

# Knowledge Application and organizational Performance Of Geothermal Development Company in Nakuru County, Kenya

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**ABSTRACT:** GDC is tasked with developing steam fields and selling geothermal steam for electricity generation to Kenya Electricity Generating Company PLC (KenGen) and private investors. While GDC, as a state owned enterprise, as well as its development partners are satisfied with a financial on return investment of 8.3%, this is way below the expected 12.5%. Therefore, the study sought to determine the knowledge application on organizational performance of Geothermal Development Company in Nakuru County, Kenya. The study was grounded on the knowledge based view theory. The study adopted descriptive research design. The target population was 110 employees from 17 departments in Geothermal Development Company, Nakuru County. Since the study population was manageable, census technique was used to incorporate all the 110 targeted employees. Questionnaire was used to collect the primary data desirable for the study. Pilot study was carried in Geothermal Development Company, Nairobi County where 11 employees were issued with the questionnaires. To measure reliability, an internal consistency technique was adopted by utilization of Cronbach's Alpha values of 0.7-0.9. Quantitative data was analyzed by utilization of Statistical Package for Social Sciences. Descriptive statistics involved the use of percentages, frequencies, measures of central tendencies (mean) and measures of dispersion (standard deviation). Inferential statistic involved the use of correlation analysis and multiple regression analysis. The analyzed data was presented using table. The study concluded that the acquired knowledge is used to develop and modify products in the organizations. Moreover, the study concluded that the acquired knowledge is used to increase the energy production in the organization. The study also concluded that the organization uses knowledge to formulate policies which guides employees in terms of performance. Further, the study concluded that the acquired knowledge is used to attract and retain well talented employees which increases performance. Recommendations may involve refining processes, encouraging cross-functional collaboration, and implementing mechanisms for sharing successful applications throughout the organization.

## I. INTRODUCTION

Knowledge application refers to the process of utilizing acquired knowledge, skills, and expertise to solve problems, make decisions, create new products or services, improve processes, and achieve organizational goals (Darmawan et al., 2023). Knowledge application in geology, geophysics, and other relevant fields is essential for accurately assessing geothermal resources. By applying their expertise in resource identification and characterization, the company can make informed decisions about where to explore and invest in geothermal projects, maximizing the potential for successful development, (Abuki, & Muchemi, 2020). Geothermal development projects require meticulous planning and design to optimize resource utilization and mitigate environmental impacts. Knowledge application in engineering, geosciences, and project management enables the company to design efficient and sustainable geothermal power plants and associated infrastructure, ensuring cost-effectiveness and compliance with regulatory requirements (Rashdi, Akmal & Al-shami, 2019).

Geothermal projects entail various technical, financial, and environmental risks that need to be managed effectively. Knowledge application enables the company to identify and assess potential risks, develop mitigation strategies, and make informed decisions to minimize project uncertainties (Murad et al., 2020). This proactive approach to risk management enhances project resilience and reduces the likelihood of costly setbacks. Knowledge application fosters innovation in geothermal technology, leading to the development of advanced drilling techniques, reservoir engineering methods, and power generation technologies, (Rono & Muchemi, 2019). By applying cutting-edge research and

expertise, the company improves the efficiency, reliability, and sustainability of its geothermal projects, gaining a competitive advantage in the renewable energy market (Butt et al., 2019)

Geothermal development is subject to stringent regulatory requirements related to environmental protection, land use, and permitting. Knowledge application in regulatory affairs and environmental science enables the company to navigate complex regulatory frameworks effectively, ensuring compliance with laws and regulations while minimizing project delays and legal challenges (Latukha & Veselova, 2019). Once a geothermal project is operational, ongoing knowledge application is crucial for optimizing plant performance, maximizing energy production, and minimizing operational costs. Continuous monitoring, data analysis, and knowledge sharing among employees enable the company to identify opportunities for efficiency improvements and implement best practices for asset management and maintenance.

