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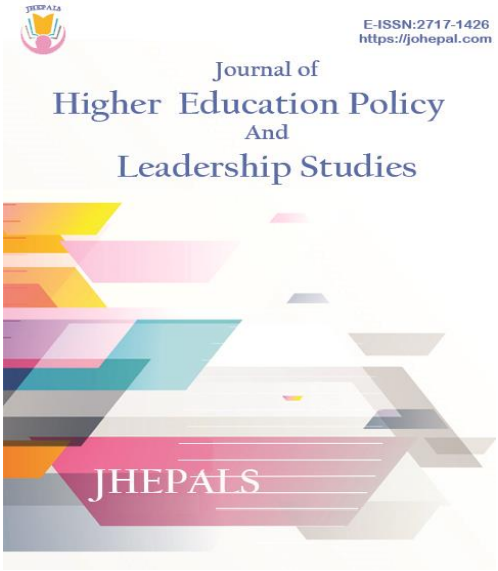

A Learning Culture in Public Universities: Improving Institutions' Adaptive Capacity for Changes

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Abstract

Universities are working in an ever-changing dynamic world. To facilitate and appreciate innovation, to anticipate and adapt to the dynamics of the changing environment, institutions are encouraged to build a learning culture. Institution's change capacity is significantly determined by learning culture; thus, the major purpose of study was to examine the learning culture of universities based on staff and academic leaders' opinions and practices. Governed by a pragmatism perspective sequential mixed method design was used. Since learning culture is a composite variable, Structural Equation Modeling (SEM) methodology, mainly Partial Least Squares Path Modeling (PLS-PM) was followed. Consequently, the learning culture of universities was found inadequate. It doesn't sufficiently reflect a learning culture quality to the required level. The universities cultures do not show empowerment, inquire and dialogue, continuous learning, team learning and other important learning culture characteristics appropriately. Thus, universities are recommended to revisit their system and build professional learning communities (PLCs) by creating multiple learning opportunities, particularly inquiry and dialogue. Concurrently, their system should appreciate, recognize, and reward learning and change. Similarly, barriers to learning need to be discussed and addressed collaboratively.

Keywords: Higher Education; Change; Change Capacity; Adaptation; Learning; Learning Culture

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Introduction

Organizations are complex social entities working with multifarious relationships inside and outside their boundaries; this makes their operation unpredictable (Cullen et al., 2013). To survive and thrive in such complex and changing environments, learning is very important (Heifetz et al., 2009; Schein, 2010; Walker, 2011; Watkins & Marsick, 2003; Yukl & Mahsud, 2010). Like other organizations, higher education institutions (HEIs) are complex hubs (Melu, 2016) under persistent changes to ensure their existence (Temple, 2011). Thus, the governance, management, and leadership structures of HEIs are confronted with unprecedented changes, which in turn demands continuous learning and change (Bates & Khasawneh, 2005).

Liu (2009) contended that organizations that are unable to learn are not capable of changing their culture and themselves. Which entails, learning is the key feature of organizations in times of change. The major cause of change failures in an organizational is unable to learn and adapt to situations. Similarly, a significant number of researchers indicated that rigidity or failure to learn and adapt to changes hamper organizational success (Zheng et al., 2010). Therefore, learning is central to organizational adaptation, and it is a necessary condition for implementing innovation and changes in organizations (Antonacopoulou, 2014). Accordingly, to facilitate and appreciate innovation, to anticipate and adapt to the dynamics of the changing environment, institutions are encouraged to improve their learning culture (Bates & Khasawneh, 2005). Even, it is possible to argue that learning culture can boost change implementation.

Nonaka (2007) noted that learning organizations are adaptive to their environment because they continually enhance their capability to change individually and collectively. This understanding necessitates organizations to build a learning system that facilitates learning, i.e., to create, acquire, and transfer knowledge to modify behavior and actions (Song et al., 2009). Rebelo and Gomes (2009) reflected that an organization could only be a learning organization if there is an effort towards the creation and development of a learning culture. In other words, an organization that promotes the acquisition, sharing, and promotion of knowledge promotes a learning culture. As Bates and Khasawneh (2005) noted, organizational learning culture support the acquisition of information, the distribution and sharing of learning, and that reinforces and supports continuous learning and its application to organizational improvement. Therefore, a learning organization has a value, belief, and practice of learning, which is a reflection of a strong learning culture.

Consequently, an attempt was made to explain and understand the learning culture in higher education institutions (HEIs). In doing so, complexity theory was followed to pragmatically explore and understand the learning culture in HEIs. Congruent with this idea, Tsoukas and Chia (2002) argue that change is inherent in human actions; it is the reweaving of actors, webs of beliefs, and habits of action due to new experiences obtained through interactions. This leads the researchers to choose pragmatism and its approaches as a governing perspective to guide the study.

The Rationale of the Study

Universities' adaptive capacity to changes might be determined by various factors; however, as Hatch and Cunliffe (2013) and Yukl and Mahsud, (2010) reflected, understanding the institutions' culture is central to understand the theoretical and practical intricacies of change as well as the adaptability of institutions. Similarly, scholars like Martins and Terblanche (2003) as well as Lee et al., (2013) related the issue with organizational culture, they argue organizational resilience to change comes from deep within the organization's culture. Yukl and Mahsud, (2010) also pointed the existence of a strong relationship between culture and organizational change. Supporting this, Hatch and Cunliffe (2013) affirmed that culture significantly influences organizational performance by anticipating or adapting to changes, particularly the learning quality of culture is important in times of change.

Kotter and Heskett (1992) indicated that an adaptive and a learning culture or a culture that fosters/nurtures creativity and innovation is important to survive and thrive in a dynamic ever-changing environment. Many literatures reflected that learning culture is important to anticipate or adapt to changes, to generate more energetic, loyal, and goal-oriented employees, and it encourages growth through innovation (Matebe & Girma, 2020). A strong learning culture is a precursor for inventing, creating, acquiring, and transmitting knowledge, and changing the behavior and actions in organizations (Huber, 1991; Kotter & Heskett, 1992). Similarly, it is argued that the culture of learning and development is a signal for organizational readiness for change. As a result, organizational learning culture becomes important for change and innovation, because it enables an organization to anticipate and adapt to the dynamics of a changing environment (Bates & Khasawneh, 2005).

