

Knowledge Integration and Implementation of Geothermal Energy Projects in Nakuru County, Kenya

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ABSTRACT

The general objective of this study was to examine the influence of knowledge integration on implementation of geothermal energy infrastructure projects in Nakuru County, Kenya. The study was underpinned by knowledge-based theory. The first level target population of the study is ten geothermal energy infrastructure projects in Nakuru County and the accessible population is two hundred and four specialist staff working on the projects seconded by KenGen, contractors, and consultants. The research adopted proportionate stratified random sampling method with descriptive survey research design. A pilot study was carried out to check the reliability and validity of the research instrument. Cronbach's coefficient alpha was used to test for reliability whereas expert opinion from practitioners in the energy sector was conducted to validate face and content validity; while KMO and Bartlett's test was used to check construct validity of the questionnaire. Data collection was carried out using questionnaires and the obtained data was analyzed using Statistical Package for Social Sciences (SPSS) version 26 and presented in tables and graphs with clear interpretations based on the findings. F-test and t-test were done to determine the statistical significance between the variables and in drawing conclusions for the study. The study established that knowledge integration had significant influence on implementation of geothermal energy infrastructure projects. The study concluded that knowledge integration had a high correlation with implementation of geothermal energy infrastructure projects. The study recommends that geothermal projects need to embrace knowledge integration as it is crucial for project success and performance by creating a unified understanding among diverse project teams, establishing a shared knowledge base, and improving overall team effectiveness.

Keywords: Implementation of Geothermal Energy Projects, Knowledge Integration, Project Integration Management

INTRODUCTION

Project integration management is a process that coordinates all aspects of a project to ensure it runs efficiently and meets goals, and is especially important when different teams and processes interact, such as when there are conflicting objectives or scheduling issues, and project integration management also helps teams make trade-offs to meet stakeholder expectations (Sanyaolu *et al.*, 2023).

Integration management is a key part of project management that helps in ensuring that projects are implemented successfully, and is important for achieving project objectives. It is one of the ten key knowledge areas espoused in the project management body of knowledge (Jarrah *et al.*, 2022). Successful implementation of energy infrastructure projects of any scale depends on support from a range of stakeholders across the spectrum and such projects involve installing new or upgraded equipment or technology and have to go through several steps for implementation.

Successful project implementation in project-driven activities is becoming a major goal for organizations looking to be successful in project implementation and projects' sustainability components are examined in a meeting at the project conclusion (Silvius, 2021). The most noteworthy international project management development is sustainable project management, which originated from this sustainability perspective. Project management can

assist in bridging the gap between the academic state-of-the-art and industrial open innovation practice (Guertler & Sick, 2021).

Statement of the Problem

In most types of projects, once sign off for the business case has been achieved, the subsequent step being to create a detailed plan for implementation. Depending on the scale and complexity of the project the plan varies in form, but it should include a schedule which identifies and sets milestones for the project and an overview of key tasks to be completed (McKenzie *et al.*, 2022).

Kenya Electricity Generating Company's (2024) Annual Report noted that 30% of energy infrastructure projects in Nakuru County faced challenges of traditional data management practices which were inadequate to handle the large amounts of data created by increased production facilities and renewable energy development. Onyango (2024) noted that 20% of local project team members struggled in sharing information, which led to duplication in data processing and were error-prone when presenting views of the company's plant performance to decision-makers. In 23% of the energy infrastructure projects, it took too long to respond to peak workloads, which frustrated support staff, and all these challenges inhibited proper project implementation (Nyongesa *et al.*, 2024).

Afshari *et al.*, (2022) reviewed the impact of integration management on construction projects management implementation. Stander (2023) explored post-merger integration challenges experienced by leaders in South African organizations. Matheka and Mungai (2024) examined project integration management and performance of digitalized projects in telecommunications industry in Nairobi City County, Kenya. These studies concentrated on general aspects of project integration management, implementation and performance of projects in various jurisdictions, thus occasioning conceptual, contextual and methodological gaps. The current study focused knowledge integration and its influence on implementation of geothermal energy infrastructure projects in Nakuru County, Kenya.

Research Objective

The general objective of this study was to examine the influence of knowledge integration on implementation of geothermal energy infrastructure projects in Nakuru County, Kenya.

