

Learning Organization Practices and Multidimensional Innovation in the Banking Sector in Ethiopia

By:

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Abstract

This study sought to examine the effect of learning organization (LO) practices on several different aspects of innovation in the banking industry, through empirical data from Awash Bank in Ethiopia. In order to bridge the existing knowledge gap, the study analyzed the association between LO practices and four different types of innovation, which include process innovation, organizational innovation, marketing innovation, and service innovation. The study employed quantitative and cross-sectional survey methodology, where data were collected from 265 employees by means of structured questionnaires that utilized five-point Likert scale. Following initial reliability and normality tests, the study hypotheses were analyzed through regression and multivariate ANOVA (MANOVA) in IBM SPSS. The results indicate that learning organization practices significantly and positively influence all aspects of innovation. Findings indicate that organizations promoting ongoing learning, knowledge exchange, and cooperative problem-solving are better equipped to create innovative process, frameworks, marketing strategies, and services. The study contributes to the current literature by providing empirical evidence on the diverse impacts of learning organization practices on innovation with in banking sector of developing economy. The result underscore the significance of bolstering cultures focused on learning, banking from leadership, and systems for managing knowledge to improve innovation potential and sustain competitiveness in fast changing financial markets.

Keywords: Banking Industry, Ethiopia, Innovation, Learning organization

1. Introduction

In such a fast-changing and highly competitive environment, it becomes necessary for firms to constantly adapt, innovate, and learn for the sake of remaining competitive and achieving long-term success. Under the theory of the Resource-Based View (RBV), it is viewed that knowledge

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is an important resource, which allows companies to generate valuable and rare capabilities. Thus, the dialogue in both academic and business spheres has increasingly shifted toward organizational learning and innovation (Bogale et al., 2025). The above perspective focuses on the significance of knowledge; however, according to the experts, knowledge is not enough in itself but requires organizations to put in place ways of converting knowledge into innovation.

Learning organizations are important concepts to understand in relation to organizations' ability to turn knowledge into innovation continually. Innovative organizations, in the view of researchers such as Senge (1990) and Na-Takuatoong (2001), are basically learning organizations that enable knowledge creation and development. Organizational adaptation to changes in the environment becomes possible through learning organization processes such as knowledge sharing, experimenting, systems thinking, and continual improvement.

International studies have shown that organizations characterized by strong learning cultures have a higher rate of innovations and success (Jiménez-Jiménez & Sanz-Valle, 2011). Furthermore, recent literature reviews confirm a sustained and growing interest in the relationship between organizational learning and innovation (Hael et al., 2024). Preliminary essential studies by researchers such as Senge (1990) and Garvin (1993) emphasize that organizations capable of fostering strong learning abilities are more likely to achieve enduring innovation. Subsequent empirical studies have reinforced this assertion by demonstrating a positive relationship between learning organization practices and innovative performance (Calantone et al., 2002; Jiménez-Jiménez & Sanz-Valle, 2011). In spite of these contributions, current research often emphasizes product and process innovation, neglecting to adequately explore other types of innovation and a significant portion of the current literature has been concentrated in developed economies and manufacturing sectors. On many occasions, innovation is considered a single entity instead of being examined for its different components related to it. This limitation makes it difficult to understand how different learning techniques influence innovation in a service industry such as banking. Banks are now under increased pressure to develop new and innovative products and services. Due to rapid imitation, the time span of financial innovations becomes shorter and creates a need for constant innovations (Ramzanpour et al., 2020). Findings from studies carried out in Ethiopia reveal that the motivation among bank workers to undertake innovation activities is inconsistent (Kassa, 2021). While the theoretical perspective suggests that learning and information exchange facilitate innovation, there is still a lack of evidence regarding the same in the banking industry in Ethiopia. Current literature reveals a positive relationship between the learning organization and innovation, but the nature of this relationship varies between industries and types of innovation (Haile & Tüzüner, 2022).

Based on findings by Tessema Sinshaw, Shiva, & Singh (2020), the learning behavior of employees influences the innovation performance of commercial banks in Ethiopia. Likewise, Debas (2025) found that learning and development drive innovation and process improvements in the Commercial Bank of Ethiopia. Although the importance of learning organization is well-recognized, the number of empirical studies investigating the relationship between learning organization and different types of innovations is low. Therefore, there are insufficient empirical findings on how learning organizations affect marketing innovation, service innovation, process innovation, and organizational innovation in financial firms (Gereabzgi et al., 2018). This means there is an existence of need for further research on innovation in relation to learning organizations.

Awash Bank, one of the oldest and biggest privately owned banks in Ethiopia, operates in an extremely competitive and dynamic environment of finance. Although the bank has embraced advanced banking technology and service innovations, the relationship between learning organization practices and innovation performance has never been explored in-depth, especially with regard to various types of innovations. It is important to explore these relationships for both theoretical and practical purposes. Theoretically, it will be helpful in enhancing our knowledge of how the practices of a learning organization affect various innovation performances. Practically, it can be used by bank managers and policymakers in identifying organizational advantages that enhance sustainable competitiveness in adapting to dynamic market conditions.

2. Literature Review and Hypothesis development

The effect of learning organization on process innovation

Empirical research offers greater understanding of the connection between innovation and learning. A common motif in the literature is the importance of organizational learning as a crucial factor in process innovation. Siregar et al. (2020) contend that learning allows companies to gather and assimilate both internal and external knowledge, like customer feedback and technology trends, thereby boosting their ability to improve processes. It has been noted by Fang et al. (2016) that a strong learning orientation improves process technology and performance, which ultimately leads to process innovation. The same notion has been reinforced by Bogale et al. (2025), who argue that process innovation is significantly dependent on learning because it requires the use of new knowledge.

However, some researches claim that there is either no correlation at all or it is quite a weak one between organizational learning and process innovation. For instance, Jiménez-Jiménez and Sanz-Valle (2011) argue that while the ability to learn is positively related to innovation, the effect can be rather strong in cases of product or market innovations, not process improvements. In some cases, organizations may obtain information, but they do not possess a sufficient technological base to turn their knowledge into improvements in internal processes. Furthermore, the existing literature provides additional nuances and limitations of the learning-process innovation link. Eroğlu & Gürol (2013) found out that while the learning of organizations usually contributes to innovation, there exist features of learning that cannot influence process innovation. This means that not all learning processes are equally important and call for further investigation of what kinds of learning practices such as gaining, sharing, or using knowledge play an essential role in promoting process innovation.

***H₁:** Learning organization has positive effect on process innovation*

The effect of learning organization on organizational innovation

The definition of institutional innovation is given as "the implementation of a new organizational practice in the business operation process, workplace organization, or in external relations" (OECD, 2005). In doing so, the definition of institutional innovation clearly captures procedural and structural nature of institutional innovation in the context of its wide scope of application,

including both internal aspects (workplace organization) and external aspects (commercial activities and external network). While the accuracy and usefulness of this definition should be noted as the advantage, it might also neglect certain aspects of institutional innovation that become increasingly important to maintain creative output in knowledge-based environment.

One of the dominant lines of research in contemporary literature views learning organizations as one of the key drivers of institutional innovation. Following this line, Patky (2020) argues that continuous learning facilitates the spread of knowledge, encourages cooperation among employees and inspires new ideas leading to innovation. Additionally, there is empirical evidence that links organizational learning model and institutional innovation. In particular, Allouzi et al. (2018) found the significant positive relationship between organizational learning models and institutional innovation. Moreover, Rahayuningsih et al. (2025) discovered that organizational learning has positive effect on innovation among faculty of Indonesian universities. On the contrary, some researchers have found conflicting information about the relationship between learning processes and institutional innovations. For example, according to Hsu and Fang (2009), the existence of learning processes alone does not guarantee any institutional innovations without proper leadership and alignment with strategy. Moreover, even though the empirical findings mentioned above correspond to the existing theoretical concepts, they rely heavily on particular organizations and industries and, therefore, can be generalized in limited ways. In addition, the literature on this issue focuses more on the aspects of innovation in general and disregards various institutional innovations in operations.

