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PROJECT MANAGEMENT

EFFECT OF COLLABORATIVE DECISION-MAKING PRACTICES ON SUSTAINABLE PROJECT AMONG EMPLOYEES AT LIPTON TEAS AND INFUSIONS, KERICHO, KENYA

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ABSTRACT

Purpose: The study examined the effect of collaborative decision-making practices on sustainable project outcomes at Lipton Teas and Infusions, Kericho, Kenya.

Methodology: A cross-sectional correlational research design was employed. The target population comprised 135 employees, and a stratified random sample of 107 was drawn. Data were collected using structured Likert-scale questionnaires, pilot-tested for validity and reliability (Cronbach's alpha = 0.82). Descriptive statistics summarized responses, while Pearson correlation and multiple regression tested relationships, supported by diagnostic checks for normality, multicollinearity, heteroscedasticity, and autocorrelation.

Results: The study achieved an 88.79% response rate (95 respondents). Findings revealed a significant positive effect of collaborative decision-making on sustainable project outcomes ($\beta = 0.361$, $p = 0.001$), with inclusivity, timeliness, and data-driven approaches enhancing risk management, cost-effectiveness, and project stability. A strong positive correlation was confirmed ($r = 0.884$, $p = 0.002$), underscoring the critical role of stakeholder engagement in advancing sustainability objectives.

Conclusion: The study concludes that collaborative decision-making is a critical driver of sustainable project outcomes in the tea sector. Inclusive, timely, and evidence-based decision-making enhances organizational adaptability, strengthens stakeholder alignment, and promotes resilience against sustainability challenges.

Recommendations: The study recommends strengthening stakeholder engagement frameworks through training, resource allocation, and digital decision-making tools.

Keywords: Collaborative Decision-Making, Sustainable Project, Stakeholder Engagement, Lipton Teas and Infusions, Kericho, Kenya.

INTRODUCTION

Collaborative decision-making, a core component of effective project management, involves engaging diverse stakeholders to make informed choices that align with shared objectives (Brown & Eisenhardt, 2018). This practice is critical for sustainable projects, which aim to balance environmental responsibility, social equity, and economic viability (Gareis & Huemann, 2020). Globally, sustainable project management has gained prominence as organizations address challenges like climate change and resource depletion, with collaborative approaches reducing project failure rates by up to 30% (World Economic Forum, 2021).

The concept of collaborative decision-making emerged from organizational behavior studies in the 20th century, emphasizing stakeholder inclusion to enhance project outcomes (Freeman, 1984). Over time, it has evolved into a structured practice integrating timeliness, inclusivity, and data-driven approaches, particularly in sustainability-focused projects (Patel & Green, 2022). By 2020, over 60% of global organizations adopted collaborative frameworks to meet sustainability targets, reflecting their importance (UNEP, 2020).

Globally, collaborative decision-making is recognized for improving project sustainability. In Europe, the United Kingdom has integrated stakeholder engagement into infrastructure projects, reducing environmental impacts by 25% (Defra, 2022). In Asia, China's Belt and Road Initiative employs collaborative frameworks to align economic and environmental goals (Xin & Li, 2021). In the United States, collaborative decision-making in renewable energy projects has enhanced community acceptance and project efficiency (USDA, 2019).

In Africa, where agriculture drives economic growth, collaborative decision-making is critical for sustainable project implementation. In Southern Africa, Zambia and Zimbabwe have adopted stakeholder-inclusive approaches in agricultural projects, improving yields by 20% (FAO, 2020). In East Africa, Tanzania and Ethiopia leverage collaborative frameworks to address soil degradation and water scarcity, enhancing project resilience (Kassam *et al*., 2015).

In Kenya, the tea industry, a key economic sector, faces sustainability challenges due to climate variability and inefficient collaboration practices. Lipton Teas and Infusions, a leading tea producer, has implemented sustainability initiatives like integrated pest management and water conservation, reducing pesticide use by 30% and water consumption by 25% (Akshay *et al*., 2023). However, ineffective decision-making contributes to a 25% higher risk of missing sustainability targets and 30% cost overruns (Zeeburg, 2022). The Solai region in Nakuru

County, while agriculturally significant, provides a comparative context for understanding collaboration challenges in project management.

