Elements of Stakeholder Involvement and Performance of Rural Electrification Projects

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Abstract: The research aimed to explore how different aspects of stakeholder participation correlate with the effectiveness of rural electrification projects in southwestern Uganda. Employing a cross-sectional research design, data was gathered from 32 projects as the primary unit of analysis, with a sample size of 34 projects selected from a total population of 39 rural electrification projects, determined using Krejcie and Morgan's method from 1970. Analysis methods included Pearson correlation and regression. The findings demonstrated a statistically significant positive relationship between communication, compliance, and engagement with the performance of rural electrification projects. Regression analysis further supported these results, showing significant unstandardized coefficients for each respective dimension. Moreover, the regression model indicated that communication, compliance, and engagement, as measures of stakeholder involvement, accounted for 39.5% of the variability in rural electrification project performance in southwestern Uganda. This suggests that other factors not addressed in this study explained the remaining 60.5%. Therefore, the study suggests that comprehensive stakeholder involvement, involving clear communication before and during project implementation, adherence to regulations agreed upon by stakeholders, and active engagement of all parties at each project stage, is crucial for achieving project success.

Keywords: Stakeholder involvement, Performance, Rural Electrification

1. Introduction

Stakeholder participation is the process by which an organization involves people who might be affected by its decisions or who have the power to influence how those decisions are carried out (Dwivedi & Dwivedi, 2021). According to Turner and Zolin (2017), the involvement of stakeholders and their prioritization of interests are critical to the success of any project. One of the factors that raise the project's performance rate is stakeholder involvement through communication, compliance, and involvement (Discenza and Forman, 2017). This is further explained by the stakeholder theory, which holds that an organization should maximize the creation of business value based on relevant stakeholder interests and an equal distribution of business value to stakeholders (Phillips et al., 2003).

Project performance is quite valuable, especially as it emphasizes ongoing improvement through various project kinds (Al-Nabae & Samoan, 2021). Increasing the success of the project’s outcome is the main goal of project performance (Mohamed et al., 2017). Projects are used worldwide to organize actions aimed at achieving desired objectives in all domains, both economic and non-economic (Ioana, Emil & Razvan, 2016). Project effectiveness is heavily influenced by stakeholder engagement and team capability. While definitions of project effectiveness vary, researchers generally agree that the "iron triangle" or "triple constraint" of cost, time, and quality standards should be included to define the achievement or realization of project objectives (Al-Nabae & Sammani, 2021). Stakeholders’ requirements are satisfied, risks are controlled, and resources are made available when they are involved. In the meantime, efficiency, quality, and on-time delivery are increased by a competent project team with the necessary abilities, cooperation, and flexibility.

Rural electrification is a key component of the Government of Uganda's (GOU) national policy to end rural poverty and promote prosperity among rural Ugandans (Ministry of Energy and Mineral Development, 2013). The government launched the Electrical Connection Policy in 2018 to guarantee that 60% of households have access to electricity by 2027. Customers can purchase an electrical connection for UGX 20,000, or around $5.50, according to Nile Post (2021) and the Rural Electrification Agency (2018). Even with these efforts, official figures from the Uganda Bureau of Figures (2019) show that just 26.7% of households have access to electricity, with only 18% of those being in rural areas. Barriers include high electricity bills and connection fees in addition to the restricted grid (Nabukeera, 2020; Blimpo, McRae & Steinbuks, 2018).
The government launched the rural electrification program in Southwestern Uganda as one of its initiatives to guarantee that the nation is supplied with power through the implementation of policies. According to a study by the Auditor General (2021), a number of obstacles have seriously impeded the execution of rural electrification projects, even though they have made a substantial contribution to the development of Southwestern Uganda. This is demonstrated by the lack of finance, which has delayed project completion and led to the Electricity Connection Policy’s suspension in late 2020. Furthermore, just sixteen (30%) of the fifty-four (54) projects in Southwestern Uganda that EXIM Bank-TBEA, under the Electricity Regulatory Authority, was charged with finishing by 2021 had been completed completely, and thirty (70%) had only been half completed (NTV News, 2020; Kakumba, 2021). A recent Kakumba (2021) survey shed light on the region’s power access, showing that just 25% of Southwestern Ugandans live in homes that are linked to the grid, and only roughly half of the population lives in areas that are served by the electric system.

