EFFECT OF KNOWLEDGE ACQUISITION ON BUSINESS PERFORMANCE OF GEOMATIC ENGINEERING FIRMS IN SEYCHELLE

Oniare Ouma Nicholas.
School of Business and Economics, Kenya Methodist University, Kenya
Kirimi Dorothy Gatwiri.
School of Business and Economics, Kenya Methodist University, Kenya.
Simon Muriithi Kamau.
School of Business and Economics, Kenya Methodist University, Kenya

International Academic Journal of Innovation, Leadership and Entrepreneurship (IAJILE) | ISSN 2518-2382

Received: 27th June 2021

Published: 8th July 2021

Full Length Research

Available Online at: https://iajournals.org/articles/iajile_v2_i2_129_141.pdf

Citation: Nicholas, O. O., Gatwiri, K. D., Kamau, S. M. (2021). Effect of knowledge acquisition on business performance of geomatic engineering firms in Seychelle, *International Academic Journal of Innovation, Leadership and Entrepreneurship, 2(2), 129-141*.

ABSTRACT

Firms across the globe have witnessed unstable market conditions. As a result, firms have begun to shift the basis upon which they establish strategies to use in order to gain competitive advantage. Due to this, firms are focusing on using organizational capabilities as their foundation rather than using served markets. Assuming that knowledge is the most important resource in the firm, from a strategic point of view, then through continuous learning, the company should emphasize generating, institutionalizing, and integrating knowledge as the most important organizational capacity. This research aimed at analyzing the effect of knowledge acquisition on business performance in Geomatic engineering firms in Seychelles. The specific objective of the study was to establish the effect of knowledge innovation on the performance of Geomatic engineering firms. A descriptive research design was used in the study. The study involved 60 managers in Geomatic engineering firms in Seychelles. The entire population was as well considered as the sample for the study. The chosen individuals provided data for the study by filling of questionnaires that were in-person delivered to them by the researcher. Data obtained was quantitative and therefore analyzed through both descriptive and inferential statistics. The results of the study were presented both in tables and interpretation narrated. On Knowledge innovation, the study revealed a (β=0.564, t=3.022 and a p-value associated with it as 0.004). The study concluded that knowledge innovation significantly affects the business performance of the geomatic firms in Seychelles. The study recommended for firms to investing in infrastructure such as management information systems, encouraging innovativeness in developing new ways of solving problems, developing new products, and services in the organization.

Key Words: **Learning, Organization, Knowledge, Organizational Learning, Knowledge Innovation, Business Performance**

INTRODUCTION

Organizations willing to succeed in business should be ready to practice and implement organizational learning because in the modern-day world, it has become a need rather than a choice for any organization. Organizational learning is certainly a key component in corporate renewal strategies that should not be missed by an organization. Firms should in turn have the capacity to keep up with the pace of continuous changes in the environment to ensure that they survive for a long time, matches the stiff market competition, and that their performance levels increase significantly (Montes et al., 2015). Learning in an organization takes place when knowledge is acquired which in turn leads to innovation. According to Egan et al. (2004), the relationship between the organizational learning culture and its outcomes

has had rapid growth in recent years. This is mainly due to the numerous studies being undertaken to understand the organization concepts as well as the adoption of principles of organizational learning. Despite the efforts made by scholars and researchers to explain relationships in organizational learning as well as the theories and practices associated with it, the relationship between organizational learning culture and its outcomes as well as employee learning is yet to be fully explored.

Changes in organizations across the globe have triggered an interest in targeting and evaluating the need for improvement of organizational performance through several approaches. As such, most organizations across the globe are yet to navigate the competitive world of the economy. This applies to both private firms and government organizations. However, the competitiveness framework in any organization is focused on maintaining a high-quality level of services, management of risk, and accountability. Organizations are expected to fully exploit their capability. Organizational learning has in recent years received a lot of attention and further studies indicate that the attention given to organizational learning is going to rapidly grow in the future (Egan et al., 2004). According to Rowden and Conine (2017), the situation can be attributed to the fact that organizational learning is one of the factors that positively influence the extent of performance of any organization.