In Kenya, the Kenya Power and Lightning Company (KPLC), has recently witnessed other small scale firms engage in what has until recently been the preserve of the organization as well as consumers resorting to the use of other alternative sources of energy such as Solar and biogas (Kim, 2018). The frequent power outages have exposed the organizations inefficiencies and with the high losses in transmission, the firm's competitiveness has been brought to question. The organization has adequate skilled workforce and what might be lacking is effective fit of this knowledge to the organizations objectives. The energy sector need to ensure that their knowledge strategy and knowledge program is consistent with corporate ambitions, and that the techniques, technologies, resources, roles, skills, culture, are aligned with and support the business objectives (Ngéno & Odero, 2018).

Organizational performance is meeting accuracy and completeness standards throughout time (Afshan, 2019). Organizational performance depends on staff skills and motivation. Otieno & Muchemi (2019) defined organization performance as the efficacy with which employees do their tasks to achieve the organization's vision and reward the organization and individual proportionally. Organizational performance evaluation and management is a key component of good Human Resource (HR) management and a top HR development intervention (Bateman, & Snell, 2017). Effective organizational performance management is necessary to maximize HR and boost organizational success. To move away from an event-driven and toward a strategic and people-centric approach, the performance-driven goal should align with organizational policies (Jena, & Pradhan, 2018). There are several factors that being described by Stup (2019) towards the success of the organizational performance. Physical working conditions, equipment, meaningful job, expectations for performance, feedback, reward for positive or negative system, routine procedures, knowledge, skills, and attitudes all important (Borman & Motowidlo, 2017).

Performance measurement involves constant data collection from certain functional domains. It involves tracking and reporting a Customs administration's progress toward its goals (Juma & Muchemi, 2020). An internal system tracks workflows, outputs, and outcomes. Performance measurement aids decision-making and tracks progress toward Strategic Plan and Action Plan goals (Muiruri & Muchemi, 2023). Performance indicators are precise quantitative and qualitative descriptions. It describes the organization's actions (Damien, 2016). In addition to measuring performance, management of performance is about managing people. It's an endeavor to understand how employees function individually and together (Watson, 2017). Supervision, decision-making, inclusive staff involvement, motivation, and technological innovation promotion are all important for company growth. In general, organizational success is a set of financial and non-financial measures that measure how well goals and objectives have been met (Kaplan & Norton, 2016). This study will evaluate organization performance based on timely service delivery, project output, ROI, and project completion.

### **Statement of the Problem**

GDC is tasked with developing steam fields and selling geothermal steam for electricity generation to Kenya Electricity Generating Company PLC (KenGen) and private investors. While GDC, as a state owned enterprise, as well as its development partners are satisfied with a financial on return investment of 8.3%, this is way below the expected 12.5% (GDC Annual and Financial Statement, 2020) (African Development Bank Group Report on Geothermal Development in Kenya, 2020). Auditor General Report (2021) revealed that GDC spent more than Sh900 million in drilling unproductive wells, which it ended up abandoning. According to a report for the year ended June 2021, the auditor general notes that the company, during the 2018/2019 fiscal period had significant expenses amounting to Sh1.7 billion, some of which could have been avoided. The statement of profit or loss and other comprehensive income reflect other expenses amounting to Sh1, 703,973,000 out of which Sh917, 002,000 relates to cost of unproductive and abandoned well. The significant costs were written off by the company during the year, but requires enhanced management attention to

minimize drilling losses.” The Auditor General also raised the red flag over delays in payment of invoices, which led the company to incur more than Sh60 million in interest and more than Sh200 million in legal costs, which negatively affected its operating results. Therefore, the study sought to establish the effect of knowledge management strategies on performance in the energy sector in Kenya

### **Research Objective**

Knowledge Application and Organizational Performance of Geothermal Development Company in Nakuru County, Kenya.

## **II. LITERATURE REVIEW**

### **Theoretical Review**

The study was grounded on the knowledge based view theory and Balance Scorecard Model. The theory states that knowledge is the most strategically significant resource of a firm. The major determinants of firm competitiveness and superior company performance are varied knowledge foundations and competences among the company's since knowledge-based competencies are usually difficult to be copied and socially complex. Knowledge is entrenched and inbuilt in many entities like organizational culture and identity, policies, routines, documents, systems, and employees. This perception originally promoted by Penrose (1952) lays its foundation from the resource based view of the firm and encompasses from there. It originates from the strategic management literature, and was later expounded by Wernerfelt (1984).