2. Literature Review

Overview of Rural Electrification Projects in Southwestern Uganda

Rural electrification is a key component of the government's overall policy and goal to enhance national economic and social development and integration. About 15 years ago, Uganda experienced a power crisis as a result of delayed capacity expansions and low Lake Victoria water levels, with a 2:1 ratio between supply and demand for electricity (RMI, 2020). The nation currently produces more electricity than it needs. As of 2019 (Electricity Regulatory Authority, 2019), the plant’s 1,254-megawatt production capacity was predicted to increase to 1,800 megawatts if Karuma Dam was put into service later that year. However, due to the lack of access to electricity in the majority of Ugandan households, the country’s maximum consumption capacity is limited to only 600 megawatts (Global Press Journal, 2020). Between 2010 and 2015, the government implemented National Development Plans I & II as well as the Rural Electrification Strategy and Plan in a bid to narrow the gap between supply and demand. These initiatives aimed to expand the national electric grid and accelerate improvements in electricity access and service penetration (Ministry of Energy and Mineral Development, 2018). To ensure electricity access for 60% of households by 2027, the government introduced the Electrical Connection Policy in 2018, providing customers with an electrical connection for a mere UGX 20,000 (about $5.50) (Nile Post, 2021; Rural Electrification Agency, 2018). Despite these efforts, more households rely on solar energy than on power from the national grid (Nile Post, 2021). The poorest people and rural communities, particularly those in the Southwestern areas, are most likely to lack access to and a link to the national electric grid (Nabukeera, 2020). Additionally, as of right now, less than 7% of rural residents have access to electricity (Kakumba, 2021).

Stewardship theory, as described by Davis et al. (1997), provides the theoretical basis for the study. To achieve their utility functions, stewards safeguard and optimize shareholder capital through corporate success. From this perspective, company managers and executives act as stewards, protecting the interests of the shareholders and making money for them. According to the stewardship concept, people become driven and fulfilled when an organization achieves success.

Agyris (1973) goes on to say that ideology undermines a person’s objectives by viewing an employee or person as an economic entity. However, stewardship theory recognizes the value of trust-based, maximum-leave regimes for stewards, as updated by Donaldson & Davis (1991). This can lower costs associated with behavior monitoring and control. It highlights the responsibility of executives or employees to behave more autonomously to maximize returns to shareholders (Davis et al., 1997).

Project performance, according to Kerzner (2015), is finishing tasks on schedule, within budget, at the appropriate performance or specification level that the client has approved, with little to no scope modifications that are mutually agreed upon and without causing disruptions to the organization's regular operations or changing its corporate culture. According to the findings of other researchers, project performance should take into account the general stakeholders' satisfaction in addition to the evaluation of budget, time, quality, and client satisfaction (Koops et al., 2017). The "golden triangle" was seen to be insufficient to describe project performance as understanding in the field of project management advanced. It was acknowledged that project performance was a multifaceted, intricate idea that encompassed a wide range of characteristics (Davis 2016; Tabish and Jha 2011). Due to the unique nature of each project, each projects
have different performance requirements (Turner and Zolin 2012). Many factors influence a project's chance of success or failure; changing these factors when necessary raises the chance of success (Ika and Donnelly, 2017).

