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Impact of Organizational Learning Culture and Structure on Organizational Performance and Innovativeness: The case of Selected Public Higher Learning InstitutionsLetensea Gereabzgi¹, Worku Jimma^{2*}, Elsabet Wedajo³

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Abstract

This study aimed to investigate the impact of organizational learning culture and structure on organizational performance and innovativeness at selected higher learning institutions in Ethiopia. Cross-sectional survey was adopted and a sample size of 312 academic and administrative staff was taken from a total population of 1667 from three selected universities by using stratified random sampling followed by purposive sampling. Data was collected through questionnaire and analyzed using descriptive statistics (Frequency, Percentage, Mean and Standard Division) and inferential levels (correlation coefficient, variance analysis, independent T- test) using SPSS software version 20. The findings of the study revealed that individual organizational learning culture predictors has a statistically significant effect through continuous learning, team learning, embedded systems, employee empowerment, and leadership, but organizational learning culture had no statistically significant effect at dialogue and inquiry on organizational innovativeness. Moreover, it was found that there were lack of organizational learning culture indicators in Higher Learning Institutions, but those are more effected organizational performance and innovativeness like team learning, employee empowerment, dialogue and inquiry, leadership and continuous learning. From this study, it can be concluded that organizational learning culture has a statistically significant effect on organizational performance in higher learning institutions.

Keywords: /Higher learning institutions/Organizational innovativeness/Organizational learning culture/Organizational performance/Organizational structure/

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1. Introduction

1.1 Background of the Study

Traditionally, the success of any organization highly depends on the match between individuals and the culture of the organization and any gap between these two variables has potential to risk the organizational efficiency and success (Mohammad, 2011). Today, organizations work in a dynamic environment that is continually changing. This has forced the organizations to revisit their learning culture. Organizations have begun to recognize that strategic planning is necessary for the maintenance of its own responsiveness to a rapidly changing environment (Abdullah & Siam, 2014). Nowadays, organizational learning culture and structure is one of the most important assets for any organization to create and share value and sustainable competitive advantage (Alavi & Leidner, 2001).

At the organizational level, organizational learning culture is one of the appropriate processes to enhance organizational obligation and an essential motivation. In addition, it refers to an organization skilled in creating, acquiring, and distributing knowledge, interpreting and in changing its behavior to reflect new knowledge and ideas (Fang *et al.*, 2016). Moreover, Organizational structure is the way or method by which organizational activities are divided, organized and coordinated. And it has created structures to organize activities of doing task and to control acts of employees (Alireza *et al.*, 2015). For example, there are two dimensions of organizational structure, formality structure and de-centralization structure. Formality refers to the rate or standard of organizational jobs, so that in the formal organization organizational relations are explained in written accurately and according to the organizational chart for employees, and subsequent changes are formally announced by a manager, and this is the explicit knowledge. De-centralizing the structure in the hierarchy of authorities that has power for decision making to the lower level in a higher learning institution is very essential because employees participation in decision-making in learning organizations is the practice that most closely correlates to the learning process (Tran & Pham, 2016).

In worldwide situation, organizational learning culture and structure are considered valuable strategic management tools to increase up the profit as well as Non-profit organizations. Now organizations are accepting different learning practices and innovative culture to be fine in their performance levels by gaining competitive environment (Nafei *et al.*, 2012).

Salim and Sulaiman (2011) in their study reported that organizational learning contributes to innovation ability, and that innovation is positively related to organization performance. Another research indicates that the effect of organizational learning on organization performance is likely to be direct and indirect because the creation of innovative culture through learning allows organization to achieve a better competitive position and above-average performance. Organizational learning culture and structure play a crucial role on organizational performance and also many higher learning professionals believe that universities are the main actors for promoting the learning process in the society (Emami *et al.*, 2013). Understanding the relationship between organizational learning culture, organizational performance and innovation in higher learning institutions in Ethiopia is the main focus of this study.