Scope of the Study

The scope of this study were ten geothermal energy infrastructure projects in Nakuru County, Kenya and were chosen because the world today is firmly focused on non-fossil energy. The study sought to examine the influence of knowledge integration on implementation of geothermal energy infrastructure projects. The study was undertaken in August and September 2025.

LITERATURE REVIEW

Theoretical Review – Knowledge Based Theory

Knowledge-based theory of the firm was founded by Grant (1996) and held that an organization's knowledge is its most tactically important asset, adding that firms' knowledge capabilities are key components in attaining long-term competitive advantage and superior organizational performance since knowledge-based endowments are typically hard to replicate and are typically diverse and multifaceted. Zavatin (2023) noted that project knowledge is ingrained and transmitted through a variety of entities, including corporate culture, policies, and eventually employees.

When market-based knowledge is appropriately responded to, it enhances the competitiveness of the organization. Knowledge management processes of creating, acquiring, storing, sharing and deploying are valuable processes which influence coordination of tasks, resources, stakeholders, other project elements and generally the successful implementation of projects, and therefore the theory explains knowledge integration as a variable in this study.

Conceptual Framework

The general objective of this study was to examine the influence of knowledge integration on implementation of geothermal energy infrastructure projects in Nakuru County, Kenya. It was hypothesized that knowledge integration influenced implementation of geothermal energy infrastructure projects as shown in Figure 2.1;

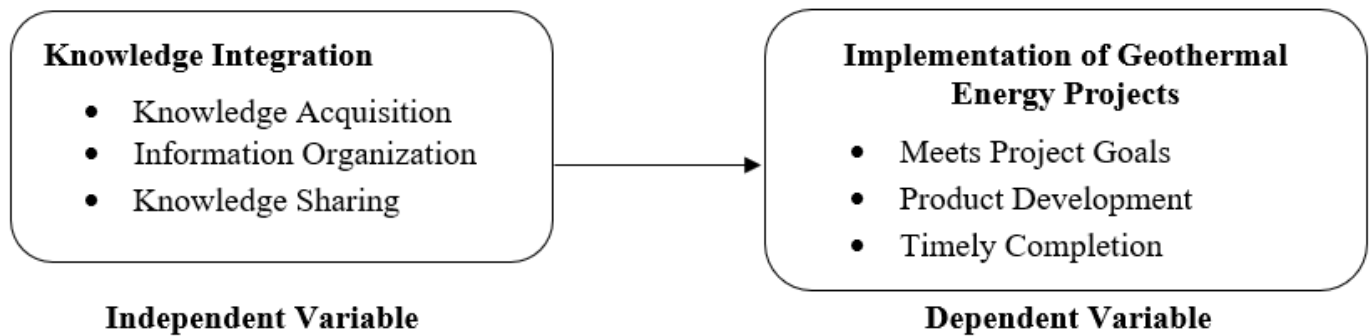


Figure 1: Conceptual Framework

Discussion of Study Variables – Knowledge Integration

Knowledge integration denotes the process by which several individuals combine their information and uniquely held knowledge to create new knowledge. It therefore, depends on how members know and integrate their individually held knowledge. Valavi *et al.*, (2022) noted that new knowledge is thus created through processes of applying multiple perspectives on the same information and this application indicates how the value of that knowledge can be increased through alternative combinations that are created through different ways of knowing.

Knowledge integration mechanisms comprise multifunctional product development projects, top management teams with members from different functional areas and product teams working on improvements of the manufacturing process (Stonig *et al.*, 2022). To make these mechanisms work and to lay the ground for effective knowledge integration is a difficult assignment to master, in particular when individuals lack a common or shared body of knowledge.

The effectiveness of knowledge integration largely depends on how different knowledge processes are tied together and what time orientations individuals or teams have, who integrate their individually held knowledge with other actors. Knowledge can not only be embodied, embedded and encoded, but also needs to be entrained that knowing in an organizational context is dependent upon related processes of knowing and that timing and adjustments is important to be able to integrate knowledge (Sandra *et al.*, 2023).

Implementation of Geothermal Energy Infrastructure Projects

Despite there being increased emphasis in various sectors on successful project implementation, identifying critical success factors in system dynamics implementation and making system dynamics application successful, more emphasis need to be placed on managing people rather than managing model technicalities are key (Ismail, 2020). Accordingly, project management success is defined as the project manager's ability to complete the project plan as set out by the project owner.

