

# Conditional Process Model of the Learning Organization in the Dubai Healthcare Sector



Muhammad Azeem, Leonardo Jose Mataruna-Dos-Santos, Edyta Skibinska

**Abstract:** UAE healthcare sector has been discussed by many researchers and organizations in the past, but very limited literature is available explaining the factors which can provide control in the hands of healthcare sector leadership to achieve sustainable competitive advantage. The unique cultural environment in UAE healthcare sector requires the control structure based on certain indigenous conditions prevailing in local environment. Three key cultural factors are borrowed from the past literature and model was built to examine the mediating role of the culture of creativity and innovation between the culture of collective leadership and the culture of learning organization. In addition to this, how the leadership commitment moderates the relationship between the culture of collective leadership and the culture of creativity and innovation. The conditional process model, explaining the moderated mediation among these cultural variables, provides knowledge about key relationships among these cultural factors and give better control in the hands of the leadership of the healthcare organizations to achieve sustainable growth and quality of services in the highly competitive environment. The key cultural variables and their interrelationship were borrowed from the author's previous researches and remodeled them to examine the hypothesized framework on the data collected from the sample of 320 employees working in the five healthcare organizations in Dubai. The "Healthcare Sector Learning Organization Scale" was developed and analyzed by the explorative factor analysis to factor out four variables. The output of the conditional process modeling proposed by Andrew F. Hayes has verified the presence of the culture of creativity and innovation as the mediator in the relationship between the culture of collective leadership and the culture of learning organization. Moreover, the moderating role of the leadership commitment on the relationship between the culture of collective leadership and the culture of creativity and innovation was also significantly verified. Research findings show that organizations in the healthcare sector need regular emphasis on research and development practices to help employees in building and managing new knowledge in order to achieve competitive advantage. In this case, the leadership has a key role to play enabling the organization to transform into the culture of learning organizations by implementing knowledge management processes and support for the experimentation in the day-to-day operations of the organization.

**Index Terms:** Learning Organization, Collective Leadership, Creativity and innovation, Leadership Commitment, Health Care Organizations.

## I. INTRODUCTION

The UAE where proportion of expatriate population is more than 80%, has distinct diversity driven social and economic culture. The contribution of expat population in the economy is the representation of at least 180 nationalities. This is a ground reality which shapes up the organizational culture in the country. Healthcare sector has also influenced by such demographic composition. The 80% of the healthcare staff is expatriate which is the reflection of the national level population proportion [1]. One of the major challenges for the UAE. is recruiting and educating quality medical personnel and to become a regional medical tourism hub. Based on report and figures released by the Dubai Health Authority (DHA), "Dubai has one of the highest physician-to-population ratios in the world, with 2.9 doctors for every 1,000 residents. Nevertheless, according to a March 2018 report by investment bank Alpen Capital, Dubai will require an additional 8,300 physicians and 8,800 nurses by 2025" [55]. According to reference[1], the healthcare sector in UAE is the manifestation of hybrid cultural model, contains two competing cultural dimensions such as clan/adhocracy vs. hierarchy/market. The richness of resources also brings fascination and complexity in the environment. Based on the author's opinion applying transformations in the healthcare organization cannot be accomplished through structural and policy changes alone, decision makers should considerate all factors that define culture to achieve sustainable growth of healthcare organization. The current study is looking towards healthcare sector organizational culture from the different perspective. The examination of such cultural characteristics which can be used to factor-out key cultural dimensions explaining the structure which can guide organizations to achieve sustainable competitive advantage. The study has examined the importance of the culture of learning organization influenced by the preceding cultural dimensions such as culture of collective leadership and the culture of creativity and innovation, and how the healthcare sector leadership defines the strength and direction of the influence of these cultures. Like many other sectors, the effectiveness of the healthcare organizations is also determined by such cultural conditions which derives quality performance of employees. Three cultural aspects or layers are considered very important.

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They are culture of learning organization, culture of creativity and innovation, and the culture of collective leadership [2]-[6]. Among three, the culture of learning organization is the top layer build upon the other two layers. The lowest in the hierarchy is the culture of collective leadership, which converges to the culture of creativity and innovation [2]. Successful institutions are learning organizations, keeping up to date with their knowledge and effective practices [7].

They have a capability to create its future by keeping focus towards the system thinking [8],[9],[10] which provides global perspective about institution's environment enabling and developing resilience by increasing their capacity to successfully meet current and future challenges [11]. Learning organization gains competitive advantage by its innovative capabilities [2],[10],[12], which are based on the practices encouraging idea-generation and creative thinking [13],[14],[15]. When leaders feel responsibility and develop the culture in the organization by continuously expanding the employees' capacity to learn, understand complexity, jointly setting up the vision and extend support to employees how to align individual goals with the organizational challenges, they in fact are building the culture of collective or shared leadership [3]. Collective leadership is a strategically shared phenomenon [16], which is collective reciprocal activity distributed among the members of a team [17]. Individualism among employee is not considered an effective way to deal with organizational challenges unless the individual efforts are taken up in a collaborative manner [3]. Shared decision making, creative approach in the work, and aspire to learn to build the capacity for meeting current and future seen and unseen challenges are key features of the learning organizations.