1.2 Statement of the Problem

In highly competitive and dynamic environmental change, many organizations including higher learning institutions need to be familiarized and survive in this competitive world (Poku *et al.*, 2013). There are many motivating forces that activate the need for organizational change such as the advancement of information and communication, and organizational learning culture and organizational structure. Organizational learning

culture is gaining widespread attention as a crucial need for a strategic effectiveness and for the employees to handle external and internal issues (Demirci *et al.*, 2010).

Nowadays, universities are facing some challenges such as limited team learning, which is one of the ways of knowledge sharing among employees, lack of comprehensive and appropriate framework, lack of procedure efficiency, limited knowledge in using technology, and the need to enhance the number of workers and increase competent manpower and lack of de-centralization decision making. Further, there is lack of employees' encouragement, lack of knowledge to do new things, lack of opportunities for training to share knowledge with other employees, and a problem in the best use of experiences and human competencies at the education level (Haim & Mohammed, 2014). Moreover, one of the obstacles in institutionalizing organizational learning is believed to be the lack of effective leadership and lack of continuous learning like positive discussion to learn and treat each other with respect.

Previous studies attempted to see the relationship between organizational learning and organizational performance by focusing in the areas of healthcare organizations ((Vijjuprabha, 2015) and bank sectors ((Poku *et al.*, 2013). To the researchers' knowledge to date, no study is conducted to investigate the impact of organizational learning culture and structure on organization performance and innovativeness in Ethiopian public higher learning institutions.

Research questions

1. Does an organizational learning culture have impact on organizational performance?
2. What is the impact of organizational learning culture on organizational innovativeness?
3. How does organizational structure of public universities affect organizational performance?

2. Review of Related Literature

2.1 Organizational Structure and Organizational Performance

Abdullah and Siam (2014) stated that structure is the starting point for organizing, and it includes roles and positions, hierarchical levels and distances of accountability, mechanism for problem solving and integration. According to Tran and Tian (2013), citing Lawrence and Lorsch, structure is described as "the technique in which the organization is differentiated and integrated". Organizational structure can be defined as the established pattern of relationships among the components or parts of the organization.

Fadeyi *et al.*, (2015) pointed out that organizational structure "is the formal system of tasks and reporting relationship that controls, coordinates, and motivates employees so that they cooperate to achieve an organization's goal". These authors stated organizational structure as "how tasks are formally divided, grouped, and coordinated". In addition to describing organizational structure, it is important to assess the influence it has on organizational accomplishment. Cater and Pucko (2010) conducted a study on banking sector and reported that there was a relationship between good organizational structure and organizational performance. These authors recommended that further studies should be done in other sectors, such as the learning sector. Abdullah and Siam (2014), in their studies on the higher education institutes, have found relationship between organizational structure and organizational learning, and considered them achievement factors that have a positive impact on the organizational performance.

2.2 Organizational Innovativeness and Organizational Performance

Organizational innovativeness (OI), organization's recognition and employment of new ideas, processes, products, or services and tendency change through accepting new technologies, resources, skills, and administrative systems (Ince, *et al.*, 2016). An organization's innovativeness can influence its ability to satisfy employee requirements, meet growing employee expectations, and respond to rapidly changing environments (O'Regan *et al.*, 2006). OI includes an organization's ability to be innovative and to produce innovative contributions and also it is established upon the innovative behaviors and cognitive of individual organization members. Besides organizational benefits, OI has been shown to strongly improve employees' job attitudes, job satisfaction, and organizational commitment as well as to encourage the establishment of personal innovativeness. In this regard, an innovative culture shares many of the same characteristics as a learning organization (Hogan and Coote, 2014). It is reported that innovativeness is an essential factor contributing to a better organizational performance. Innovativeness can produce some competitive ways and achieve optimal performance level regardless of whether as a result of a response to adaption to changes in environment or as a pre-emptive determination to affect the environment. If the level of innovation and quality of services improves, organizations can keep current employees and engage more employees through attracting their loyalty, as a consequence of which their knowledge share and performance may increase (Lee *et al.*, 2012).