Stakeholder participation, as defined by Turner and Zolin (2017), is the process through which an organization consents to include stakeholders in a constructive manner in its operations. According to Dispenza and Forman (2017), stakeholder involvement is the process of including stakeholders to determine ahead of time what, when, why, how, and who will complete the activity. Stakeholder involvement in decision-making, according to Probst (2016), improves the extent to which employers communicate with stakeholders and allow or encourage them to contribute or participate in organizational decision-making. Involving stakeholders also encourages participatory decision-making, which is anticipated to increase productivity since stakeholders will be more dedicated to seeing decisions through to completion to meet organizational objectives and raise productivity. It will also help to lessen employee agitation, misunderstandings, and lack of commitment. It's a collaborative technique that encourages individual contributions to organizational management by granting decision ownership to the entire group. According to Balogun and Johnson (2018), a successful organization will probably engage all significant stakeholders in the formulation and application of strategy and policy. Throughout the implementation process, stakeholder involvement is crucial, and to inform and include the stakeholders, a communication strategy is required. The public's special role as an intermediate necessitates stakeholder involvement in communication during project execution (Robyn, 2016). A wave of failures or the failure of an institution itself tests the efficacy of stakeholder involvement in communication.

**Stakeholder Involvement and Project Performance**

Stakeholder participation may create conflicts and uncertainty that could hinder project performance, according to research by Johansen, Eik-Andresen, and Ekambaram (2018) using a qualitative approach to examine stakeholder benefit appraisal and project performance. On the other hand, as the PMI (2017) noted, stakeholder participation is acknowledged as a component leading to improved project performance (Project Management Institute, 2017). Stakeholders, however, have a significant impact on project performance, especially for complicated projects with a diverse range of stakeholders. For this reason, it is crucial to comprehend their influence to plan and execute projects successfully.

This is corroborated by Sachs and Ruhli’s (2017) study, which used a descriptive design to show that the amount of time a company spends interacting with its stakeholders is a strategic decision that managers make regarding their companies’ operations and affects the outcome of projects. This is in line with a study by Edelenbos and Klijn (2016) that used a representative sample of 69 Dutch local governments along with a combined longitudinal data set consisting of 3,434 Social Support Act participants. The study found that involving stakeholders in the decision-making process makes it much easier for them to support and carry out the plan; as a result, stakeholder involvement improved project performance.

Menoka (2016) researched the relationship between stakeholder involvement and the performance of sustainability-related building projects. The study focused on stakeholder involvement to achieve construction sustainability and improve building project performance. A framework that integrated stakeholders and project performance motivated by sustainability was developed. The best way to conduct an empirical investigation was mixed-method research, which was employed in this study. An analysis of variance in participant perceptions of their roles and the strategic priorities of their organizations with respect to stakeholder involvement, construction sustainability, and project performance was conducted using ANOVA. To achieve sustainability in construction and increase the efficiency of building projects, a conceptual framework was established that centers on the communication and organization of stakeholder participation. This framework was developed with the help of information obtained from interviews as well as questionnaire surveys.

Pavez et al. (2021) conducted interviews with managers of twenty (20) distinct projects to evaluate the efficacy of organizations. The initiatives included chemical, aeronautical, and energy-related activities. Their analysis indicated that fixing problems with stakeholders involved was preferable to project performance. They identified manager-to-manager communication as a crucial requirement. Additionally, they discovered that
project characteristics including precisely specified cost-effectiveness, timeliness, high-quality service that responds to needs, and team participation were crucial for success.

Conversely, Dvir et al. (2008) pointed out that different stakeholder viewpoints can influence the outcome of a project. Stakeholder involvement may be a problem for project performance in that it may lead to misunderstandings and uncertainty, according to Johansen et al. (2018). Therefore, to prevent them from impeding project performance, comprehensive criteria that take into account the interests and viewpoints of all stakeholders are required. This study will concentrate more on the relationship between stakeholder involvement and project performance, even if prior research suggests that stakeholder involvement is essential for project success.

However, Daly et al. (2003) argued that to maintain their status as decision-makers in businesses, executives and directors are likely to manage the company to maximize shareholder profits as well as financial performance. In this sense, opinions on the performance of each employee are believed to be directly influenced by the success of the company. According to Fama (1980), executives and directors are actually handling their careers to be seen as competent stewards of their organization.