However, the KBV has also received criticism from scholars. For example, some researchers argue that the KBV is too focused on tacit knowledge and overlooks the role of explicit knowledge in creating a competitive advantage (Kogut & Zander, 2010). Others argue that the KBV is difficult to apply in practice, as it can be challenging to identify and manage knowledge assets effectively (Bontis, Chua, & Richardson, 2002). The theory was relevant to the current study in that organizations absorptive capacity could be enhanced through KM processes that allow the firm to acquire, convert and apply existing and new knowledge by adding value to the social capital while improving their performance. Hence the theory helped in explaining the influence of knowledge application on organizational performance of geothermal development company in Nakuru County, Kenya.

The Balanced Scorecard was developed in 1992 by Robert Kaplan and David Norton. It was created by Kaplan and Norton to oversee performance and strategy. Managers can gauge the efficacy of their businesses' operations by keeping tabs on employees and seeing if they're carrying out the responsibilities assigned to them. A corporation must align its goals with its mission and vision to prosper. The balanced scorecard argues that corporate success goes beyond financial achievement. Thus, it examines four organizational domains depending on their distinct goals, (Muralidharan, 2006). Balanced scorecard administration helps firms implement vision and strategy. To improve organizational performance and results, this system gives feedback on internal business processes and external consequences (Flamholtz, 2003). Nonprofits and governments have successfully implemented the Balanced Scorecard. Success stories are mounting and studies demonstrate the Balanced Scorecard benefits both types of organizations.

One critique of the BSC approach is that it can be overly simplistic and reductionist in its approach to measuring organizational performance (Bourne, Neely, Platts & Mills, 2003). The BSC focuses primarily on quantifiable and measurable indicators, which may not fully capture the complexity and nuances of an organization's operations, particularly in areas such as innovation and creativity (Neely, Gregory, & Platts, 2002). The financial perspective of the BSC may be given too much weight, leading to a neglect of other important aspects such as customer satisfaction and employee engagement.

A balanced scorecard is a well-structured report that managers can use to track staff actions and their repercussions (Kaplan & Norton, 1992). Among those who took part in a poll in 2020, 88% said they used the Balanced Scorecard to oversee the execution of their strategies, while 63% said the same about their operations. Despite the fact that 30% of those surveyed utilize corporate Balanced Scorecard components to guide their own goal setting and reward calculations, only 17% use it to monitor their own performance. A geothermal development firm in Nakuru County, Kenya, will have its managerial effectiveness examined in this study using the model as the dependent variable.

### **Knowledge Application and Organizational Performance**

Knowledge application enables organizations to make more informed and effective decisions across all levels. By leveraging expertise, data, and insights, organizations can identify opportunities, mitigate risks, and allocate resources more efficiently, leading to better strategic outcomes (Bartol & Srivastava, 2022). Knowledge application drives

innovation by facilitating the exploration of new ideas, technologies, and approaches, (Chebiego, Kinyua, & Muchemi, 2021). Organizations that encourage employees to apply their knowledge creatively are more likely to develop novel solutions, products, or services that meet evolving customer needs and market demands (Nonaka & Takeuchi, 2019). Knowledge application contributes to operational excellence by optimizing processes, improving efficiency, and reducing costs. Organizations that systematically apply best practices, lessons learned, and continuous improvement methodologies can streamline operations and deliver higher-quality products and services to customers (Davenport & Prusak, 2019).