H₂: Learning organization has positive effect on organizational innovation

The effect of learning organization on marketing innovation

Marketing innovation has been considered by both academics and policy makers under different perspectives. For example, Purchase & Volery (2020) define marketing innovation as an application of new technologies in one or all of the four "Ps" of the organization—product, price, place, or promotion. While being quite elaborate, the above definition tends to ignore the overall organizational perspective behind marketing innovations. The extant literature emphasizes the significant relevance of marketing innovation in the banking sector where creation of innovative approaches is crucial to ensuring financial stability and improving market positioning (Trusova et al., 2023). This example proves that marketing innovation is absolutely necessary for particular industries since companies working under the conditions of regulation and tough competition have to innovate their marketing framework constantly. Still, the modern research literature gives rather general suggestions instead of analyzing how banking organizations actually implement and control marketing innovations.

Organizational learning is one of the primary engines which push marketing innovation forward. Using continuous learning processes, companies collect detailed market intelligence, understand changing needs of consumers and find new ways to realize marketing innovation. According to Liao et al. (2007), absorptive capacity, that is organizational ability to absorb information from outside, is a basic condition for transforming institutional learning into marketing innovation. This statement is important because it shows that knowing something does not guarantee being able to use the gained knowledge properly. A limitation in the previously mentioned theory is that there is insufficient research examining structural or contextual factors that either support or hinder the absorptive capacity process.

Some researches reveal that the relationship between learning and market innovation may vary depending on the context. For example, Baker & Sinkula (2007) argue that while learning orientation fosters market innovation, at times, too much focus on existing market knowledge may prevent radical innovation. Organizations tend to rely heavily on existing customer inputs and market trends, hence failing to exploit new market opportunities. In contrast, empirical research clearly shows the positive relationship between a learning organization and marketing innovation. Organizational learning is shown by Martín-de Castro et al. (2013) to have a positive effect on marketing innovation performance through the implementation of new marketing strategies and improved customer involvement. Similarly, Sinkula et al. (1997) show that a learning orientation leads to an increased capacity of firms to identify market opportunities, which eventually drives marketing innovation. These pieces of research provide clear evidence of the assertion that learning and knowledge generation are essential to marketing innovation success. However, most of the research done in this area focuses more on general correlations rather than exploring causal relationships.

H₃: Learning organization has positive effect on marketing innovation

The effect of learning organization on service innovation

According to Ostrom et al. (2010), Service innovation refers to "the creation of value through new and/or improved service offerings, service processes, and service business models for customers, employees, business owners, alliance partners, and communities." It is clear from this definition that the concept of service innovation holds a multidimensional perspective, indicating that service innovation benefits various stakeholders in terms of internal as well as external dimensions. The essence of the definition is recognizing service innovation as a process as well as an output and going beyond product development towards organization and relational perspectives. However, although the definition is quite comprehensive, it does not take into account contextual factors such as market changes and technological shifts that have an impact on the success of service innovations. This is evidence of the importance of service innovation in dynamic markets. However, all these studies have mostly provided normative or theoretical perspectives whereas there is a need for empirical verification in diverse contexts. Organizational learning is a crucial aspect of service innovation in literature. According to Fu (2017), organizational learning and knowledge creation have positive impacts on the management innovation within hotels, which can be considered as being associated with service and organizational innovations. Panayides (2007) is an additional author, whose findings support this point of view, showing that learning practices in logistics service organizations positively affect the innovation performance, where the creation of knowledge becomes a mediating factor between learning and innovation. It means that, for service innovation, it is not enough to rely only on technical or operational procedures but also on the capability of the company to use and create knowledge.

The relationship between learning-based practices and service innovation is supported by evidence collected in the service industries. According to Milbratz et al. (2020), organizational learning increases openness to new ideas and increases innovation performance and development of new services. However, the problem here is that most of the empirical works focus on areas such as hospitality and logistics, and it can be difficult to generalize this approach to other service industries, including finance. In addition, there is an opinion that only through learning it will be possible to explain the results of innovation in the service industry. The issue is highlighted by

Gallouj and Weinstein (1997), stating that such elements as technological infrastructure, the experience of employees, and clients' involvement are important in the process of service innovation. Thus, even though learning organization principles are very important in the process of service innovation, some extra organizational resources can be necessary for their improvement.

Such inconsistency shows the need for research in order to understand what particular practices of learning contribute to service innovation. In this way, it will become possible to receive valuable information about both the theory and practice that can help managers develop innovation in service management through learning organization practices. The importance of this research gap is more pronounced in the banking sector because the aspect of service innovation is very important in gaining an advantage over competitors. The importance of researching service innovation as a product of learning organizations therefore presents itself.

H₄: *Learning organization has a positive effect on service innovation.*

Conceptual framework

Through the integration of the above-mentioned evidence, the study formulated a conceptual framework, as shown in figure 1 below, that focused on the link between learning organization, process innovation, marketing innovation, organizational innovation, and service innovation.

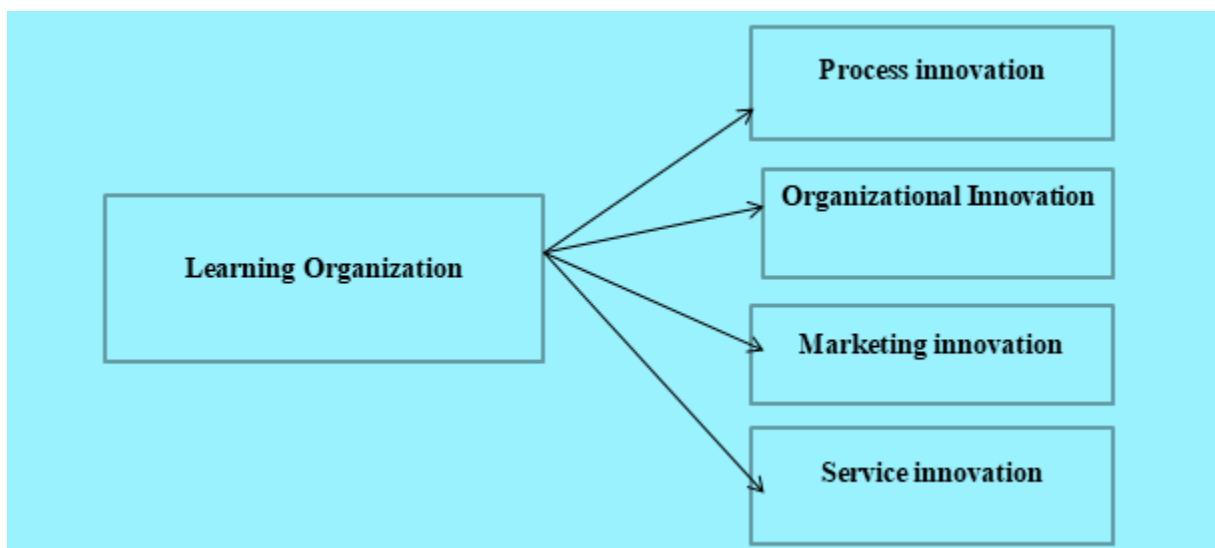


Figure 1. Hypothesized linkage of learning organization, process innovation, marketing innovation, organizational innovation, and service innovation