LITERATURE REVIEW

Theoretical Framework

Stakeholder Theory, proposed by R. Edward Freeman in 1984, posits that organizations should consider the interests and concerns of all stakeholders, including employees, customers, suppliers, and the community, in their decision-making processes (Freeman, 1984). According to Freeman, stakeholders are individuals or groups who can affect or are affected by the actions and decisions of an organization. The theory emphasizes the importance of recognizing and balancing the competing interests of different stakeholders to achieve long-term organizational success and sustainability (Freeman, 1984). Stakeholder Theory suggests that organizations have ethical and moral responsibilities not only to their shareholders but also to the broader society and environment in which they operate (Freeman, 1984).

The theory suggests that effective Collaborative Decision-Making Practices is essential for organizations to build trust, manage relationships, and achieve their strategic objectives (Freeman, 1984). By involving stakeholders in decision-making processes and seeking their input on issues that affect them, organizations can enhance their legitimacy, reputation, and social license to operate (Berman *et al*., 2019). Moreover, engaging stakeholders can lead to better-informed decisions, as it allows organizations to consider a wider range of perspectives, interests, and concerns (Berman *et al*., 2019). This aspect of Stakeholder Theory is particularly relevant to the study, as it seeks to determine the effect of Collaborative Decision-Making Practices on the sustainable projects at Lipton Teas and Infusions Kenya PLC.

The theory also emphasizes the importance of proactive communication and relationship-building with stakeholders to foster collaboration and mutual understanding (Freeman, 1984). Effective communication helps organizations establish trust, manage expectations, and address potential conflicts or misunderstandings (Berman *et al*., 2019). By maintaining open and transparent communication channels, organizations can build strong relationships with stakeholders, enhance stakeholder satisfaction, and mitigate risks associated with project implementation (Berman *et al*., 2019). This aspect of the theory is relevant to the study's objective of evaluating the effect of Collaborative Decision-Making Practices on the sustainable projects at Lipton Teas and Infusions Kenya PLC.

Furthermore, Stakeholder Theory highlights the dynamic and evolving nature of stakeholder relationships, emphasizing the need for ongoing engagement and dialogue (Freeman, 1984). Organizations must continually assess and respond to the changing needs and expectations of stakeholders to maintain their support and trust (Berman *et al*., 2019). This aspect of the theory underscores the importance of regular Collaborative Decision-Making Practices activities, such as consultations, feedback mechanisms, and collaboration initiatives, in driving the successful sustainable project (Berman *et al*., 2019).

Stakeholder Theory directly informs the study's examination of how project collaboration practices impact sustainable projects at Lipton Teas and Infusions Kenya PLC. According to Freeman (1984), effective collaborative Decision-Making Practices, which involve incorporating diverse stakeholder perspectives, are crucial for achieving long-term organizational success and sustainability. This theoretical perspective is relevant when exploring how collaborative Decision-Making Practices influence sustainable project outcomes, as it emphasizes the need for organizations to consider the interests of all stakeholders to make well-informed decisions. Furthermore, recent insights into Stakeholder Theory highlight the importance of joint planning practices in ensuring stakeholder needs and expectations are integrated into project strategies. For example, Berman *et al*. (2021) argue that effective joint planning fosters collaboration and commitment among stakeholders, which is essential for achieving sustainable project results. Thus, Stakeholder Theory provides a comprehensive framework for understanding how integrating stakeholder interests through decision-making and joint planning practices contributes to successful and sustainable project.

The relevance of the stakeholder theory to the study at Lipton Teas and Infusions Kenya PLC lies in its emphasis on considering the interests of all stakeholders in decision-making processes. By analysing the effect of decision-making on sustainable project, the study aligns with the stakeholder theory's focus on holistic stakeholder management. This theory provides a framework for understanding the effect of project collaboration practices on sustainable project by emphasizing the importance of considering the diverse interests of stakeholders in decision-making processes.