### II. CULTURE OF LEARNING ORGANIZATION

There is a difference between the terms Organizational Learning (OL) and Learning Organization (LO). The OL is the acquisition of knowledge and value which occurs when members of the organization act as learning agents, responding to internal and external changes [18],[19]. Organizations learn when people working in such organizations are learning, and it allows its members to see the whole together by putting efforts to enhance their capacity and capability to generate desired outcomes [10],[20],[21]. On the other hand, the LO is a form of organization which is referred to the professional learning community describing institution [22],[23]. It is a community with shared leadership, collective creativity, shared vision, and shared personal practices [24]. It describes the structural characteristics of an organization that has 'ability to learn' [25]. Past literature in the organizational culture has mentioned number of visible practices in the organization which are considered the key indicators of the learning organization. Reference[10] has given five principles of creating a learning organization. It includes mental models, personal mastery, system thinking, shared vision, and team learning. Senge's model emphasizes on the system thinking among members of the organization to build a learning organization. Employees working in the such organizations are found involved in the practices of

knowledge acquisition, sharing and application. According to [23], the culture of LO cannot be developed unless the acquisition, dissemination, sharing and application of the right information is not assured in the organization. It is right supportive learning environment in which employees have no fear of sharing information or knowledge, and there exist appreciation of differences, openness to new ideas, and time for reflection [26]. Transfer of knowledge is taking place among employees from one corner to the other. Knowledge management process is considered permanent feature in such organizations. It is a deliberate effort of building organizational capabilities of knowledge acquisition, knowledge application, and knowledge sharing [27],[28],[29],[30],[21],[31],[32],[33]. Learning organization are involved in the knowledge management process in cyclic form; from tacit to explicit and then back to the tacit knowledge [34]. Another important feature of the learning organization is that employees are habitually taking the scientific approach in their work. They know the importance of data and understand the collection of evidence to support their decision making [35]. Moreover, the organization also provides expert advisory facility to the employees in the form of database, learning management systems, or a team of specialists extending such support. The one of the building blocks in the [26] model of learning organization is called concrete learning. It explains the presence of a scientific approach in problem-solving through information acquisition, analysis, training and information transfer among employees. Employees are encouraged to reach the root cause of the problem using a scientific approach [36]. Their arguments are based on the real hard evidence, and not mere subjective judgment [37]. The key indicators explaining the culture of learning organization include practices among employees involved in the knowledge acquisition, knowledge sharing, knowledge application, taking scientific approach in decision making, learning use of data in scientific enquiry, and extending or seeking expert advice during jobs. The culture of learning organization par excellence, and it is borne after the culture of creativity and innovation reaches the maturity [2].

### III. CULTURE OF CREATIVITY AND INNOVATION

The sustainable growth of any business depends on the creative capabilities of the employees, as they are the assets which create a competitive advantage [38],[14],[39]. These human capabilities require certain ground conditions to transform creative abilities into the innovative outcome. The ground conditions mean the workplace environment that encourages idea-generation and creative thinking among employees [2],[40],[14],[15]. Creativity is the production of novel and useful ideas, and when such ideas are implemented successfully, it becomes the innovation. The organization cultural is the external factor which mobilizes the creative outcome [39], by experimentation and sharing of ideas with others [29],[15].

The culture of creativity and innovation in the organization explains how far set of internal organizational conditions and management practices can provoke creativity and enabling employees to adopt creative and innovative ways in their jobs for improved performance and competitiveness [2]. Past researches have provided number of cultural conditions which can be used as the indicators of the culture of creativity and innovation in the organization. The popular KEYS model [15] provides a framework to assess the workplace creativity. It assumes that innovation in the work begins when creative ideas are borne, and the successful implementation of creative ideas into the practice. There are three components of creative work in the KEYS model: creative thinking, motivation, and expertise. The component of the creative thinking is an enabler which enable employees to face challenging situation in the work. Whether it is the challenge of making high quality products, or to meet certain performance specifications, the challenge prevails and controls the thinking process of the employees. If the work environment has factors which motivates employees to deal with the challenge, and if they are encouraged to experiment, seek or extend the expert advice, and learn new skills, the innovation will take place. According to this model, the conditions prevailing in the organization supporting creativity include supervisory and workgroup support, autonomy or freedom, availability of resources, and work pressures like challenging work or workload. The conditions unfavorable to creativity include cultural factors like politics among workers, and unrealistic work pressure. Reference[41], in his book 'Wisdom, Intelligence, and Creativity Synthesized' mentioned the strategies to foster creative workplace practices. For example, keep challenges in jobs, risk-taking, freedom to problem solving, right use of knowledge, enough time for creativity, guidance for creativity, encouragement for creativity, allow to do mistakes, and encourage creative collaboration. Reference[38] gave the framework of innovation. The fundamental assumption of this model was that innovation is not a one time or a random act in any organization, rather it should be considered as a permanent feature which measures the innovative practices and processes as habits of employees and leadership. This model describes input, process, and output in three innovative contexts. First is the resource view, which addresses the allocation of resources to generate a return on investment by deploying strategic innovative processes. Capability view assesses the cultural conditions allowing innovative practices. The conducive culture acts as an input and it accommodates processes such as research and experimentation for producing unique products. The leadership view assesses the degree to which organizational leadership extends support for innovation. Reference[42], in his case study of the Fidelity Investments, has emphasized that for the success of innovation, there should be bold and risk-taking efforts in the presence of stringent compliance requirements. Fidelity's Innovation Framework is based on four layers which develop the culture of innovation in the organization. These layers include; business layer, tools layer, human layer, and cultural layer. The business layer is the first layer which carries strategy and resources for innovation, where resources include both time and funding. Business layer will provide support to the tools layer which explains the