Source: (developed by authors' own compilation, 2025)

3. Methodology

This study employed a quantitative approach with a cross-sectional survey design to explore the effects of Learning Organization (LO) practices on various facets of innovation. A quantitative approach was selected to investigate the connection between the variables and assess hypotheses using statistical analysis, while the cross-sectional design facilitated data gathering at a specific moment. The participants in the study were selected from the headquarters of Awash

International Bank, where learning backgrounds and innovations affect performance. The group being examined at this office comprises 1398 persons, made up of 1220 clerical staff and 235 non-clerical staff. Based on the degree of awareness of the survey questions and experience in performing this type of research, the chosen target group was defined by specific selection criteria outlined below. Employees holding administrative roles at the central office of various departments and divisions of Awash International Bank, including directors, department managers, divisional heads, team leaders, senior executives, officers, and other clerical roles, along with other selection criteria, are considered; however, security staff, janitors, and couriers are excluded from this selection criterion. The researchers employed a 95 percent confidence level and a 5 percent margin of error to determine the suitable sample size. The formula representing Yamene's equation is as follows:

$$n = \frac{N}{1 + N(e)^2}$$
$$n = \frac{1228}{1 + 1228(0.05)^2} = 301.71 \approx 302$$

Where n= required sample size, N= total target population, e= level of precision or error

Of the 302 questionnaires that were distributed, 276 were retrieved while 26 did not get returned. From those questionnaires that were retrieved, 11 questionnaires were removed because of invalid or illegible answers. Thus, there were a total of 265 questionnaires that were answered fully without any missing data. This provided an overall response rate of about 87.7%. This response rate is adequate for carrying out regression and multivariate analysis.

The data were collected using a structured questionnaire, made up of closed-ended questions that were measured using a five-point Likert scale. The five constructs involved in the survey include LO, PI, OI, MI, and SI. To measure LO, the instrument used by Kim (2016) was modified. Furthermore, the instruments used in measuring the four innovation dimensions were modified from the most recognized innovation metric used by Lin et al. (2010). Regarding common method bias, since the data are collected using similar measures, this study conducted a test for inter-construct correlation matrix. According to Bagozzi and Yi (1988), correlations greater than 0.90 might signify common method variance and lack of discriminant validity. Moreover, there were procedural remedies to address common method bias.

Anonymity and confidentiality of the participants were ensured, participation was done voluntarily, and standardized measuring scales were used from past researches. This procedure is consistent with the recommendations of Podsakoff et al. (2003) in reducing common method bias in surveys. Reliability analysis through Cronbach's Alpha was done to prove the internal consistency of the measured variables.

Descriptive statistics were used using IBM SPSS in analyzing the data to describe the characteristics of the variables. Normality test including the Kolmogorov-Smirnov test, Shapiro-Wilk test, and Skewness and Kurtosis measures were conducted to check the normal distribution of the data. Simple linear Regression analysis was conducted to determine the effects of LO practices on each innovation dimension. Furthermore, Multivariate Analysis of Variance (MANOVA) was done to determine the effect of LO practices on all innovation outcomes at once.

4. Result

Descriptive statistics

Descriptive statistics have been used in order to analyze the central tendency, variance, and distribution of the dependent variables. The analysis has been done using measures such as mean, skewness, kurtosis, and confidence intervals to help in understanding the opinions of the participants on innovation.

From the analysis, it is clear that participants generally perceive medium to high levels of innovation in all aspects. Process Innovation had a mean of 3.6868, implying that most of the participants think that their organizations engage in process innovation, and the skewness was slightly negative (-0.385). Organizational Innovation had a mean of 3.6528, implying that there was a moderate level of agreement on the adoption of new managerial/structural practices by organizations, and the skewness was slightly negative (-0.345). Market Innovation had a mean of 3.5713, which implies that there is a moderate level of innovative marketing practices, and it was slightly negatively skewed (-0.179). In the same manner, the value of Service Innovation was 3.6274. This suggests that the level of consensus regarding participation in innovative services was moderate, with a negative skewness of -0.272. According to Garson (2012), values of skewness and kurtosis lying within ± 1 suggest that the distribution of data is normally distributed.

Table 1 Descriptive statistics of process, organizational, marketing, and Service Innovations

Descriptives			
		Statistic	Std. Error
PI	Mean	3.6868	.04279
	Skewness	-.385	.150
	Kurtosis	-.079	.298
OI	Mean	3.6528	.04572
	Skewness	-.345	.150
	Kurtosis	-.198	.298
MI	Mean	3.5713	.04499
	Skewness	-.179	.150
	Kurtosis	-.134	.298
SI	Mean	3.6274	.04760
	Skewness	-.272	.150
	Kurtosis	-.278	.298

Source: Survey, 2025

Test of Normality

Normality is crucial assumption for various parametric statistical methods, including correlation and regression analysis. In this research, the normality of the variables was assessed with the Kolmogorov–Smirnov (K–S) test and the Shapiro–Wilk test. Outcomes of the normality assessments for process innovation (PI), organizational innovation (OI), marketing innovation

(MI), and service innovation (SI) are detailed in Table 2 below, the findings show that the Kolmogorov–Smirnov test results for every variable are statistically significant ($p < 0.001$). The Shapiro–Wilk test findings likewise indicate significant values ($p < 0.001$) across all variables.

As per the statistical criteria of these tests, a significance value below 0.05 suggests that the data substantially diverge from ideal normal distribution. Nonetheless, numerous researchers contend that with large sample sizes, normality tests like Kolmogorov-Smirnov and Shapiro-Wilk exhibit heightened sensitivity and may suggest important deviation even when the distribution is early normal. For example, Field (2013) notes that in large samples (usually over 200 observations), slight deviations from normality can yield statistically significant outcomes even when the distribution is fairly normal. With sample size of 265 respondents in this study, the minor deviation from normality show by the Kolmogorov-Smirnov and Shapiro-Wilk tests does not present a significant issue for subsequent analysis. Consequently, the data can be viewed as roughly normally distributed, allowing for the suitable application of parametric statistical techniques like correlation and regression analysis.

Table 2 Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
PI	.221	265	<.001	.943	265	<.001
OI	.178	265	<.001	.946	265	<.001
MI	.162	265	<.001	.946	265	<.001
SI	.190	265	<.001	.942	265	<.001
a. Lilliefors Significance Correction						

Source: Survey, 2025

Reliability Analysis

Prior to conducting the hypothesis test, Cronbach's alpha measure was applied to check the internal consistency of the items. According to Nunnally (1978), a minimum requirement of 0.70 would be regarded as acceptable. It is evident from Table 3 that the Cronbach's alpha measure of the four innovation factors is 0.937. Also, Table 3 reflects a Cronbach's Alpha measure for the learning organization construct of seven items, and that is 0.946, signifying excellent internal consistency. This implies that the items used to measure the Learning Organization construct have high reliability and can be subjected to further statistical tests. According to well-known standards, if Cronbach's alpha is more than 0.90, it is regarded as high internal consistency.

Table 3 Reliability Statistics

	N of Items	Cronbach's Alpha
Innovation	4	.937
learning organization	7	.946

Source: Survey, 2025

In order to assess the robustness of the measurement model and test the validity, an Exploratory Factor Analysis (EFA) was conducted. In line with this, the KMO value for sampling adequacy was found to be 0.934, implying excellent suitability for conducting factor analysis. As shown in Table 4 below, Bartlett's Test of Sphericity resulted in a statistically significant finding ($\chi^2 = 3923.935$, $df = 190$, $p < .001$), meaning that the variables were correlated enough for factor analysis.

