

Journal of Business and Strategic Management

(JBSM) Cross-Functional Collaboration Practices and Firm
Strategic Outcome in The Energy Sector in Nairobi City County



Cross-Functional Collaboration Practices and Firm Strategic Outcome in The Energy Sector in Nairobi City County



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Accepted: 10th June, 2026, Received in Revised Form: 24th June, 2026, Published: 8th July, 2026

ABSTRACT

Purpose: This study investigated the influence of cross-functional collaboration on firm strategic outcomes in the energy sector within Nairobi City County. The main objective of this study was to examine the effect of cross-functional collaboration on firm strategic outcomes in the energy sector within Nairobi City County.

Methodology: Employing a descriptive research design, the study targeted three hundred personnel from Oil & Gas (Petroleum) Energy companies in Nairobi City County. Stratified random sampling was used to select participants, while structured questionnaires served as the primary data collection instrument. Data were analyzed using descriptive and inferential statistics by use of SPSS software. The results were presented in tables, charts and graphs.

Findings: Findings indicated that open communication has the strongest positive and statistically significant effect on firm strategic outcomes. Equally, shared goal alignment also showed a positive significant effect, reinforcing its importance in synchronizing department efforts towards common organizational objectives. However, knowledge sharing and consensus building had small insignificant effects on strategic outcomes, suggesting that these factors might require more supportive organizational structures to impact firm performance significantly. The regression model explained about 71.3% of the variance in firm strategic outcomes; hence, cross-functional collaboration variables collectively strongly predict firm success.

Unique Contribution to Theory Practice and Policy: The study recommended enhancing open communication through transparent channels and collaborative digital tools, strengthening shared goal alignment via clear goal articulation and consistent communication across departments, integrating knowledge sharing into structured organizational processes supported by leadership, and carefully managing consensus building to balance inclusivity with decision-making efficiency.

Keywords: *Cross-functional collaboration, Strategic outcomes, Energy sector, Knowledge sharing practice*

INTRODUCTION

The increasingly dynamic and competitive business environment has compelled organizations to adopt strategies that enhance coordination, innovation, and organizational agility. As firms respond to technological disruption, sustainability pressures, and evolving customer expectations, cross-functional collaboration has emerged as a critical organizational capability that integrates expertise across functional areas to improve strategic decision-making and organizational performance (Gutterman, 2023). Through effective communication, shared goals, knowledge exchange, and collaborative decision-making, cross-functional collaboration enables organizations to break down functional silos, improve resource utilization, and strengthen strategic outcomes such as market growth, innovation, customer satisfaction, and competitive advantage. Globally, leading organizations such as Apple, Spotify, and CarMax have institutionalized cross-functional teams to accelerate innovation and improve responsiveness to complex business challenges, while evidence from Deloitte indicates that digitally mature organizations are more likely to utilize cross-functional teams than less mature firms (Kane et al., 2021).

In Africa, the energy sector increasingly relies on cross-functional collaboration to address the dual challenge of expanding energy access while promoting environmental sustainability. Regional initiatives spearheaded by organizations such as the African Petroleum Producers Organization (APPO) and the East African Community (EAC) encourage collaboration among governments, private investors, regulators, and development partners to harmonize policies, mobilize investment, and strengthen energy infrastructure across national boundaries. The establishment of regional financing mechanisms such as the Africa Energy Bank further demonstrates the importance of collaborative approaches in enhancing project financing, knowledge sharing, and strategic planning within the continent's energy industry. These collaborative arrangements have become essential for improving organizational adaptability and achieving sustainable strategic outcomes in an increasingly complex energy landscape (Copinschi, 2022).

In Kenya, the energy sector has undergone significant transformation driven by policy reforms, renewable energy investments, and increased stakeholder participation. Nairobi City County, as the country's commercial and administrative hub, hosts a large concentration of energy firms and serves as the focal point for policy implementation, innovation, and strategic decision-making. Organizations within the sector increasingly collaborate with government agencies, regulators, private firms, and community stakeholders to improve operational efficiency, environmental sustainability, and service delivery. Institutions such as the Kenya Renewable Energy Association (KEREa) continue to promote partnerships that enhance innovation and regulatory compliance, while strategic alliances among energy firms facilitate resource sharing and operational excellence.

Despite these developments, limited empirical evidence exists on how cross-functional collaboration practices influence firm strategic outcomes within Kenya's energy sector, particularly among firms operating in Nairobi City County, thereby necessitating the present study (Macharia et al., 2022).