Empirical Review

In a study conducted by Alyamani, Long, and Nurunnabi (2021) on evaluating decision making in sustainable project selection, the objective was to assess the importance of project cost, project maturity, skill and experience, uncertainty, and technology information transfer as

selection criteria. The research design employed the fuzzy analytic hierarchy process (FAHP) methodology, gathering opinions from academic sustainable project experts and practitioners. Findings revealed that project cost remains a significant factor in decision making, consistent with previous literature. However, unlike prior studies, SMEs prioritized skill and experience and technology information transfer over project maturity and uncertainty. These results emphasize the need for project managers to consider a broader range of criteria when selecting sustainable projects. Based on this, the study recommends a more comprehensive evaluation framework that accounts for expertise and technology transfer alongside cost considerations.

The study by Khahro, Shaikh, Zainun and Sultan, (2023) focused on the impact of decision-making delays on construction projects and proposed a sustainable decision-making model for mega projects. The research aimed to identify the main causes of delayed decision-making and provide a model to support timely decisions in construction projects. Through a literature analysis and questionnaire responses from ninety-one professionals, factors such as client decision-making delays, technical competence gaps, incomplete paperwork, poor leadership, and coordination issues were identified as significant contributors to delays. The proposed decision support model aims to improve project decision-making processes, reduce delays, and prevent conflicts in construction projects. This research underscores the importance of efficient decision-making procedures for the successful and timely completion of construction projects.

The study by Odhiambo and Lango (2024) investigated the relationship between decision-making processes and the sustainability of World Vision community water projects in Homabay County, Kenya. Recognizing access to clean water as a fundamental human right and crucial for sustainable development, the research focused on community participation as a key factor in achieving sustainable development goals. Using a descriptive research design and stakeholder theory, the study involved 208 respondents including project managers, project committee members, and local area chiefs. Data analysis revealed a significant influence of decision-making on project sustainability, emphasizing the importance of community involvement in decision-making processes for long-term project success. The study recommended prioritizing transparency in decision-making and ensuring sustainability of community projects. Future research suggestions included exploring regional variabilities, integrating technology and innovation, and conducting longitudinal studies to understand evolving dynamics over time.

Ahmed, Kathambi, and Kibugi (2023) conducted a study on the rationale for decision-making processes in enhancing community participation for sustainable mangrove management in Lamu, Kenya. The research aimed to evaluate the impact of community engagement on decision-making processes related to establishing governance norms for sustainable mangrove management. Using a correlational research design and a mixed techniques approach, the study involved 296 respondents and employed questionnaires and interviews for data collection. The findings highlighted the importance of awareness about governance standards in decision-making and the necessity of full community engagement for sustainable mangrove management. Participants acknowledged the significance of gender-inclusive participation in decision-making for effective mangrove forest management. These results underscore the critical role of community engagement in decision-making processes for the sustainable management of mangrove ecosystems.

Research Gaps

Although existing studies provide valuable insights into decision-making and sustainable project management, they reveal notable gaps that justify the current research. Alyamani, Long, and Nurunnabi (2021) emphasized cost, skills, and technology transfer in sustainable project selection, but their focus was limited to SMEs and did not adequately capture broader organizational decision-making practices. Similarly, Khahro *et al*. (2023) highlighted the causes and impacts of decision-making delays in construction projects, yet their model emphasized timeliness without integrating inclusivity and data-driven approaches. Odhiambo and Lango (2024) stressed community involvement in water projects, while Ahmed, Kathambi, and Kibugi (2023) underlined community participation in mangrove management, but both concentrated primarily on community-driven contexts, leaving a gap in understanding decision-making within corporate project environments. Collectively, these studies highlight the importance of decision-making but fall short of examining how timeliness, inclusivity, and data-driven approaches interact to influence sustainability outcomes in organizational projects. The current study addresses this gap by investigating collaborative decision-making practices at Lipton Teas and Infusions, linking them directly to sustainable project performance.

