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Harnessing the Wind, Shaping Lives through Community Interventions and Kipeto Project's Impact on Indigenous Women in Kajiado West Sub-County, Kenya

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Abstract: *Large-scale energy projects such as Kipeto significantly influence the livelihoods of indigenous women, particularly by restricting their participation in decision-making and benefit-sharing. Patriarchal norms within the Maasai community further limit women's inclusion, underscoring the need for gender-equitable approaches in renewable energy development. This study investigated the impact of the Kipeto Wind Power Project on women's participation in community consultation, land-use decision-making, benefit-sharing, and empowerment programs. Using a descriptive design, the study targeted 22,935 indigenous women in Kajiado West Sub-County, with a sample derived through Slovin's formula and stratified random sampling. Primary data were collected through semi-structured questionnaires and focus group discussions, generating both quantitative and qualitative insights. Thematic analysis was applied to qualitative data, while quantitative data were analyzed using descriptive and inferential statistics through SPSS (version 28). Findings revealed that social engagement and economic development initiatives had significant positive effects on women's livelihood security. However, women's inclusion in decision-making and consultation alone did not yield substantial impacts. These results highlight that direct socio-economic interventions, such as income generation and skills training, are more transformative for women's well-being than consultative processes. The study recommends prioritizing women-centered economic empowerment and strengthening governance frameworks to promote equitable benefit-sharing in future energy projects.*

Key words: *Harnessing the Wind, Shaping Lives, Kipeto Project Impact, Indigenous Women*

1.1 Introduction

Globally, energy is a fundamental input for economic activities across sectors such as manufacturing, agriculture, transportation, and services (Rezaeiha, Montazeri, & Blocken, 2020). Large-scale energy projects provide reliable and affordable energy that stimulates economic growth, job creation, and investment opportunities. The global expansion of wind power capacity reflects the shift toward renewable energy, with countries setting ambitious targets to reduce carbon emissions and dependence on fossil fuels (Rodrigues & Loureiro, 2020). Growing awareness of climate change, air pollution, and

the environmental impacts of fossil fuels has intensified interest in sustainable alternatives such as wind energy.

While large-scale wind projects play a vital role in national development, they often occupy vast tracts of land, some of which belong to indigenous peoples (Kebede & Berecibar, 2022). The impacts of such projects on indigenous communities depend on the extent of consultation, compensation, and equitable distribution of costs and benefits (Zhang, 2020). In many cases, wind energy projects have eroded cultural heritage, disrupted traditional practices, and displaced families, while simultaneously creating opportunities for income generation through land leases, royalties, and employment (Rezaeiha et al., 2020). Gender dimensions are also critical, as women frequently bear disproportionate burdens from displacement, resource scarcity, and exclusion from decision-making processes (Ramirez, 2021). Conversely, where participatory approaches have been implemented—such as in Denmark's Samsø Wind Farm and Uruguay's AAE UTE Wind Farm—community empowerment and women's involvement have enhanced project sustainability (Ahsan & Pedersen, 2018; Corrêa & Vaz, 2022).

In Kenya, the constitutional and legal frameworks, including the Constitution of 2010, the Energy Act of 2012, and the Land Act of 2012, emphasize community engagement and the protection of human rights in energy development (Ongoma, 2018). The Kipeto Wind Power Project (KWPP), located in Kajiado County, exemplifies this shift toward integrating renewable energy expansion with community participation. It is Kenya's second-largest wind farm after the Lake Turkana Wind Project, with an installed capacity of 100 MW generated from 60 turbines (Kazimierczuk, 2019). Unlike projects that purchase land and displace communities, Kipeto Energy Limited adopted a leasing model, engaging the Maasai community through transparent and prolonged consultations supported by legal representation (Oluoch & Vedwan, 2020). Landowners entered into 30-year leases with compensation rates based on land size, enabling households to invest in education, housing, and livelihoods (Kipkoech & Essandoh, 2021).