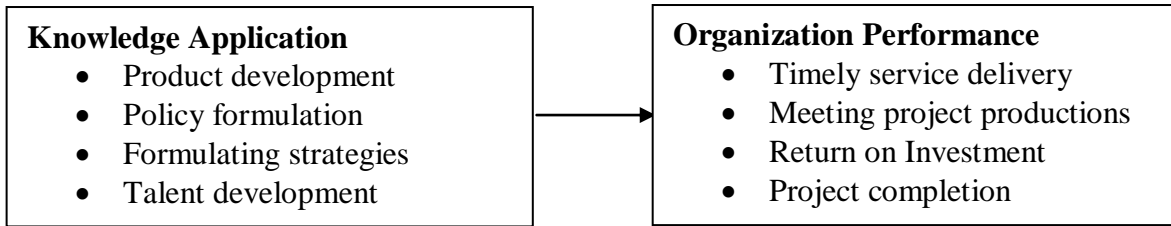
Knowledge application fosters a culture of learning and development within organizations, (Githuku, Kinyua, & Muchemi, 2022). By encouraging employees to apply their knowledge in practical contexts, organizations can facilitate skill development, knowledge transfer, and career advancement, leading to higher levels of employee engagement and retention (Grant, 2019). Knowledge application provides organizations with a sustainable competitive advantage. By effectively leveraging their intellectual capital, organizations can differentiate themselves from competitors, innovate faster, and respond more effectively to market changes, thus maintaining their market position and profitability (Zack, 2019). Knowledge application enables organizations to better understand and meet customer needs and expectations, (Kaibung'a, Muchemi, & Mwasijaji, 2022). By applying customer insights, market research findings, and product/service knowledge, organizations can deliver tailored solutions and exceptional experiences that drive customer satisfaction, loyalty, and retention (Davenport & Harris, 2019). Knowledge application enhances organizational resilience by enabling organizations to adapt to disruptions, crises, and unforeseen challenges, (Abuki, & Muchemi, 2022). By leveraging expertise, data, and contingency plans, organizations can quickly assess situations, make agile decisions, and implement effective responses, thus minimizing negative impacts on performance and reputation (Bennett & Lemoine, 2021).

Zaim, Muhammed, and Tarim (2018) conducted a study in Turkey to assess the relationship between knowledge application and its effect on knowledge management performance on service based organization. The study adopted a descriptive research design the study target population consisted of employees of the service-based firms. The study employed a split-sample technique for sampling and a total of 1068 respondents were drawn from the population. The study employed statistical package for social science for analysis of the data collected and findings of the study revealed that knowledge utilization played a mediating role between all of the knowledge management practices. The findings of the study further revealed that formulation of new policies, improving of existing programs and evaluating alternatives as measures of application has a positive influence on performance of service-based companies in that knowledge utilization increases performance. Nonetheless, the study was conducted in Turkey and focused on the knowledge application and performance of service firms while the current study will focus on the knowledge application in GDC whose main product is the steam generated for power production.

Mwangi and Njoroge, (2018) conducted a study on knowledge application to improve organizational performance. A sample size of 135 employees was selected using stratified sampling procedure from a population of 1345 employees of the Ministry of Lands and Physical Planning Headquarters. Primary data was collected by use of a semi-structured questionnaire. The study established that knowledge application and knowledge repository influence the performance of the Ministry of Lands and Physical Planning. The study recommended the creation of an office to take charge of knowledge management. The management should be committed in creating a strong and positive culture that will result in improved performance. However, the study used stratified random sampling to select the sample as opposed to the current study which will use census technique to select the study sample size.

Zarine (2018) did an empirical investigation of moderation between knowledge application and organizational performance. Data of 150 companies was collected from the annual reports of those companies. Proportionate sampling was conducted in order to include all the sectors. After ensuring the normality of data, regression was applied on the variables that were chosen on the basis of literature review. The results highlighted that all the variables like board size, CEO duality, ownership structure, and operating cash flow, have a significant impact on knowledge application in the firm. However, the study adopted a proportionate sampling to select the study sample size as opposed to the current study which will use census technique to select the study sample size.

Conceptual Framework



III. RESEARCH METHODOLOGY

The study used a descriptive research design. It is used to explore relationships between variables and allows generalizations across populations. The descriptive research design enabled the researcher to expose the respondents to a set of standardized questions to allow comparison. The target population of the study was top level, Middle level and lower level employees from 17 departments in GDC Nakuru County. Since the study population was manageable the researcher used a census design to incorporate all the respondents in the study. Therefore the study sample size was all the 110 targeted respondents.