Consequently, the tools and techniques used today offer insight into integration management and its constituent parts, but do not, however, adequately address integration and its management in general projects because their primary focus is software development (Moyano *et al.*, 2022). Depending on the sector or developmental stage, there are several ways to gauge the success of a project's implementation; this helps to explain why unforeseen circumstances arise at both the strategic and operational levels throughout the project implementation process.

Therefore, even if organizations put a lot of effort into creating well-thought-out project plans and performing precise integration assessments, the plans never work out as intended and if the perversion increases, the projects

fail thus effective project implementation strategies that recognize enthusiasm amidst uncertainty ought to be examined in these conditions (Kujala, 2022)

Empirical Review

Misra *et al.*, (2024) analyzed knowledge integration in convergence research and sought to examine the linkages between integration approaches and products, analyzing the integrative qualities of research products and the collaborative processes used to generate these products. The study found that large, heterogeneous teams with a broad mix of disciplines and professional expertise produced more interdisciplinary research products, and relied on skilled integration by the leader, more intensive forms of collaboration, and inclusive problem framing.

Yanou *et al.*, (2023) reviewed integrating local and scientific knowledge and the need for decolonizing knowledge for conservation and natural resource management. The findings demonstrated that despite an increasing number of studies seeking to integrate indigenous and local knowledge and scientific knowledge relevant to conservation and natural resource management, methods, procedures, and opportunities were poorly and vaguely documented, and challenges and colonial legacies were often overlooked.

Matheka and Mungai (2024) examined project integration management and performance of digitalized projects in telecommunications industry in Nairobi City County, Kenya. Findings showed that there was a strong significant relationship between integrating project knowledge and performance of digitalized projects and a strong significant relationship between managing project work and performance of digitalized projects.

CRITIQUE OF LITERATURE REVIEW

There are few local studies on project integration management and geothermal energy infrastructure projects, particularly in Nakuru County, Kenya, and according to literature from previous research, most of the studies were undertaken in developed nations. Additionally, a number of studies on project integration have been scrupulously examined in the reviewed literature; however, their precise influence on overall implementation of energy infrastructure projects is primarily ancillary and not well-articulated (Jarrah *et al.*, 2022). So much literature from prior studies attempt to establish the influence of project integration management on project implementation, project effectiveness and overall project success.

Less studies have been done explicitly on project integration management and implementation of geothermal energy infrastructure projects, notwithstanding the fact that many more other studies on project integration have been conducted in diverse sectors, including industrial, healthcare, supply chain, and education (Luvai & Mungai, 2024). Despite having similar major requirements for project integration management, the referenced studies might not be entirely applicable to their use in the local energy infrastructure sector.

There is dispersed research that sets the pace on application of project integration subsets including process knowledge integration and its influence on implementation of geothermal energy infrastructure projects. The studies are principally concise and provide wide-ranging perspectives on project integration and how the same influences project implementation (Mwai, 2023).

Research Gaps

There exists a wealth of literature regarding project integration and its influence on implementation of energy infrastructure projects across various sectors, nevertheless, it cannot be wholly applied to the sub-sector of geothermal energy infrastructure projects. Based on literature on the subject of project integration, it is more likely to be espoused in complex and indeterminate environments, particularly when applied in diverse sectors.

Since energy infrastructure projects are sensitive to economic conditions due to their facilitative function, there is a scarcity of literature on the probable limitations that project organizations, particularly those involved in geothermal energy infrastructure projects, may encounter if they do not adopt knowledge integration and the attendant categorization for improved project implementation.

RESEARCH METHODOLOGY

Research design denotes the procedural framework within which the research is conducted and is characterized by procedures and methods for arriving at results and findings and tools for rejecting or failing to reject such knowledge (Pandey & Pandey, 2021). The study adopted descriptive research design, which entails proffering a description of the phenomena under study based on findings from a sample that shares similar traits as the universe, and identifying the relationship between the variables being studied. The research design was chosen for the study because it allows researchers to better understand the research problem by incorporating multiple aspects into the study.

Target population is the totality of members of real or hypothetical set of individuals, events or objects that an investigator seeks to generalize the research results. Conversely, an accessible population denotes that have a realistic chance to be included in the study sample (Patankar, 2024). The first level of the target population of this study comprised ten (10) geothermal energy infrastructure projects which were at various levels of implementation, and formed the unit of analysis. The second level of target population was made up of the accessible population being two hundred and four (204) specialist staff who were deployed across the projects and included engineers, quantity surveyors, consultants and contactors' representatives, and these were the unit of observation.