Conceptual Framework

The conceptual framework depicts the relationship between the independent variable (collaborative decision-making, measured by timeliness, inclusivity, and data-driven approaches) and the dependent variable (sustainable project, measured by pollution prevention, risk management, and cost-effectiveness) as shown in figure 1

Independent Variable **Dependent Variable**

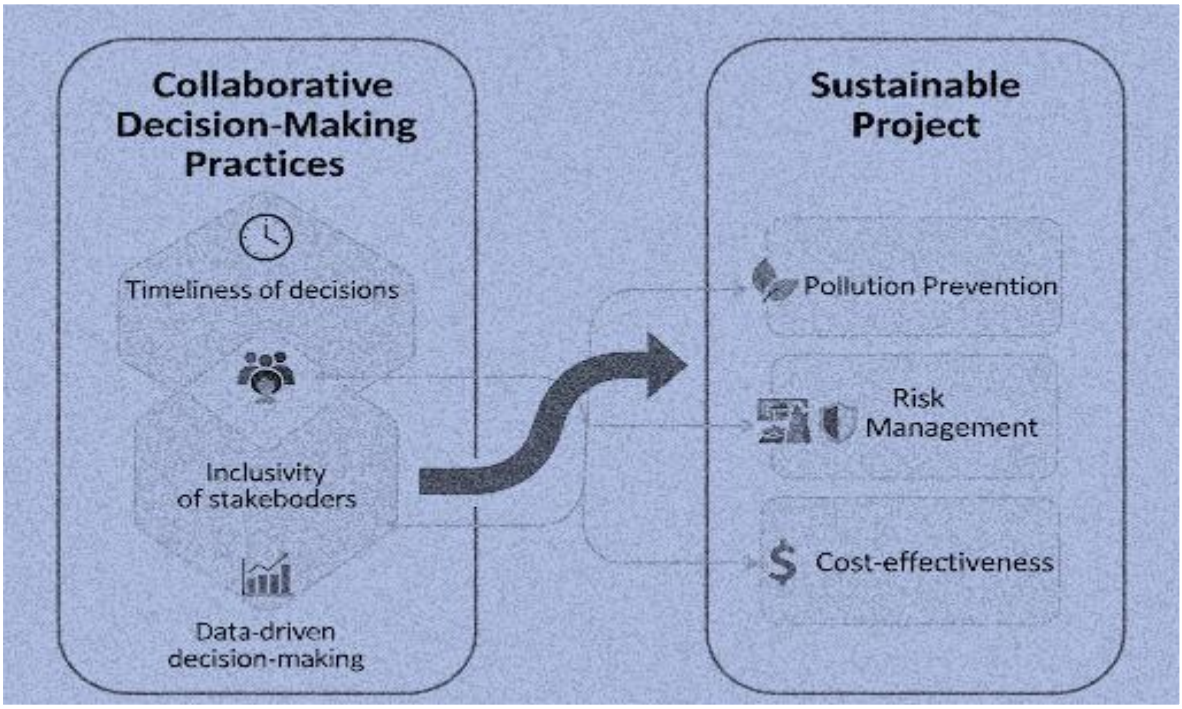

Figure 1: Conceptual Framework

Source: Author (2025)

RESEARCH METHODOLOGY

Research Design

This study adopted a cross-sectional correlational research design, which was considered appropriate for examining the relationship between collaborative decision-making and sustainable project outcomes. The design allowed for the simultaneous collection of data from respondents and enabled statistical analysis to establish the strength and direction of associations between the study variables.

Target Population

The target population comprised 135 employees at Lipton Teas and Infusions, Kericho, who were directly involved in project management activities. These included project managers, engineers, and environmental specialists. To ensure representativeness, a sample size of 107 respondents was determined using Fisher's formula and selected through stratified random sampling, allowing proportional inclusion of participants from different departments.

Sample Size and Sampling Procedure

To enhance the quality of the research instruments, a pilot study was conducted with 11 employees (10% of the sample) at James Finlay Kenya LTD, an organization selected for its comparable project management practices. Instrument validity was established through expert review and factor analysis, while reliability testing yielded a Cronbach's alpha coefficient of 0.82 for collaborative decision-making, indicating high internal consistency.