Semi-structured questionnaire was used to collect the primary data desirable for the study. The questionnaire contained both open and close ended questions. The design of the questionnaire was based on a multiple-item measurement scale. There are several advantages associated with the use of the questionnaire and which informs its usage in this study. These advantages include ease of distribution and data collection, ease of data analysis, standardization of the questions and cost efficiency. The researcher first sought permission from Kenyatta University to go out and collect data in form of introduction letter. After being granted the permission, the researcher then applied for authorization from National Commission for Science, Technology and Innovations (NACOSTI) to collect data from the GDC Nakuru employees. With both the letter, the researcher proceeded to visit the GDC Nakuru, County, Kenya for introduction. The researcher then issued the questionnaires to the study respondents which was collected after two weeks. This time allocated for the respondents to fill in the questionnaires is meant to improve the response rate which is desired in this study since the sample size is small. This method of questionnaire distribution and collection is called Drop and Pick Method.

The pilot study was carried in GDC Nairobi County to assess the effectiveness of the data collection instruments before venturing fully into data collection. This consisted of 11 employees representing 10% of the sample size. The content validity of this study was enhanced in search of views of experts in the field of study especially the research supervisor. Reliability in this study was enhanced by pre-testing the questionnaire with a selected sample which were not be included in the main study. An internal consistency technique was adopted by utilization of Cronbach’s Alpha. The pilot study found Cronbach of .854 which was above 0.7 indicating that the instruments were reliable. Quantitative data was analyzed by utilization of Statistical Package for Social Sciences (SPSS) version 24. Descriptive and inferential statistics was employed in the study. Descriptive statistics involved the use of percentages, frequencies, mean, minimum and maximum. Inferential statistic involved the use of correlation and multiple regression analysis.

IV. FINDINGS OF THE STUDY

The section focused on data analysis, results presentation and discussion of the findings. The findings of the study were presented in form of tables.

Response Rate

A response rate is calculated by dividing the number of individuals who properly completed the semi-structured questionnaires by the total sample size (Fowler, 2014). The study administered 110 questionnaires for data collection out of which 97 were properly filled and returned. This represented 88% overall successful response rates. Trex (2012) suggested that a response rate of 50% is adequate 60% is good and 70% and above very good for analysis. This implies that 88 percent response rate was adequate for data analysis.

Table 1: Response Rate

Questionnaires Issued	Questionnaires Correctly Filled	Response Rate (%)
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110	97	88
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**Gender of the Respondents**

The respondents were also asked to indicate the gender representation of the study subjects. The findings were as presented in Table 2

**Table 2: Gender Representation of the Study Subjects**

Gender	Frequency	Percentage
Female	32	33
Male	65	67
<b>Total</b>	<b>97</b>	<b>100</b>

According to the findings, (67%) of the respondents were male while (33%) were female. Gender is important for a public service because it can ensure equitable access and provide benefits from diversifying the services (Kirton 2012). This implies that majority of the respondents were male. Gender diversity brings a variety of perspectives and approaches to problem-solving and decision-making. Having both men and women at various levels within the organization ensures a richer pool of ideas, which can lead to more innovative solutions and strategies.

**Length of Service in the Organization**

The respondents were asked to indicate the duration they have served in their current organization. The findings were as shown in Table 3

**Table 3: Length of Service in the Organization**

Age of the respondents	Frequency	Percentage
Less than 3 Years	18	19
3-9 Years	42	43
9-12 Years	23	24
More than 12 Years	14	14
<b>Total</b>	<b>97</b>	<b>100</b>

From the findings, (19%) of the respondents indicated that they had worked in with GDC for less than 3 years, 43% stated that they had worked with GDC for 3-9 years, 24% stated that they had worked with GDC for 9-12 years while 14% stated that they had worked with GDC for more than 12 years. This implies that majority of the respondents had worked with GDC for 3-9 years and 9-12 years. Longer tenures often translate to greater experience and expertise. Employees who have been with the organization for an extended period are likely to have a deep understanding of the company's processes, culture, and industry trends. This experience can be invaluable in solving complex problems and making informed decisions.

**Education Level of the Respondents**

The respondents were asked to indicate their highest level of education. The findings were as shown in Table 4.