Table 4 Kaiser–Meyer–Olkin (KMO) and Bartlett's Test of Sphericity

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.934
Bartlett's Test of Sphericity	Approx. Chi-Square	3923.935
	Df	190
	Sig.	.000

Source: Survey, 2025

Multiple regression analysis

For this study, regression analysis has been used to study the effect of learning organizations on each innovation dimension separately, and to determine how well the models explain the dependent variables in terms of the coefficient of determination (R^2 and Adjusted R^2). However, prior to conducting multiple regression analysis, the relationship between the dependent variables was assessed, and then multiple regression analysis was conducted in order to determine the predictions of the examined constructs. The independent variable for multiple regression analysis is learning organization, while process innovation, organizational innovation, market innovation, and service innovation are the dependent variables.

It is evident from the below-mentioned Table 5 below that Pearson correlation analysis was carried out for the detection of the correlation between PI, OI, MI, and SI. From the above-mentioned analysis, it could be determined that there is a positive correlation between all of the variables at the level of significance of 0.01. More specifically, PI shows a very strong positive correlation with OI ($r = .830$, $p < .01$), MI ($r = .784$, $p < .01$), and SI ($r = .740$, $p < .01$). Similarly, OI has strong positive correlation with MI ($r = .759$, $p < .01$), and SI ($r = .754$, $p < .01$). However, the strongest positive correlation was found between MI and SI ($r = .866$, $p < .01$). All these results show that there is a high degree of association between the variables of this study. Moreover, it was observed that all the correlations between constructs are less than 0.90, indicating no common method bias problem in the study.

Table 5 Relationship between dependent variable

Correlations					
		PI	OI	MI	SI
PI	Pearson Correlation	1	.830**	.784**	.740**
	Sig. (2-tailed)		.000	.000	.000
	N	265	265	265	265

OI	Pearson Correlation	.830**	1	.759**	.754**
	Sig. (2-tailed)	.000		.000	.000
	N	265	265	265	265
MI	Pearson Correlation	.784**	.759**	1	.866**
	Sig. (2-tailed)	.000	.000		.000
	N	265	265	265	265
SI	Pearson Correlation	.740**	.754**	.866**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	265	265	265	265
**. Correlation is significant at the 0.01 level (2-tailed).					

Source: Survey, 2025

Results in Table 6 imply a medium positive relationship between LO and PI ($R = 0.533$). According to the value of $R^2 = 0.284$, it is possible to conclude that about 28.4 percent of variance in process innovations could be explained by learning organization activities. Adjusted $R^2 = 0.281$ implies that this regression model gives adequate prediction of the process due to the number of predictors and sample size. Standard error of the estimate (0.59052) shows that the model is quite accurate.

Table 6 Model Summary of Learning Organization on Process Innovation

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.533 ^a	.284	.281	.59052

a. Predictors: (Constant), LO (learning organization)

Source: Survey, 2025

Simple linear regression analysis was done in order to analyze the effect of learning organization on process innovation. Results from ANOVA analysis as given in table 7 below revealed that the regression model is statistically significant, $F(1, 263) = 104.387$, $p < .001$, thus implying that learning organization practices are significant predictors of process innovation. The sum of squares due to regression was 36.402 while the residual sum of squares was 91.713 giving a total sum of squares of 128.115.

Table 7 ANOVA Results for Learning Organization on Process Innovation

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	36.402	1	36.402	104.387	<.001 ^b
	Residual	91.713	263	.349		
	Total	128.115	264			

a. Dependent Variable: PI

b. Predictors: (Constant), LO

Source: Survey, 2025

Table 8 shows that the unstandardized coefficient ($B = 0.506$) implies that with a unit increase in LO, there is an increase of 0.506 in process innovation when all other variables are held constant. The standardized coefficient ($Beta = 0.533$) shows a moderate to strong effect, underscoring the real-world significance of LO on PI.

Table 8 Effect of Learning Organization on Process Innovation

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.976	.171		11.535	<.001
	LO	.506	.050	.533	10.217	<.001

Source: Survey, 2025

According to Table 9, the regression analysis demonstrated a moderate positive relationship between Learning Organization and Organizational Innovation ($R = 0.518$). With an R^2 of 0.269, one can say that Learning Organization explains about 26.9% of the variance in Organizational Innovation. According to social science research, R^2 of 0.20 to 0.30 is acceptable because there are many things influencing organizational events (Hair et al., 2019; Field, 2013). Thus, the findings imply that Learning Organization is a crucial factor affecting Organizational Innovation, although there are other factors as well.

Table 9 Model Summary of Learning Organization on Organizational Innovation

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.518 ^a	.269	.266	.63769
a. Predictors: (Constant), LO				

Source: Survey, 2025

The ANOVA statistics shown in Table 10 above reveal that the regression model is statistically significant $F(1,263) = 96.579$, $p < .001$, meaning that the variable Learning Organization is a key predictor for Organizational Innovation. In regression analysis, statistical significance for a model is attained where the p-value is below 0.05 (Field, 2013; Bryman, 2016). While statistical significance means there is a relationship between the two variables, this does not necessarily mean there is causation (Cohen, 1988; Trochim, 2006). The results show that there is a strong association between the Learning Organization and Organizational Innovation.

Table 10 ANOVA Results for Learning Organization on Organizational Innovation

ANOVA^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	39.273	1	39.273	96.579	<.001 ^b
	Residual	106.947	263	.407		
	Total	146.220	264			
a. Dependent Variable: OI						
b. Predictors: (Constant), LO						

Source: Survey, 2025

The results in Table 11 reveal that the regression coefficient of Learning Organization is a significant predictor of Organizational Innovation ($B = 0.525$, $\beta = 0.518$, $t = 9.827$, $p < .001$). The standardized Beta of 0.518 implies a strong effect size in accordance with social science study recommendations (Tabachnick & Fidell, 2019). The statistical significance level is set at $p < 0.05$ (Osborne, 2017). Multicollinearity is assessed (Tolerance = 1.000, VIF = 1.000) in acceptable boundaries (Menard, 2002). Thus, there exists a statistically significant relationship between Learning Organization and Organizational Innovation, yet causation is not implied (Kline, 2016). These results are in line with the principles of organizational learning theory (Senge, 1990) and knowledge creation theory (Nonaka & Takeuchi, 1995). According to these theories, learning-oriented cultures foster innovation.

Table 11 Effect of Learning Organization on Organizational Innovation

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.876	.185		10.141	<.001
	LO	.525	.053	.518	9.827	<.001

Source: Survey, 2025

From the regression result provided in Table 12, it can be established that there is a strong and positive correlation between Learning Organization and Marketing Innovation ($R = 0.592$). According to Hair et al. (2019), an R^2 value of 0.350 suggests that the independent variable LO explains 35% of the variance in Marketing Innovation, and this relationship is said to be moderately to strongly related. The small gap between R^2 and Adjusted R^2 (0.350 and 0.348) shows that the regression is a strong and good fit (Tabachnick & Fidell, 2019). Nonetheless, these results are not enough to show causation since other variables influence Marketing Innovation.

Table 12 Model Summary of Learning Organization on Market Innovation

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.592 ^a	.350	.348	.59159
a. Predictors: (Constant), LO				

Source: Survey, 2025

The results of the ANOVA are presented in Table 13 and prove the statistical significance of the regression model predicting the value of Marketing Innovation from Learning Organization ($F(1, 263) = 141.63$, $p < .001$), meaning that the variance of MI is explained to a considerable extent by LO. According to Field (2013) and Osborne (2017), the statistical significance of a regression model can be defined as the significance of the F-test in the organizational and behavioral researches, where p-value lower than 0.05 implies significance (Field, 2013; Osborne, 2017). Moreover, the value of $R^2 = 0.350$ indicates strong explanatory power (Hair et al., 2019; Kline, 2016). At that, since there is no considerable difference between R^2 and Adjusted R^2 (0.350 vs. 0.348), the model may be considered as reliable (Tabachnick & Fidell, 2019).