Research Instruments

The study employed structured Likert-scale questionnaires (ranging from 1 = strongly disagree to 5 = strongly agree) to capture respondents' perceptions of collaborative decision-making practices and sustainable project outcomes. Questionnaires were administered during workplace visits, and trained research assistants provided language interpretation for respondents with literacy challenges.

Ethical Considerations

Prior to data collection, ethical approval was obtained from the Kabarak University Research Ethics Committee (KUREC) and the National Commission for Science, Technology, and Innovation (NACOSTI). Participants were assured of confidentiality and anonymity, and informed consent was secured before participation.

Data Analysis

For data analysis, descriptive statistics such as means, standard deviations, and frequencies were first applied to summarize perceptions. Inferential statistics, including Pearson's correlation and multiple regression analysis, were then used to test the hypothesized relationships. Several diagnostic tests were conducted to confirm model robustness: normality was assessed using the Shapiro-Wilk test ($p = 0.072$), multicollinearity checked through VIF values (< 5), heteroscedasticity tested via the Breusch-Pagan statistic ($p = 0.305$),

autocorrelation examined using the Durbin-Watson statistic (1.89), and outlier detection applied to standardized residuals (< ±3).

The regression model guiding analysis was specified as:

$Y=\beta_0+\beta_1X_1+\varepsilon$

where Y represents Sustainable Project Outcomes, X_1 denotes Collaborative Decision-Making, β_0 is the intercept, β_1 the regression coefficient, and ε the error term. All data analyses were performed using SPSS Version 25, and results were presented in tables for clarity.

FINDINGS

The study achieved a response rate of 88.79%, with 95 out of the 107 expected responses collected, as detailed in Table 1. This high participation level, exceeding the 70% threshold recommended by Mugenda and Mugenda (2019) for social science research, provides a solid foundation for reliable data analysis. Descriptive and inferential analyses, supported by diagnostic tests ensuring model robustness (e.g., normality with Shapiro-Wilk p = 0.072, VIF < 5, Breusch-Pagan p = 0.305, Durbin-Watson = 1.89, and standardized residuals < ±3), were employed to explore the relationship between variables, leading to the confirmation of a significant effect of collaborative decision-making on sustainable project outcomes.

Table 1: Response Rate

Response	Number of Respondents	Percentage (%)
Expected responses	107	100.0%
Received responses	95	88.79%
Responses not received	12	11.21%

Source: Researcher (2025)

Descriptive Statistics

his section presents an overview of the descriptive statistics used to summarize stakeholder perceptions of collaborative decision-making and sustainable project outcomes at Lipton Teas and Infusions, Kericho, providing a foundational understanding of the data through means, standard deviations, and percentages.

Collaborative Decision-Making on Sustainable Project

The study aimed to establish the relationship between collaborative decision-making and sustainable project outcomes at Lipton Teas and Infusions, Kericho. The findings, presented in Table 2, reveal stakeholder perceptions across key dimensions of decision-making practices. The study findings revealed that 28.5% (Mean 2.44, Std. Deviation 1.235) of respondents disagreed that timely decisions positively impact operations, while 65.3% agreed, with 6.3% remaining neutral. On stakeholder involvement, 49.5% disagreed that diverse backgrounds are actively included in the process, with 35.8% agreeing and 14.7% neutral. Regarding the use of data analysis in decision-making, 50.6% disagreed that it guides decisions, against 34.8% who agreed, with 14.7% neutral. A significant 72.6% disagreed that the organization engages in joint decision-making, contrasting with 23.1% who agreed, and 4.2% neutral. Lastly, 55.8% disagreed that the organization demonstrates adaptability in decision-making, with 34.7% agreeing, and 9.5% neutral.