Community interventions within the Kipeto project extended beyond land leasing to include grievance redress mechanisms, community liaison structures, and access to project information in local languages (Kipkoech & Essandoh, 2021). These participatory measures demonstrate the potential for renewable energy projects to strike a balance between corporate interests and community welfare. For indigenous Maasai women, these interventions are particularly significant given their central role in household welfare, natural resource use, and cultural preservation. While evidence from global and regional wind projects highlights both risks and opportunities for indigenous women, the Kipeto case provides a unique opportunity to examine how community-centered approaches can shape women's livelihoods in contexts where gender, land rights, and development intersect.

1.2 Literature review

1.2.1 Theoretical Framework

Stakeholder theory, developed by Freeman in 1984, emphasizes that organizations should address the concerns of all stakeholders, not just shareholders, since their actions directly affect diverse groups such as employees, regulators, suppliers, and local communities (Freeman & Sisodia, 2020; Barney & Harrison, 2020). The theory assumes interdependence between organizations and stakeholders, highlighting mutual obligations where stakeholders provide resources or recognition, and organizations uphold ethical responsibilities to respect rights, meet needs, and involve them in decision-making (Jones

& Wicks, 2018; Zyglidopoulos, 2018). Despite its utility, the theory faces criticism for challenges in balancing conflicting stakeholder claims, risks of powerful groups dominating decision-making, and difficulties in measuring stakeholder value (Schaltegger & Hörisch, 2019).
In the Kipeto Wind Energy Project, stakeholder theory is relevant in understanding how indigenous Maasai women are engaged in consultations, land-use decisions, and benefit-sharing. Given their marginalization under patriarchal norms, recognizing women as legitimate stakeholders is essential for safeguarding economic autonomy and promoting sustainable development that reflects their aspirations (Zyglidopoulos, 2018).

Feminist theory, originating from Wollstonecraft's *A Vindication of the Rights of Woman* in the 1790s, critiques systems of gender inequality and oppression while examining intersections with race, class, and ethnicity (Allen, 2018; Butler, 2020; Humm, 2021). It challenges entrenched patriarchal structures but has been critiqued for privileging Western perspectives and oversimplifying gender into binaries (Allen, 2018; Biana, 2020). Applied to energy projects, feminist theory reveals how large-scale developments are not gender-neutral, often excluding indigenous women from decision-making, displacing them from resources, and intensifying socio-economic vulnerabilities.

Together, stakeholder and feminist theories provide complementary lenses for assessing Kipeto's impact. Stakeholder theory stresses procedural inclusion and equitable benefit-sharing, while feminist theory exposes structural inequalities. Combined, they offer a comprehensive framework to analyze how community interventions in wind energy projects can empower or marginalize indigenous women, ultimately shaping their livelihood security.

1.2.2 Empirical literature

The inclusion of women in community interventions linked to land use and energy projects is increasingly recognized as critical for achieving equitable and sustainable outcomes. Historically, women's roles in decision-making concerning land and natural resources have been overlooked, despite their central contribution to resource use and household livelihoods (Belaid, Ochola & Bayo, 2021). Evidence from Nepal and Ghana demonstrates that increased female participation in local governance enhances resource management and promotes social transformation, though structural and cultural barriers persist in limiting their influence (Marinella, 2019; Opare, 2019). Similarly, interventions in Uganda and Kenya reveal that empowering women's groups can facilitate the adoption of renewable energy technologies while enhancing collective agency, yet traditional and patriarchal norms continue to impede full participation (Kayongo, Mugambwa & Kigundu, 2019; Nakhosi & Odhiambo, 2020).

Large-scale energy projects, such as wind farms, also reshape household and community dynamics, often redistributing labor and responsibilities in ways that disproportionately affect women. Studies show that as men migrate for project-related employment, indigenous women assume greater domestic and economic burdens, highlighting the gendered implications of such transitions (McKenna, 2022; Popoola, 2022). While renewable energy initiatives can foster empowerment by creating income-generating opportunities and enhancing social status, exclusionary practices risk deepening inequalities rather than addressing them (Hermawati et al., 2023; Kazimierczuk, 2019).

At the same time, development spin-offs from energy projects—including infrastructure expansion, employment, and entrepreneurship—can benefit women if gender-responsive approaches are prioritized.