According to James and Biesta (2007, p. 23), learning culture is "a particular way of understanding a learning site as a practice constituted by the actions, dispositions and interpretations of the participants," and "the social practices through which people learn". Huber (1991) emphasized that an organization that has developed a strong learning culture is good at inventing, creating, acquiring and transmitting knowledge, changing behavior that reflects newly acquired knowledge and insight. The existence of a learning culture plays a significant role in determining and predicting many dependent variables like human resource development, performance, satisfaction, change, creativity, productivity, and effectiveness (Joo, 2007). However, Hatch and Cunliffe (2013) argue that empirical research on organizational change and adaptability lags behind its appreciation of cultural learning and adaptability. Thus, reflecting on learning culture may trigger policy concerns on the issue and further practical interventions because a learning culture can be achieved in all institutions, authorities, industries, companies, etc. of all sizes (Schein, 2010).

As explained earlier, establishing a learning culture in universities is not a choice in this fast-changing unpredictable world, it is fundamental to survive and thrive through changes. In addition, organizational learning culture plays an important role as an antecedent for many dependent variables of human resource development (HRD) i.e., learning, performance, satisfaction, change, creativity, productivity, and effectiveness (Joo, 2007). Like other organizations, universities have their own culture that affects their day-to-day activities and operations.

The absence of this fundamental culture impedes institutional change and development in HEIs of developing countries like Ethiopia (Melu, 2016). Similarly, in the Ethiopian context, Yizengaw (2003) noted that bringing about change, particularly in HEIs setting is a difficult task; because as Marshall (2010) identified, resistance to change characterizes the HEIs community. Therefore, universities need to install a learning culture into their system by assessing their current assumptions and practices (Patnaik et al., 2013).

Accordingly, this research is expected to give potential insight into the current culture of universities with particular attention to its learning features, which is one of the key factors for successful change implementations. Consequently, the major purpose of this study was to examine the learning culture of universities by systematically assessing the staff and leaders' attitudes, opinions, and practices using a contextual tool customized from the literature review.

1. To what extent do universities exhibit the qualities of a learning culture in their systems and practices?
2. What are the major ways to build a learning culture that improves the change adaptive capacity of universities?

Conceptual Framework

Learning culture is a multidimensional construct (Benson & Hagtvet, 1996). Rebelo and Gomes (2009) defined learning culture as an organizational culture oriented towards the promotion and facilitation of workers' learning, lesson sharing, and dissemination, to contribute to organizational development. The path to building a learning organization begins with an assessment of the current culture of the organization (Senge, 1990). Nonetheless, the most critical issue has been the lack of practical and validated measurement tools (Holton, 2005; Yang et al., 2003).

Benson and Hagtvet (1996) and Senge (1990) provided us a spectacle to see learning organizations based on the five major disciplines i.e., shared vision, mental models, personal mastery, team learning, and systems thinking. These disciplines have been widely used by many scholars as a framework to assess the organizations' status from a learning perspective. Schein (2010) pointed out ten characteristics of a learning culture. Similarly, Heifetz et al. (2009) solicited five major institutional practices to build change adaptive culture i.e., naming the elephants in the norm, nurturing shared responsibility, encouraging independent judgment, developing leadership capacity and institutionalizing leadership practice. More specific to the measurement of a learning culture, Marsick and Watkins (1997) developed a seven-dimensional tool i.e., dimension of learning organization questionnaire (DLOQ). These include creating continuous learning opportunities, promoting inquiry and dialogue, encouraging collaboration and team learning, establishing systems to capture and share learning, empowering people towards a collective vision, connecting the organization to its environment, and leadership model and learning support. Similarly, Song et al. (2009) has modified and used the DLOQ to study the relationship between organizational learning culture with performance and innovation.

Song et al. (2009) also indicated that there have been different studies to validate DLOQ in the United States, Colombia, China, and Taiwan to verify its applicability in different cultures. The results of these studies have verified the applicability of the DLOQ in different

cultures, providing internal consistency of each item's reliability (coefficient alpha ranging from .71 to .91). In addition, different studies have been conducted by using DLOQ to test its applicability to other organizational constructs like leadership, organizational commitment, organizational creativity, job satisfaction, learning transfer, and so on, in both educational and business settings, both profit and nonprofit (Joo, 2007). Therefore, this study has adopted key criteria from Song et al. (2009), Young (2003), Watkins and Marsick (1997, 2003) to develop a relatively more comprehensive assessment approach and tools to understand and examine the learning culture of universities.

Methodologically, variables like learning culture are an aggregate result of many other independent variables (Matebe & Girma, 2020). To measure such variables, it is important to use composite indices methodology. Cataldo (2016) explained that the approaches may be theory-based, which is an approach by combining variables suggested by a theory or well-established knowledge on the subject matter, whereas data-driven approaches follow the best possible quantitative synthesis of a suitable set of elementary indicators. However, both approaches have their own limits, hence; scholars introduced a model-based approach, which is in the mid-way between the previous two approaches. This model is used to test and or estimate casual or proxy relationships of composite statistical data and qualitative assumptions (Cataldo, 2016; Hair et al., 2017). Table 1 presents latent and manifest variables of learning culture.

Table 1.
Latent and Manifest Variables of the Multidimensional Learning Culture Model

Higher Order Construct	Latent Variables (CIs)	First Order Construct (Manifest Variables)
I. Learning Culture	A. Team Learning	1. Sharing feedback openly & honestly:
		2. Practice of reflection, feedback & lesson:
		3. Opportunity to work together:
	B. Systems Connection	4. Use of customer feedback:
		5. Encourage new lesson adoption:
		6. Communicating learning & success:
		7. Use of staffs' skills & knowledge:
		8. Understanding the value of learning:
	C. Continuous Learning	9 Learn from each other:
		10. Learn continuously:
		11. Support learning in word & action:
		12. Encourage learning & sharing:
	D. Embedded System	13. Making learning part of performance goals:
		14. Impact of learning is measured:
		15. Learning is criteria to hire & promote:
		16. Institutional lessons are stored & shared:
	E. Empowerment	17. Applying lessons:
		18. Planning for learning:
		19. Allocate resources for learning:
	F. Strategic Leadership	20. Feedbacks to success through learning:
		21. Opportunity to learn & grow:
		22. Change responsive/proactive trainings:
		23. Existing assumptions & values can be changed:
	G. Inquiry & Dialogue	24. Feedback & self-reflection:
		25. Ask & learn with no fear:

Among the model-based approaches, Structural Equation Modeling (SEM) methodology was used in this study. Hair et al., (2017) explained SEM as a class of multivariate techniques that combines aspects of factor analysis and regression, enabling the researcher to simultaneously examine relationships among measured variables and latent variables (assessment of measurement theory) as well as between latent variables (assessment of structural theory). Under SEM methodology, researchers might use covariance-based techniques and component-based techniques. This investigation used component-based techniques, particularly the Partial Least Squares (PLS) Path Modeling Approach (PLS-PM), because PLS-PM helps to model complex multivariable relationships among observed, and latent variables. This approach is also helpful to simultaneously estimates relationships between multiple independent, dependent, and latent variables (Kline, 1998).