Statement of Problem

Cross-functional collaboration is widely acknowledged as a critical organizational capability for enhancing innovation, operational efficiency, and strategic decision-making, thereby improving firms' strategic outcomes and competitiveness. However, this expectation remains largely unmet in Kenya's energy sector. Evidence indicates that 62% of energy firms experience weak cross-functional collaboration, while 42% lack integrated data-sharing systems, resulting in operational inefficiencies and poorly coordinated strategic decisions (PwC, 2021; IREA, 2024). Furthermore, 47% of energy companies in Nairobi City County have reported project implementation delays, and over 38% continue to experience challenges related to knowledge sharing and interdepartmental communication (KERECA Annual Report, 2023). These challenges hinder firms' ability to achieve strategic outcomes such as market growth, customer satisfaction, innovation, and sustainable competitiveness, ultimately affecting organizational performance and the broader contribution of the energy sector to Kenya's economic development.

Although previous studies have established the importance of cross-functional collaboration, notable gaps remain. Conceptually, existing studies have largely emphasized communication and knowledge sharing while giving limited attention to dimensions such as goal alignment and consensus building. Contextually, most Kenyan studies have focused on sectors such as banking and oil rather than the broader energy sector (Gachigo et al., 2023). Methodologically, earlier studies have predominantly employed descriptive approaches, qualitative case studies, or financial performance indicators without adequately examining the relationship between collaboration practices and broader strategic outcomes (Kimemia & Moronge, 2018; Mushira et al., 2024). This study addresses these conceptual, contextual, and methodological gaps by examining how open communication, goal alignment, knowledge sharing, and consensus building influence firm strategic outcomes in energy firms operating in Nairobi City County using a mixed-methods approach.

LITERATURE REVIEW

Theoretical Framework

This study is anchored on four complementary theories that explain how cross-functional collaboration enhances firm strategic outcomes. The first is Social Exchange Theory (SET) that

was proposed by Peter M. Blau (1964) and building on earlier work by George Homans and John Thibaut. The theory posits that relationships are sustained through reciprocal exchanges based on trust, fairness, and mutual benefit. Within organizations, open communication and cooperative interactions encourage employees from different functional units to share information, build trust, and work toward common objectives, thereby improving strategic outcomes. The second is the Knowledge-Based View (KBV), advanced by Grant and Spender (1996), which considers organizational knowledge as the most valuable strategic resource. The theory argues that competitive advantage arises from creating, integrating, and sharing knowledge across organizational boundaries, making it particularly relevant for explaining how knowledge sharing among cross-functional teams enhances innovation, decision-making, and organizational performance.

The study further draws on Goal Congruence Theory that was developed through the work of Chris Argyris (1950s), and emphasizes aligning individual and departmental goals with overall organizational objectives to minimize conflicts and promote coordinated action. The theory explains that shared goals and consensus among organizational units improve cooperation and strategic alignment. In addition, the study adopts Deliberative Democracy Theory that was advanced by Jürgen Habermas and Joseph M. Bessette, and argues that effective decisions emerge through rational, inclusive, and participatory dialogue among stakeholders. The theory provides a foundation for understanding how consensus building enables cross-functional teams to reconcile diverse perspectives, strengthen commitment to organizational decisions, and improve strategic outcomes.

The four theories jointly provide a comprehensive foundation for the study by explaining the complementary mechanisms through which cross-functional collaboration influences firm strategic outcomes. Social Exchange Theory underpins open communication through reciprocal relationships, the Knowledge-Based View explains the strategic value of knowledge sharing, Goal Congruence Theory supports the alignment of departmental and organizational goals, while Deliberative Democracy Theory explains how consensus building enhances collective decision-making. Collectively, these theories demonstrate that when organizations cultivate trust, facilitate knowledge exchange, align goals, and encourage participatory decision-making, they strengthen collaboration across functional boundaries and improve strategic outcomes.

Conceptual Framework

The conceptual framework depicts how the collaboration practices across functions relate to the strategic outcomes (Varpio et al., 2020). When different sections in an organization communicate freely with each other, share information with each other, share the same organizational goals and make decisions through consensus, it impacts how good the plans are, how fast things get done, and

how adaptable they are in the energy sector. Based on the framework, improving independent variables will enhance strategic planning outcome in the energy sector of Nairobi City County. The independent variables directly affect the dependent variable in the framework, strategic planning outcomes.