A sample indicates a portion of the population of particular interest and is a carefully chosen portion of the entire population to participate in a research project (Zina, 2021). The rationalization of sampling was to evaluate the characteristics of the selected sample in order to assess the attributes of the entire population. Samples are used in statistical testing when the population is too big for the test to include all possible participants or observations. This study adopted Yamane's model to determine the sample size as shown;

$$n = N / (1 + N (e)^2)$$

where;

n = Sample size

N = Population

e = Margin of error (take 0.05)

The substituted values in determining the sample size from the target population are;

$$n = 204 / (1 + 204(0.05^2))$$

$$n = 204 / 1.51$$

$$n = 135$$

Data collection instruments denote the methods and instruments used to collect and document data for a study. In this study, since the projects under review are at different levels of implementation, primary data was used and Hennink and Kaiser (2022) indicated that primary data is the original information that is collected for the first time.

The study fully complied with ethical guidelines for the research process and sought an approval from the administration of Jomo Kenyatta University of Agriculture & Technology to grant permission for the study, and also requested for a formal letter to the participating organizations asking them to take part completing the study questionnaires. Additionally, the researcher penned a letter of request to participants urging them to take part in the data collection process.

A detailed explanation of the relevant particulars of the study was done to each participating organization, with particular emphasis being on the fact that its sole objective was to advance academic knowledge. The results of the study were forwarded to the relevant university department and confidentiality was maintained.

RESEARCH FINDINGS AND DISCUSSION

Response Rate

A total of one hundred and thirty five (135) questionnaires were distributed to respondents who were identified to participate in the final study, and one hundred and twenty three (123) questionnaires were fully filled and collected, accounting for 91.1% of the circulated questionnaires, and this was a satisfactory response rate. Shiyab *et al.*, (2023) noted that a response rate of 50% is adequate, while a response rate of 60% is considered good whereas a response rate of 70% and above are considered excellent and representative of the target population.

General Information

Descriptive statistics revealed that 44.7% of the respondents had worked on the subject projects for between five and ten years, whereas 30.9% of the respondents had worked for less than five years, while 24.4% of the respondents had put in over 10 years. Results showed that fifty one respondents were from medium-sized projects, forty respondents were from small-sized projects while thirty respondents were from large-sized projects

Reliability Test Results

Reliability denotes the consistency and stability of a measurement or research technique, which guarantees that comparable results are obtained when the same conditions are repeated (Ahmed *et al.*, 2021). The reliability results for the individual variable was .862, which was above 0.7 being the lower threshold of acceptability, hence it was considered excellent.

Validity Test Results

Validity denotes the degree to which a study instrument measures what it is supposed to measure, and ensures that the conclusions drawn from research are based on accurate data and reflects the real world (Lim, 2024). This study engaged project management specialists to assess the instrument’s applicability in measuring the variables of interest for face and content validity. Construct validity was determined by KMO and Bartlett test, with the KMO value being .780 and Bartlett’s test returned a significance value of .003, which indicated high correlation in study items.

Table 1: Communalities

Statement	Initial	Extraction
In all projects we undertake, we always seek new project ideas	1.000	.670
Our project top management usually revises all adopted project ideas.	1.000	.665
Our project teams always make predictions on likely project implementation scenarios.	1.000	.742
Our project top management always encourage interaction between teams.	1.000	.560
In the projects we undertake, we always compare notes on learnt lessons.	1.000	.545
Our project managers always endeavour to explain project ideas to all project teams.	1.000	.602
In the projects we undertake, we always employ industry standards to enhance knowledge sharing.	1.000	.697
Extraction Method: Principal Component Analysis.		

Communalities in factor analysis represent the proportion of variance in each observed variable explained by the extracted factors, ranging from 0 to 1. They indicate how well a variable is represented by the factor model, with higher values closer to 1 indicating better fit, while values below 0.4 may suggest an item should be removed. From Table 1, all the values were above 0.5 hence indicating a better for all the variable items. Generally,

communalities above 0.6 are considered good, suggesting the factor model explains a high portion of the variable's variance. If a variable has low communality, it implies that the variable does not share much variance with the other variables, indicating it is not well-accounted for by the underlying factor structure.