Evidence from Morocco, Afghanistan, and Kenya suggests that women can gain skills, jobs, and access to entrepreneurial opportunities, provided that recruitment, training, and benefit-sharing processes are inclusive (Terrapon-Pfaff, 2019; Shoaiba, 2018).

Overall, the literature demonstrates that community interventions surrounding renewable energy projects hold the potential to improve indigenous women's livelihoods, but this depends on deliberate efforts to dismantle structural inequalities, ensure equitable participation, and design inclusive benefit-sharing mechanisms. Without such measures, projects risk reinforcing pre-existing gender disparities rather than advancing social and economic empowerment.

1.3 The Conceptual Framework

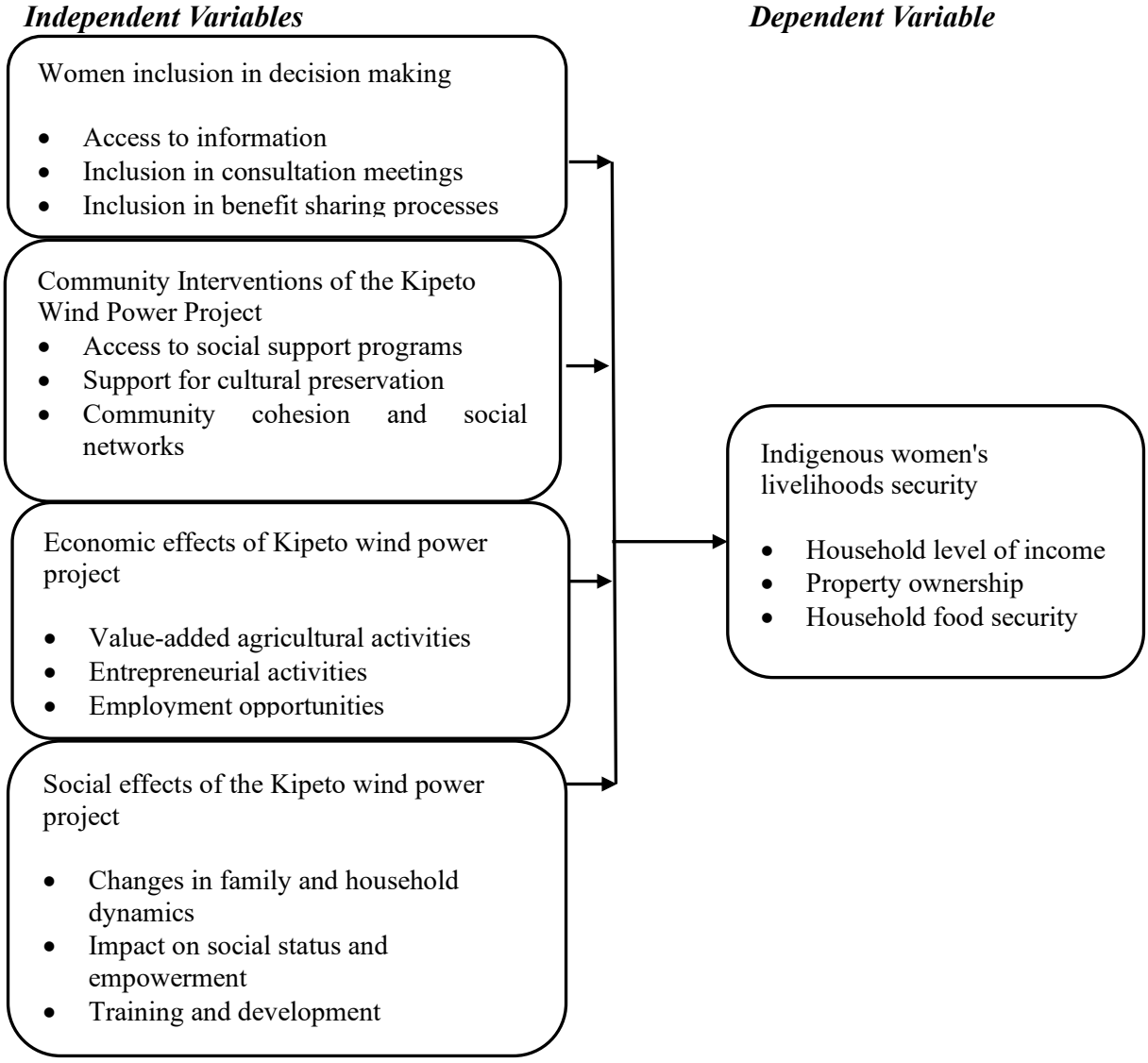

Figure 1: *The Conceptual Framework*
Source: *Own Conceptualization, 2024*

1.4 Methodology

Research Design: This study adopted a descriptive research design, which is employed to systematically examine and present the characteristics, behaviors, and dynamics of a particular population or phenomenon without manipulating the variables involved (Babbie, 2021). Descriptive research is particularly useful in generating in-depth understanding and factual representations of real-world situations. In the context of this study, the design was appropriate for exploring the role of large-scale renewable energy projects—specifically the Kipeto Wind Power Project—in shaping the livelihood security of indigenous women in Kajiado West Sub-County. This approach facilitated the collection and analysis of data related to the project's implementation, its socio-economic and cultural effects on indigenous women, and the broader implications for their livelihood security. By providing a detailed account of the lived experiences and community dynamics, the descriptive design enabled a nuanced understanding of how energy infrastructure intersects with gender and indigenous rights.

Study Site: Kajiado West Sub-County, located within Kajiado County, Kenya, spans approximately 7,862 square kilometers and is home to a population of 182,849 as per the 2019 census. The region is predominantly inhabited by the Maasai, a Nilotic ethnic group traditionally known for their semi-nomadic pastoralism. However, recent socio-economic transformations have seen a gradual shift toward decentralization and diversification into subsistence farming, small-scale trade, and other income-generating activities (Mugambi, 2022). Livelihood strategies in the area primarily revolve around livestock rearing, with limited engagement in agriculture and commerce. Access to essential services such as education and healthcare remains a challenge, particularly in remote and rural localities. The sub-county faces several structural and environmental challenges, including land use conflicts, scarcity of clean water, and the adverse effects of climate