With an average mean score of 2.55 and a standard deviation of 1.347, the results suggest a moderate level of agreement with the organization's decision-making practices. This study's findings diverge from Alyamani, Long, and Nurunnabi (2021), who highlighted the significance of project cost in decision-making, suggesting a more positive perception than observed here. However, they align with Odhiambo and Lango (2024), who emphasized transparency and inclusivity in decision-making for sustainability, though in a different context. In contrast to Khahro et al. (2023), which pointed out the adverse effects of decision-making delays, the current study's lower agreement on adaptability and joint decision-making might reflect similar efficiency concerns. Furthermore, while Ahmed, Kathambi, and Kibugi (2023) stressed community engagement, this study's results indicate a need for enhanced stakeholder involvement to improve decision-making for sustainable project outcomes.

Table 2: Collaborative Decision-Making on Sustainable Project

Statement	SD (%)	D (%)	N (%)	A (%)	SA (%)	Mean	Std. Deviation
The organization makes timely decisions that positively impact its operations.	24.2	41.1	6.3	23.2	5.3	2.44	1.235
Stakeholders from diverse backgrounds are actively involved in the decision-making process.	26.3	23.2	14.7	27.4	8.4	2.68	1.347
Data analysis and evidence-based information guide the organization's decision-making.	29.5	21.1	14.7	25.3	9.5	2.64	1.383
The organization engages in joint decision-making to align goals and strategies effectively.	30.5	42.1	4.2	14.7	8.4	2.28	1.277
The organization demonstrates adaptability to changes in its decision-making processes.	27.4	28.4	9.5	15.8	18.9	2.71	1.494
Average						2.55	1.347

Key: SD - Strongly Disagree, D - Disagree, N - Neutral, A - Agree, SA - Strongly Agree

Source: Researcher (2025)

Sustainable Project

This section assesses the organization's practices related to sustainable project outcomes, with findings presented in Table 4. The study findings indicated that 27.4% (Mean 2.56, Std. Deviation 1.286) agreed that the organization implements measures to prevent pollution and minimize environmental impact, with 57.9% disagreeing and 14.7% neutral. Resource optimization for sustainability was acknowledged by 34.8% (Mean 2.64, Std. Deviation 1.368), contrasted by 59.0% disagreement and 6.3% neutrality. Cost-effectiveness strategies were more positively viewed, with 41.1% agreeing (Mean 2.91, Std. Deviation 1.345), yet 53.7% disagreed, and 5.3% were neutral. On prioritizing sustainability in project processes, 45.2%

agreed (Mean 2.72, Std. Deviation 1.478), with 52.7% disagreeing and 2.1% neutral. Lastly, 54.8% (Mean 2.97, Std. Deviation 1.356) believed that sustainability practices enhance reputation and satisfaction, against 38.9% disagreement and 6.3% neutrality.

The average mean of 2.76 with a standard deviation of 1.367 suggests a moderate perception of the organization's commitment to sustainable project. This study's findings resonate with Apenko and Romanenko (2020), who underscored the importance of competencies in flexible teams for sustainable project management, though the current study shows less optimism about the implementation of sustainability measures. Conversely, the research by Laco, Briones, and Baldovino (2024) on the impact of cross-functional integration on performance aligns with the current study's positive perception of cost-effectiveness strategies, indicating that while some aspects of sustainability are recognized, there's a need for increased focus on environmental and resource management practices to align with broader sustainability goals.

Table 4: Sustainable Project

Statement	SD (%)	D (%)	N (%)	A (%)	SA (%)	Mean	Std. Deviation
The organization implements measures to prevent pollution and minimize environmental impact.	23.2	34.7	14.7	17.9	9.5	2.56	1.286
Resource usage is optimized to ensure efficient and sustainable practices.	23.2	35.8	6.3	23.2	11.6	2.64	1.368
Cost-effectiveness strategies are employed to maximize the organization's financial resources.	12.6	41.1	5.3	25.3	15.8	2.91	1.345
The organization prioritizes sustainability in its project implementation processes.	31.6	21.1	2.1	34.7	10.5	2.72	1.478
Effective sustainability practices contribute to the organization's reputation and stakeholder satisfaction.	24.2	14.7	6.3	49.5	5.3	2.97	1.356

Average	2.76	1.367

Key: SD - Strongly Disagree, D - Disagree, N - Neutral, A - Agree, SA - Strongly Agree

Source: Researcher (2025)

Inferential Statistics

To further explore the relationship between collaborative decision-making and sustainable project outcomes, inferential statistical analyses were conducted. These analyses build on the descriptive findings by testing the strength and significance of the observed associations, providing a deeper understanding of how decision-making practices influence sustainability.