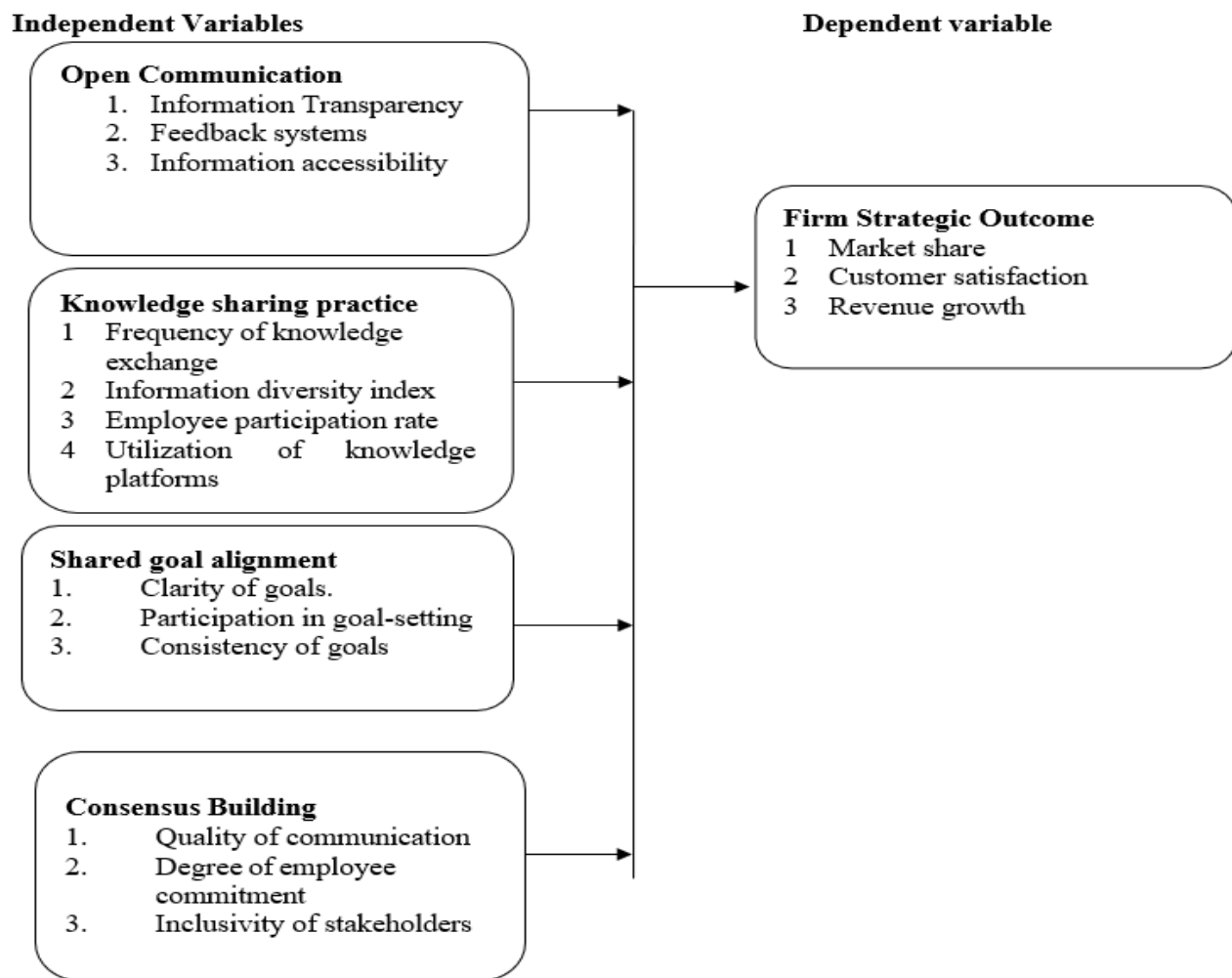


Figure 1: Conceptual Framework

Empirical Review

Musheke and Phiri (2021) examine the effects of effective communication on organizational performance through the lens of systems theory, emphasizing the interdependence and interconnectedness of organizational components. It further underscores the role of management in facilitating communication channels that align with organizational goals, fostering trust,

collaboration, and informed decision-making. Key findings reveal that effective communication positively influences organizational performance by promoting openness, inclusiveness, and result-oriented interactions. The study stresses that secretive or closed communication environments stifle involvement, leading to lost ideas and opportunities, whereas transparent communication cultivates employee engagement, creativity, and alignment with corporate objectives. However, conceptual gaps remain in fully integrating the dynamic and multi-level nature of communication processes within complex organizations, as the study primarily focuses on linear relationships. Methodologically, the relatively small sample size and reliance on self-reported data may limit generalizability and introduce bias. Contextually, the study's focus on specific organizational settings restricts insights into diverse industries or cultural environments.