Table 13 ANOVA Results for Learning Organization on Market Innovation

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	49.577	1	49.577	141.656	<.001 ^b
	Residual	92.045	263	.350		
	Total	141.622	264			
a. Dependent Variable: MI						

a. Dependent Variable: MI

b. Predictors: (Constant), LO

Source: Survey, 2025

As presented in Table 14 below, a regression analysis was conducted to analyze the impact of LO on Marketing Innovation (MI). The results reveal a substantial positive relationship between LO and MI. An unstandardized coefficient ($B = 0.590$, $p < 0.001$) suggests that for every unit change in LO, there would be a corresponding increase of 0.59 units in MI when other factors remain constant. Furthermore, a standardized coefficient ($\beta = 0.592$) shows a strong positive relationship of LO on MI, which is considered a large effect according to Cohen's (1988) criteria for effect sizes, in which those exceeding 0.50 represent a large effect. Moreover, the p value ($p < 0.001$) is much smaller compared to the significance criterion of 0.05.

Table 14 Effect of Learning Organization on Market Innovation

Coefficients ^a							
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B
		B	Std. Error	Beta			Lower Bound Upper Bound
1	(Constant)	1.575	.172		9.177	<.001	1.237 1.913
	LO	.590	.050	.592	11.902	<.001	.493 .688

a. Dependent Variable: MI

Source: Survey, 2025

From Table 15, it can be observed that the coefficient of determination (R^2) value is 0.365, meaning that around 36.5 percent of the variation in service innovation is accounted for by the application of the learning organization practices. The adjusted R^2 value is 0.362; this adjustment accounts for the number of predictors in the model and lowers the explanatory power a little bit. This means that the model fits fairly well, and the LO is a good predictor of service innovation among others.

Table 15 Model Summary of Learning Organization on Service Innovation

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.604 ^a	.365	.362	.61871

a. Predictors: (Constant), LO

Source: Survey, 2025

The findings of ANOVA test in Table 16 show that the analysis was able to produce F value of 151.088 with $p < 0.001$ significance level, meaning that the regression model is statistically significant. The finding implies that learning organization behaviors are good predictors of service innovation since it shows that the effect observed could not be as a result of chance occurrence. The finding agrees with Hair et al. (2010), who argue that statistically significant F test verifies predictors' influence in predicting variations of the dependent variable.

Table 16 ANOVA Results for Learning Organization on Service Innovation

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	57.837	1	57.837	151.088	<.001 ^b
	Residual	100.677	263	.383		
	Total	158.514	264			
a. Dependent Variable: SI						
b. Predictors: (Constant), LO						

Source: Survey, 2025

The unstandardized coefficient ($B = 0.638$) shows that for every unit rise in Learning Organization practices, an increase of 0.638 units is expected in Service Innovation, assuming other variables remain constant. The standardized coefficient ($Beta = 0.604$) shows that there is a moderately strong relationship between LO and SI. The significance value (< 0.001) shows that the result is statistically significant, as seen in the table below, Table 17.

Table 17 Effect of Learning Organization on Service Innovation

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.471	.179		8.196	<.001
	LO	.638	.052	.604	12.292	<.001

Source: Survey, 2025

Multivariate Analysis (MANOVA)

As presented in Table 18, the multivariate analysis of Learning Organization has a significant impact on the total set of innovation outcomes, Pillai's Trace = 0.390, $F(4, 260) = 41.521$, $p < .001$; Wilks' Lambda = 0.610, $F(4, 260) = 41.521$, $p < .001$; Hotelling's Trace = 0.639, $F(4, 260) = 41.521$, $p < .001$; Roy's Largest Root = 0.639, $F(4, 260) = 41.521$, $p < .001$. The partial eta squared value of 0.390 shows that LO contributes to 39% of the variance in total innovation results, indicating a substantial effect. These findings support the Resource-Based View (Barney, 1991), Knowledge-Based View (Grant, 1996), and socio-technical systems theory (Trist & Bamforth, 1951), emphasizing that practices focused on learning simultaneously boost innovation across various organizational areas.

Table 18 Multivariate Analysis (MANOVA)

Multivariate Tests ^a							
Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Intercept	Pillai's Trace	.345	34.280 ^b	4.000	260.000	<.001	.345
	Wilks' Lambda	.655	34.280 ^b	4.000	260.000	<.001	.345
	Hotelling's Trace	.527	34.280 ^b	4.000	260.000	<.001	.345
	Roy's Largest Root	.527	34.280 ^b	4.000	260.000	<.001	.345
LO	Pillai's Trace	.390	41.521 ^b	4.000	260.000	<.001	.390
	Wilks' Lambda	.610	41.521 ^b	4.000	260.000	<.001	.390
	Hotelling's Trace	.639	41.521 ^b	4.000	260.000	<.001	.390
	Roy's Largest Root	.639	41.521 ^b	4.000	260.000	<.001	.390
a. Design: Intercept + LO							
b. Exact statistic							

Source: Survey, 2025

From the Between-Subjects Effects Tests of table 19, we learn that Learning Organization is a highly significant predictor for all four innovation outcomes – Process Innovation ($F(1, 263) = 104.387$, $p < .001$, $\eta^2 = 0.284$), Organizational Innovation ($F(1, 263) = 96.579$, $p < .001$, $\eta^2 = 0.269$), Marketing Innovation ($F(1, 263) = 141.656$, $p < .001$, $\eta^2 = 0.350$), and Service Innovation ($F(1, 263) = 151.088$, $p < .001$, $\eta^2 = 0.365$), as detailed in Table 19 below. These significant effect sizes suggest that learning focused methods greatly improve innovation in various organizational aspects.

Table 19 Tests of Between-Subjects Effects

Tests of Between-Subjects Effects							
Source	Dependent Variable	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	PI	36.402 ^a	1	36.402	104.387	<.001	.284
	OI	39.273 ^b	1	39.273	96.579	<.001	.269
	MI	49.577 ^c	1	49.577	141.656	<.001	.350
	SI	57.837 ^d	1	57.837	151.088	<.001	.365
Intercept	PI	46.401	1	46.401	133.062	<.001	.336
	OI	41.817	1	41.817	102.835	<.001	.281
	MI	29.474	1	29.474	84.215	<.001	.243
	SI	25.715	1	25.715	67.174	<.001	.203
LO	PI	36.402	1	36.402	104.387	<.001	.284
	OI	39.273	1	39.273	96.579	<.001	.269
	MI	49.577	1	49.577	141.656	<.001	.350
	SI	57.837	1	57.837	151.088	<.001	.365
Error	PI	91.713	263	.349			
	OI	106.947	263	.407			
	MI	92.045	263	.350			
	SI	100.677	263	.383			
Total	PI	3730.111	265				
	OI	3682.160	265				

Corrected Total	MI	3521.520	265				
	SI	3645.313	265				
	PI	128.115	264				
	OI	146.220	264				
	MI	141.622	264				
	SI	158.514	264				

Source: Survey, 2025

5. Discussion

This study investigated the effect of LO practices on four different aspects of organizational innovation, namely Process Innovation (PI), Organizational Innovation (OI), Market Innovation (MI), and Service Innovation (SI). From the results, it is clear that LO practices play an important role in promoting innovation in the organization since they significantly affect all aspects of innovation, hence increasing the likelihood of innovative achievements through learning, knowledge sharing, and adaptation.