Ultimately, 25 items in the form of Likert scale were developed and used to understand the learning culture of HEIs. The items focus on the degree to which the studied universities reflect a learning culture in terms of continuous learning, systems connection, team learning, empowerment, strategic leadership, inquiry, and dialogue as well as an embedded system. Accordingly, the dependent variable i.e., learning culture in HEIs was measured by aggregating the ratings of the above indicators. The ratings of the practices or status learning culture were made using a five-point Likert scale from very high (VH)=5, high (H)=4, medium (M)=3, low (L)=2, and very low (VL)=1.

Research Methodology

This research was guided by the pragmatism perspective, which advocates the use of mixed methods (Feilzer, 2010) rejecting a position between the two opposing viewpoints i.e., objectivist and subjectivists (Creswell, 2014). This helped to maintain both subjective reflections and objective data during data collection and analysis. To attain the purpose of the study the sequential explanatory approach was used. Creswell (2009, p. 215) noted, "The purpose of the sequential explanatory design is to use qualitative results to assist in explaining and interpreting the findings of a primarily quantitative study." This approach requires two phases, collecting quantitative data first and explaining the results in a more detailed manner using a qualitative approach. To gather relevant data from the target population, stratified simple random sampling was used. Then, the perception of academic staff, support staff and leaders at different positions were collected from three randomly selected universities (Bahir Dar, Debremarkos and Debretabor Universities).

Before distributing the questionnaire, piloting was made at Bahir Dar University to ensure its reliability. One hundred ten (110) questionnaires were distributed to randomly selected academic and support staff of the university. From the distributed questionnaires, 79 were returned, among these only 62 (27 academic staff and 35 administrative staff) were found useful. The reliability of the questionnaire was calculated, and the internal consistencies of the total items were 0.91 Cronbach's Alpha.

Finally, the questionnaire was distributed to 954 sample participants based on the sampling procedure. Academic staff, support staff, and leaders at different university leadership positions (from presidents to program/office coordinators) on payroll during the study were included. To determine sample participants and gather quantitative data, the

multi-stage proportional stratified random sampling - lottery method was used. Sample participants were asked to indicate their perception on the level of learning culture in universities. According to Gay and Airasian (2003), a 60% or more response rate might be acceptable. From the distributed questionnaire, 594 completed and useful questionnaires were returned from 133 leaders, 268 academic staff, and 193 support staff, which was a 62.06% response rate.

In addition to the data collected through the questionnaire, in-depth interviews were carried out with purposely selected 37 participants from academic staffs, support staffs, and leaders from each university. Each interview took from 30 minutes to an hour; interviews were made until sufficient information was gathered. Many scholars like Bogdan and Biklen (1998), recommended interviews with semi-structured questions to get the subjects freely express their thoughts around a topic. Thus, semi-structured interviews were used to support and further understand the quantitative data obtained from respondents. In doing so, the interview guide was developed based on the literature review that are identified to explain learning culture of universities. The questions focused on how far the culture encourages learning in different ways like peer learning, dialogue, sharing experiences etc. The perception of participants on how far such culture is important to successfully implement institutional changes as well as opinions about the learning qualities of university leaders were part of the question during the interview. All the interviews were made in a local language (Amharic) because it allows smooth communication with no barriers of understanding. However, when the conversation/question demands using a technical language/term, some English words were used followed by a brief explanation to get across the idea.

The data collected through the questionnaire, interviews and documents were analyzed qualitatively, and quantitatively in such a way to answer the basic questions. Responses obtained through questionnaires were analyzed using Principal Least Square Path Modeling (PLS-PM). The PLS-PM was used to show the status of the learning culture as well as the loadings and contributions of indicators, it is also possible to understand which criteria are being well reflected in the culture of HEIs. Besides, the model shows the predictive importance of criteria from their contribution as well as from the Importance-Performance Map Analysis (IPMA) result.

The two-step approach was followed to estimate the learning culture because Cataldo (2016) recommended this approach over hybrid and repeated measures approach for measuring higher-order construct for its ability to explain the relationships and parametric estimation. By following a two-step approach, the estimation was made. Hence, second-order constructs (latent variables) which are formatively (inwards directed way) related to their first-order dimensions and reflectively measured (outwards directed way) by their manifest variables to explain the learning culture. Thus, the link between latent and manifest variables can be established in two ways; formative and reflective. In a reflective way, the indicators (manifest variables) are regarded to be reflections or manifestations of their latent variables: a variation of the construct yields a variation in the measures. As a result, the direction of causality is from the construct to the indicator. In a formative way, the indicators are regarded as causes of their latent constructs: a variation of the measures yields a variation in the construct. So, the direction of causality is from the indicator to the construct. To employ these analysis techniques a statistical tool XL-STAT was used.

Conversely, the data collected through interviews and document were analyzed using a "thematic analysis" technique. The analysis was based according to the data organization procedures and techniques recommended by Bogdan and Biklen (1998). Thus, in organizing the data, the researcher revisited and listened to each audiotape to ensure the accuracy of the data. Each participant's interview transcript was analyzed as follows: first, the answers to each question were separated into meaningful categories, named, and coded as R1, R2, R3 and R4 where ''R'' refers to the respondent; Second, the conceptualized statements were collected together; Third, repeated ideas were avoided. In the last phase, the identified results were explained and related to each other thematically. In this approach, each set of data collected was reviewed so that key issues, recurrent events, or activities in the data became categories of focus.

Consequently, information obtained via interview was analyzed, discussed, and presented qualitatively as per their thematic pattern following questionnaire results. During the analysis, the researcher used different ways to keep anonymity and privacy of participants, using general terms like one respondent, one professor, leader, dean, top-level leader, and by giving respondents a number etc. Eventually, based on the discussion and analysis of results, conclusion and recommendations are provided.