Geomatics Engineering is a rapidly developing engineering discipline that focuses on spatial information, that is, information that has a location and position. The location is the primary factor used to integrate a very wide range of data for spatial analysis and visualization. Geomatics engineers apply engineering principles to spatial information and implement relational data structures involving measurement sciences. They manage local, regional, national and global spatial data infrastructures. It also involves aspects of Computer Engineering, Software Engineering, and Civil Engineering. Seychelles, a small African country is currently faced with a sharp increase in infrastructural developments thus an increase in the number of Geomatic engineering entrepreneurs who are majorly in construction and civil works. Running these businesses requires one to constantly scan the environment and continuously learn from the dynamic field of Geomatics to stay competitive and improve on performance (Varinlioğlu & Pasin, 2018).

Organizations across the globe have come to realize the importance of organizational learning. Studies have shown that the 21st century has witnessed organizational learning receiving a significant amount of attention over the years to an extent where organizational learning has become almost prominent among other ideas that influence management studies. The research community has over the years assumed that there exists a relationship between general learning and positive work. However, according to Lopez et al. (2015), there is very little evidence that would support this assumption. Scholars such as Spicer and Sadler-Smith (2006) have gone ahead to emphasize the fact that research carried out to determine the impact of organizational learning on organizations has failed to provide enough evidence in support of this perspective. Empirical evidence to demonstrate that indeed there is a relationship between organizational learning and outcomes based on performance has become very hard to come by.

Scholars have tried to determine the relationship between performance-based outcomes and learning activities. According to Jashapara (2005), learning in an organization has a positive influence on the performance level of the organization. In support of this, Garver (2016), indicated that employees that are deemed to perform highly at work are mostly involved in activities that entail learning. This, therefore, indicates that there indeed exists a positive relationship between performance-based outcomes and learning activities. Furthermore, Skerlavaj et al. (2016) conducted a study to determine the relationship between organizational learning and performance. From their study, they concluded that organizational learning has a positive and direct influence on the performance level of the organization. Implying that organizations that emphasize the implementation of organizational learning have better performance levels than those that do not. Spicer and Sadler-Smith (2006) conducted a study to determine this relationship in small manufacturing firms. Their study also made the same conclusion that organizational learning has a positive influence on both the non-financial and financial performance of the firm. More studies have been conducted over the years as the idea of organizational learning is being adopted by firms and organizations across the globe. The majority of these studies concluded that a positive relationship between performance-based results and organizational learning exists (Bilan, et al., 2020).

Despite these major strides made in the field of organizational learning, there has been no study conducted focusing on the effects of organizational learning and organizational performance on geomatic engineering firms. Researchers such as Hanaysha (2016); Naqshbandi and Tabche (2018) focused on determining the relationship that exists between organizational learning and the attitude of employees towards their jobs; that is to determine whether the employees were satisfied with their jobs and whether the organization were committed towards their employees. However, their studies did not attempt to identify the relationship of these factors with organizational performance. It is therefore clear that there exists a research gap that requires to be addressed since the relationship between the variables that constitute organizational learning and the organizational performance have not received much attention in the research field. The objective of the study was to establish the effect of knowledge acquisition on business performance by specifically seeking to answer the question: what is the effect of knowledge innovation on the business performance of geomatic engineering firms in Seychelles?