change (County Government of Kajiado, 2023). A significant development within this context is the Kipeto Wind Energy Project, a large-scale renewable energy initiative that involves the generation of electricity through wind turbines. While the project has the potential to deliver socioeconomic benefits—such as improved infrastructure, employment opportunities, and economic upliftment—it also raises concerns regarding land access, environmental resources, and the protection of indigenous rights (Kanini, 2022). These dynamics are particularly relevant in understanding how such developments intersect with the livelihoods and cultural integrity of local populations, especially indigenous women.

Study and Target Population: A study population is a subset of the whole population of things or people that are the subject of research, while a target population is the general population of people or objects to whom a researcher wishes to draw generalizations in a study. According to the Kenya National Bureau of Statistics (2019), the total population included in this research consisted of 57,342 females living in the Kajiado West Sub-County. There was a total of 22,935 indigenous women who were the target demographic, and they were distributed across the five wards that make up the Kajiado West Sub-County.

Table 1: Target Population

Ward	Target Population
Keekonyokie	7,647
Oloodokilan	3,249
Magadi	4,921
Ewuaso Kedong	5,870
Mosiro	1,248

Total	**22,935**

Sampling Techniques: To determine the sample size, the study design employed a stratified random sampling approach. In stratified random sampling, the population is divided into subgroups or strata according to specific criteria, and samples are then randomly selected from the subgroups to ensure that a static sample of the population is captured (Stake, 2020). A stratum in this study was the five wards in Kajiado West Sub-County. Stratified random sampling enables and focus on obtaining more accurate estimations of the population parameters by sorting the samples into smaller, more uniform groups or subgroups, according to the population characteristics. Stratified random sampling is particularly useful because it guarantees that all significant subpopulations are evenly distributed in the sample (Punch, 2020). Random sampling ensures that the sample includes all segments of the population and does not focus on specific areas where specific types of participants may dominate the sample. In line with this, the study applied proportionate stratification in the distribution of the sample size within each ward. Stratified sampling is a form of area sampling that is common in survey research because it aims to include each subpopulation group within the sampled population in a proportionate manner (Stake, 2020). It is especially valuable when the population divides into subpopulations that differ in size or other features.