Implementation of Geothermal Energy Infrastructure Projects

Respondents gave their feedback on statements under implementation of geothermal energy infrastructure projects in Nakuru County, Kenya and results are presented in Table 2;

Table 2: Implementation of Geothermal Energy Projects

Statements	n	Mean	Std. Deviation
Top management in our projects define project goals and create the project charter.	123	3.93	.744
In our projects, teams ensure that planned products or services are developed.	123	3.91	.747
Our project managers regularly review milestones and optimize resources.	123	3.71	.817
In our projects, we adopt appropriate approaches and tools.	123	4.00	.789
Our top executive always ensure effective communication and leadership in all projects.	123	3.85	.830
In the projects we undertake, top management promote efficient use of resources.	123	3.76	.888
In all our projects, we strive to have quality assurance in order to meet project goals and requirements.	123	3.63	.986
Valid N (listwise)	123		

n = 123 (SD = Strongly Disagree; D = Disagree; N = Neither Agree nor Disagree; A = Agree; SA = Strongly Agree) *Mean = (Strongly Disagree = 0 – 1.8; Disagree = 1.9 – 2.6; Neither Agree nor Disagree = 2.7– 3.4; Agree = 3.5 - 4.2; Strongly Agree = 4.3 – 5.0).

Table 2 presents descriptive results indicating that the mean scores for the seven items were between 3.63 and 4.00, which implied that the respondents were in general agreement given that the scores were in the calculated range of 3.41 to 4.20 on the Likert scale interval which denoted agree. The item on projects adopting appropriate approaches and tools scored the highest mean (M = 4.00, SD = .789). The results concur with Mehmood and Elbanna (2024), who reviewed digital transformation projects and the challenge of knowledge integration in practice, and found that digital transformation challenges were primarily human-centric, not just technological, and that employee participation was key to knowledge integration. By involving workers in decision-making and fostering a culture of collaboration, companies can break down silos, boost innovation, and ensure that tacit knowledge is captured and transformed into tangible organizational assets. The study noted that the primary applications for geothermal energy include electricity generation, a wide range of direct use such as district heating, greenhouses, aquaculture, food drying, industrial processes and geo- tourism, as well as space heating and cooling through ground source heat pumps.

Knowledge Integration and Implementation of Geothermal Energy Infrastructure Projects

Table 3 bears results from respondents' opinions on a range of statements about knowledge integration and its impact on implementation of geothermal energy infrastructure projects as shown;

Table 3: Descriptive Statistics for Knowledge Integration

Statements	n	Mean	Std. Deviation
In all projects we undertake, we always seek new project ideas	123	4.02	.707
Our project top management usually revises all adopted project ideas.	123	4.01	.707
Our project teams always make predictions on likely project implementation scenarios.	123	3.62	.919

Our project top management always encourage interaction between teams.	123	3.80	.868
In the projects we undertake, we always compare notes on learnt lessons.	123	3.88	.845
Our project managers always endeavour to explain project ideas to all project teams.	123	3.76	.843
In the projects we undertake, we always employ industry standards to enhance knowledge sharing.	123	3.72	.954
Valid N (listwise)	123		

n = 123 (SD = Strongly Disagree; D = Disagree; N = Neither Agree nor Disagree; A = Agree; SA = Strongly Agree) *Mean = (Strongly Disagree = 0 – 1.8; Disagree = 1.9 – 2.6; Neither Agree nor Disagree = 2.7– 3.4; Agree = 3.5 - 4.2; Strongly Agree = 4.3 – 5.0).

Descriptive statistics show the mean scores for the questionnaire items were between 3.72 and 4.02, which indicated that most respondents were in the affirmative because the values fell between 3.41 and 4.20, being the Likert scale interval range for agree. The item about projects always undertaking to seek new project ideas returned the highest mean (M = 4.02, SD = .707).