LITERATURE AND HYPOTHESIS

Prakash and Power (2014) studied the influence of knowledge innovation on financial performance in Australian manufacturing firms. The study was descriptive in nature and data was collected through survey questionnaires. The results of the study revealed that innovation orientation is a key factor in the success and survival strategy of any firm since it influences the firm’s ability to provide customer and consumer satisfaction as well as meet their expectations. With the changing times, innovation orientation dictates how fast a firm responds to these changes. From a firm’s perspective, innovation orientation helps firms gain

a competitive advantage over other firms in the market. Innovation orientation is the readiness of a firm to innovate. Several factors can be used to determine a firm's readiness to innovate i.e. a firm willing to attain a high degree of innovation orientation should be open to new ideas and should be ready to implement and accept these new ideas. It should also be open to change by implementing up-to-date technologies, skills, and systems of administration. An innovation-oriented firm has several advantages including employees improving their satisfaction and attitudes towards the job as well as improving the commitment of the organization of the firm.

Calantone et al. (2020), studied the diffusion of innovation among Canadian techno-based firms. The study was descriptive and used a semi-structured questionnaire in data collection. The study result showed that innovation diffusion resulted in organizational performance. This study also found that indeed innovativeness positively influences a firm's ability to perform. This study also found that several factors influence the competitive edge of any firm or organization. These factors include the ability of the firm to satisfy its consumers, the ability of the firm to implement new advanced technologies in their day-to-day processes as well as what actions the firm's competitors undertake. These factors have been observed to increase the business performance level of a given firm. The study also found that the lack of these key factors, makes the survival of these firms difficult, although there are other ways to ensure the survival of these firms. The study concluded that for any firm or organization to gain a competitive advantage over the others in the market, then it should be innovation-oriented. Furthermore, there have been studies conducted to determine the relationship between the diffusion of innovations and the development of new products. A vast majority of these studies concluded that diffusion of innovations has a positive effect on the development of new products and services in any firm or organization.

Fang et al. (2017) studied the influence of knowledge networks on innovation performance in Taiwan. The study was carried out among 144 highly tech-based firms. Questionnaires and interviews were used to collect data on how an organization's network with others enables an organization to improve on its innovativeness capabilities. The study revealed that knowledge networks had a positive and significant effect on the innovativeness of organizations through promoting knowledge exchange, knowledge sharing, and transfer which in effect has a profound effect on the innovative performance in the organization. The study recommended organization alliance and cooperation to help in exchanging knowledge and therefore promoting innovativeness.

Jain and Moreno (2015) sought to establish the impact of organizational learning on a firm's performance and knowledge management practices in a heavy engineering organization in the United States of America. The study concluded that the firm's performance was influenced positively by organizational learning factors. Studies have also indicated that there exists a relationship between organizational learning transfer climates and innovation. For instance, Tajeddini (2016) sought to establish the effects of innovation on the performance of public organizations in Iran. The study found out that public organizational performance is positively influenced by factors such as learning orientation and innovation. In fact,

according to the study, an organization can attain cost efficiency, speed, and quality performance by improving the company's innovativeness and its learning orientation.
Steinmo and Rasmussen (2016) conducted a study to establish whether research organizations can collaborate with other firms especially engineering-based firms to promote the development of innovations. According to the study, engineering firms tend to rely on social and public proximity to the public research organizations. The study concluded that engineering-based firms could develop both cognitive and organizational learning through collaborations with other firms. Choi and Park (2014), sought to determine the relationship between learning transfer environments and organizational innovation. The study revealed that private organizations had a higher mean score compared to public organizations. Thus, this study provides evidence that if these two disciplines are merged then it can improve the return on the investment made on organizational learning (Chamarena, 2020).

Urban and Gaffurini (2017) studied organizational learning capabilities as determinants of social innovation in South Africa. The study found that different dimensions of organizational learning capabilities explain a significant amount of variation in the levels of social innovation. Ndinya (2010) investigated the organizational learning strategy at East Africa Cables, Kenya. The study found that the company has adopted crucial aspects of organizational learning such as storing vital information, passing information from one generation to the other, and keeping all contracts in a specific database to use for future reference.