**Table 4 Education Level of the Respondents**

Level of Education	Frequency	Percentage
Diploma	17	17
University Degree	52	54
Postgraduate Degree	28	29
<b>Total</b>	<b>97</b>	<b>100</b>

From the findings, (17%) of the respondents indicated that they had attained diploma education, (54%) of the respondents indicated that they had university degree education while (29%) stated that they had postgraduate degree education. The education level determines the efficiency of a human resource officer. Officer with high education level tend to perform better. This implies that majority of the respondents had attained university education and postgraduate degree education. Varied educational backgrounds contribute to a diversity of perspectives and approaches. This diversity can foster innovation and creativity within the organization, as individuals bring unique ideas and insights shaped by their educational experiences.

**Knowledge Application on Organizational Performance**

The respondents were asked to indicate their level of agreement on the influence of knowledge application on organizational performance of geothermal development company in Nakuru County, Kenya. The findings are presented in Table 5

**Table 5: Knowledge Application on Organizational Performance**

<b>Knowledge Application</b>	<b>N</b>	<b>Mean</b>	<b>Std</b>
The acquired knowledge is used to develop and modify products in the organizations	97	4.210	0.908
The acquired knowledge is used to increase the energy production in the organization	97	4.258	0.886
The organization uses knowledge to solve complex projects and attain the objectives of the project	97	4.403	0.557
The organization uses knowledge to formulate policies which guides employees in terms of performance	97	4.145	0.807
The organization uses the acquired knowledge to develop yearly strategic plans on the anticipated performance	97	4.452	0.592
The organization uses knowledge to effectively implement the strategic plans which enhances performance	97	3.873	1.037
The organization uses the knowledge to develop the talent of existing employees which increases performance.	97	4.145	0.807
The acquired knowledge is used to attract and retain well talented employees which increases performance.	97	4.307	0.738

According to the findings majority of the respondents agreed that the acquired knowledge is used to develop and modify products in the organizations with a mean of 4.210 and a standard deviation of 0.908. Majority of the respondents also agreed that the acquired knowledge is used to increase the energy production in the organization with a mean of 4.258 and a standard deviation of 0.886. Majority of the respondents also agreed that the organization uses knowledge to solve complex projects and attain the objectives of the project with a mean of 4.403 and a standard deviation of 0.557. The study findings are in line with those of Nawab, et al., (2020) who observed that knowledge serves as the foundation for informed decision-making throughout the project lifecycle. By leveraging existing expertise and data, project managers and teams can make well-informed decisions that align with project objectives. Informed decision-making helps mitigate risks, optimize resource allocation, and navigate uncertainties.

In addition majority of the respondents agreed that the organization uses knowledge to formulate policies which guides employees in terms of performance with a mean of 4.145 and a standard deviation of 0.807. Further majority of the respondents agreed that the organization uses the acquired knowledge to develop yearly strategic plans on the anticipated performance with a mean of 4.452 and a standard deviation of 0.592. Moreover, majority of the respondents agreed that the organization uses knowledge to effectively implement the strategic plans which enhances performance (mean=3.873, SD=1.037). The study are in line with those of Karani (2019) who noted that knowledge is crucial for ensuring that the implementation of strategic plans aligns with the organization's overarching goals and objectives. By leveraging insights from internal and external sources, organizations can make informed decisions to align actions with the strategic direction, ensuring coherence and focus across all levels.

Similarly, the majority of respondents (mean=4.145, SD=0.807) agreed that the organization uses the knowledge to develop the talent of existing employees which increases performance. Moreover, majority of the respondents agreed that the acquired knowledge is used to attract and retain well talented employees which increases performance (Mean=4.307, SD=0.738). The findings concurs with those of Jayasingam, et al., (2021) organizations that actively showcase their commitment to learning, innovation, and knowledge-sharing build a strong employer brand. Talented individuals are attracted to organizations that are perceived as forward-thinking, dynamic, and invested in the continuous development of their workforce.