Regression Analysis

Regression analysis results provide a summary of how independent variables influence a dependent variable, using metrics like coefficients, confidence intervals, and p-values. These results help in understanding the strength and direction of relationships, making predictions, and determining which factors are statistically significant. The linear regression model that was applied in this study is shown;

$$Y = \beta_0 + \beta_1 X_1 + \varepsilon$$

Where;

Y = Implementation of Geothermal Energy Infrastructure Projects

β_0 = Constant term

β_1 = Beta Coefficient

X_1 = Knowledge Integration

ε = Error term

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.807 ^a	.651	.626	.36765
a. Predictor: (Constant), Knowledge Integration				
b. Dependent Variable: Implementation of Geothermal Energy Infrastructure Projects				

Table 4 shows that the correlation coefficient which was denoted as R value was .807 indicating a very strong positive relationship between the dependent variable being implementation of geothermal energy infrastructure projects and the independent variable which was knowledge integration. R-squared, or the coefficient of determination, indicated the proportion of variation in the dependent variable that was predicted from the independent variable in the regression model. In this study, the R-square value was .651 which meant that 65.1% of the variation in the dependent variable could be explained by the independent variable. The standard error of .36765 indicated the deviation from the line of best fit.

Table 5: ANOVA Results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14.453	1	14.453	225.828	.000 ^b
	Residual	7.749	121	.064		
	Total	22.202	122			
a. Dependent Variable: Implementation of Geothermal Energy Infrastructure Projects						
b. Predictor: (Constant), Knowledge Integration						

Table 5 demonstrates that the model was significant since the p-value = .000 was < 0.05 in consequence indicating that the model was statistically significant in establishing the influence of project integration management on implementation of geothermal energy infrastructure projects. The regression model of the independent variable and the dependent variable was significant (F (1, 121) = 225.828, p-value = .000).

Table 6: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.858	.436		4.261	.000
	Knowledge Integration	.516	.160	.524	3.225	.002
a. Dependent Variable: Implementation of Geothermal Energy Infrastructure Projects						

Results in Table 6 present the beta coefficients of the independent variable which was knowledge integration and its influence on implementation of geothermal energy infrastructure projects. The regression equation was represented as;

$$Y = 1.858 + .516X_1$$

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

The general objective of this study was to examine the influence of knowledge integration on implementation of geothermal energy infrastructure projects in Nakuru County, Kenya. The study found that knowledge integration had a significant influence on implementation of geothermal energy infrastructure projects in Nakuru County, Kenya. It was noted that in most undertaken projects, new project ideas were always sought as they were not a universal constant but emerged from various drivers such as solving problems, fulfilling needs, and capitalizing on opportunities.

This study concluded that knowledge integration had a significant and positive influence on implementation of geothermal energy infrastructure projects in Nakuru County, Kenya. In most undertaken projects, new project ideas were always sought as they were not a universal constant but emerged from various drivers such as solving problems, fulfilling needs, capitalizing on opportunities, and could be identified through top-down directives or bottom-up community input, often emerging from creativity and resourcefulness.

This study recommends that knowledge integration should be adopted as it is crucial for project success and performance by creating a unified understanding among diverse project teams, establishing a shared knowledge base, and improving overall team effectiveness. Project teams should always make predictions on likely project implementation scenarios because they form the foundation of effective project integration, enabling teams to identify potential challenges, setting realistic benchmarks, and developing comprehensive strategies to align the project with its strategic goals.

The implementation of geothermal energy infrastructure projects in Nakuru County, Kenya was the main focus of the study. It is advised that more studies be undertaken in order to evaluate the implementation of other kinds of projects in other industries using the broad framework of project integration management. For these projects to be conducted successfully in Kenya and even beyond by using comparable methodologies, they should also

be crucial initiatives in fields that demand careful consideration of project integration management, including construction, energy and gas, and information technology projects demand these initiatives to effectively balance the interconnected elements of projects.