Shitemi (2016) focused on identifying the relationship between organizational learning, knowledge management, and continuous improvement focusing on one organization – General Motors East Africa. The study concluded that the ability of a firm to improve its services and products provides a significant competitive edge to the firm. However, its key success factor relies on the ability of both the employees and employer to use the firm's internal tools to ensure that it has a competitive advantage in the ever continuously changing business environment.

However, those studies that tried to explain the relationship between organizational performance and knowledge acquisition did not focus on geomatic engineering firms in Seychelles. It is therefore clear that there exists a research gap in the research world in determining the relationship between organizational learning and organizational performance in geomatic engineering firms in Seychelles.

Hθ: Knowledge innovation has no significant effect on business performance in geomatic engineering firms

DATA AND METHODS

The study preferred descriptive design due to its ability to establish the natural form of a phenomenon and characterize them. The researcher made inferences about respondents from Geomatic engineering firms in Seychelles. According to the Ministry of Lands and Housing

(2020), there were 6 active geomatic engineering firms in Seychelles. The target population was 60 managers from all Geomatic Engineering firms in Seychelles. Each providing 2 top-level managers and eight middle–level managers. The sample size used of 60 respondents was obtained through the census sampling method, where the population was taken as a sample. This study used a questionnaire to collect data. Primary data used in this study was obtained by using well-designed self-administered questionnaires with closed and open-ended structured questions. Analysis of the data was done through both descriptive and inferential statistics through simple linear regression.

The simple linear regression model that was used in the study was expressed in the following form:

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

Whereby: Y represented the business performance

α represented a constant

β_1 represented coefficient for knowledge innovation

X_1 represented knowledge innovation

RESULTS AND DISCUSSIONS

Response Rate

The study administered 60 questionnaires, out of which 51 responses were obtained and used for further analysis in the study, which represents an 85% response rate. Fowler (2014) noted that a response rate of 50% is good for further analysis, anything above 70% is therefore excellent.

Descriptive Statistics for Knowledge Innovation

Table 1 revealed that: there is new knowledge innovation in new markets, majority of the respondent agreed as shown by 43.1% and a mean of 3.92; on There is new knowledge innovation on new service lines, majority of the respondents strongly agreed as shown by 54.9% and a mean of 3.98; There is new knowledge innovation on new equipment and technology, a majority of the respondents agreed as shown by 39.2% and mean of 3.98; There is new knowledge innovation on management information systems like project management information system and human ERP, majority of the respondent agreed as shown by a 25.5% and a mean of 3.76; There is knowledge innovation of new products, majority of the respondent agreed as shown by 54.9% and mean of 4.02. Holtgrave et al. (2019) were in agreement that without continuous innovation in new products and service lines, a company's product soon becomes immutable and therefore easily faced out in the market as obsolete. Organizations are therefore informed to set part of their money in the annual budget on new product development, acquiring new skills through training, and having research, innovation, and development department that generates new business ideas and comes up with new products to improve on their performance and achieve competitive advantage. Calantone et

al. (2020) also supported the findings where they revealed that several factors influence the competitive edge of any firm or organization. These factors include the ability of the firm to satisfy its consumers, the ability of the firm to implement new advanced technologies in their day-to-day processes as well as the actions the firm's competitors undertake. These factors have been observed to increase the business performance level of a given firm.

Table 1: Knowledge Innovation Practices

Statements on knowledge innovation	SD		D		N		A		SA		Mean	Std dev
	F	%	F	%	F	%	F	%	F	%		
There is new knowledge innovation on new markets	2	3.9	1	2.0	11	21.6	22	43.1	15	29.4	3.92	0.997
There are new knowledge innovations on new service lines	0	-	2	3.9	9	17.6	28	54.9	12	23.5	3.98	0.761
There is new knowledge innovation on new equipment and technology	3	5.9	2	3.9	7	13.7	20	39.2	19	37.3	3.98	1.104
There are new knowledge innovation on management information system like project management information system and human ERP	1	2.0	6	11.8	10	19.6	21	41.2	13	25.5	3.76	1.031
There is knowledge innovation of new products	2	3.9	1	2.0	10	19.6	28	54.9	10	19.6	4.02	0.927

