retention, and conflict resolution. With a standard deviation of 0.31733, the responses were fairly consistent, indicating a shared understanding among respondents of the importance of strong human resource policies in fostering a well-functioning project team.

Thirdly, procurement policies received positive but slightly lower mean scores compared to stakeholder and human resource policies. For the statement about procurement policies establishing guidelines for budgeting, bidding, and negotiation processes, the mean score was 4.0806. This reflects a general agreement on the importance of these policies, although the slightly lower score suggests that procurement may not be perceived as critical as stakeholder and human resource management. The standard deviation of 0.74902 is notably higher, indicating a wider variation in responses, which may suggest some differing opinions on the relative importance of procurement in relation to other governance areas. On a more specific note, procurement policies defining standards for vendor qualifications and performance scored a mean of 4.2581, showing strong agreement among

respondents that setting clear standards for evaluating vendors is an important governance element for project success. The standard deviation of 0.43875 indicates a moderate level of agreement across respondents, suggesting that while the policy is seen as important, there is still some variability in how strongly different respondents feel about its impact.

In terms of procurement timelines, the policy focusing on establishing timelines and milestones for procurement activities received a very high mean score of 4.5699, indicating a strong consensus among respondents on its importance for ensuring timely delivery of goods and services. The standard deviation of 0.63922 is slightly higher than other categories but still shows a general agreement on the significance of timely procurement in achieving project success. Finally, project corruption policies, which focus on transparency, accountability, and ethical conduct, received a mean score of 4.0108, suggesting that respondents generally agree on their importance. However, the higher standard deviation of 0.85966 points to more varied opinions regarding the impact of anti-corruption measures on project success. While some respondents placed high value on these policies for maintaining ethical standards, others may have perceived them as less directly influential compared to the other governance policies

4.1.3 Correlation Analysis

The findings of the correlations between the independent variables and the dependent variables are summarized and presented in Table 3

Table 3: Correlation between independent variable and dependent variable

		Project governance Policies	Project Success
Project governance Policies	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	166	
Project Success	Pearson Correlation	.795**	1
	Sig. (2-tailed)	.000	
	N	186	186

Source: Primary data, 2024

The correlation analysis in Table 3 reveals a strong positive relationship between Project Governance Policies and Project Success, with a Pearson correlation coefficient of 0.795. This indicates that as the effectiveness of governance policies improves, the likelihood of project success increases significantly. The p-value of 0.000 further confirms the statistical significance of this correlation, meaning the relationship is not due to random chance. With a sample size of 186 respondents, the data shows that well-structured governance policies such as those related to stakeholder management, procurement, human resources, and anti-corruption measures are crucial

in ensuring the success of peat power plant projects. The findings emphasize the importance of implementing robust governance frameworks to enhance project outcomes, particularly in complex infrastructure projects like peat power plants.

4.1.4. Regression analysis

A multiple regression analysis was performed in this section to identify the predictor and its contribution towards the criterion. It aims to determine the prediction of a single dependent variable from a group of independent

variables. The multiple regression analysis was performed with all the assumptions complied with. Table 4 shows the model summary of the results

Table 4: Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.806 ^a	.649	.643	.26875

a. Predictors: (Constant), Project governance policies

The Model Summary in Table 4 provides an overview of the regression analysis performed to examine the relationship between Project Governance Policies and Project Success. The R-value of 0.806 indicates a strong positive correlation between the independent variable (Project Governance Policies) and the dependent variable (Project Success), suggesting that the model fits the data well. The R Square value of 0.649 means that approximately 64.9% of the variance in project success can be explained by the governance policies, highlighting the

significant influence of governance on project outcomes. The Adjusted R Square value of 0.643 accounts for the number of predictors in the model, ensuring the robustness of the findings. The Standard Error of the Estimate (0.26875) reflects the average distance that observed values fall from the regression line, with a lower value suggesting that the predictions made by the model are relatively accurate. This analysis confirms that project governance policies are a strong predictor of project success in the context of peat power plant projects.

Table 5: Summary of ANOVA results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	24.301	3	8.100	112.150	.000 ^b
	Residual	13.145	182	.072		
	Total	37.446	185			

a. Dependent Variable: Project Governance policies

b. Predictors: (Constant), Project success

The ANOVA results in Table 5 show that the overall regression model is statistically significant, as indicated by the F-value of 112.150 and the p-value of 0.000, which is less than the typical significance level of 0.05. This suggests that Project Governance Policies significantly contribute to explaining the variance in Project Success for peat power plant projects. The sum of squares for regression (24.301) is substantially higher than the residual sum of squares (13.145), further confirming that

governance policies play a vital role in predicting project success. The F-value also demonstrates that the regression model is a good fit for the data, indicating that the independent variable (project governance policies) is a strong predictor of the dependent variable (project success). Therefore, the findings imply that strengthening governance policies can significantly improve the likelihood of success for peat power plant projects.

Table 6: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	Project Governance Policies	.643	.046	.717	14.011	.000

a. Dependent Variable: Project Success

The regression coefficients in Table 6 reveal that Project Governance Policies have a strong and statistically significant impact on Project Success. The unstandardized coefficient of 0.643 indicates that for each unit increase in the effectiveness of governance policies, project success increases by 0.643 units. The standardized beta coefficient of 0.717 highlights that governance policies are a major predictor of project success, showing a substantial influence compared to other variables in the model. The t-value of 14.011 and the p-value of 0.000 confirm the statistical significance of this relationship, suggesting that the effect of governance policies on project success is highly unlikely to have occurred by chance. These results underscore the importance of robust governance policies in enhancing the likelihood of successful project outcomes in peat power plant projects.