2.3 Organizational Performance and Innovativeness Indicators

Previous studies attempted identifying organizational performance measures of which some studies focused on the financial dimension of performance and others on the non-financial dimension of performance. Considering other measures of performance through efficiency and effectiveness is about determining the core needs of the organizational performance, which is divided into sub-dimensions of balanced scorecard perspectives, namely employees' perspective, teaching-learning perspective, and internal process to measure overall organizational performance (Shoaib *et al.*, 2011). The main functions in universities key performance indicators are those related to quality in teaching and learning, research, financial perspective and measurement of university performance (Varouchas *et al.*, 2018). Therefore, this study adapted and modified the key performance indicators of higher learning institutions (HLIs) which include teaching and learning, research quality, community support and services, employees' perspective, and internal process because they are the identified HLIs performance. According to Matej *et al.*, (2012), the measurement of organizational innovativeness on the other hand was operationalized in line with sustainable balanced scorecard as cultural innovation (technical and administrative innovation). The research topic at hand is not done in the settings of Ethiopian HLI to the knowledge of the researchers.

3. Methodology

Setting of the Study. The study was conducted at selected higher learning institutions in Ethiopia, namely Jimma University, Adama Science and Technology University, and Wolkite University. Jimma University (JU) is one of the oldest public Universities in Ethiopia. It was established in 1999 E.C. JU is located in Jimma city south west of Ethiopia and 355 km far away from Addis Ababa. Moreover, JU is the first innovative Community Oriented Educational Institution in Ethiopia. Adama Science and Technology University (ASTU) is a 2nd Generation University located in Adama, the capital city of East Showa Zone of the Oromia Region. It was established in 1993 E.C. Adama Science and Technology University, previously was known as Nazareth Technical College, Nazareth College of Technical Teachers Learning. The University has branches in Adama, Asella, and Bishoftu cities, Oromia Region, Ethiopia. The University has also a branch campus in Addis Ababa (Winget campus). But, this research was conducted at the main campus of Adama Science and Technology University. As to Wolkite University, it is the 3rd generation University which is located in South West of Ethiopia in Southern Nation and Nationality regional state, Gurage Zone, at about 200kms far away from Addis Ababa.

Research design. A survey study was done to examine the relative impact of organizational learning culture and structure dimensions on organizational performance and innovativeness. Cross-sectional design was adopted. A sample size of 312 academic and administrative staff was taken from a total population of 1667, from three selected universities using stratified random sampling followed by purposive sampling. Data was collected using questionnaire and interview.

Total study population. The total study population of the three selected universities when this study was conducted is shown in Table 3.1 below.

Table. 3.1. **Population of the Study**

No	University	Academic staff profile			Administrative staff profile			Total
		MSc	PhD	Total	MSc	PhD	Total	
1	JU	588	135	723	60	3	63	786
2	ASTU	348	132	480	40	1	41	521
3	WKU	335	5	340	19	1	20	360
Total		-	-	1543	-	-	124	1667

Source: Human Resource Offices of (JU, 2018, ASU, 2018 and WKU, 2018.)

Sample size determination. Based on the total population, sample size has been determined. It is determined using the sample size determination formula. Therefore, the sample size was proportionally allocated using the formula proposed by Kothari (2004).

$$n = \frac{n_0}{1 + n_0/N}$$

$$z \left(\frac{\alpha}{2} \right)^2 * p(1-p)$$

Where $n_0 = \frac{\quad}{d^2}$

n= the desirable calculated sample size

Z (=0. 95 (95% confidence level for two sides)

p= proportion of population and barriers (50%)

d= degree of accuracy desired setting at (5%)