Table 2 Target population and sample size distribution

Ward	Target Population	Sample Size
Keekonyokie	7,647	131
Oloodokilan	3,249	56
Magadi	4,921	84
Ewuaso Kedong	5,870	101
Mosiro	1,248	21
Total	**22,935**	**393**

Source: *Field data, 2025*

Sample Size: The process of deciding how many observations or replicates to include in a statistical sample is known as sample size determination (Bryman, 2022). Slovin's formula will be used in the study to determine the sample size.

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

Where: n = no. of samples; N = total population; and e = error margin / margin of error (0.05)

$$n = \frac{22{,}935}{1 + (22{,}935 * (0.05^2))}$$

$$n = 393$$

Data Collection Instruments: This study utilized primary data collection methods, specifically semi-structured questionnaires and an interview schedule, to capture both quantitative and qualitative insights. The research targeted both literate and illiterate indigenous women in Kajiado West Sub-County. Literate participants completed the questionnaires independently, while for illiterate respondents, the researcher read the questions aloud and recorded their responses. Semi-structured questionnaires were selected for their flexibility, combining standardized questions with open-ended prompts that allowed respondents

to elaborate on their experiences, perceptions, and attitudes in their own words. This approach enabled the collection of rich, contextual data, particularly valuable for exploring complex issues related to indigenous women's livelihoods and interactions with large-scale energy projects (Greene & Dreyer, 2021). In addition to questionnaires, focus group discussions (FGDs) were conducted among illiterate indigenous women to further explore collective experiences and shared perspectives. FGDs served as a complementary qualitative method, encouraging interactive dialogue facilitated by a moderator. This setting fostered open communication, promoted eye contact, and created a space where participants could reflect on and validate each other's responses. FGDs were particularly effective in surfacing nuanced insights and socio-cultural dynamics that may not have emerged through individual responses. By combining both methods, the study ensured inclusivity and depth in understanding the intersection between gender, indigeneity, and the impacts of the Kipeto Wind Power Project.

Pilot test: A pilot test is a preliminary assessment made on a small scale before undertaking a large-scale project in the study or research process (Stake, 2020). Therefore, the pilot test was carried out in Matapato South Ward of Kajiado South Sub-County since it is nearer to Kipeto Wind Energy Project. The pre-test group was selected randomly and it will be 10% of the total sample size. Kumar (2019) noted that in conducting a full study, 10 percent of the sample size should be used in a sample size.

Validity and Reliability: To ensure the validity of the research instruments, both content and face validity were considered in alignment with the study's aims and objectives. Content validity was established through expert review by professionals in project management and community development, as well as pilot testing involving selected participants who assessed the clarity, relevance, and comprehensiveness of the questionnaire items. Additionally, face validity was enhanced by pretesting the instruments before full-scale data collection. Feedback obtained from the pretest phase informed the final refinement of the instruments, thereby increasing their accuracy in capturing the intended constructs (Devi, 2019). Reliability, defined as the consistency of an instrument's measurements across repeated applications, was assessed using Cronbach's alpha as a measure of internal consistency. A high Cronbach's alpha coefficient indicates a strong interrelationship among items within the instrument, suggesting that the tool reliably measures the underlying construct (Creswell & Clark, 2021). Values closer to 1.0 reflect higher reliability, with a minimum threshold of 0.70 considered acceptable for research purposes (Greene & Dreyer, 2021). Instruments yielding values below this threshold would suggest low internal consistency, requiring further modification to ensure the coherence and dependability of the data collected.

Data Analysis: The study employed both qualitative and quantitative methods for data collection and analysis. Qualitative data obtained from open-ended questionnaire items and key informant interviews were analyzed using thematic analysis, a systematic approach for identifying and interpreting recurring patterns or themes within complex qualitative data (Bhattacherjee, 2018). Quantitative data collected through surveys were coded and entered into SPSS version 28 for analysis. Descriptive statistics—including frequencies, percentages, means, and standard deviations—were used to summarize and describe key trends in the data. To assess relationships and make predictions, inferential statistical techniques such as regression analysis and Pearson correlation were employed. Visual tools such as tables, pie charts, and bar graphs supported the presentation of findings. The study also utilized a multivariate regression model to examine the influence of four independent variables—women's inclusion in decision-making (X_1), representation in land use (X_2), development projects related to energy (X_3), and best practices for women's engagement (X_4)—on the dependent variable, indigenous women's livelihood security (Y), with an error term (ε) capturing unexplained variance.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Whereby:

Y = Indigenous women livelihood security;
β_0 = Constant;
$\beta_1, \beta_2, \beta_3, \beta_4$ = Coefficients of determination;
X_1 = Women inclusion in decision making;
X_2 = Representation of women in land use;
X_3 = Development projects related to Energy projects;
X_4 = Best practices for Women's Engagement; and
ε = Error term

Ethical considerations: Ethical considerations were central to the study, ensuring that the research adhered to established ethical standards and protected the rights and well-being of participants (Babbie, 2021). Prior to data collection, the researcher obtained formal authorization from the Catholic University of Eastern Africa and secured research clearance from the National Commission for Science, Technology and Innovation (NACOSTI). Informed consent was obtained from all participants, with only those who voluntarily agreed to participate provided with questionnaires. Participants were assured of the confidentiality and exclusive use of data for research purposes, and all data were stored securely in locked locations with access limited to authorized personnel. To preserve anonymity, the research instruments were designed to avoid collecting personally identifiable information, and respondents were explicitly instructed not to include names or contact details in their responses.

1.5 Results and Discussion

Response rates across the five wards

The study attained a high overall response rate of 97.7%, with 384 out of 393 targeted indigenous women participating across all five wards. Oloodokilan and Mosiro recorded perfect response rates of 100%, while Keekonyokie—the ward with the largest sample—achieved 98.5%. Magadi and Ewuaso Kedong recorded 97.6% and 95.0%, respectively. The consistently high response rates across wards affirm the robustness of the sampling frame and enhance the credibility and generalizability of the findings related to the impact of the Kipeto Wind Energy Project on indigenous women's livelihood security.

Table 2 Response Rate

Ward	Target Sample	Actual Responses	Response Rate (%)
Oloodokilan	21	21	100.0%
Mosiro	56	56	100.0%
Keekonyokie	131	129	98.5%
Magadi	84	82	97.6%
Ewuaso Kedong	101	96	95.0%
Total	**393**	**384**	**97.7%**

Source: *Field data, 2025*

Demographic Characteristics

Table 3 presents the ethnic distribution of respondents participating in the study across the five wards of Kajiado West Sub-County.

Table 3: Ethnic Representation of Respondents

Ethnicity	Frequency	Valid Percent
Non-Indigenous	12	3.1
Maasai	372	96.9
Total	**384**	**100**

Source: *Field data, 2025*

The ethnic composition of respondents shows that the sample predominantly comprised the intended primary target population of indigenous women. Out of the 384 participants, 96.9% (N = 372) identified as Maasai, while only 3.1% (n = 12) were non-indigenous. The non-indigenous are from other ethnic communities, including Kikuyu, Luhya, and Embu. The small proportion of non-indigenous people are well conversant with the area, as they have lived there for over 15 years, having immigrated in pursuit of jobs and business. The high proportion of Maasai respondents ensures that the analysis remains grounded in the experiences and realities of the indigenous community most affected by the Kipeto Wind Energy Project.

Table Error! No text of specified style in document.**: Distribution of the Respondents by Education Level**

Highest Educational Level	Frequency	Valid Percent	Cumulative Percent
No formal education	68	17.7	17.7
Primary education	182	47.4	65.1
Secondary education	71	18.5	83.6
Tertiary education	56	14.6	98.2
Postgraduate education	7	1.8	100
Total	**384**	**100**	

Source: *Field data, 2025*

Out of the 384 respondents, a significant proportion (47.4%) had attained only primary education, while 17.7% reported having no formal education at all. Cumulatively, 65.1% of the women had either no education or only primary-level schooling, indicating a high level of educational vulnerability among the target group. This limitation may impact access to information, autonomy in decision-making, and the ability to engage in skilled livelihood opportunities. Secondary education was attained by 18.5% of the respondents, while 14.6% had reached tertiary-level education. Only a small fraction (1.8%) had postgraduate qualifications. In total, 34.9% of respondents attained a tertiary education level. These patterns reflect the limited educational access for indigenous women in pastoral communities. Thus, such populations need supportive economic and infrastructural structures, such as livelihood programs and training opportunities in non-technical skills, to enhance their well-being. In the current study, the Kipeto Wind Power Project's community capacity-building programs can enhance the livelihoods of the majority of residents who possess primary and non-formal education, which currently limits their employment outcomes.