Results

Learning culture is considered as a composite variable[*], whose measurement requires composite indicators[†] (CIs) methodology. This method is the mathematical combination (or aggregation) of a set of indicators that represent the different dimensions of a phenomenon to be measured (OECD, 2008). Among the many approaches to measure composite indicators, Structural Equation Modeling (SEM) methodology was found relevant. Hair et al., (2017) explained SEM is a class of multivariate techniques that combines aspects of factor analysis and regression, enabling the researcher to simultaneously examine relationships among measured variables and latent variables (assessment of measurement theory) as well as between latent variables (assessment of structural theory). Cataldo (2016) identified covariance-based techniques and component-based techniques to estimate model parameters in SEMs.

However, this investigation follows component-based techniques, particularly the Partial Least Squares (PLS) Path Modeling Approach (PLS-PM) due to different reasons. One, this approach is helpful to simultaneously estimates relationships between multiple independent, dependent, and Latent Variables (Kline, 1998). Two, PLS does not necessitate the normal distribution of data, so it was found good for Likert scale data. Third, PLS-PM is useful to explain complex constructs (Henseler et al., 2016) like learning culture, which is the aggregate behavior of complex adaptive systems. Besides, the explanatory power of composite indicators, their horizontal relationship, and their impact on such complex constructs is possible using this method (Hair et al., 2017).

[*] The Composite variable is a linear combination of several variables (Hair et al., 2017).

[†] A type of indicator used in formative measurement models. Composite indicators form the construct (or composite) fully using linear combinations. Therefore, composite indicators do not need to be conceptually united (Hair et al., 2017).

Quantitative Results

Adopting change initiatives always require learning, behaving, and doing activities in a new way. Thus, how much do the universities establish that platform? What are the barriers of learning? How do staffs reflect on their culture from a learning point of view? Addressing these and similar questions were part of this investigation. Before moving to further statistical analysis, it was found important to ensure the validity of the construct.

Measurement Model (Learning Culture Dimensions)

Accordingly, all the correlation coefficients were statistically significant. Yang et al. (2004) noted that significantly correlated factors suggest the satisfied convergent validity of the hypothesized measures, ranging from 0.67 to 0.81. This indicates the nonexistence of extremely high correlation coefficients, which might result in the constraints of factor discrimination among sub-factors (Hair et al., 2017). In addition, Cronbach's coefficient alphas were reasonably acceptable, ranging from .63 to .81. As can be seen from the following table, the overall reliability estimates were satisfactory (Yang et al., 2004).

Table 2.
Descriptive, Correlation and Reliability Results of Learning Culture Dimensions

		M	SD	1	2	3	4	5	6	7
1.	Team Learning	2.78	.820	(.81)						
2.	System Connection	2.75	.741	.782**	(.81)					
3.	Continuous Learning	2.84	.766	.775**	.817**	(.80)				
4.	Embedded System	2.68	.728	.707**	.811**	.776**	(.77)			
5.	Empowerment	2.86	.754	.708**	.758**	.775**	.714**	(.71)		
6.	Strategic Leadership	2.75	.727	.695**	.812**	.737**	.774**	.715**	(.71)	
7.	Inquiry & Dialogue	2.64	.813	.721**	.767**	.733**	.737**	.672**	.685**	(.63)

Note. N =594
Correlation is significant at the 0.01 level (2-tailed). ** Reliability estimates are presented in the diagonal.

The descriptive statistics illustrate the extent to which the investigated universities exhibit the seven dimensions of a learning culture. The aggregated mean score of learning culture in universities was found (M =2.76, SD=0.675). This mean score shows the assessed universities exhibit the qualities of a learning culture despite differences. Among the reflected qualities the highest was empowerment (M=2.86, SD=0.75), while the lowest dimension was inquiry and dialogue (M =2.64, SD=0.81). As depicted in table 2, all the correlations were significant at the 0.01 level (2-tailed), providing empirical evidence of the strong relationship among each of the dimensions confirms the presence of an underlying construct of the learning culture despite the results are ranged only from low to medium. Therefore, PLS-PM analysis was made to ensure the usefulness of the measurement tool, as well as to identify which components are contributing the most, and which components are most important to enhance learning culture in universities.

The Outer or Measurement Model: It refers to the measurement model and specifies the relationships between the constructs and the associated indicators manifest variables (MVs). The assessment of the constructs followed a reflective way, where the indicators (manifest variables) are regarded to be reflections or manifestations of their latent variables. As a result, the direction of causality is from the construct to the indicator.

According to the three main indicators of unidimensionality, the Cronbach's alpha, the Dillon-Goldstein's rho, and the first and second eigenvalues of the covariance matrix it is possible to say the model is unidimensional.

Cronbach's alpha is a coefficient that is intended to evaluate how well a block of indicators measures their corresponding latent construct (Vinzi et al., 2010). This correlation coefficient requires a level greater than 0.7. Table 3 below shows that all the Cronbach's alpha results are greater than 0.7 except inquiry and dialogue (0.634).

The Dillon-Goldstein's rho also shows a block of manifest variables are considered unidimensional greater than 0.7, it is calculated based on the variance of the sum of variables in the block. 0.7. The third criteria use the first and second eigenvalues, which should be greater than one in the first and lower than one in the second. Hence, the outer model is well specified and that the latent variables are well measured by their manifest variables, their synthesis being effectively performed. Dillon-Goldstein's Rho is a Cronbach's alpha generalization. Similarly, a block of manifest variable is considered to be unidimensional when the Dillon-Goldstein's rho is greater than 0.7. This index measures the unidimensionality of latent variables through the correlation between the reflective latent construct and each manifest variable of the corresponding block, i.e., the loadings (Sanchez, 2013; Vinzi et al., 2010).

Table 3.
Unidimensionality Measures of a Learning Culture

Latent variable	Manifest V.	Cronbach's alpha	D.G. rho (PCA)	Condition number	1st Eigenvalue	2nd Eigenvalue
Team Learning	3	0.805	0.885	2.344	2.158	0.449
System Connection	5	0.808	0.868	2.722	2.855	0.750
Continuous Learning	4	0.800	0.870	2.627	2.503	0.692
Embedded System	4	0.770	0.853	2.199	2.370	0.616
Empowerment	3	0.716	0.841	2.062	1.917	0.632
Strategic Leadership	4	0.711	0.823	2.247	2.165	0.795
Inquiry & Dialogue	2	0.634	0.845	1.654	1.464	0.536

The formative construct's convergent validity can be examined by its correlation with an alternative measure of the construct, using reflective measures or a global single item (redundancy analysis). No extremely high correlation coefficients, which might result in the constraints of factor discrimination, were found among the sub-factors (Hair et al., 2017). All these indices are acceptable in each block/dimension, close to the conventional acceptability threshold of 0.7 for all blocks. Hence, the outer model is well specified and that the latent variables are well measured by their manifest variables, their synthesis being effectively performed.