Olan et al. (2022) analyzes how artificial intelligence (AI) and knowledge sharing (KS) affect organizational performance. In this case, the utilization of (AI) enhances processes associated with knowledge creation, knowledge storage, and knowledge sharing. Finding from the research suggests that when AI is firmly positioned with knowledge sharing it will enhance organization performance significantly. The results also indicate that organizational cohesion enhances the effect of AI on knowledge sharing to improve performance. When the insights of the study are applied by the energy organizations, they will significantly improve their strategic planning processes through enhanced knowledge flows. The study shows how AI can be used to break down silos, unlock cross-functional collaboration, and drive superior organizational performance in complex knowledge-intensive settings such as the energy sector. A key knowledge gap in this study is that while AI technologies alone improve efficiency, the study highlights that without a complementary knowledge-sharing system and an enabling organizational environment, AI's potential to optimize performance remains limited. This gap underscores the need for frameworks that address both technological and human factors to fully leverage AI for sustainable organizational success.

Fu et al. (2022) investigate how sustainable supply chain management (SSCM) practices—including strategy, network design, information systems, and organizational structure—impact business performance, emphasizing the integration of sustainability into supply chain operations. The study highlights that aligning supply chain partners around shared sustainability goals enhances operational efficiency, collaboration, and resilience, which collectively improve financial and environmental outcomes. Key findings reveal that effective strategy formulation and network design, supported by advanced information systems and adaptive organizational structures, are critical enablers of SSCM success, fostering goal congruence among stakeholders and driving superior business performance. However, conceptual gaps remain regarding the nuanced mechanisms through which shared goal alignment among diverse supply chain actors

translates into sustained competitive advantage. Methodologically, much of the existing research, including this study, relies on cross-sectional data and quantitative models, limiting insights into the dynamic, longitudinal processes of alignment and collaboration. Contextually, the focus on specific industries or regions constrains the generalizability of findings, as supply chain complexities and sustainability pressures vary widely across sectors and geographies. Future research should explore how goal alignment evolves over time within multi-tier supply chains and incorporate qualitative approaches to capture the interplay of relational and structural factors influencing SSCM outcomes.

Kuosmanen et al. (2021) conduct an integrative review to synthesize research on patient participation in shared decision-making (SDM) within palliative care, emphasizing collaboration among patients, families, and healthcare professionals. Key findings stress that effective SDM requires interdisciplinary teamwork, open communication, strong patient-provider relationships, and supportive environments. The authors note that healthcare professionals and organizations bear primary responsibility for facilitating meaningful patient participation. However, conceptual gaps exist in understanding the patient's subjective experience and meaning of participation. Methodologically, the review is limited by a small number of studies and predominantly qualitative data, which may constrain generalizability. Contextually, most included research focuses on specific healthcare settings, limiting insights into diverse cultural or systemic environments. This study will fill the gaps by deepening exploration and expanding empirical studies across varied contexts to enhance practical implementations of appropriate frameworks.

METHODOLOGY

This study adopted a descriptive research design, which involved systematically describing characteristics of the target population and examining relationships between variables without manipulating them. The study targeted a total of 60 registered Oil & Gas (Petroleum) companies operating within Nairobi City County. In this case the respondents comprised of two senior and three middle management personnel from each of these companies, which gave a total of 300 personnel. The study sampled registered firms within the Oil & Gas sector operating within Nairobi City County. The sample size of 171 was determined using Yamane's formula (1967). The study adopted stratified random sampling, which involved dividing the population into homogeneous strata (Senior and Middle management) and randomly selecting samples from each stratum proportionally. The primary instrument for data collection was a questionnaire. Data collection begun with obtaining necessary approvals and informed consent from participating firms as well as respondents. The researcher distributed structured questionnaires to the selected sample, ensuring clarity of instructions and confidentiality. Follow-up reminders were made to maximize response rates. This step-by-step procedure ensured systematic, ethical, and

comprehensive data gathering, enhancing data quality and representativeness. Prior to data collection for the study, a pilot study was conducted to test the research instruments and improve them in terms of clarity, reliability and validity. Quantitative data from questionnaires was analyzed using descriptive statistics (means, frequencies) to summarize respondent characteristics and inferential statistics (correlation, regression analysis) to test hypotheses and relationships between variables. Before conducting inferential data analysis, various diagnostic tests were undertaken to ensure the integrity and validity of the regression models applied in this study. The following was the overall regression model:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon \dots\dots\dots (i)$$

Potential ethical issues were mitigated by clearly explaining the study's purpose, voluntary participation, and data protection measures. Data were securely stored and used solely for research purposes. The researcher also sought ethical clearance from the institution's review board and NACOSTI permit to uphold research integrity and participant rights.

RESULTS

Response Rate

The study achieved a high response rate of 97.1%, with 166 out of the targeted 171 respondents completing the survey. Since Sekaran (2016) claims that any response rate above 75% is considered to be optimum, the response rate was considered satisfactory.