The existing literature on rural electrification projects, when regarded at the global, African, and Ugandan levels, reveals distinct gaps, particularly concerning Southwestern Uganda. A predominant trend across these contexts is the prevalence of studies that often adopt a global or national perspective, neglecting the shades specific to regional settings. While the global discourse on rural electrification provides valuable insights, its applicability to the unique socio-economic and geographic conditions of Southwestern Uganda remains uncertain. Furthermore, existing African studies, while contributing to a broader understanding of electrification dynamics on the continent, may not sufficiently capture the details of this specific region. In the Ugandan context, literature tends to focus more broadly on national rural electrification efforts, overlooking the localized factors that could significantly impact project success in Southwestern Uganda. A critical observation is the scarcity of literature that explicitly links the variables of stakeholder involvement to the success of a project in the context of Southwestern Uganda. Most existing studies tend to discuss these variables in a general rural electrification framework, lacking the specificity required to inform targeted interventions in this particular region. The dearth of research exploring the interconnectedness of stakeholder involvement and the success of a project is still lacking. Therefore, the identified study gap emphasizes the need for research to address the specific dynamics of Southwestern Uganda and establish a robust connection between stakeholder involvement and project performance.

3. Methodology

**Design, Population, and Sample:** This study focused on a population of 38 projects utilizing a cross-sectional survey design (Auditor-General Report, 2022). 34 projects were chosen in accordance with Krejcie and Morgan's (1970) criterion to determine the sample size. There were 238 possible responses overall because the unit of analysis included the project manager, three foremen, two heads of engineering, one chairperson for LCI, and the parish chief for each project. A response rate of 94.1% was achieved by compiling data from 32 initiatives, based on the unit of analysis.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Constructs</th>
<th>Definition &amp; Measurement</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>project performance</td>
<td>Cost-effectiveness and timeliness, Service quality Scope</td>
<td>One of the most studied subjects in project management literature is project performance. Despite the large number of studies that offer a thorough analysis of project performance, opinions on various aspects of it are divided (Davis 2016).</td>
<td>Davis 2016; Tabish and Jha 2011</td>
</tr>
<tr>
<td>Stakeholder involvement</td>
<td>Engagement, Communication Compliance</td>
<td>Stakeholder participation, as defined by Turner and Zolin (2017), is the process through which an organization consents to include stakeholders in a constructive manner in its operations. According to Discenza and Forman, 2017; Probst (2016)</td>
<td></td>
</tr>
</tbody>
</table>
Dispenza and Forman (2017), stakeholder involvement is the process of including stakeholders to determine ahead of time what, when, why, how, and who will complete the activity.

The validity of the study instrument was assessed using Cronbach’s (1951) alpha coefficient to make sure that it produced results that were consistently comparable when given to the same respondents over a brief period of time. In addition, a content validity index was used to evaluate the content validity of the study instrument. The results, which are shown in Table 1, showed that the instrument was more reliable and valid than the 0.7 cutoff point (Nunnally, 1978). Before any analysis or data management, the data was carefully checked to make sure it was comprehensive. The study was conducted using SPSS (Statistical Package for Social Scientists) version 21. Inferential statistics were employed in accordance with the research objectives to evaluate the relationships between the study variables and the ability of the independent variables to predict the dependent variable, respectively. Among these analyses were regression and correlation analysis.

4. Results

Table 2: Demographic characteristics of the respondents

<table>
<thead>
<tr>
<th>Category</th>
<th>Item</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>115</td>
<td>58.7</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>81</td>
<td>41.3</td>
</tr>
<tr>
<td>Age bracket</td>
<td>21-30</td>
<td>11</td>
<td>5.6</td>
</tr>
<tr>
<td></td>
<td>31-40</td>
<td>93</td>
<td>47.4</td>
</tr>
<tr>
<td></td>
<td>41-50</td>
<td>84</td>
<td>42.9</td>
</tr>
<tr>
<td></td>
<td>above 50</td>
<td>8</td>
<td>4.1</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>196</td>
<td>100</td>
</tr>
<tr>
<td>Marital Status</td>
<td>Married</td>
<td>162</td>
<td>82.7</td>
</tr>
<tr>
<td></td>
<td>Single</td>
<td>34</td>
<td>17.3</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>196</td>
<td>100</td>
</tr>
</tbody>
</table>