Table 5: Occupation of Respondents

Occupation	Frequency	Valid Percent	Cumulative

			Percent
Farmer	175	45.6	45.6
Business owner	163	42.4	88
Government employee	11	2.9	90.9
Private Sector employee	18	4.7	95.6
NGO/Community organization member	17	4.4	100
Total	**384**	**100**	

Source: *Field data, 2025*

A majority of respondents (45.6%) reported farming as their primary occupation, underscoring the importance of land-based and livestock-dependent livelihoods among the indigenous women. Farming in this context largely reflects subsistence and pastoralist practices, which are often vulnerable to environmental changes and land-use restrictions. Business ownership followed closely, with 42.4% of respondents identifying as self-employed traders or small-scale entrepreneurs. The high engagement in informal business activities suggests a strong reliance on non-farm income streams to support household needs, especially in the context of fluctuating agricultural conditions. Given the evident low education among the respondents, their main source of livelihood would be predominantly farming or business, which is mainly dependent on non-technical skills. Consequently, a few participants had formal wage employment. Government employees accounted for just 2.9% of respondents, while 4.7% were employed in the private sector. A further 4.4% reported engagement with NGOs or community-based organizations. Cumulatively, 88% of respondents were concentrated in informal or subsistence-based occupations (farming and small business), highlighting both economic vulnerability and the need for livelihood diversification. This occupational structure suggests that energy-related development interventions, such as enhancing access to water, energy, or training to improve women's livelihoods and economic security, may be beneficial.

Community Interventions of the Kipeto Wind Power Project

The aim of the research was to assess the impact of the community initiatives of Kipeto Wind Power Project on the livelihoods of the aboriginal women working. Under this community interventions domain, the effects of the project on three sub-domains of the social support structures, which are accessibility to social support programs, support of cultural preservation and community cohesion and social networks, were assessed. Each of the sub-scales consists of three items, rated on a 5-point Likert scale, ranging from 1 to 5. Table 6 shows the descriptive statistics of community intervention measures.

Table 1: Descriptive Statistics of Community Interventions

Item	N	Mean	SD
Accessibility to Social Support Programs			
To a large extent, women do have easy access to health and childcare services since the initiation of the Kipeto wind power project.	384	3.95	0.785
Women are very satisfied with the quality of services provided through the social support programs (e.g., healthcare, schools, childcare) associated with the Kipeto wind power project	384	3.95	0.847
To a large extent, the social support programs established as a result of the Kipeto wind power project meet the needs of women and their families.	384	3.94	0.798
Support for Cultural Preservation			

Item	N	Mean	SD
The project respects and values the cultural heritage of our community.	384	3.95	0.883
Kipeto wind power project supports and promotes cultural practices important to your community.	384	3.92	0.804
Kipeto wind power project to actively contribute to preserving our community's cultural practices	384	4.01	0.85
Community Cohesion and Social Networks			
Kipeto wind power project influences the relationships and sense of unity among women in our community.	384	3.90	0.787
To a large extent, women feel connected to other women in the community as a result of the project's activities and interventions.	384	3.90	0.80
The project often creates opportunities for women to participate in community activities that strengthen social networks	384	3.92	0.807
Community Interventions	**384**	**3.94**	**0.512**

Source: *Field data, 2025*

Descriptive statistics revealed a consistently moderate to high perception of positive outcomes across all assessed items. The composite mean score for Community Interventions was 3.94 (SD = 0.512), indicating a moderately high level of effectiveness. Internal consistency for the scale was strong, CA = 0.805, indicating that the nine items are reliable. Key items that received relatively high mean scores included access to health and childcare services (M = 3.95), satisfaction with the quality of social services (M = 3.95), and perceived cultural sensitivity of the project (M = 4.01). The findings suggest that the Kipeto Wind Power Project has facilitated visible improvements in community-level services, which are essential enablers of women's livelihood security. Improved access to health and childcare, in particular, reduces the unpaid care burden placed on women, enabling them to participate more fully in income-generating activities and decision-making forums.