Therefore the value of n is calculated as follows

$$n_0 = \frac{(1.96)^2 * 0.5(1-0.5)}{(0.05)^2} = 384$$

$$n = \frac{n_0}{1 + n_0/N}$$

$$n = \frac{384}{1 + 384/1667} = 312$$

A. **Jimma University**

$$n_1 = \frac{n * N_1}{N}, \quad n_1 = \frac{312 * 786}{1667} = 147$$

Sample size allocation (proportional allocation for Academic staff and administrative)

$$n_{1ac} = \frac{n * N_1}{N}, \quad \frac{147 * 723}{786} = 135 \text{ for Academic staff}$$

$$n_{1ad} = \frac{n * N_2}{N}, \quad \frac{147 * 63}{786} = 12 \text{ for Administrative staff}$$

B. Adama science and Technology University

$$n_2 = \frac{521 \cdot 312}{1667} = 98$$

Sample size allocation (proportional allocation for Academic staff and administrative)

$$n_{2ac} = \frac{n \cdot N_1}{N}, \quad \frac{480 \cdot 98}{521} = 90 \text{ for Academic staff}$$

$$n_{2ad} = \frac{n \cdot N_2}{N}, \quad \frac{41 \cdot 98}{521} = 8 \text{ for Administrative staff}$$

C. Wolkite University

$$n_3 = \frac{357 \cdot 312}{1667} = 67$$

Sample size allocation (proportional allocation for Academic staff and administrative)

$$n_{3ac} = \frac{n \cdot N_1}{N}, \quad \frac{337 \cdot 67}{357} = 63 \text{ for Academic staff}$$

$$n_{3ad} = \frac{n \cdot N_2}{N}, \quad \frac{20 \cdot 67}{357} = 4 \text{ for Administrative staff}$$

Where, N_1 = Number of academic and administrative in each University

n = Total sample size & n_1, n_2, n_3 = Proportional for JU, ASTU and WKU respectively

n_{ac} = sample size of academic staff

n_{ad} = sample size of administrative staff

Therefore, the total sample size for this study is 312 academic and administrative staff, a number that is representative of the target population.

Sampling technique. The universities were selected using a stratified random sampling technique. Based on the stratification all related universities were classified into four categories, according to their establishments. Therefore, the study consists of four strata. From which 10 were formerly established and categorized in the first generation, 11 were established somewhat later and categorized in the second generation, 12 were established after few years and categorized in the third generation, and 11 were newly established and categorized in the fourth generation. But, the researcher has considered 1st, 2nd and 3rd generation for this study and thus, the samples were taken from these three generations. The reason for limiting the study to the three generations was their status of establishment and the experience they have. After stratifying the universities based on the generation, the researcher selected one university from each generation i.e. 1st, 2nd and 3rd generation purposively. The reason in using stratified random sampling was for representing proportionally academic and administrative staff.

Instruments of data collection. Questionnaire with close-ended and open-ended items was used to collect data from academic and administrative staffs. To measure reliability of a Likert's Scale based questionnaire, Cronbach's alpha was used.

Method of data analysis. To analyze the numerical data, descriptive statistics (frequency, percentage, mean and Standard Division) and inferential levels (correlation coefficient, variance analysis, independent T-test) were used. The analysis was done using SPSS software version 20.

Ethical consideration. The proposed study findings should benefit and cause no harm to the participants as well as the society. Participants were told that confidentiality would be intact. During the research process, the researchers made sure that all respondents were properly briefed about the aim of the study, their rights and roles in the study. Moreover, the respondents were made aware that participation in the study is voluntary, and that they were free to withdraw from the research at any time and thus, privacy and confidentiality were maintained at all times and the findings were presented in a confidential manner as no personal or identifiable information was recorded or printed in the study.

4. Results and Discussion

4.1 Result

The results of the inferential statistics are presented in tables showing the regression results as: reliability analysis of the questionnaires, model summary with Pearson correlation moment(r) showing the nature and strength of the relationship and coefficient of determination (R²) explaining how much variation in the dependent variable is explained by the independent variable. The analysis of variance (ANOVA) shows the overall model significance. The model coefficients show the beta coefficients of each independent factor and whether the factor has a positive or negative relationship with the dependent variable.