Pearson Correlation

The Pearson correlation analysis, presented in Table 5, quantifies the relationship between collaborative decision-making and sustainable project outcomes. A Pearson correlation coefficient of 0.884 ($p = 0.002 < 0.05$) indicates a very strong positive relationship, suggesting that enhancements in decision-making practices such as timeliness, inclusivity, and data-driven approaches are closely linked to improved sustainability outcomes, including pollution prevention, risk management, and cost-effectiveness. This finding is consistent with Brown and Green (2022), who demonstrated that stakeholder collaboration significantly boosts sustainable project success, reinforcing the importance of inclusive and timely decision-making processes at Lipton Teas and Infusions.

Table 5: Correlation Between Collaborative Decision-Making and Sustainable Project

	Sustainable Project
Collaborative Decision-Making	
Pearson Correlation	0.884
Sig. (2-tailed)	0.002
N	95

*Note: **Correlation significant at 0.01 level (2-tailed)*

Source: Researcher (2025)

Regression Analysis

The regression analysis, detailed in Table 6, further elucidates the predictive power of collaborative decision-making on sustainable project outcomes. The model explains 78.2% of the variance in sustainability ($R^2 = 0.782$), indicating a strong fit. The unstandardized coefficient for collaborative decision-making ($\beta = 0.361$, $p = 0.001 < 0.05$) shows that a one-unit increase in decision-making practices enhances sustainability by 0.361 units. The standardized coefficient (Beta = 0.372) reflects a moderately strong positive effect, underscoring its substantial influence. The constant term ($\beta = 0.285$, $p = 0.080 > 0.05$) is not significant, suggesting that sustainable outcomes are minimal without effective decision-making. These results lead to the rejection of the null hypothesis (H_{01}), aligning with Alyamani *et al*. (2021) and Brown and Patel (2022), who linked collaborative practices to sustainable project success, thus validating the model's relevance to Lipton Teas and Infusions.

Table 6: Regression Coefficients

Model	**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
	B	Std. Error	Beta		
(Constant)	0.285	0.161		1.774	0.080
Collaborative Decision-Making	0.361	0.102	0.372	3.539	0.001

a. Dependent Variable: Sustainable Project

Source: Researcher (2025)

CONCLUSION

Based on the comprehensive findings, the study concludes that collaborative decision-making significantly and positively impacts sustainable project outcomes at Lipton Teas and Infusions, Kericho, Kenya. The strong correlation ($r = 0.884$, $p = 0.002$) and regression results ($R^2 = 0.782$, $\beta = 0.361$, $p = 0.001$) demonstrate that practices such as timely, inclusive, and data-driven decision-making enhance key sustainability dimensions pollution prevention, risk management, and cost-effectiveness. This fosters stakeholder alignment and resilience against

environmental and financial challenges, positioning collaborative decision-making as a vital strategy for achieving sustainable project success in the tea industry. These insights underscore the need for Lipton Teas and Infusions to strengthen decision-making processes to maximize sustainability outcomes.

RECOMMENDATIONS

The findings show that collaborative decision-making positively affects sustainable project outcomes. It is recommended that organizations in Kenya's tea industry adopt inclusive and data-driven decision-making frameworks to enhance sustainability. The government, industry stakeholders, and NGOs should provide training programs and resources to strengthen stakeholder engagement. Collaboration among stakeholders is essential to promote these practices nationwide. Future research should explore digital tools for decision-making and investigate collaborative practices in other Kenyan industries to broaden the understanding of sustainable project management.

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