**Correlation Analysis**

The study adopted Pearson correlation analysis. Pearson's correlation coefficient (r) a measures the strength of the association between the two variables

**Table 6: Correlation Matrix**

		Organizational Performance
<b>Knowledge Application</b>	Pearson Correlation	.541
	Sig. (2-tailed)	.00
	N	129

The study examined the correlation between knowledge applications and organizational performance of geothermal development company in Nakuru County, Kenya. The findings established that there was a strong positive correlation between knowledge application on organizational performance of geothermal development company in Nakuru County, Kenya ( $r = 0.541$ ;  $p < 0.05$ ). The results of the correlation analysis indicated that better knowledge application enhances organizational performance of geothermal development company in Nakuru County, Kenya. The study findings are in line with those of Nawab, et al., (2019) which revealed that information processing, pick up and transmission are essential in understanding of knowledge utilization. Study findings further revealed that when employees raise an issue of concern, formulation of new programs and an improvement of existing program are some of the indicators of knowledge application that boost organization performance.

**Overall Model**

Table 7 shows the overall significant test results for the hypothesized research model

**Table 7: Regression Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.038	.145		.260	.796
	Knowledge Application	.245	.104	.179	2.356	.022

The interpretations of the findings indicated follow the following regression model.

$$Y = \beta_0 + \beta_1 X_1 + \epsilon \dots \dots \dots \text{Equation (1)}$$

Therefore,

$$Y = 0.038 + 0.245 X_1 \dots \dots \dots (2)$$

In addition, holding all the other variables constant, a unit increase in knowledge would lead to a 0.245 improvement in organizational performance of geothermal development company in Nakuru County, Kenya. The findings are in line with those of Karani (2019) which revealed that knowledge application increases performance of organization in that employees raising an issue of concern, changes in employee’s way of thinking and mobilizing support on projects have a significant impact on performance of the telephone companies.

**Hypothesis Testing**

The study sought to test the hypothesis that: **H0**: Knowledge application has no significant influence on organizational performance of geothermal development company in Nakuru County, Kenya. From the findings the p-value was 0.022 which was less the 0.05 significant level. Therefore, based on the rule of significance, the study rejects the null hypothesis (**H0**) and concluded that knowledge application has a significant influence on organizational performance of geothermal development company in Nakuru County, Kenya. The finding is in agreement with those of Jayasingam et al., (2021) findings which revealed that knowledge utilization is a mediating factor between knowledge acquisition and dissemination. The study findings further revealed that improving of programs and projects, new policies formulation shows that employees had fully utilize existing knowledge which impacts the company performance. The study findings agrees with those of Nawab et al., (2019) which found that knowledge application and transmission are essential in understanding of knowledge utilization. Moreover, the study findings agrees with those of Mwangi and Njoroge, (2018) who found that knowledge application and knowledge repository influence the performance of the Ministry of Lands and Physical Planning. The study recommended the creation of an office to take charge of knowledge management.



## V. CONCLUSIONS AND RECOMMENDATIONS

### Conclusions

The study concluded that the acquired knowledge is used to develop and modify products in the organizations. Moreover, the study concluded that the acquired knowledge is used to increase the energy production in the organization. The organization uses knowledge to solve complex projects and attain the objectives of the project. The study also concluded that the organization uses knowledge to formulate policies which guides employees in terms of performance. The study also concluded that the acquired knowledge is used to attract and retain well talented employees which increases performance.

### Recommendations

In examining the influence of knowledge application on organizational performance, it is crucial to assess how the geothermal development company translates acquired knowledge into practical solutions and improvements. This can be achieved by evaluating project outcomes, innovations, and the implementation of best practices. Utilizing case studies, performance metrics, and employee feedback will provide a comprehensive understanding of knowledge application. Recommendations may involve refining processes, encouraging cross-functional collaboration, and implementing mechanisms for sharing successful applications throughout the organization.

### Areas for Further Research

There are various gaps identified in the study, the study was exclusively confined on the energy sector therefore the findings could not be generalized in other sectors. The researcher therefore suggested that further study should focus on the effect of knowledge application strategies on performance of various sectors like manufacturing sectors, banking sectors among others for the generalization of the study findings. Another gap emanates from the conceptual scope of the study, this excluded other knowledge management strategies which affects organization performance. Therefore, the researcher suggested that future studies should focus on the effect of continuous improvement on organizational performance

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