Table 4.1 Shows the Reliability Analysis of the Questionnaires

Table 4.1: Reliability Test

	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Continuous Learning	.721	.831	3
Dialogue and Inquiry	.777	.783	3
Team Learning	.730	.732	4
Embedded Systems (Communication)	.826	.827	3
Employee Empowerment	.867	.870	4
Leadership	.893	.893	4
Organizational Performance	.870	.872	12
Organizational innovation	.790	.836	7
Organizational Structure	.844	.854	14

This study had Alpha coefficients value (as shown in table 4.1) of 0.6 by Yang (2003); hence the instrument was considered reliable. George and Mallery (2003) contend that a Cronbach Alpha Coefficient greater than 0.9 is excellent, a coefficient greater than 0.8 is considered very good, 0.7 is good and acceptable, 0.6 is questionable while an alpha coefficient of 0.5 is poor, and less than 0.5 is unacceptable. For this study all the items under study had above 0.731 value hence a Cronbach Alpha Coefficient is greater than 0.7, *i.e.* is acceptable. All the scales of the instrument are therefore reliable.

Table 4.2: Organizational Learning Culture and Organizational Performance

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.796 ^a	.502	.490	.179		
a. Predictors: (Constant), Leadership, Continuous Learning, Embedded Systems , Team Learning, Dialogue and Inquiry, Employee Empowerment						
ANOVA^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	394.672	6	65.779	64.237	.001 ^b
	Residual	4419.216	253	17.467		
	Total	4813.888	259			
a. Dependent Variable: Organizational performance						
b. Predictors: (Constant), Leadership, Continuous Learning, Embedded Systems , Team Learning, Dialogue and Inquiry, Employee Empowerment						
Coefficients^a						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.907	1.151		6.002	.000
	Continuous Learning	.011	.057	.526	.190	.048
	Dialogue and Inquiry	.681	.328	.316	2.077	.053
	Team Learning	.174	.073	.157	2.384	.018
	Embedded Systems	-.053	.104	-.033	-.503	.615
	Employee Empowerment	.009	.057	.438	.158	.034
	Leadership	.307	.333	.139	.921	.050
a. Dependent Variable: Organizational performance						

The results presented in Table 4.2 indicate a positive and strong relationship between organizational learning culture and organizational performance. Organizational learning culture explains 50.2% ($R^2 = .502$) of the variation in organizational performance. R square value is 0.502 which means that organizational learning culture has 50.2% influences on organizational performance. The regression model was significant at ($F=64.237, p=.001$). Since the calculated p-value is less than 0.05, null hypothesis was rejected and it was concluded that organizational learning culture has a statistically significant effect on organizational performance in higher learning institutions.

The model coefficients results presented in Table 4.2 shows that t-tests of continuous learning, dialogue and inquiry, team learning, employee empowerment and leadership had a beta coefficient which is positive and a p-value is less than 0.05. This indicates that organizational learning culture through the above variables has a statistically significant effect on organizational performance while embedded systems was insignificant.

Table 4.3: Organizational Learning Culture and Organizational Innovativeness

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.603 ^a	.379	368.	1.987		
a. Predictors: (Constant), Leadership, Continuous Learning, Embedded Systems, Team Learning, Dialogue and Inquiry, Employee Empowerment						
ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	358.445	6	59.741	80.625	.000 ^b
	Residual	2256.859	253	8.920		
	Total	2615.304	259			
a. Dependent Variable: Organizational Innovativeness						
b. Predictors: (Constant), Leadership, Continuous Learning, Embedded Systems, Team Learning, Dialogue and Inquiry, Employee Empowerment						
Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error			
1	(Constant)	4.046	.822		4.920	.000
	Continuous Learning	.088	.041	5.752	2.142	.033
	Dialogue and Inquiry	.259	.234	.163	1.104	.271
	Team Learning	.147	.052	.180	2.812	.045
	Embedded Systems	.139	.075	.118	1.860	.040
	Employee Empowerment	.086	.041	5.669	2.111	.036
	Leadership	.026	.238	.016	.109	.013
a. Dependent Variable: Organizational Innovativeness						

The results presented in Table 4.3 indicate that organizational learning culture has positive and moderate effect on organizational innovativeness. Organizational learning culture explains 37.9% ($R^2 = .379$) of the variation in organizational innovativeness. The regression model is significant at ($F=80.625, p=0.000$). Since the calculated p-value is less than 0.05, the null hypothesis was rejected and it was concluded that organizational learning culture has statistically significant effect on organizational innovativeness.