The validation of the outer model is also explained by an average of the squared correlations between each manifest variable and the corresponding latent variable i.e., the

overall average communality (0.634). Both the mean communalities (AVE) of dimensions and learning culture are within the acceptable threshold, which is above 0.5. This supports the convergent validity of the construct measures (Henseler et al., 2016).

This on average indicates the construct explains more than half of the variance of its indicators. Moreover, a satisfying GoF is obtained both for the outer model (0.998) and for the inner model (0.70). The Goodness of Fit (GoF) is a global criterion that compromise between the quality of the measurement model and the quality of the structural model.

Hence, it is important to check the cross-loading, the cross-loading result also showed the items also indicated very good discriminant validity. Each item better explained the indicator they are supposed to measure than other constructs.

Therefore, the next step is the analysis of the loadings and the communalities. To estimate the parameter of the model, this research has used the path-weighting scheme. Loading greater than 0.7 and communalities greater 0.5 are generally considered acceptable. In both measurements (Table 4), all manifest variables satisfy the expectation. Communalities are indexes of local fit calculated on each manifest variable and the latent construct. This index is calculated with the purpose of checking the indicators of a block are well explained by its latent variable. Simply, they are squared loadings and they measure the part of the covariance between a latent variable and its indicator that is common to both (Sanchez, 2013).

Based on the results reported below it is possible to compare which manifest variable is contributing more compared to others. So, the highest contributing manifest variable is systems' connection (0.884) and the lowest is strategic leadership (0.813). Relatively, the indicators are almost in a similar range exhibiting constructs satisfactory levels of quality. Thus, we can proceed with the evaluation of the structural model.

Table 4.
Loading and Communalities of a Learning Culture Dimensions

Latent variable	Manifest variables	loadings	Communalities	Standard error	Critical ratio (CR)	Lower bound (95%)	Upper bound (95%)
Learning Culture	Team Learning	0.848	0.719	0.012	69.197	0.822	0.871
	System Connection	0.884	0.781	0.010	84.386	0.862	0.902
	Continuous Learning	0.853	0.727	0.012	72.967	0.829	0.874
	Embedded System	0.846	0.716	0.013	63.570	0.818	0.870
	Empowerment	0.830	0.689	0.013	62.345	0.803	0.855
	Strategic Leadership	0.813	0.662	0.016	49.720	0.779	0.844
	Inquiry & Dialogue	0.827	0.684	0.013	62.127	0.799	0.852

Therefore, once the construct measures are reliable and valid, the next step addresses the assessment of the structural model results. This involves examining the model's predictive capabilities and the relationships between the constructs. The key criteria for assessing the structural model in PLS-PM are the significance of the path coefficients, the level of the R^2 values, the f^2 effect size, and the predictive relevance Q^2.

The Structural Model/the Inner Mode (Among Learning Culture Dimensions)

The model's predictive accuracy is explained by R^2 and it was found (0.773) after bootstrapped, which means the model has high predictive accuracy. The general rule

indicates as it gets higher when the R^2 value approaches 1. The blocks R^2 were found: team learning (0.755), system connection (0.847), continuous learning (0.811), embedded systems (0.775), empowerment (0.740), strategic leadership (0.757), and inquiry and dialogue (0.730). R^2 values of 0.75, 0.50, or 0.25 for endogenous latent variables can, as a rule of thumb, be respectively described as substantial, moderate, or weak (Hair et al., 2017; Henseler et al., 2016). Therefore, substantial results were obtained.

When a PLS path model exhibits predictive relevance, it accurately predicts data not used in the model estimation. In PLS-PM the quality of each structural equation is measured by the cv-redundancy index (i.e., Q^2), this value was found 0.483. Commonly, Q^2 values larger than zero for a specific reflective endogenous latent variable indicate the path model's predictive relevance for a particular dependent construct. Reinartz et al. (2009) used the path model and path coefficient specifications as 0.15-low; medium-0.30, and 0.5-high. Based on this specification, all path coefficients are medium despite the coefficient of resource availability is slightly lower.

The results of PLS-PM consider the performance of each construct. In addition, composite indicator average values are considered. For a specific endogenous composite indicator, this matrix contrasts the structural model's total effects (the importance) and the average current values of the composite indicator (the performance). So, importance is the total effect on the studied latent variable on learning culture of universities, whereas performance is the current score of the latent variable. As a result, conclusions can be drawn on two dimensions (i.e., both importance and performance), which is particularly important to prioritize actions.

Table 5.
Learning Culture Importance-Performance Matrix (IPMA)

Latent variable	Importance	Performance
LV1 Team Learning	0.165	44.532
LV2 System Connection	0.160	43.581
LV3 Continuous Learning	0.165	46.040
LV4 Embedded System	0.139	42.258
LV5 Empowerment	0.166	46.392
LV6 Strategic Leadership	0.159	43.537
LV7 Inquiry & Dialogue	0.163	41.063

As presented in Table 5, according to the importance-performance matrix, the highest contributor to the current (performance) learning culture of universities was attributed to empowerment (46.392) followed by continuous learning (46.040), relatively the lowest contributors were embedded system (42.258) and strategic leadership (43.537). The contributions of other indicators were found team learning 14.99%, system connection (15.15%), continuous learning (12.5%), embedded system (14.1%), empowerment (14.09%), strategic leadership (14.54%) and inquiry & dialogue (14.54%). On the other hand, the most important indicators for model building according to the PLS-PM analysis were empowerment (0.166), continuous learning (0.165), and team learning (0.165), while the embedded system was found the least important (see the details from the coefficient path and IPMA results in Figure 1).