From the regression analysis findings, it can be concluded that LO practices significantly affect Process Innovation. This conclusion indicates that firms that promote continuous learning, experimenting, and knowledge sharing improve their internal processes. The finding supports previous works that have found out the importance of learning in process innovation. For instance, in Yang (2007), firms that develop continuous learning, knowledge sharing, and improvements have greater potential for developing innovative processes. Marquardt (2011) pointed out that learning organizations generate adaptive capabilities required for process innovations. In the same line, Garvin (1993) and Senge (1990) argue that organizations that focus on learning continuously enhance their practices through knowledge acquisition and reflection.

The results suggest that the Learning Organization approach is very influential on Organizational Innovation, as. It means that organizations emphasizing learning will tend to develop new management approaches, organizational systems, and processes. This finding is consistent with the theory that learning is a critical factor in the process of change and structural innovation in organizations. Argyris and Schön (1978) assert that through organizational learning, organizations can question their assumptions and transform their organizational systems. In addition, Crossan, Lane, and White (1999) note that the learning process at the level of individuals, groups, and organizations can influence the creation of new organizational routines and systems. When organizations actively encourage learning and knowledge sharing, they create an environment of innovation and adoption of innovative organizational approaches.

The findings of this study reveal that Learning Organization practices significantly contribute to Market Innovation. It means that firms which are constantly learning from their customers, competitors and market trends have a tendency to come up with marketing innovations and discover new markets. The above results coincide with the literature that learning organization practices positively impact innovation performance and its outcome, which is marketing innovation (Senge, 1990; Nonaka & Takeuchi, 1995; Jiménez-Jiménez & Sanz-Valle, 2011). In addition, according to Hurley & Hult (1998), organizations that concentrate on gathering and sharing knowledge are more likely to create innovative marketing ideas and tactics.

Furthermore, the research also revealed that there is a substantial effect of Learning Organization on Service Innovation. This shows that organizations which focus on learning and sharing knowledge have the potential to come up with new and better services. This finding is in line with prior research work highlighting the importance of knowledge and learning in service innovations. Garcia-Morales et al. (2006) found that learning-based organizational practices are instrumental in fostering innovation in both service and products. Similar is the case with Teece (2007), who argues that organizational learning enables firms to build dynamic capabilities so that they can adapt and innovate according to the changing customer requirements. In a similar vein, Nonaka and Takeuchi (1995) have highlighted that knowledge creation and diffusion in organizations is a critical catalyst for innovation, especially in those firms which focus on serving services and have intangible knowledge as an important component of their business. In the same context, Den Hertog (2000) has observed that innovation in services usually comes by integrating the views of many sources such as employees, customers and other outside organizations.

6. Conclusion

This research examined the influence of LO practices on process innovation, organizational innovation, market innovation, and service innovation within organizations. Based on information obtained from 265 respondents and examined using descriptive statistics, regression analysis, and multivariate analysis, the behaviors of a learning organization have a positive impact on innovation outcomes across all innovation dimensions. This indicates that LO practices make a significant and moderate impact on innovation outcomes. Therefore, it is clear that organizations engaged in continuous learning and information sharing are more inclined to create innovative processes, structures, promotional strategies, and innovative products. Additionally, the research indicated via multivariate analysis that the Learning Organization has a significant influence on innovation performance. This highlights the significance of a learning organization in enhancing innovation capabilities within a company. Research revealed that companies fostering a learning culture are generally more effective in their innovation outcomes. Organizations that foster a learning culture can quickly adjust to shifts in the environment and enhance their innovation.

7. Implications

Theoretical Implications

There are a number of contributions of the findings of this research for the existing literature on learning organizations and innovation management. The research is empirically based and supports Learning Organization Theory stating that companies which create knowledge and learn, and share the information are usually more innovative and adaptive. The presence of the relationship between Learning Organization and other factors of innovation proves that learning culture makes firms more flexible and creative. The research adds evidence in favor of the Knowledge-Based View (KBV) theory as knowledge is shown to be a strategic resource and the key to innovation. The research also improves Dynamic Capabilities Theory as it emphasizes the

importance of capabilities for the identification and exploitation of opportunities and the transformation of resources for the competitive advantage. Learning Organization practices turn into dynamic capabilities allowing companies to constantly renew innovation processes. The main contribution of the research to the existing literature is that it deals with several aspects of innovation simultaneously in terms of multivariate analysis. The research proves that the activities of a Learning Organization influence simultaneously process, organizational, market and service innovations.

Practical Implications

The results of this research provide some critical insights into the organizational components that have positive influences on the innovation outcomes. Firstly, according to the results obtained, the organizations that have highly developed learning-based culture show high innovation performance. It seems that those organizations that support constant knowledge development, experimenting, and knowledge sharing have better conditions for innovation concepts development and implementation. Secondly, the research reveals another important factor – the crucial role of leadership in the processes of organizational learning and innovation outcomes. According to the results, the use of participatory approaches in leadership contributes to the active participation of employees in such activities as knowledge sharing, ideas generation, and problem-solving as a team. This leadership approach creates the environment that is conducive to innovation activities. Thirdly, the results show that the use of knowledge management and learning systems has a positive impact on organizational learning processes. Organizational learning processes are significantly influenced by the availability of systems that ensure successful knowledge capture, sharing, and application, and allow organizations to transform knowledge into innovations. Fourth, the results show that teamwork and interdepartmental communication increase innovation outcomes. Innovation performance is likely to be higher in an organizational environment where people from diverse functions come together and integrate their expertise, underscoring the relevance of interdisciplinary collaboration for stimulating creativity and dealing with problems. In essence, the conclusions point to the greater institutional relevance of learning-based approaches. From the evidence provided, it is evident that organizations that stress learning and skill improvement are likely to be better at innovation and adapting to changes.

8. Limitations

There are limitations in the current research that cannot be overlooked despite the valuable contribution. First of all, the current research used the cross-sectional approach, which does not allow to investigate the casual relationships between the learning organization practices and innovation outcomes. While the correlation is evident from the current findings, further longitudinal research is needed in order to analyze the changes in the causal relationship. The second limitation of the research is the reliance on the self-reported survey data, which can introduce some biases, such as common method bias or social desirability bias. Further research should overcome this limitation through the use of different sources of information or the inclusion of the objective measures of organizational performance. In addition, the current research considered only one predictive variable while innovation outcomes are influenced by

many factors including organizational culture, leadership style and technological capabilities of the company and the environment. The next research should consider other factors for a deeper understanding of innovation drivers. In essence, this study evaluated innovation based on perceptual rather than objective criteria such as patents, new product launch, and performance. It is possible that future research could combine both perceptual and objective criteria in order to increase the validity of the evaluation process.

Abbreviations

LO	Learning Organization
PI	Process Innovation
OI	Organizational Innovation
MI	Marketing Innovation
SI	Service Innovation
RBV	Resource-Based View
KBV	Knowledge-Based View
SPSS	Statistical Package for the Social Sciences
ANOVA	Analysis of Variance
MANOVA	Multivariate Analysis of Variance
K-S	Kolmogorov–Smirnov (test)
KMO	Kaiser–Meyer–Olkin (measure of sampling adequacy)
EFA	Exploratory Factor Analysis
R ²	Coefficient of Determination
VIF	Variance Inflation Factor
OECD	Organization for Economic Co-operation and Development

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Author's Contributions

Abera Ayalew: Conceptualization, methodology, data collection, formal analysis, writing – original draft. Dr. Haimanot Guadie: Supervision, methodology validation, statistical analysis review, writing – review and editing. Dr. Demis Alamirew Getahun: Supervision, methodology validation, statistical analysis review, writing – review and editing. All authors read and approved the final manuscript.