4.2. Discussion of Findings

In this study, the researcher aimed to investigate how project governance policies impact the success of Peat power plant projects in Rwanda. This involved examining various governance aspects, including the stakeholder management policies, human resource policies, procurement policies, and project corruption policies, to determine their influence on project outcomes. The findings of this study reveal that stakeholder management policies are considered the most critical for the success of peat power plant projects, indicating that effectively engaging and addressing the interests of stakeholders is essential. Procurement policies, particularly those related to timelines and vendor evaluation, are also viewed as crucial for project success, highlighting the importance of rigorous procurement processes to ensure timely and effective delivery of goods and services. However, there is greater variability in opinions about general procurement and project corruption policies, suggesting that while robust procurement practices are widely recognized as important, there are mixed views on the role of anti-corruption measures.

During the interview with a project manager, she emphasized that stakeholder management policies are essential for the success of peat power plant projects in Rwanda, highlighting that effective engagement with local communities is crucial for securing support and managing expectations. While human resource policies are important for team efficiency, they are secondary to stakeholder management in impact. The manager noted that stringent procurement policies, particularly those outlining timelines and vendor evaluation criteria, are vital for ensuring timely and reliable delivery of goods and services. Corruption policies are also necessary for maintaining transparency and ethical conduct, though enforcing them effectively poses challenges.

The findings from the analysis of project governance policies' impact on the success of peat power plant projects in Rwanda indicate a strong positive relationship between governance policies and project success. The correlation analysis revealed a Pearson correlation of 0.795 between project governance policies and project success, which is statistically significant ($p < 0.001$). This suggests that improvements in governance policies significantly contribute to higher levels of project success. This result aligns with the findings of global studies, such as Gilbert (2023), which emphasize that projects with clear governance structures are more likely to meet their objectives within time and budget constraints. In the context of peat power plant projects, the role of governance policies in areas like stakeholder management, procurement processes, and transparency appears to be crucial in ensuring project success.

The regression analysis further solidified this relationship, with a coefficient of 0.643 indicating that an improvement in governance policies contributes to a substantial increase in project success. The high standardized beta coefficient of 0.717 reinforces the importance of project governance policies as one of the most influential factors in determining project outcomes. These findings are consistent with studies in both developed and developing regions, where strong governance frameworks have been identified as key to achieving successful project outcomes (Harrington & Frank, 2019). The ANOVA results confirmed the overall significance of the model ($F = 112.150$, $p = 0.000$), further supporting the conclusion that governance policies play a vital role in the success of peat power plant projects in Rwanda.

However, the study also highlighted some challenges related to the application of governance policies in the Rwandan context. While project governance policies were shown to have a strong positive effect on success, there are issues such as inconsistent policy enforcement, lack of adequate training for project staff, and occasional misalignment between governance policies and local political dynamics that may hinder their full potential. These gaps were reflected in qualitative data obtained through interviews with project staff, where concerns about resource constraints, regulatory complexities, and political interference were common.

These findings are in line with those of Jepsen and Eskerod (2019), who argue that successful project governance not only depends on the design of policies but also on their effective implementation within the specific context of the project. Their study highlights that governance frameworks should be adaptable to the local environment, acknowledging that factors such as political dynamics, cultural contexts, and institutional capacities play a

significant role in shaping the outcomes of projects. Similarly, this study found that while governance policies in Rwanda significantly contribute to the success of peat power plant projects, their effectiveness is often compromised by challenges such as inconsistent enforcement, resource constraints, and political interference. Jepsen and Eskerod (2019) also emphasize the need for continuous training, clear communication, and context-specific adjustments to governance policies, all of which were identified as areas for improvement in the Rwandan case. Thus, while strong governance policies are critical, their impact can be diminished if they are not appropriately tailored and effectively executed within the local political and regulatory framework.

Similarly, Gelderman and Van Weele (2020) emphasize the importance of well-structured governance frameworks, particularly in procurement policies, for the successful execution of large-scale projects. Their research highlights that procurement policies that are clear, transparent, and aligned with the strategic goals of the project significantly enhance project outcomes by minimizing risks, controlling costs, and ensuring timely delivery of resources. In the context of peat power plant projects in Rwanda, this aligns with the study's finding that procurement policies especially those governing timelines, vendor evaluation, and milestones play a crucial role in determining project success.

5. Conclusion and Recommendations

5.1 Conclusion

This study concludes that project governance policies significantly influence the success of peat power plant projects in Rwanda. Key governance aspects such as stakeholder management, procurement policies, and transparency are crucial for project success. The analysis

shows that effective stakeholder engagement and robust procurement practices positively impact project outcomes. However, challenges like inconsistent policy enforcement and political dynamics limit the full effectiveness of these policies. The strong positive correlation and regression results further highlight the importance of governance policies in achieving project success, aligning with global studies. Addressing the identified gaps in policy implementation could enhance the success of future projects.

5.2 Recommendations

Based on the study findings, the following recommendations are made:

1. It is crucial to develop comprehensive stakeholder management strategies that prioritize effective communication and collaboration with local communities, project staff, and government agencies. This will help ensure broad support, manage expectations, and mitigate any potential resistance to peat power plant projects.
2. There is a need to further refine procurement policies, particularly concerning vendor evaluation, timelines, and the timely delivery of goods and services. Ensuring transparency and consistency in procurement will help avoid delays and cost overruns, contributing to the overall success of peat power plant projects.
3. To maximize the potential of governance policies, there should be a focus on better enforcement mechanisms and regular training for project staff. Additionally, aligning governance policies with the political and socio-economic realities of Rwanda will enhance their effectiveness and ensure smooth project implementation.

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