The results in Table 1 indicate that the majority of the respondents were male (58.7%) and their female counterparts were 41.3%. This implies that both categories of female and male were fully represented and the combination of both male and female bridges the gap of affirmative action which promotes high performance. In addition, the findings indicated that the age bracket of 31-40 had the highest number of respondents, with 93 individuals, comprising 47.4% of the total. This suggests a significant concentration of participants in their thirties and the age bracket of 41-50, were 84 respondents, representing 42.9% of the total sample. This age group constitutes a substantial portion of the participants who had worked with the organization. This group accounts for 57.1% of the total, indicating a significant proportion of well-educated participants. There were 7 respondents with a doctorate degree, making up 3.6% of the total. This indicates a notable presence of individuals with advanced degrees in the study. Additionally, a number of 162 respondents were married making up 82.7% of the total whereas 34 of the total were found single making up 17.3% of the total.

Table 3: Distribution by demographic characteristics of Rural Electrification Projects.

<table>
<thead>
<tr>
<th>Category</th>
<th>Item</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time spent</td>
<td>1-5years</td>
<td>12</td>
<td>38.2</td>
</tr>
<tr>
<td></td>
<td>6-10years</td>
<td>15</td>
<td>47.1</td>
</tr>
<tr>
<td></td>
<td>more than 10years</td>
<td>5</td>
<td>14.7</td>
</tr>
<tr>
<td>Number of employees</td>
<td>21-30</td>
<td>2</td>
<td>5.9</td>
</tr>
</tbody>
</table>
The majority of the Rural Electrification Projects in Southwestern Uganda 16 in total, have 31-40 employees, representing 50% of the sample. This indicates that a significant proportion of the Rural Electrification Projects in Southwestern Uganda surveyed fall within this employee range whilst 1 Rural Electrification Projects in Southwestern Uganda have above than 50 employees, making up 2.9% of the total. This suggests a smaller proportion of Rural Electrification Projects in Southwestern Uganda with larger employee counts in the study. In addition, in the Rural Electrification Projects Existence Period in southwestern Uganda, The majority of the Rural Electrification projects 15 in total, have an existence period ranging from 6 to 10 years, accounting for 47.1% of the sample. This indicates a significant concentration of Rural electrification projects in Southwestern Uganda that have been operating within this time frame and 5 Rural electrification projects have an existence period of more than 10 years in southwestern Uganda making up 14.7% of the total. This suggests an even smaller proportion of Rural electrification projects that have been operating for a slightly longer duration in southwestern Uganda.

Results of the Correlation Analysis: Stakeholder participation indicators and project performance in Southwestern Uganda's Rural Electrification Projects were compared using Pearson's Correlation analysis, with the strength of the link indicated by the letter "r." Table 4 shows that there is a statistically significant and positive correlation (r = 0.413**, p < 0.01) between project performance and communication. Additionally, the results show that compliance and project performance have a favorable and statistically significant association (r = 0.482**, p < 0.01). Analogously, the data show a favorable and statistically significant link (r = 0.473**, p < 0.01) between involvement and project performance. All of these results point to a beneficial shift in project performance that is correlated with any positive change in stakeholder involvement, supporting the study's hypothesis. In conclusion, the analysis shows that there is a statistically significant and positive correlation (r = 0.612**, p < 0.01) between the comprehensive variable of stakeholder involvement and project performance. This means that every improvement in stakeholder participation in rural electrification projects corresponds to an improvement in project performance.