Furthermore, items related to cultural preservation and social connectivity, such as the promotion of cultural practices (Mean range: 3.92 to 4.01) and the strengthening of women's social networks (Mean range: 3.90 to 3.92), were also perceived to be moderately high. The findings highlight the project's role in enhancing livelihood security by developing cultural and social capital. Such support is especially important in indigenous pastoralist settings, where cultural heritage remains the main source of livelihoods in the tourism industry. The support programs help create a social environment that enhances cohesion and unity in society.

Open-ended responses on other community interventions introduced by the Kipeto Wind Power Project provided further evidence of some of the specific support structures in place. Respondents mentioned school feeding programs, health literacy initiatives, provision of solar lighting, and water tanks, all of which address basic needs and reduce the burden of care work for women. Such projects are often conducted in groups or public spaces, such as schools, thereby enhancing access to key resources and basic needs while fostering social cohesion and networking. Besides, interventions such as cultural programs and tree nurseries reflected efforts to sustain local identity and ecological heritage. Moreover, activities such as sports support, entrepreneurship training, vocational skills development, and youth employment contribute to social inclusion, cohesion, and networking. Such social places are avenues for

accessing job information and market demand for farm produce or goods, which are crucial in enhancing the incomes of the indigenous community.

1.6 Conclusion

The findings of this study highlight the complex and uneven effects of the Kipeto Wind Power Project on the livelihoods of indigenous Maasai women in Kajiado West Sub-County. While the project has contributed positively to women's livelihood security through socio-economic engagements such as employment opportunities, skills training, and community development initiatives, its impact on decision-making and equitable benefit-sharing remains limited. Patriarchal norms and cultural barriers continue to restrict women's participation in land use decisions and community consultations, undermining their ability to influence outcomes that directly affect their lives. Regression analysis confirmed that social engagement and economic development interventions were more significant in enhancing women's livelihood security than consultative inclusion alone. This suggests that material opportunities—such as income diversification, infrastructure improvements, and empowerment programs—are more transformative than tokenistic participation in governance processes. Overall, the Kipeto experience underscores the need for energy projects to go beyond compliance-based consultation models and prioritize meaningful gender-equitable strategies. Sustainable outcomes can only be achieved when women are fully integrated into decision-making structures and benefit-sharing frameworks, enabling them to harness both the economic and social potential of large-scale renewable energy projects.

1.7 Recommendations

Strengthen Women's Inclusion in Decision-Making: Energy projects should establish mandatory quotas or gender-sensitive policies to ensure women's representation in community consultation meetings and land-use decision-making forums. Capacity-building workshops can equip women with negotiation and leadership skills, enabling them to effectively participate in governance processes.

Expand Economic Empowerment Pathways: Beyond land leasing, renewable energy projects should create inclusive livelihood programs that directly benefit women, such as vocational training, entrepreneurship support, and access to project-related employment opportunities. Financial literacy programs should be introduced to help women manage lease payments, royalties, and other forms of income from energy projects.

Adopt Gender-Responsive Governance Frameworks: National and county governments should strengthen legal and institutional frameworks that protect women's land rights and guarantee equitable benefit-sharing in large-scale energy projects. Monitoring mechanisms should be established to track gender equity outcomes, with periodic assessments ensuring that interventions address women's specific needs.

Enhance Community Engagement Mechanisms: Consultation processes should be culturally sensitive and conducted in local languages, with targeted outreach to women's groups and grassroots organizations. Grievance redress mechanisms should be made more accessible to women to ensure their voices are heard and acted upon.

Promote Partnerships for Women's Development: Collaboration between project developers, NGOs, and women's organizations can foster long-term empowerment through initiatives such as education sponsorships, healthcare access, and microfinance programs. Community-driven projects that prioritize

women's roles in cultural preservation and natural resource management should be integrated into corporate social responsibility (CSR) strategies.

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