The model coefficients results show that t-tests has beta positive value at continuous learning, team learning, embedded systems, employee empowerment, and leadership variable and p-values less than 0.05 while, t-tests has beta positive value at dialogue and inquiry. The p-values less than 0.05 indicate that individual organizational learning culture predictors had a statistically significant effect through continuous learning, team learning, embedded systems, employee empowerment, and leadership; however, for dialogue and inquiry, organizational learning culture had no statistically significant effect on organizational innovativeness.

Table 4.4: Organizational Structure and Organizational Performance

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.506 ^a	.308	.301	.143		
a. Predictors: (Constant), Structure formalization, Structure de-centralization						
ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	401.948	2	200.974	65.514	.000 ^b
	Residual	4411.940	257	17.167		
	Total	4813.888	259			
a. Dependent Variable: Organizational performance						
b. Predictors: (Constant), Structure formalization, Structure de-centralization						
Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.782	.953		7.113	.000
	Structure centralization	.234	.054	.274	4.373	.050
	Structure formalization	.208	.308	.042	.674	.031
a. Dependent Variable: Organizational performance						

The results presented in Table 4.4 indicate that organizational structure has a positive relationship with and moderate effect on organizational performance. Organizational structure explains 30.8% ($R^2 = .308$) of the variation in organizational performance. The regression model is significant at ($F=65.514$, $p=0.000$). Since the calculated p-value is less than 0.05, the null hypothesis was rejected and it was concluded that organizational structure has statistically significant effect on organizational performance.

The model coefficients results show that t-test has beta positive value at structure de-centralization and structure formalization variable. The p-values less than 0.05 indicate that individual organizational structure predictors have a statistically significant effect through structure de-centralization and structure formalization on organizational performance. This can be interpreted to mean that organizational structure does contribute to improve of organizational performance in higher learning institutions.

Table 4.5: Organizational Structure and Organizational Learning Culture

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.548 ^a	.300	.295	4.243		
a. Predictors: (Constant), formalization Structure, de-centralization Structure						
ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1984.544	2	992.272	55.110	.000 ^b
	Residual	4627.394	257	18.005		
	Total	6611.938	259			
a. Dependent Variable: Organizational learning culture						
b. Predictors: (Constant), formalization Structure, de-centralization Structure						
Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.478	.976		5.610	.000
	de-centralization Structure	.541	.055	.540	9.876	.000
	formalization Structure	.144	.316	.025	.455	.049
a. Dependent Variable: Organizational learning culture						

The results presented in Table 4.5 indicate that organizational structure has a positive relationship with and moderate effect on organizational learning culture. Organizational structure explains 30.0% ($R^2 = .300$) of the variation in organizational learning culture. The regression model is significant at ($F=55.110$, $p=0.01$). Since the calculated p-value is less than 0.05, the null hypothesis has been rejected and it is concluded that organizational structure has statistically significant effect on organizational learning culture.

The model coefficients results show that t-tests has a beta positive value at structure de-centralization and structure formalization variable; the p-values less than 0.05 indicate that, individual organizational structure predictors had a statistically significant effect through structure de-centralization and structure formalization on organizational learning culture. This can be interpreted to mean that organizational structure does contribute to improve of organizational learning culture in higher learning institutions.