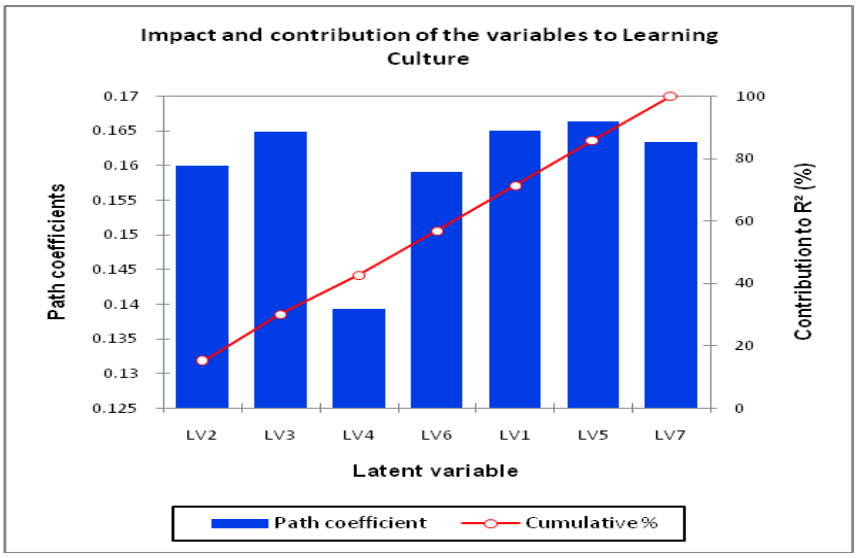
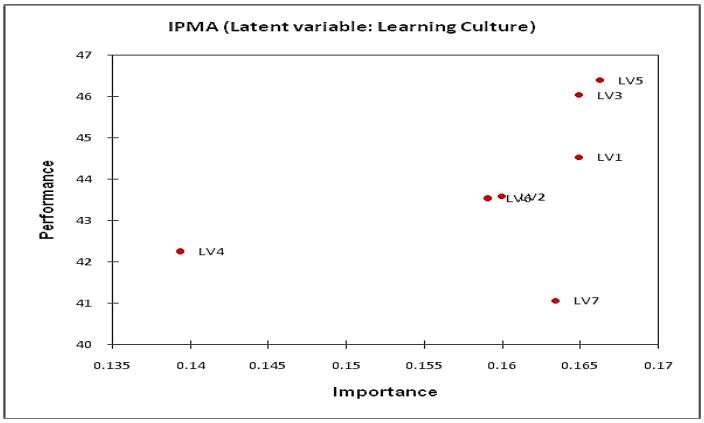


Figure 1. Learning Culture Path-Coefficient

The x-axis represents the importance, which is the total effect of each latent variable (indicator) on learning culture. The y-axis depicts the performance or the average scores of each latent variable (indicator). The PLS-PM output presented in the map shows the relative importance of constructs in explaining learning culture in the structural model. According to Hock et al., (2010) this decision matrix clarifies the area of action and decision making. Thus, conclusions can be made based on this performance matrix. Figure 2 presents the importance performance map analysis result.



Key:
LV1 Team Learning
LV2 System Connection
LV3 Continuous Learning
LV4 Embedded System
LV5 Empowerment
LV6 Strategic Leadership
LV7 Inquiry & Dialogue

Figure 2. Importance Performance Map Analysis

Based on this output, the performance of universities in the corresponding latent variables are different. The overall mean result shows a lot has to be done to improve the learning culture of universities, which was found slightly lower than medium, generally unsatisfactory. From this matrix, indicators in the right lower part of the diagram require critical action because the performance is lower even if they are very critical for building a learning culture in universities. However, this does not mean the indicators in the upper right part are being implemented satisfactorily, compared to other indicators these are relatively better reflected. The most important (0.166) and better reflected (46.39) is

empowerment. The second important is continuous learning (0.165) and reflected second (46.040). Equally important in the second position is team learning (0.165) but the third in performance (44.53). On the other hand, the least performed (41.063) and the fourth important (0.163) is inquiry and dialogue. Based on this result, universities have to take action particularly on the most important indicators. On one hand, this action might improve the learning culture of universities; on the other hand, universities might develop their capacity for institutional changes.

Qualitative Results

Asking the learning culture of universities might be a strange question for who thinks universities are sources of knowledge and a place where teaching-learning is taking place. However, the underlying question is to understand whether staff are interacting and creating exposures to advance their knowledge and skills or not. The practice of continuous learning, inquiry and dialogue, making lessons systemic, opportunities to learn and develop were centers of attention with the spectacle of a learning culture.

According to the quantitative result empowerment is relatively the highest in performance. This means university staffs and leaders are empowered to make decisions; however, one respondent said, "Middle and lower-level leaders are theoretically empowered, but still the top-level leaders are busy of lower-level decisions, routine activities and serving guests than working on strategic issues of the university that could have been done by lower line leaders." This probably shows limitations on complete delegation of authority. Conversely, according to the interview, annual research conferences, weekly research presentations, expert or guest speakers, experience sharing visits etc. are among the visible opportunities of inquiry and dialogue in universities despite the implementation varies among universities and academic units. To make the issue clear, the major points of the interview results are summarized and discussed as follows.

Thus, the interview results are presented next in five important themes. Let us start from the general view on the learning culture of universities. One interviewee criticized the learning culture of universities as:

> "… I never expected implementing change is as such difficult in universities. I have been working in other sectors, but I found universities very resistant to new ideas and change initiatives. My expectation was different before I joined the university as a teacher. I thought new ideas, debates and challenging assumptions are created here and shared with other sectors. Can you imagine academic staffs underestimate others' ideas and experiences in a personalized manner?" (R_{17})

First, let us see the reflections related to lesson accusation and sharing in universities. From the perspective of a learning culture, universities are expected to widen learning exposures and modalities in which they share ideas, expertise, skills and even perceptions. So, they might use team learning, inquire and dialogue, etc. to facilitate learning in universities. One interviewee said, "In our university, different seminars, workshops, and research conferences are held. These are good opportunities to learn, but most of us do not participate with the intention of learning; however, in some departments it is a requirement." (R_{27}) Another interviewee adds that,

> "It is difficult to attend presentations outside own department, mostly technical and clear for specific group of individuals only, the attempt to present in a common language for all with common agenda is limited this hinders the interest and participation of other staffs." (R_{33})

However, all in common agreed that the learning modalities in universities have to be strengthened, the researcher feels such discussion and learning opportunities could be excellent opportunities to discuss on change initiatives, create a collaborative solution to problems or to improve ownership. The second is researching and learning as institutional "value." One interviewee reflected that,

> "…even though universities are naturally learning institutions, administrative staffs are mostly excluded from learning sessions, and they are also not willing to attend. Academic staffs also in principle are expected to do research and publish, they don't tend to conform to the expectation. I don't see learning and sharing is appreciated and held as institutional value." (R_{34})

According to participants, staffs conduct research but simply for promotion in academic carrier, for obtaining research grants, or because it is a requirement of universities academic staffs to publish one article every year. They said, only a few researches are conducted due to curiosity or for learning. Even these researches are mostly shelved or unilaterally sent to a publisher in an attempt to publish in a journal. Very rarely research outputs are used for changing the institutional practices. Not only research outputs, but it is also hard to say experiences, knowledge, and beliefs or opinions are enthusiastically shared among staffs.