Descriptive Statistics

Open Communication

The findings as shown in Table 1 indicate that respondents generally agreed that open communication is well established among energy sector firms in Nairobi City County. High mean scores for information transparency (means = 3.86–4.06), timely information sharing (mean = 3.92), feedback culture (means = 3.82–4.15), and shared information accessibility (means = 3.60–4.28) suggest that employees experience effective communication across departments, with relatively low standard deviations indicating consistency in responses. Notably, access to information that supports timely decision-making recorded the highest rating (mean = 4.28), while the effectiveness of communication tools recorded the lowest (mean = 3.60), highlighting the need to strengthen communication infrastructure despite the overall positive communication climate. These findings are consistent with D'Souza et al. (2022), who observed that transparent communication and effective feedback mechanisms foster trust, knowledge sharing, and collaboration, thereby enhancing organizational performance.

Table 1: Descriptive Statistics for Open Communication Dimensions

Measure	N	SDA %	DA %	N%	A%	SA %	Mean	Std. Dev.
Information Transparency								
In my organization, team members clearly communicate their ideas across departments.	127	1.6	7.1	7.1	52.8	31.5	4.06	0.902
In our organization, relevant data, decisions, and policies are openly shared with all stakeholders.	127	1.6	5.5	13.4	64.6	15	3.86	0.794
Information shared between departments is timely.	127	1.6	0.8	4.7	19.7	51.2	3.92	0.832
Feedback Systems								
The communication channels used for cross-department collaboration are effective	127	1.6	10	24	50	13	3.64	0.897
I feel comfortable providing and receiving feedback across teams.	127	1.6	4	8	52	34	4.15	0.855
There are established feedback mechanisms that allow for continuous dialogue.	127	5	4	11	65	15	3.82	0.903
Shared Information Accessibility								
Information is readily available and accessible to all relevant parties.	127	4	4	17	52	24	3.87	0.951
We have effective communication tools (e.g., intranet, emails) to facilitate easy of sharing of information.	127	5	9	22	51	13	3.6	0.986
Access to information supports timely decision-making across departments.	127	2	5	3.1	46	45	4.28	0.861

Knowledge Sharing Practices

Table 2 below shows that knowledge sharing practices are well established among energy sector firms in Nairobi City County. Respondents reported high levels of interdepartmental knowledge exchange, information diversity, employee participation, and utilization of knowledge-sharing platforms, with the highest mean recorded for frequent use of knowledge-sharing platforms to access organizational information (Mean = 4.31), while the effectiveness of formal knowledge-sharing mechanisms received the lowest, though still positive, rating (Mean = 3.65). The relatively low standard deviations across the measures suggest consistent perceptions that knowledge sharing enhances problem-solving, innovation, and cross-functional collaboration. Nevertheless, the comparatively lower rating for formal knowledge-sharing mechanisms highlights the need to strengthen organizational structures and technological systems that facilitate continuous knowledge exchange. These findings corroborate the Knowledge-Based View advanced by Grant and Spender (1996), which posits that the creation, integration, and dissemination of knowledge are fundamental sources of organizational learning, innovation, and sustained competitive advantage.

Table 2: Descriptive Statistics for knowledge sharing practices

Measure	SDA %	DA %	N %	A %	SA %	Mean	Std. Dev.
Frequency of Knowledge Exchange							
I actively share relevant knowledge and expertise with other departments.	1.6	2.4	9	54	33	4.15	0.798
I regularly receive useful information from other departments	1.6	1.6	15	68	14	3.91	0.702
Knowledge exchange happens frequently between different teams.	3	6	14	54	23	3.88	0.931
Information Diversity Index							
The information shared covers diverse perspectives from various departments.	1.6	9	20	58	13	3.71	0.856
Sharing knowledge across teams improves problem-solving and innovation.	1.6	4	8	58	29	4.09	0.817
Cross-functional collaboration enriches the variety of information available.	1.6	3.1	12	69	15	3.92	0.73
Employee Participation Rate & Utilization of Platforms							
I feel encouraged to share best practices with colleagues from other functions.	0.8	4	17	56	22	3.94	0.79
The mechanisms for knowledge sharing (e.g., meetings, shared databases) are effective.	1.6	10	24	50	14	3.65	0.904
I frequently use knowledge-sharing platforms to access relevant organizational information.	1.6	2.4	2	53	42	4.31	0.761