Table 4: Pearson's Correlation analysis

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication-1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compliance-2</td>
<td></td>
<td>0.535**</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engagement-3</td>
<td>0.113</td>
<td>.239**</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stakeholder Involvement-4</td>
<td>.579**</td>
<td>.642**</td>
<td>.457**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Project Performance-5</td>
<td>.413**</td>
<td>.482**</td>
<td>.473**</td>
<td>.616**</td>
<td>1</td>
</tr>
</tbody>
</table>

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

Multiple Regression Analysis

The results in Table 5 indicate a unit increase in engagement will result in a 0.541 unit increase in project performance (B = .541, p<.01). The results further indicate that a unit increase in communication would result in 0.262 unit increase in project performance (B = .262, p<.01) and a unit increase in compliance with standards would result into 0.294 units increase in project performance. Lastly, in southwestern Uganda, the three aspects are highly significant indicators of project performance for rural electrification programs.

Financial success is the dependent variable; R2 = 0.404, Adj R2 = 0.395, F-stat = 43.450, and sig. = 0.000. The findings of the regression analysis indicate that factors pertaining to stakeholder involvement, such as communication, engagement, and standard compliance, are significant in predicting the success of rural electrification projects. Overall, 39.5 percent of the variance in project performance is explained by the model, suggesting that factors not included in this study account for the remaining 60.5% of the variance.
Table 5: Regression Analysis

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td>-0.832</td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>-0.273</td>
<td>0.328</td>
<td>-0.832</td>
<td>0.406</td>
</tr>
<tr>
<td>Engagement</td>
<td>0.541</td>
<td>0.081</td>
<td>0.383</td>
<td>6.678</td>
</tr>
<tr>
<td>Communication</td>
<td>0.262</td>
<td>0.077</td>
<td>0.225</td>
<td>3.414</td>
</tr>
<tr>
<td>Compliance</td>
<td>0.294</td>
<td>0.073</td>
<td>0.2700</td>
<td>4.004</td>
</tr>
</tbody>
</table>

R = .636
R Square = 0.404
Adjusted R Square = 0.395
F = 43.450
Sig. = .000b
N = 196

5. Discussion, Conclusion, Recommendations and Policy Implications

In Southwestern Uganda, the discourse emphasizes the noteworthy affirmative correlation between project performance and stakeholder involvement components in rural electrification programs. It emphasizes the importance of project management engaging in various aspects such as feasibility studies, awareness of stakeholder demands, worker recruitment, and involvement during project stages like demarcation and compensation, all of which contribute to improved project performance. These findings align with those of Iqbal (2022) and Shiferaw & Abuye (2019), who have indicated that stakeholder engagement is vital for project success. Effective communication, both within the project management team and with workers, regarding project details and channels for addressing complaints, is also highlighted as crucial for success. This notion is supported by Johansen, Eik-Andresen, and Ekambaram (2018), who advocate for proper communication between project implementers and stakeholders for project success.

Compliance with standards and guidelines, including those set by regulatory bodies like ERA, is identified as another key factor driving project performance enhancement. These findings are consistent with the observations of Akbar & Shahid (2023), who underscore the importance of compliance with standards for project success.

Conclusion: To summarize, Table 5’s results highlight the noteworthy benefits of stakeholder involvement aspects including communication, engagement, and standard compliance on the project success of rural electrification initiatives in Southwestern Uganda. These dimensions serve as vital predictors of project success, emphasizing the importance of active stakeholder engagement, effective communication practices, and adherence to established standards in optimizing project outcomes. Stakeholders and project managers should prioritize these aspects to ensure the efficient and sustainable implementation of rural electrification initiatives in the region.

Policy Recommendation: A practical recommendation stemming from the discussion would be to prioritize stakeholder engagement throughout all phases of rural electrification projects in Southwestern Uganda. This entails actively involving stakeholders in feasibility studies, understanding their demands, ensuring effective communication channels are established between project management teams and workers, and adhering to compliance standards set by regulatory bodies like ERA. By emphasizing stakeholder engagement and effective communication, project managers can enhance project performance and increase the likelihood of successful outcomes.


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