Source: Author (2021)

Descriptive Statistics on Business Performance

Table 2 revealed that: majority of the respondent strongly agreed that staff morale had improved through organizational learning, as shown by 35.3% and a mean of 4.12; majority of the respondents also agreed they had diversified into other products through organization learning as shown by 60.8% and a mean of 3.76; beside, majority of the respondents agreed as shown by 41.2% and mean of 3.94 that they had made entry into new markets through organization learning; majority of the respondent also agreed as shown by a 43.1% and a mean of 4.12 that they had increased profits through organization learning; Finally, majority of the respondents agreed that sales revenues had increased through organization learning as shown by 54.9% and mean of 3.76.

Azemina (2018) concurred with the study findings that to measure the performance of an organization we consider both the financial performance and non-financial performance. The financial organizational performance entails the organization's estimate profitability. This includes the organization's net profits, the return on invested capital, the operating profit margin, the actual profit margin, the rate of return on capital, and the return on assets. On the other hand, the non-financial performance is based on the extent to which the organization is effective in variables that include loyalty of the organization's customers, the benefit a customer accrues from the organization, the capability of the organization to satisfy its

customers, its ability to innovate and improve its products and the organization's market share.

Table 2: Descriptive statistics on Business Performance

statements	SD		D		N		A		SA		Mean	Std dev
	F	%	F	%	F	%	F	%	F	%		
The staff morale has been improved through organization learning	2	3.9	1	2.0	4	7.8	26	51.0	18	35.3	4.12	0.931
We have diversified into other products through organizational learning	4	7.8	0	-	8	15.7	31	60.8	8	15.7	3.76	0.992
We have made entry into new markets through organization learning	2	3.9	3	5.9	8	15.7	21	41.2	17	33.3	3.94	1.047
We have increased our profits through organizational learning	0	-	3	5.9	7	13.7	22	43.1	19	37.3	4.12	0.864
We have increased our sales revenues through organization learning	2	3.9	1	2.0	4	7.8	32	62.7	12	23.5	4.00	0.872
We have increased our workforce through organizational learning	4	7.8	0	-	9	17.6	28	54.9	10	19.6	3.76	1.026

Source: Author (2021)

Hypothesis Testing

Table 3 revealed a square of 0.136, which indicated that knowledge innovation could explain about 13.6% of the variation or changes of the business performance of the geomatic engineering firms in Seychelles.

Table 3: Knowledge Innovation

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
dimension0 1	.369[a]	.136	.121	.690

a. Predictors: (Constant), Knowledge Innovation
. Predictors: (Constant), Business Performance

Table 4 revealed an F-ratio of 9.131 which was associated with a p-value of 0.004 which was less than a level of significance of 0.05 therefore the study rejected a null hypothesis that Knowledge innovation has no significant effect on business performance in geomatic engineering firms. The model was also a good fit for predicting the business performance of geomatic engineering firms in Seychelles. The study findings were in agreement with those of Fang et al. (2017) when they revealed that knowledge networks had a positive and

significant effect on the innovativeness of organizations through promoting knowledge exchange, knowledge sharing, and transfer which in effect has a profound effect on the innovative performance in the organization. The study recommended organization alliance and cooperation to help in exchanging knowledge and therefore promoting innovativeness.

Table 4: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.344	1	4.344	9.131	.004[a]
	Residual	27.590	58	.476		
	Total	**31.933**	**59**			

a. Predictors: (Constant), Business Performance
b. b. Dependent Variable: Knowledge Innovation

Regression Coefficients

Table 5 revealed a β of 0.564, a t-statistic value of 3.022 that was associated with a p-value of 0.004, therefore an increase in knowledge innovation has a positive effect on the business performance of geomatic engineering companies that was significant. Klomp and Van Leeuwen (2017) agreed with the study findings when they determined the influence of the different stages of the process of innovation on the overall economic performance. He found out that there exists a significant difference in the performance levels of innovating firms and non-innovating firms with the innovating firms performing better than the latter.