Shared Goal Alignment

The descriptive findings in table 3 below show that respondents generally perceived shared goal alignment to be strongly embedded within energy sector firms in Nairobi City County. High mean scores were reported for understanding the shared goals of cross-functional projects (Mean = 4.41), clearly defined work-related goals (Mean = 4.38), alignment between departmental and organizational objectives (Mean = 4.31), and clear communication of organizational goals (Mean = 4.27), suggesting that employees have a common understanding of organizational priorities. Respondents also expressed positive perceptions regarding participation in goal-setting discussions and the regular reinforcement of shared goals across departments, reflecting an inclusive approach to strategic planning. The relatively low standard deviations indicate consistent agreement that shared goal alignment enhances coordination and minimizes conflicting priorities, although continued efforts to strengthen employee participation in goal-setting could further

improve collaboration. These findings corroborate Goal Congruence Theory, advanced by Chris Argyris (1950s), which posits that aligning individual and departmental goals with organizational objectives enhances coordination, minimizes siloed behavior, and improves organizational performance, a position similarly supported by Biswas et al. (2024), who argue that goal alignment strengthens cross-functional collaboration and organizational performance.

Table 3: Descriptive statistics for Shared Goal Alignment

Measure	SDA %	DA %	N %	A %	SA %	Mean	Std. Dev.
Clarity of Goals							
I clearly understand the shared goals of cross-functional projects.	1.6	0.8	0.8	49	49	4.4	0.71
The organizational goals are communicated clearly to all departments.	2.4	0.8	4	54	39	4.3	0.78
Goals related to my work are clearly defined and understandable.	2.4	6.3		40.2	51.2	4.38	0.81
Participation in Goal-Setting							
I participate in discussions to clarify and align on shared goals.	3	0.8	15	56	25	3.99	0.85
Employees are involved in setting goals for cross-functional projects.	8	3	54	35	0	4.08	1.04
My department contributes to defining the objectives of cross-functional projects.	3.1	.8	4	50	43	4.28	0.84
Consistency of Goals Across Levels							
My department's objectives align well with the organization's overall goals.	3.1	.8	6	43	47	4.31	0.87
There is consistency between individual, team, and organizational goals.	3.1	.8	12	50	34	4.11	0.88
Shared goals are regularly reinforced and communicated across departments.	4	7	56	33	0	4.14	0.86

Consensus Building

The findings indicated that respondents perceived consensus building to be well established within energy sector firms in Nairobi City County. High mean scores were reported for the frequency of consensus-building activities (Mean = 4.37), employee commitment to agreed decisions (Mean = 4.28), open and constructive communication during decision-making (Mean = 4.24), and consideration of diverse stakeholder perspectives (Mean = 4.24), reflecting an inclusive and collaborative decision-making environment. Respondents also expressed positive perceptions regarding conflict resolution, stakeholder involvement, and employees' willingness to negotiate and compromise, while reaching consensus before implementing cross-departmental decisions received the lowest, though still favorable, rating (Mean = 3.83), indicating opportunities to further

strengthen collaborative decision processes. The relatively low standard deviations suggest consistent perceptions that consensus building enhances coordination and commitment across teams. These findings corroborate Deliberative Democracy Theory, advanced by Jürgen Habermas and Joseph M. Bessette, which posits that inclusive, rational dialogue promotes collective decision-making and organizational effectiveness, and are further supported by D'Souza et al. (2022), who argue that trust, transparency, and participatory decision-making strengthen cross-functional collaboration and organizational performance.

Table 4: Descriptive Statistics for Consensus Building

	SDA %	DA %	N %	A %	SA %	Mean	Std. Dev.
Quality of Communication							
Cross-functional teams collaboratively make decisions on project matters.	1.6	3	2.4	73	20	4.06	0.699
Communication during decision-making is open, respectful, and constructive.	0.8	0.8	5	61	33	4.24	0.651
Conflicts between departments are resolved effectively and constructively.	1.6	2.4	6	65	24	4.09	0.735
Degree of Employee Commitment & Agreement							
Consensus is usually reached before implementing decisions involving multiple departments.	1.6	3	21	61	14	3.83	0.767
I feel comfortable negotiating and compromising to reach team agreements.	0.8	8	71	21	0	4.1	0.589
Employees show strong commitment to decisions once consensus is reached.	2.4	1.6	2	54	41	4.28	0.794
Inclusivity of Stakeholders							
Consensus-building activities (e.g., joint meetings) are frequently held in my projects.	1.6	5	47	47		4.37	0.722
All relevant departments and stakeholders are involved in decision-making.	2.4	0.8	12	54	32	4.11	0.819
Diverse perspectives are considered in consensus-building processes.	2.4	0.8	2.4	59	35	4.24	0.753