Statements and Declarations

Consent to Participate

Informed consent was obtained from all individual participants included in the study. Participation was voluntary, and respondents were informed of the purpose of the research prior to completing the questionnaire.

Consent for Publication

Not applicable. This manuscript does not contain any individual person's data in any form.

Declaration of Conflicting Interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Declaration of Generative AI and AI-Assisted Technologies

The authors acknowledge the use of artificial intelligence tools, specifically ChatGPT and Claude, during the preparation of this manuscript. These tools were employed exclusively for improving language quality, grammar, clarity, and overall readability. No AI tools were used to generate original research content, conduct data analysis, formulate interpretations, or draw conclusions. After utilizing these tools, the authors meticulously reviewed and revised all content and accept complete accountability for the accuracy, integrity, and originality of the final published article.

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The datasets generated and/or analyzed during the current study are available from the corresponding author upon reasonable request.

References

- Akgün, A. E., Keskin, H., Byrne, J., & Aren, S. (2007). Emotional and learning capability and their impact on product innovativeness and firm performance. *Technovation*, 27(9), 501–513. <https://doi.org/10.1016/j.technovation.2007.03.001>
- Alegre, J., & Chiva, R. (2008). Assessing the impact of organizational learning capability on product innovation performance: An empirical test. *Technovation*, 28(6), 315–326. <https://doi.org/10.1016/j.technovation.2007.09.003>

- Allouzi, R. A. R., Suifan, T. S., & Alnuaimi, M. (2018). Learning organizations and innovation mediated by job satisfaction. *International Journal of Business and Economics Research*, 7(1), 7–19. <https://doi.org/10.11648/j.ijber.20180701.12>
- Alsabbagh, M., & Al Khalil, A. H. (2017). The impact of organizational learning on innovativeness: An empirical study on the education sector in Damascus City. *International Journal of Academic Research in Business and Social Sciences*, 7(7). <https://doi.org/10.6007/IJARBS/v7-i7/3135>
- Altman, D. G. (1991). *Practical statistics for medical research*. Chapman & Hall.
- Argyris, C., & Schön, D. A. (1996). *Organizational learning II: Theory, method, and practice*. Addison-Wesley.
- Baker, W. E., & Sinkula, J. M. (2007). Does market orientation facilitate balanced innovation programs? An organizational learning perspective. *Journal of Product Innovation Management*, 24(4), 316–334. <https://doi.org/10.1111/j.1540-5885.2007.00254.x>
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99–120. <https://doi.org/10.1177/014920639101700108>
- Bogale, A. T., Birbirs, Z. A., & Abegaz, M. B. (2025). The effect of organizational learning on firm performance: The mediating role of innovation capability in Ethiopian state-owned enterprises. *Discover Sustainability*, 6, 880. <https://doi.org/10.1007/s43621-025-01277-8>
- Bryman, A. (2016). *Social research methods* (5th ed.). Oxford University Press.
- Chesbrough, H. (2011). *Open services innovation: Rethinking your business to grow and compete in a new era*. Jossey-Bass.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum Associates.
- Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112(1), 155–159. <https://doi.org/10.1037/0033-2909.112.1.155>
- Cohen, W. M., & Levinthal, D. A. (1990). Absorptive capacity: A new perspective on learning and innovation. *Administrative Science Quarterly*, 35(1), 128–152. <https://doi.org/10.2307/2393553>
- Crossan, M. M., Lane, H. W., & White, R. E. (1999). An organizational learning framework: From intuition to institution. *Academy of Management Review*, 24(3), 522–537. <https://doi.org/10.5465/amr.1999.2202135>
- Damanpour, F. (1996). Organizational complexity and innovation: Developing and testing multiple contingency models. *Management Science*, 42(5), 693–716. <https://doi.org/10.1287/mnsc.42.5.693>
- Damanpour, F., & Aravind, D. (2012). Managerial innovation: Conceptions, processes, and antecedents. *Management and Organization Review*, 8(2), 423–454. <https://doi.org/10.1111/j.1740-8784.2012.00274.x>
- Debas, A. T. (2025). The effect of organizational elements on knowledge transfer performance of employees in Commercial Bank of Ethiopia Gondar City Branches. *Journal of Innovation and Entrepreneurship*, 14, 133. <https://doi.org/10.1186/s13731-025-00597-3>
- Den Hertog, P. (2000). Knowledge-intensive business services as co-producers of innovation. *International Journal of Innovation Management*, 4(4), 491–528. <https://doi.org/10.1142/S136391960000024X>
- Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic capabilities: What are they? *Strategic Management Journal*, 21(10–11), 1105–1121. [https://doi.org/10.1002/1097-0266\(200010/11\)21:10/11<1105::AID-SMJ133>3.0.CO;2-E](https://doi.org/10.1002/1097-0266(200010/11)21:10/11<1105::AID-SMJ133>3.0.CO;2-E)
- Eroğlu, O., & Gürol, Y. (2013). The role of organizational learning capability in innovation. *European Journal of Innovation Management*, 16(4), 439–460. <https://doi.org/10.1108/EJIM-01-2013-0002>
- Fang, E. A., Li, X., & Lu, J. (2016). Effects of organizational learning on process technology and operations performance in mass customizers. *International Journal of Production Economics*, 174, 68–75. <https://doi.org/10.1016/j.ijpe.2016.01.019>
- Field, A. (2013). *Discovering statistics using IBM SPSS statistics* (4th ed.). SAGE Publications.

- Fu, Y. (2017). Organizational learning, knowledge creation, and management innovation in the hospitality industry. *Tourism Management*, 60, 62–73. <https://doi.org/10.1016/j.tourman.2016.10.019>
- Gallouj, F., & Weinstein, O. (1997). Innovation in services. *Research Policy*, 26(4–5), 537–556. [https://doi.org/10.1016/S0048-7333\(97\)00030-9](https://doi.org/10.1016/S0048-7333(97)00030-9)
- Garson, G. D. (2012). *Testing statistical assumptions*. Statistical Associates Publishing.
- Garcia-Morales, V. J., Llorens-Montes, F. J., & Verdu-Jover, A. J. (2006). Effects of transformational leadership on organizational performance through knowledge and innovation. *British Journal of Management*, 17(3). <https://doi.org/10.1111/j.1467-8551.2006.00434.x>
- Gereabzgi, L., Jimma, W., & Wedajo, E. (2018). *Impact of organizational learning culture and structure on organizational performance and innovativeness* (Unpublished master's thesis). Jimma University Institutional Repository.
- Grant, R. M. (1996). Toward a knowledge-based theory of the firm. *Strategic Management Journal*, 17(S2), 109–122. <https://doi.org/10.1002/smj.4250171110>
- Hael, M., Belhaj, F. A., & Zhang, H. (2024). Organizational learning and innovation: A bibliometric analysis and future research agenda. *Heliyon*, 10(11), e31812. <https://doi.org/10.1016/j.heliyon.2024.e31812>
- Haile, E. A., & Tüzüner, V. L. (2022). Organizational learning capability and its impact on organizational innovation. *Asia Pacific Journal of Innovation and Entrepreneurship*, 16(1), 69–85. <https://doi.org/10.1108/APJIE-03-2022-0015>
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis* (7th ed.). Pearson.
- Hannachi, Y. (2016). The impact of the learning organization on product innovation performance: An empirical assessment in the French biotechnology industry. *Management International*, 20(3). <https://doi.org/10.7202/1051306ar>
- Hassan, A. (2024). Effect of learning organisation on organisational performance mediated by innovation. *International Journal of Business Excellence*, 33(2), 210–237. <https://doi.org/10.1504/IJBEX.2024.139919>
- Hsu, Y.-H., & Fang, W. (2009). Intellectual capital and new product development performance: The mediating role of organizational learning capability. *Technological Forecasting and Social Change*, 76(5), 664–677. <https://doi.org/10.1016/j.techfore.2008.03.012>
- Hurley, R. F., & Hult, G. T. M. (1998). Innovation, market orientation, and organizational learning: An integration and empirical examination. *Journal of Marketing*, 62(3), 42–54. <https://doi.org/10.1177/002224299806200303>
- Jiménez-Jiménez, D., & Sanz-Valle, R. (2011). Innovation, organizational learning, and performance. *Journal of Business Research*, 64(4), 408–417. <https://doi.org/10.1016/j.jbusres.2010.09.010>
- Kassa, E. T. (2021). Examining employees creativity in commercial bank of Ethiopia Woldia branches. *Journal of Innovation and Entrepreneurship*, 10(1), 39. <https://doi.org/10.1186/s13731-021-00178-0>
- Kim, K. (2016). The impact of learning organizations on knowledge performance, adaptive performance and financial performance. (Unpublished PhD Thesis). The University of Georgia, Athens
- Kline, R. B. (2016). *Principles and practice of structural equation modeling* (4th ed.). The Guilford Press.
- Kotler, P., & Keller, K. L. (2016). *Marketing management* (15th ed.). Pearson.
- Lin, R., Chen, R., & Kuan-Shun Chiu, K. (2010). Customer relationship management and innovation capability: An empirical study. *Industrial Management & Data Systems*, 110(1), 111–133. <https://doi.org/10.1108/02635571011008434>
- López, S. P., Peón, J. M. M., & Ordás, C. J. V. (2005). Organizational learning as a determining factor in business performance. *The Learning Organization*, 12(3), 227–245. <https://doi.org/10.1108/09696470510592311>