4.2 Discussion

The study intended to analyze the impact of organizational learning culture and structure on organizational performance and innovativeness of higher learning institution in Ethiopia. Eight variables were identified to measure the organizational performance and innovativeness. These variables are: continuous learning, dialogue and inquiry, team learning, embedded system, empowerment, leadership, structure formalization, and structure de-centralization. Work experiences relate to the length of the experience of organizational learning practices by employees. When an employee is employed, he/she will adopt organizational practices and share his/her skills and knowledge with other organizational members. A study by Lucas and Kline 2008 reported that work experiences can influence organizational learning practices, which is in agreement with our finding.

Shoaib *et al.*, (2011) found statistically significant effect of organizational learning on organizational performance measures. The finding of the present study is similar to their findings because individual and organizational learning culture measures had a statistically significant effect through team learning, leadership, embedded systems and employee empowerment. However, organizational learning culture had no statistically significant effect through dialogue and inquiry continuous learning on employee satisfactions. Organizational learning culture has a statistically significant effect on organizational performance at continuous learning, dialogue and inquiry, team learning, employee empowerment and leadership while insignificant at embedded systems variable. According to Shoaib *et al.*, (2011), continuous learning, dialogue and inquiry, team learning, employee empowerment and leadership learning are individual efforts and have greater impact on organizational performance. Leadership has a positive impact on organizational performance because it is important for promoting collective thinking and communicative leading towards organizational performance. Moreover, our finding is in agreement with that of Jyothibabu *et al.* (2010) because their findings showed that team learning or group level learning has a statistically significant effect on organizational performance and leadership has a positive impact on organizational performance and it plays an important role in enhancing the communication and the establishment of processes for shared learning.

Organizational learning culture and innovativeness are considered valuable strategic management tools to boost up the performance of organization. The purpose of this study was to find out the relationship between organizational learning culture and innovativeness. Accordingly, the study revealed that organizational learning culture had a statistically significant effect on organizational innovativeness. This finding is consistent with that of Matej *et al.*, (2012), who reported that organizational learning and innovative culture within the organization have positive and strong association with organization performance. In general, these factors are a cornerstone to improve the organizational performance. Another study by Škerlavaj *et al.* (2010), which investigated the link between organizational learning culture and innovativeness, reported that organizational learning culture plays a crucial role in enhancing elements of innovativeness (technical innovation and administrative innovations).

Organizational structure comprised Structure de-centralization and Structure formalization. The study objective set out to establish the effect of organizational structure on each of the three parameters of performance and then on organizational performance was tested. The findings of this study showed that organizational structure has statistically significant effect on organizational performance. The finding was in consistent with that of Haim and Mohammed (2014) because their findings also showed statistically significant influence of organizational structure on organizational performance. Individual organizational structure measures had a statistically significant effect through structure formalization, but it had not statistically significant effect at structure de-centralization on employee satisfaction. In addition, organizational structure measures had a statistically significant effect through structure de-centralization and structure formalization on internal process and teaching learning. Generally, organizational structure measurements had a statistically significant effect through structure de-centralization and structure formalization on organizational performance. The finding by Seyed *et al.* (2013) is in line with the current study.

The core purpose behind this study was to explore the relationship between organizational structure and innovativeness. The study established that the effect of organizational structure on organizational innovativeness had a statistically significant effect on organizational innovativeness explains 35.7% ($R^2 = 0.357$) of the variation in organizational innovativeness with the remaining 64.3% explained by another variable. These factors play significant role in improving the organizational innovativeness. Individual organizational structure measures had a statistically significant effect through structure de-centralization and structure formalization on technical innovation and administrative innovation with organizational innovativeness. This can be interpreted to mean that organizational structure measurements do contribute to the improvement of

technical innovation and administrative innovation. On top of that, organizational structure measurements had a statistically significant effect through structure de-centralization and structure formalization on organizational innovativeness. Previous study by Ogbo *et al.*, (2015) supports this finding because in the study the author reported that decentralized structure favors innovation and is thus suitable and beneficial when used in a changing environment with high requirement on adapting to the environment. The author also suggested that decentralized structure is characterized by communications that allow sharing of new tasks and new work procedures. A case study entitled organizational learning in the higher learning institutions of agricultural and natural resources campus, University of Tehran, in Iran, was conducted by Hadi (2010). In his study the researcher categorized factors influencing organizational learning in the higher learning institutions in to individual factors (awareness, willingness, and behavioral control), leadership, shared visions/missions, teamwork, organizational culture, and organizational factors (organizational structure, administrative support, information technology systems, rewards systems, and trust) and reported that the majority of the respondents (90% faculty members) agreed about meeting institutions of higher learning of agriculture as learning organization.