In addition, the culture of working together and sharing experiences as well as lessons vertically seems a problem in universities. This gap is identified by most interviewees as a barrier to exchange experiences and lessons vertically. In this way, leaders cannot be good models, learn from and share experiences with other staffs, understand emotions, and work with others. One interviewee said, "Top leaders come to such sessions only to give opening speech and then they left the room for other urgent issues." (R_{26})

According to the interview result, leaders usually defend, get panicked or annoyed when negative comments are forwarded on their behavior and actions. In public meetings or individually, leaders tend to disregard other comments or suggestions. Respondents said as they prefer defending their decision than listening to comments of others. On one hand, it shows their unwillingness to learn from others, and on the other hand, it shows their emotional development. It also shows the gaps to learn from failures. This could probably be an impediment for successful implementation of change initiatives.

The third point raised was related to reflection and documentation. As per respondents' opinion, almost all universities fail to document properly their lessons, challenges, successes and case stories. One respondent said,

> "I was trying to research on community problems and universities contribution. However, I could not find proper documents that explains the measurable impacts universities have made to solve community challenges. I have tried to collect data from the intervened areas but I could not compare the changes before and after universities intervention. So, I dropped it." (R_6)

Related with this, some respondents have also reflected, documents are not easily available and they have doubts whether universities record, examine, and reflect on their experience. The most common documents are office letters, student grades, newsletters, and research papers, not best experiences and failures. From the interview, it seems lesson documentation in universities is a critical challenge. Respondents reflected that if there are particular lesson sharing units in universities or accessible systems that transparently share experiences, challenges, novice ideas, and successes, probably research ideas, collaborative solutions and lessons could be easily shared.

The fourth issue related to learning culture is staffs' behavior of continuous insatiable learning (learn…learn…learn), which is a kind of behavior for being a continuous learner. One interviewee (*R10*) said, "Most staffs in new universities are young, energetic and obedient. To some extent, young staffs are open to learn new issues." However, according to research participants, academic staffs in older universities are reluctant to learn from or share with others; they get easily satisfied and feel as they know enough. In most occasions they want to be heard, they want to explain about issues than listening and learning from others. One respondent said,

> "I can say people have poor listening habits. In presentations, most participants are restless; you experience frequent movements, ins and outs. Most do not give attention to what is being presented, but at the end, they raise their hand to ask or clarify what they know. When they add to your point and clarify, you commonly listen, sometimes I feel people come only to speak." (R_{11})

It seems staffs have limitation of a critical listening skill. This quality is about listening others with no interruptions, which in turn is useful for speakers not to lose ideas and listeners to note comments. In addition, it helps to see through the eyes of the speaker. The other respondent commented that "I feel frightened to present my research papers; the most frequent questions I suffer are who said so? Which well-known scholar said? Even in universal truths they expect me to put a reference..." (R_2)

The last point is measuring progress because of learning. The transferability of learning particularly those associated with changes are determined by involvement and positive attitude. One respondent (R9) commented, "…we attend trainings just to listen, learn and implement. We can ask for clarification, but we cannot challenge the idea especially government led top-down change initiatives." Congruent to this opinion, the researcher reviewed documents of Kaizen implementation (Japanese innovation) as a change initiative from institutional transformation and quality assurance office. The information about Kaizen was conveyed via training; first, the manual was prepared then a three days training was given on global issues related to Kaizen, the purpose of Kaizen, the principles, characteristics, and major tasks in Kaizen. The document says the participants expressed their interest to implement Kaizen and requested the support and commitment of top management during implementation. To ensure transferability of lessons, a learning culture requires measuring performances, achievements, changes made due to learning. Measuring is important to identify what is left or needs to be learned and to recognize returns of investment on learning. Almost all participants noted that let alone measuring the practical changes made because of learning, simple experience sharing visits are not commonly reported. It might

be helpful to establish a system that recognizes and appreciate lesson sharing based on evidence.

Discussion and Conclusion

According to Haftu (2018), leaders consider organizational culture as a decisive factor for organizational success, however, the university culture has been considered as a barrier to the implementation of management innovation (BPR). So, investigating whether the culture of universities reflects a learning culture or not helped to understand the way staff are interacting and creating exposure to advance their knowledge and skills. The practices of continuous learning, dialogue, and inquiry, making lessons systemic, opportunities to learn and develop were the study's centers of attention. This investigation wants to show, as changes always require learning, behaving and doing activities in a new way. Having a learning culture is expected to create an excellent platform to carry out successful changes. According to Bates and Khasawneh (2005), organizational learning culture emphasizes the open exchange of information and ideas in ways that facilitate learning and its creative application. In effect, learning organization culture can be seen as a critical facilitator of creativity and innovation because it supports inquiry, risk-taking, and experimentation.

The aggregated mean score of learning culture in universities was found (M=2.76, SD=0.76), which is slightly lower than moderate. Among the reflected qualities the highest was empowerment (M=2.86, SD=0.75), while the lowest dimension was inquiry and dialogue (M=2.64, SD=0.81). Though empowerment is relatively better reflected in universities than the other dimensions, still it is not sufficient. Haftu (2018) identified the reflection of middle-level leaders as there is disconnection and a clear rift of "we" and "they", most importantly their relationship is characterized by "imposition", "command", as well as "dos and don'ts". Respondents pointed that the role and involvement of middle level leaders are negligible this raises a question of empowerment, the busyness and crowd of clients at presidents and vice president's office might be a signal for problems related to empowerment.

Based on the perceived reflection, the learning culture in universities are ranked from the highest Empowerment (2.86, SD=0.754), Continuous Learning (2.84, SD=0.766), Team Learning (2.78, SD=0.820), System Connection (2.75, SD=0.741), Strategic Leadership (2.75, SD=0.727), Embedded System (2.68, SD=0.728), to the lowest Inquiry & Dialogue (2.64, SD=0.813). Researchers cite the importance of creating an environment of openness in which staff feels comfortable asking questions, raising problematic issues, and reflecting on mistakes (Senge, 1990).