- Mabrouk, A., & Mamoghli, C. (2010). Dynamic of financial innovation and performance of banking. *International Research Journal of Finance and Economics*, 51, 17–36.
- Marquardt, M. J. (2011). *Building the learning organization: Achieving strategic advantage through a commitment to learning* (3rd ed.). McGraw-Hill.
- March, J. G. (1991). Exploration and exploitation in organizational learning. *Organization Science*, 2(1), 71–87. <https://doi.org/10.1287/orsc.2.1.71>
- Marsick, V. J., & Watkins, K. E. (2003). Demonstrating the value of an organization's learning culture: The dimensions of the learning organization questionnaire. *Advances in Developing Human Resources*, 5(2), 132–151. <https://doi.org/10.1177/1523422303005002002>
- Martín-de Castro, G., Delgado-Verde, M., López-Sáez, P., & Navas-López, J. E. (2013). Organizational learning, innovation and performance: A review of empirical studies. *Journal of Innovation & Knowledge*, 2(2), 87–109.
- Menard, S. (2002). *Applied logistic regression analysis* (2nd ed.). SAGE Publications.
- Milbratz, C., Gomes, G., Oliva, E. D. C., & Grimaldi, D. (2020). Organizational learning and innovation: The mediating role of innovation capability. *European Journal of Innovation Management*, 23(3), 561–583. <https://doi.org/10.1108/EJIM-06-2019-0153>
- Nonaka, I., & Takeuchi, H. (1995). *The knowledge-creating company: How Japanese companies create the dynamics of innovation*. Oxford University Press.
- Nunnally, J. (1978). *Psychometric Theory* (2nd ed.), McGraw-Hill, New York.
- OECD. (2005). *Oslo manual: Guidelines for collecting and interpreting innovation data* (3rd ed.). OECD.
- Osborne, J. W. (2017). *Regression & linear modeling: Best practices and modern methods*. SAGE Publications.
- Pallant, J. (2020). *SPSS survival manual* (7th ed.). McGraw-Hill.
- Patky, J. (2020). The influence of organizational learning on performance and innovation: A literature review. *Journal of Workplace Learning*, 32(3), 229–242. <https://doi.org/10.1108/JWL-04-2019-0054>
- Purchase, S., & Volery, T. (2020). Marketing innovation: A systematic review. *Journal of Marketing Management*, 36(9–10), 763–793. <https://doi.org/10.1080/0267257X.2020.1774631>
- Rahayuningsih, S., Chandra Kirana, K., & Hadi, S. (2025). The impact of learning organization on organizational innovation with self-efficacy and knowledge management as mediators. *Jurnal Riset Ekonomi Manajemen (REKOMEN)*, 8(1), 522–540. <https://doi.org/10.31002/rekomen.v8i1.2572>
- Ramzanpour, M., Fakour, A., Nasri, S. R., & Jafari Titkanloo, S. (2020). The effect of marketing activities on gaining a competitive advantage with the mediating role of relationship quality; Case study: Ansar Bank of Mashhad. *Journal of Educational and Management Studies*, 10(2), 30–39. <https://doi.org/10.51475/jems.2020.4>
- Razali, N. M., & Wah, Y. B. (2011). Power comparisons of Shapiro–Wilk, Kolmogorov–Smirnov, Lilliefors and Anderson–Darling tests. *Journal of Statistical Modeling and Analytics*, 2(1), 21–33.
- Schumpeter, J. A. (1934). *The theory of economic development*. Harvard University Press.
- Senge, P. M. (1990). *The fifth discipline: The art and practice of the learning organization*. Doubleday.
- Siregar, Z. M. E., Suryana, E., Ahman, E., & Senen, S. H. (2020). Knowledge management, innovation, and firm performance: The case of Batik industry in Indonesia. *Quality – Access to Success*, 21(179), 27–32. <https://doi.org/10.33258/birci.v4i3.2156>
- Na-Takuatoong, O. (2001). *Innovation articles for teacher's learning in education reform* (Unpublished doctoral dissertation). Chulalongkorn University.
- Tabachnick, B. G., & Fidell, L. S. (2019). *Using multivariate statistics* (7th ed.). Pearson.
- Teece, D. J. (2007). Explicating dynamic capabilities: The nature and microfoundations of enterprise performance. *Strategic Management Journal*, 28(13), 1319–1350. <https://doi.org/10.1002/smj.640>

- Tessema Sinshaw, G., Shiva, A., & Singh, M. (2020). Linking ethical leadership to administrative innovation in Ethiopian banks: The mediating role of knowledge process capabilities. *Journal of Management Development*, 40(5), 418–437. <https://doi.org/10.1108/JMD-04-2020-0124>
- Tidd, J., & Bessant, J. (2014). *Managing innovation: Integrating technological, market and organizational change* (5th ed.). Wiley.
- Trist, E. L., & Bamforth, K. W. (1951). Some social and psychological consequences of the longwall method of coal-getting. *Human Relations*, 4(1), 3–38. <https://doi.org/10.1177/001872675100400101>
- Trochim, W. M. K. (2006). *The research methods knowledge base* (2nd ed.). Atomic Dog Publishing.
- Trusova, N. V., Chkan, I. A., Radchenko, N. G., Yakusheva, I. Y., & Rubtsova, N. N. (2023). Banking innovations: Marketing support in the financial market of Ukraine. *Economic Alternatives*, 2, 384–408. <https://doi.org/10.37075/EA.2023.2.09>
- Yamane, T. (1967), *Statistics an introductory analysis*, 2nd edition, New York harger and raw
- Yang, B. (2007). The relationships between organizational learning and effectiveness. *Leadership & Organization Development Journal*, 28(1), 83–99. <https://doi.org/10.1108/01437730710718281>