Firm Strategic Outcomes

The results as shown in Table 5 below indicate that respondents generally perceived firm strategic outcomes to be positive among energy sector firms in Nairobi City County. High mean scores were reported for consistently achieving long-term strategic goals (Mean = 4.29), market share growth (Mean = 4.13), and the use of customer feedback to improve products and services (Mean = 4.09), reflecting strong strategic orientation, market competitiveness, and customer

responsiveness. Positive perceptions were also observed for revenue growth, customer loyalty, competitive positioning, and the introduction of innovative solutions, although the firm's ability to adapt to market changes through innovation received the lowest, though still favorable, rating (Mean = 3.67), indicating room for improvement in organizational adaptability. The relatively low standard deviations suggest consistent respondent perceptions that firms are achieving favorable strategic outcomes while recognizing the need to strengthen innovation capabilities. These findings corroborate Bhuiyan et al. (2023), who contend that market share growth, revenue growth, customer satisfaction, and innovation are critical indicators of strategic organizational performance and long-term competitiveness.

Table 5: Descriptive statistics for the Firm Strategic Outcomes

	SDA %	DA %	N %	A %	SA %	Mean	Std. Dev.
Market and Financial Performance							
My organization has experienced growth in its market share over the past 5 years.	1.6	4	8	54	33	4.13	0.836
Our revenue growth has significantly increased over time.	1.6	3.1	11	70	14	3.92	0.719
The organization's competitive position has strengthened in recent years.	0.8	6	17	54	23	3.91	0.845
Customer Satisfaction and Market Engagement							
Customers are satisfied with our products or services.	1.6	8.7	21	57	12	3.69	0.852
Customer feedback is regularly used to improve offerings.	1.6	4	8	57	30	4.09	0.821
Our firm maintains strong customer loyalty and retention.	1.6	3.1	12	70	13	3.91	0.718
Innovation and Long-Term Strategic Objectives							
We routinely launch innovative solutions that meet customer needs.	0.8	4	16	57	23	3.97	0.786
The firm effectively adapts to changes in the market through innovation.	1.6	9	23	53	13	3.67	0.882
My organization consistently meets its long-term strategic goals	1.6	3.1	1.6	52	42	4.29	0.788

Inferential Statistics

Correlation Analysis

The correlation analysis revealed significant positive relationships between firm strategic outcomes and three dimensions of cross-functional collaboration: open communication ($r = 0.826$, $p < 0.01$), shared goal alignment ($r = 0.429$, $p < 0.01$), and consensus building ($r = 0.240$, $p < 0.01$), indicating that improvements in these collaboration practices are associated with enhanced strategic outcomes. In contrast, knowledge sharing exhibited a negligible and non-significant relationship with firm strategic outcomes ($r = -0.011$), suggesting that its direct influence may

depend on other organizational conditions. The independent variables also exhibited significant positive interrelationships, particularly between open communication and shared goal alignment ($r = 0.359$), open communication and consensus building ($r = 0.324$), and shared goal alignment and consensus building ($r = 0.269$), demonstrating the complementary nature of cross-functional collaboration practices. Overall, the findings corroborate Musheke & Phiri (2021) who argue that effective communication, aligned goals, and participatory decision-making strengthen cross-functional collaboration and enhance organizational performance.

Table 6: Correlations

		Firm Strategic Outcomes	Open Communication	Knowledge sharing	Shared Goal Alignment	Consensus Building
Firm Strategic Outcomes	Pearson Correlation	1				
Open Communication	Pearson Correlation	.826**	1			
Knowledge sharing	Pearson Correlation	-.011	.093	1		
Shared Goal Alignment	Pearson Correlation	.429**	.359**	.045	1	
Consensus Building	Pearson Correlation	.240**	.324**	.063	.269**	1

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

Regression Analysis

The combined regression model examining the effects of open communication, knowledge sharing, shared goal alignment, and consensus building on firm strategic outcomes yields vital insights. The model includes 127 observations and is statistically significant with an F-statistic of 75.876 ($p = 0.000$), explaining 71.3% of the variance in firm strategic outcomes ($R\text{-squared} = 0.713$, adjusted $R\text{-squared} = 0.704$). The standard error of the estimate is reasonably low at 0.2315, indicating a good fit. Open Communication has a strong positive and highly significant effect (coefficient = 0.637, $\beta = 0.794$, $t = 14.748$, $p = 0.000$). This confirms that transparent and accessible communication channels are a primary driver of strategic outcomes, consistent with literature emphasizing trust-building and knowledge flow as vital for strategic success (D'Souza et al., 2022).