Table 5: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	**Std. Error**	**Beta**	**t**	**Sig.**
1	(Constant)	.538	.503		1.071	.288
	Knowledge innovation	.564	.187	.369	3.022	.004

a. Dependent Variable: Business Performance

CONCLUSIONS AND RECOMMENDATIONS

The study concluded that knowledge innovation had a significant effect on business performance in geomatic engineering firms in Seychelles, therefore the null hypothesis was rejected. The study recommended the boosting of business innovation through coming up with new product lines, new markets, and new technology development which would ultimately raise the business performance by improving on competitive advantage. Organizations should also put more emphasis on generating new strategies and policies that enhance their competitive advantage. Besides the study recommended for organization alliance and cooperation to help in exchanging knowledge and therefore promoting innovativeness.

REFERENCES

Azemina, M. (2018). Key financial and nonfinancial measures for performance evaluation of foreign subsidiaries. *Journal of Contemporary Economic and Business Issues, 5*(2), 63-74. http://hdl.handle.net/10419/193492

Bilan, Y., Hussain, H. I., Haseeb, M., & Kot, S. (2020). Sustainability and economic performance: Role of organizational learning and innovation. *Engineering Economics*, *31*(1), 93-103. https://www.inzeko.ktu.lt/index.php/EE/article/view/24045

Calantone, I., & Stavrou-Costea, E. (2020). Connecting human resources management and knowledge management. *International Journal of Manpower*, 28(3/4), 197-206. https://www.scirp.org/(i43dyn45teexjx455qlt3d2q))/reference/ReferencesPapers.aspx?ReferenceID=1095703

Chamarena, P. G. (2020). Linking knowledge management, organizational learning, and memory. *Journal of Innovation & Knowledge*, *5*(2), 140-149. https://doi.org/10.1016/j.jik.2019.04.002

Choi, Y., & Park, K. (2014). Organizational memory and new product development performance: Investigating the role of organizational ambidexterity. *Technological Forecasting and Social Change*, *120*(7), 117-129. https://doi.org/10.1016/j.techfore.2016.12.016

Egan, T. M., Yang, B., & Bartlett, K. R. (2004). The effects of organizational learning culture and job satisfaction on motivation to transfer learning and turnover intention. *Human Resource Development Quarterly*, *15*(3), 279-301. https://download.clib.psu.ac.th/datawebclib/e_resource/trial_database/WileyInterScienceCD/pdf/HRQ/HRQ_2.pdf.

Fang, S. C., Wang, M. C., & Chen, P. C. (2016). The influence of knowledge networks on a firm's innovative performance. *Journal of Management and Organization*, *23*(1), 22-37. https://doi.org/10.1016/j.jbusres.2018.03.034

Garver, D. (2016). Employees' job involvement and satisfaction in a learning organization: A study in India's manufacturing sector. *Global Business and Organizational Excellence*, *39*(2), 51-61. https://onlinelibrary.wiley.com/doi/abs/10.1002/joe.21983

Hanaysha, J. (2016). Testing the effects of employee engagement, work environment, and organizational learning on organizational commitment. *Procedia-Social and Behavioral Sciences*, *229*, 289-297. https://www.sciencedirect.com/science/article/pii/S1877042816310746

Holtgrave, M., Nayir, D. Z., Nienaber, A. M., & Schewe, G. (2019). Knowledge comes but wisdom lingers! Learning orientation as the decisive factor for translating social capital into organizational innovativeness and performance in Turkey. *European Journal of International Management*, *13*(2), 127-158. https://www.inderscienceonline.com/doi/abs/10.1504/EJIM.2019.098142