REFERENCES

1. Afshari, A. R., Mehran, Y., & Tavakolian, E. (2022). Impact of integration management on mashhad construction projects management performance. *Engineering Management and Competitiveness (EMC 2022)*, 3.
2. Guertler, M. R., & Sick, N. (2021). Exploring the enabling effects of project management for SMEs in adopting open innovation—A framework for partner search and selection in open innovation projects. *International Journal of Project Management*, 39(2), 102-114.
3. Hennink, M., & Kaiser, B. N. (2022). Sample sizes for saturation in qualitative research: A systematic review of empirical tests. *Social science & medicine*, 292, 114523.
4. Ibuta, M., Kariuki, A., & Kamau, C. G. (2023). Effect of On-the-Job Training Techniques on Performance of SMES in Mombasa County. *South Sahara Multidisciplinary Journal*, 1(1), 17-27.
5. Ismail, M. F. A. (2020). Identification and Use of Critical Success Factors Affecting Student and Employer Satisfaction in Higher Education Using System Dynamics Scenarios (Doctoral dissertation, Cardiff Metropolitan University).
6. Jarrah, M. A., Baker, J., & Altarawneh, I. (2022). Toward successful project implementation: Integration between project management processes and project risk management. *Problems and Perspectives in Management*, 20(3), 258.
7. Kujala, J. (2022). Design Thinking as a Project Management Tool.
8. Luvai, W. M., & Mungai, A. M. W. (2024). Project Integration Management Practices and Implementation of Selected High-Rise Buildings Projects in Nairobi City County, Kenya. *International Journal of Social Sciences Management and Entrepreneurship (IJSSME)*, 8(2).
9. Matheka, E. K., & Mungai, A. M. W. (2024). Project Integration Management and Performance of Digitalized Projects in Telecommunications Industry in Nairobi City County, Kenya. *International Journal of Social Sciences Management and Entrepreneurship (IJSSME)*, 8(2).
10. McKenzie, J. F., Neiger, B. L., & Thackeray, R. (2022). Planning, implementing and evaluating health promotion programs. Jones & Bartlett Learning.
11. Mehmood, H., & Elbanna, A. (2024). Digital Transformation Projects and the Challenge of Knowledge Integration in Practice.
12. Misra, S., Rippy, M. A., & Grant, S. B. (2024). Analyzing knowledge integration in convergence research. *Environmental Science & Policy*, 162, 103902.
13. Moyano, C. G., Pufahl, L., Weber, I., & Mendling, J. (2022). Uses of business process modeling in agile software development projects. *Information and Software Technology*, 152, 107028.
14. Mwai, D. G. (2023). Monitoring and Evaluation Practices and Performance of Kenya Climate Smart Agricultural Project: a Case of Kieni West Sub-county, Nyeri County, Kenya (Doctoral dissertation, University of Nairobi).
15. Nyongesa, W. J., & Van Der Westhuizen, J. (2024). Human Resources Aspects in Tourism and its Technology Application: Kenyan Perspective. In *Tourism and Hospitality for Sustainable Development: Volume Three: Implications for Customers and Employees of Tourism Businesses* (pp. 155-186). Cham: Springer Nature Switzerland.
16. Onyango, G. (2024). Social processes of public sector collaborations in Kenya: unpacking challenges of realizing joint actions in public administration. *Journal of the Knowledge Economy*, 1-31.
17. Pandey, P., & Pandey, M. M. (2021). Research methodology tools and techniques. Bridge Center.
18. Patankar, S. D. (2024). Research Methodology. Laxmi Book Publication.
19. Sandra, D., Segers, J., & Giacalone, R. (2023). How organizations can benefit from entrainment: a systematic literature review. *Journal of Organizational Change Management*, 36(2), 233-256.
20. Sanyaolu, T. O., Adeleke, A. G., Efunniyi, C. P., Akwawa, L. A., & Azubuko, C. F. (2023). Stakeholder management in IT development projects: Balancing expectations and deliverables. *International Journal of Management & Entrepreneurship Research P-ISSN*, 2664-3588.

21. Silvius, G. (2021). The role of the project management office in sustainable project management. *Procedia Computer Science*, 181, 1066-1076.
22. Stonig, J., Schmid, T., & Müller-Stewens, G. (2022). From product system to ecosystem: How firms adapt to provide an integrated value proposition. *Strategic Management Journal*, 43(9), 1927-1957.
23. Stander, Q. (2023). Exploring post-merger integration challenges experienced by leaders in South African organizations (Doctoral dissertation, North-West University (South Africa)).
24. Valavi, R., Guillera-Arroita, G., Lahoz-Monfort, J. J., & Elith, J. (2022). Predictive performance of presence-only species distribution models: a benchmark study with reproducible code. *Ecological monographs*, 92(1), e01486.
25. Yanou, M. P., Ros-Tonen, M. A., Reed, J., Moombe, K., & Sunderland, T. (2023). Integrating local and scientific knowledge: The need for decolonising knowledge for conservation and natural resource management. *Heliyon*, 9(11).
26. Zavatin, I., Ene, A. B., Bujor, D., & Fratiloiu, B. A. (2023). Study on the impact of organizational culture, knowledge management and digitalization on sustainable leadership. In 17th International Conference on Business Excellence, Sciendo (pp. 1702-1715).
27. Zina, O. (2021). *The essential guide to doing your research project*. Sage.