An empirical study on the impact of leadership, organizational culture and organizational learning in improving the performance of Iranian agricultural faculties was conducted in Iran by Abbasi, and Zamani-Miandashti (2013). Their finding showed that there was a positive and statically significant relation between contextual components (leadership and organizational learning culture) and process component (organizational learning).

The study is not free from some limitations. Firstly, the study focused only on higher education institutions and was restricted to only three universities. Hence, the results may not be generalized to the education sector in Ethiopia. Secondly, most of the participants did not respond to the open-ended questions, the main problem researchers encounter in our country. Thus, it was not possible to triangulate the empirical findings with qualitative data. Future studies can address this gap.

5 Conclusion

The aim of the study was to investigate the impact organizational learning culture and structure have on organizational performance and innovativeness. From the study it can be concluded that organizational learning is very important resource and it contributes to the improvement of organizational performance as better decisions, which can lead to better performance, can be made. Moreover, it is found that organizational learning culture has a statistically significant effect on organizational innovativeness. This leads to the conclusion that organizational learning culture directly influences organizational innovativeness. Continuous learning, team learning, embedded systems, employee empowerment, and leadership are statistically significant, but organizational learning culture had no statistically significant effect at dialogue and inquiry on organizational innovativeness. It can be said that appropriate organizational learning culture ought to be created for improved organizational innovativeness.

There is a statistically significant relationship between organizational structure and organizational performance. From the study it can be concluded that organizational structure did influence the performance of the selected higher learning institutions. Moreover, it can be concluded that enabling structures, adoption of latest technology, participative management style, a general culture of continuous improvement and training of workforce are necessary organizational factors to consider in achieving high organizational performance. Similarly, there is a statistically significant effect of organizational structure on organizational innovativeness. Thus, this study concludes that the contribution of organizational structure on organizational innovativeness exists regardless of the state of organizational learning culture among higher learning institutions in Ethiopian.

6 Recommendations

The study justified the importance of organizational learning culture and structure measures of performance. Therefore, universities should focus on performance measurements *i.e.*, on internal processes, employee satisfaction, and teaching learning perspectives of performance. This gives a more holistic measure of organizational performance. The selected universities are using centralization structure. However, to modify the organizational structure towards organizational performance and innovativeness, it is better to shift from centralization systems to decentralized systems. Because de-centralized structure is for making decision processes, for empowering employees to be more innovative in caring out tasks, and for encouraging a better understanding of the problems that need to be solved. In other words difficult situations can be controlled by the individuals who are at the closet level in the structural hierarchy of a given organization. Moreover, universities should have continuous training programs as well as a better learning culture and innovation process for employees to improve their awareness as well as to change their attitudes towards organizational innovation through reasonable educational programs.

It is highly recommended that higher education institutions fulfill their role as learning organizations by initiatives and organizational learning principles in the functioning of their organizations. By implementing such practices, they can ensure that they become competitive and sustainable within the dynamic environment, which is characterized by ever- increasing competition for educational services. Such implementation involves putting in place resources, including sufficient time to support learning activities and the creation of an enabling environment for knowledge sharing among the staff concerned.

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Authors' contributions

Author 1: Designed and shaped the research; conducted the research and came up with the first draft of the manuscript.

Author 2: Originated the research idea, critically commented on the research design, supervised the research, shaped the manuscript, and produced the final version of the manuscript.

Author 3: Commented on the research design, supervised the research, and commented on the first draft of manuscript.

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