Jain, A. K., & Moreno, A. (2015). Organizational Learning, Knowledge Management Practices and Firm's Performance: An Empirical Study of a Heavy Engineering Firm in India. *Learning Organization, 22* (1), 14-39. http://dx.doi.org/10.1108/TLO-05-2013-0024

Jashapara, A. (2015). The emerging discourse of knowledge management: a new dawn for information science research? *Journal of Information Science*, *31*(2), 136-148. https://doi.org/10.1177/0165551505051057

Klomp, V. J., & Van Leeuwen, K. E. (2017). Linking Innovation and Firm Performance: A New Approach. *International Journal of the Economics of Business, 8*(3), 343–364. DOI: 10.1080/13571510110079612

Lopez, E., Strom, R., & Baumol, W. (2015). *Entrepreneurship, Innovation, and the Growth Mechanism of the Free-Enterprise Economics,* Princeton University Press, Princeton. www.conscientiabeam.com/pdf-files/bus/11/IJMS-2015-4

Montes, F., Moreno, A., & Morales, V. (2015). Influence of support leadership and teamwork cohesion on organizational learning, innovation, and performance: An empirical examination. *Journal of Technovation,* 3 (4), 122-145. https://www.sciencedirect.com/science/article/abs/pii/S0166497204000914

Naqshbandi, M. M., & Tabche, I. (2018). The interplay of leadership, absorptive capacity, and organizational learning culture in open innovation: Testing a moderated mediation model. *Technological Forecasting and Social Change*, *13*(7),156-167. https://www.sciencedirect.com/science/article/pii/S0040162517307357

Ndinya, J. (2010). *Organisation Learning Strategy: A Case Study of East African Cables.* [Masters Thesis, University of Nairobi]. erepository.uonbi.ac.ke/handle/11295/5787

Prakash, J., & Power, D. (2014). Innovative knowledge sharing, supply chain integration, and firm performance of Australian manufacturing firms. *International Journal of Production Research, 52*(21), 6416-6433. https://doi.org/10.1080/00207543.2013.859760

Shitemi, M. (2016). *Organizational learning, knowledge management, and continuous improvement. A case of General Motors East Africa.* [Masters Thesis, University of Nairobi].
http://erepository.uonbi.ac.ke/bitstream/handle/11295/100337

Skerlavaj, B., Cary, C., & Penny, W. (2016). Organizational learning: The new management paradigm. *Journal of Management Decision, 41*(5), 452-464.
https://dspace.stir.ac.uk/handle/1893/21361#.YA7780_ivIU

Spicer, D. P., & Sadler-Smith, E. (2006). Organizational Learning in Smaller Manufacturing Firms. *International Small Business Journal: Researching Entrepreneurship*, *24*(2), 133-158.
doi/10.1177/0266242606061836

Steinmo, A. S., & Rasmussen, M. J. (2015). How firms collaborate with public research organizations: The evolution of proximity dimensions in successful innovation projects. *Journal of Business Research, 69*(3), 1250–1259.
DOI: 10.1016/j.jbusres.2015.09.006

Tajeddini, D. (2009). Adaptation and Organizational Connectedness in Corporate Innovation Programs. *Journal of project and information management, 26*(5), 487 – 501.
https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1540-5885.2009.00676.x

Urban, B., & Gaffurini, E. (2017). Organizational learning capabilities as determinants of social innovation: An empirical study in South Africa. *SA Journal of Human Resource Management, 15*(10), 112-145.
https://doi.org/10.4102/sajhrm.v15i0.857

Varinlioğlu, G., & Pasin, B. (2018). Integrating Biomimicry and Geoinformatics: A Designerly Approach to Underwater Colonization. *International Journal of Environment and Geoinformatics*, *5*(3), 260-272. https://dergipark.org.tr/en/pub/ijegeo/article/414248