The interview results revealed that lesson accusation and sharing have to be strengthened. Despite not satisfactory, the annual research conferences, weekly research presentations, invited expert guests, experience-sharing visits are among the visible opportunities for learning in universities. Not only research outputs, experiences, but knowledge, and beliefs or opinions are not enthusiastically shared among staff. Nevertheless, researchers cite the importance of creating an environment of openness in which staff feel comfortable asking questions, raising problematic issues, and reflecting on mistakes (Senge, 1990). Thus, the participation rate is recommended to increase with the sole purpose of learning and development. Yet again, the research and conference presentations are mostly technical and clear for only specific groups, the attempt to present

in a common language for all. If such learning modalities are strengthened, potentially might create opportunities for discussion and communication about changes as well as a collaborative solution or a means to create ownership.

Appreciating the need for continuous learning, learning has to be one of the institutional values than for mere promotion & benefits. It is argued that without a fully engaged and enthused academic community, building academic excellence, a strong culture of scholarship and professional commitment may remain elusive (Teferra, 2014). Besides, to make learning part of the system the analysis indicated that every lesson, experience, challenges, risks and opportunities as well as research outputs should be documented well in an accessible institutional repository and has to be available for everyone. Not only documentation, but it is important to measure the progress/possible changes as a result of learning. Moreover, identifying learning gaps should also be part of learning and development.

How far is the Proposed learning culture model useful?

The quality of the measurement model and the quality of the structural model were found satisfactory with the outer model and inner model GoF 0.998 and 0.70 respectively. Besides, the model's predictive accuracy (R2) was found 0.773. Similarly, the Q2 was 0.483. All these results indicate the model's relevance to assessing the learning culture of universities. Therefore, organizational learning culture becomes important during change and innovation, because it enables an organization to anticipate and adapt to the dynamics of a changing environment (Bates & Khasawneh, 2005). From this understanding, we may say learning culture enhances the adaptive capacity of universities which in turn determines success of institutional changes.

How much is the contribution of indicators for the learning culture model?

The PLS-PM model helped to make further analysis on specific indicators contribution to build a learning culture. In their loadings, the indicators are almost in a similar range exhibiting constructs satisfactory levels of quality. Relatively, the highest contributing factor is a systems' connection (0.884) and the lowest is strategic leadership (0.813).

Based on the importance-performance matrix, the highest contributor for the current learning culture of universities was empowerment (46.392) followed by continuous learning (46.040), relatively the lowest contributors were embedded system (42.258) and strategic leadership (43.537). On the other hand, according to their predictive importance, the PLS-PM analysis indicated the most important ones are empowerment (0.166), continuous learning (0.165) and team learning (0.165), while embedded system was found the least important.

Consequently, the most important contributor of a learning culture and currently better reflected in the studied universities is empowerment. The second important is continuous learning (0.65) and reflected second (46.040). Equally important in the second position is team learning (0.65) but the third in performance (44.53). On the other hand, the least performed (41.063) and the fourth important (0.163) is inquiry and dialogue. According to the current result, all indicators are necessary but below the expectation level in performance; however, critical intervention is required to enhance inquiry and dialogue

according to the IPMA map analysis. This analysis revealed that inquiry and dialogue are the major contributors to a learning culture in universities.

Reflections and Recommendations

Change is multi-faceted; various reasons are mentioned for the failure of change initiatives. Liu (2009) noted that organizations need to learn to change themselves. These qualities enable organizations to anticipate and adapt to the dynamics of the changing environment (Bates & Khasawneh, 2005). From this, we can understand that learning is a great contributor to successful change implementation. However, the learning culture of public higher education institutions is inadequate, particularly the studied universities culture does not sufficiently reflect the important qualities of a learning culture. Components like empowerment, inquire and dialogue, continuous learning, team learning and other learning culture characteristics are not reflected in the studied universities to the required level. Recently, many scholars are encouraging professional learning communities (PLCs), which is a group of people working together interdependently to achieve a common goal for which members are held mutually accountable. Teachers collaborate on all aspects of planning and preparation, curriculum and instruction, and assessment.

Thus, to build an open, supportive, and change adaptive organizational culture, staff's adaptability, shared decision-making and the practice of innovation and creativity has to be strengthened in universities (Matebe & Girma, 2020). Ensuring the clarity of goals among staff and leaders at different positions, creating collaborative spirit and a shared vision, significantly helps to minimize resistance, and improve adaptive culture. So, clear communication and mutual understanding among leaders, academic and support staff guarantee a shared system of meaning. In addition, recognizing, rewarding, supporting and promoting innovation, and creativity, may ignite motivation among staff. This also in turn makes employees willing and ready to adopt changes or innovative ideas and practices.

Moreover, universities have to widen opportunities for learning modalities for both staffs and leaders. Strengthening the formal education of staff and consecutive learning opportunities through inquiry and dialogue and other continuous learning opportunities has to be strengthened. The annual research conferences, weekly research presentations, invited expert guests, experience-sharing visits are among the appreciated learning opportunities that should be strengthened in universities. Leaders have to set mechanisms to learn from staffs and get different feedbacks about their actions and decisions. On the other hand, staffs have to be enthusiastic about learning and change than for simple promotion and status. Concurrently, the universities' system has to appreciate, recognize, and reward learning and change. In sum, to ensure successful changes in universities, there should be a good practice of learning culture, which in turn helps to ensure efficiency and effectiveness of institutions.

Limitations and Future Study

The basic limitation of this study is the problem of sufficient supporting literature from similar local findings, conducted to see the practical linkages and other scholars' perception of the approach. Besides, this research might probably have a limited transferability to other

organizations because the sample of this study was focused on a university setting. More quantitative and qualitative data on the issue might enrich the research's finding and it would have been best if students were included in the data collection. Thus, future studies should attempt to collect more precise, longitudinal data to test the approach in-depth. Finally, the researchers feel that this research should be further strengthened to answer how empirically learning culture can improve the change implementation process in different organizations. Even the research could be extended to address the performance improvements, improved service, customer satisfaction and other issues following successful changes. However, this study might provide all-rounded insight into the context of learning culture and change implementation endeavors in HEIs.

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