Knowledge Sharing shows a small, negative, and marginally insignificant effect (coefficient = -0.089, $\beta = -0.089$, $t = -1.821$, $p = 0.071$). This suggests that, when controlling for other factors, knowledge sharing alone may not positively influence strategic outcomes, which echoes critiques in the literature about knowledge management challenges in isolation (Lubis, 2022). Shared Goal

Alignment demonstrates a positive and statistically significant effect (coefficient = 0.156, beta = 0.163, $t = 3.082$, $p = 0.003$), reinforcing its importance in harmonizing efforts and improving firm performance, as widely supported by Goal Congruence Theory and empirical findings (Biswas et al., 2024). Consensus Building exhibits a small negative and statistically insignificant effect (coefficient = -0.062, beta = -0.055, $t = -1.064$, $p = 0.290$), indicating that once other variables are considered, consensus building may have a less direct influence on strategic outcomes. This nuanced finding suggests that consensus has value in specific contexts but may also involve complexities like groupthink or delays in decision-making that mitigate its overall impact.

Table 7: Combined Model

Source	SS	Df	MS	Number of obs	= 127
Model	16.265	4	4.066	F (4, 122)	= 75.876
Residual	6.538	122	.054	Prob > F	= 0.000
Total	22.803	126		R-squared	= .713
				Adj R-squared	= .704
				Std. Error of the Estimate	= .2315
Strategic Outcomes	Coef.	Std. Err.	Beta	T	P> t
Constant	1.411	.320		4.404	.000
Open Communication	.637	.043	.794	14.748	.000
Knowledge Sharing	-.089	.049	-.089	-1.821	.071
Shared Goal Alignment	.156	.051	.163	3.082	.003
Consensus Building	-.062	.059	-.055	-1.064	.290

Ranking of the independent variables (Table 8) based on the standardized coefficients (Beta), which indicate their relative strength of effect on the dependent variable (Firm Strategic Outcomes).

Table 8: Ranking of the independent variables

Independent Variable	Standardized Coefficient (Beta)	Rank
Open Communication	0.794	1
Shared Goal Alignment	0.163	2
Knowledge Sharing	-0.089	3
Consensus Building	-0.055	4

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary of Findings

The combined regression model including all four variables explained 71.3% of the variance in firm strategic outcomes ($R^2 = 0.713$, $F = 75.876$, $p < 0.001$). Open communication showed the strongest standardized effect ($\beta = 0.794$), followed by shared goal alignment ($\beta = 0.163$). Knowledge sharing ($\beta = -0.089$) and consensus building ($\beta = -0.055$) had negative or insignificant effects when controlling for other variables, highlighting the complex dynamics of collaboration. Firms are thus encouraged to prioritize open communication and goal alignment while integrating knowledge sharing and consensus building with contextual support to maximize strategic success.

Conclusions

The study concluded that cross-functional collaboration is a significant determinant of firm strategic outcomes in Nairobi's energy sector, although the influence of its dimensions varies. Open communication emerged as the strongest predictor of strategic outcomes by promoting transparency, trust, and effective information flow, while shared goal alignment significantly enhanced coordination, resource optimization, and strategic execution. In contrast, knowledge sharing and consensus building exhibited weaker or non-significant direct effects, suggesting that their contributions depend on supportive organizational structures and effective integration with other collaboration practices. Overall, the findings demonstrate that open communication and shared goal alignment are the most critical collaboration practices for achieving superior strategic outcomes, a conclusion that is well explained by Social Exchange Theory, Knowledge-Based View, and Goal Congruence Theory, which collectively illustrate how trust-based relationships, knowledge integration, and aligned organizational goals foster sustainable organizational performance.

Recommendations

The study recommended that energy sector firms strengthen cross-functional collaboration by enhancing open communication through transparent communication channels, regular feedback mechanisms, and collaborative digital platforms that promote trust and effective information flow. Organizations should also reinforce shared goal alignment by clearly communicating strategic objectives, involving employees in goal-setting, and monitoring cross-functional goal achievement. In addition, knowledge sharing should be embedded within structured organizational processes supported by leadership, an enabling culture, and effective knowledge management systems. Finally, firms should promote inclusive consensus-building practices while establishing

decision-making protocols that encourage constructive debate, minimize groupthink, and ensure timely implementation of strategic decisions.

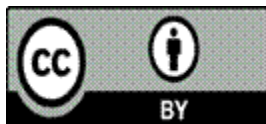
5.4 Suggested Area for Further Research

Future research should examine the long-term effects of cross-functional collaboration on firm strategic outcomes using longitudinal designs to establish causal relationships. Studies should also investigate the moderating or mediating roles of organizational culture, leadership styles, and digital technology adoption in shaping the effectiveness of collaboration practices. Additionally, comparative studies across different industries and geographical contexts are recommended to enhance the generalizability of findings. Further research should explore the contextual factors influencing the effectiveness of knowledge sharing and consensus building, including knowledge management systems and conflict resolution mechanisms, as well as cross-functional collaboration within sustainable energy projects involving multiple stakeholders.

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