management processes. The human layer includes right people, who are motivated and appropriately empowered to contribute. The final layer of culture represents permanent nature of practices which are hard to be influenced directly. Reference[43] has grouped the visible practices of the organizations popular for the innovative practices into three sets: organization, culture, and processes. The organization covers practices including the creation of impact from resources for innovation, open collaboration among employees for innovation and idea generation, establishing dedicated innovation teams. Culture includes the placement of innovation at the core of the organization, building a climate of innovation by making innovation a philosophy, and prioritize agility as a critical capability. Processes include creating idea generation platforms, idea evaluation processes, securing an innovation funding stream, and use quantitative metrics to evaluate innovation. The outperforming innovators generate new ideas from a wide range of sources, they fund innovation and measure innovation outcomes. There are few other reliable instruments assessing the work environment for creativity, for example, the Organizational Assessment Instrument [44], Work Environment Scale [45], Sport of Innovation Scale [46], and Creative Climate Questionnaire [47]. The key indicators explaining the culture of creativity and innovation are such practices among employees which are the manifestation of the presence of outcome or performance level challenges in the jobs, the motivation to take-risk in the work, freedom in planning and the way work is done, and the availability of enough resources to apply creative ideas into the practice. The culture of creativity and innovation is initiated when the employees find a real challenge in their work. The level and scope of challenge is derived from the culture of the collective leadership which is the pre-condition of the culture of creativity and innovation [3].

#### IV. CULTURE OF COLLECTIVE LEADERSHIP

The concept of collective leadership refers to the shared leadership in the organization [3],[16]. Collective leadership is the involvement of employees in the decision-making [9], and the culture with collective leadership promotes team building, communication and collaboration among employees. When the culture of collective leadership is prevailing in the organization the employees working at different levels are trained as the leaders. This process of leadership development will result into the shared vision among employees, collective and individual sense of ownership, motivation to take initiatives for problem solving and experimentation. Past researches show the cultural conditions which can be used as the indicators of the culture of collective leadership in the organization. Reference[16] has mentioned that it is the relationship between "habits" and "habitat". Highly effective people creates highly effective culture and highly ineffective people creates highly ineffective cultures. Many researchers agree that the involvement of employees in the decision making increase the shared vision in the organization [3],[9],[16].

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Shared vision means that all organs of the organization are clear about the overall goal of the organization and as a result they can relate their own work goals with the organizational objectives. Reference[9] has emphasized that the organizations interested to develop shared vision among employees must have clear set of guiding statements which are aligned with the organizational policies and practices.

Guiding statements means the statements of vision, mission and overall objectives. Alignment of policies and processes means that they are mapped the organizational vision, mission, and objectives with the missions and goals at the departmental, team, and at the individual level. The shared vision is considered a leading step in the development of collective leadership [3]. This will result into the staff commitment to achieve organizational goals. The higher level of job commitment at the staff level will also result into the low turnover rate and absenteeism, which will support the higher performance and productivity. Shared vision and higher work commitment co-exist with the collaborative practices in the organizational culture [48]. Collaboration encourages information sharing and it has mediating role between the collective leadership and organizational performance. Similarly, the trust and consensus emerges among employees which is a key outcome of the culture of collective leadership [9].

The key indicators explaining the culture of collective leadership include: clarity of organizational objective among employees, clarity of goals at the individual level, involvement of employees in the decision-making process, sense of ownership among employees in the organization level achievements, consensus among employees about actions organization is taking to achieve overall goals, and trust among employees prevails.

## V. LEADERSHIP COMMITMENT

Leadership plays important role in shaping up the organizational culture. This shows how far leadership is involved with employees encouraging them for generating creative ideas in implement them in their work [42]. This role moderates in relationship between the culture of collective leadership and the culture of creativity and innovation [2]. Employees are encouraged when their mistakes are considered as another source of learning [41]. Leaders should identify performance gap among employees, give them positive feedback [49], helping them in setting learning goals by identifying learning needs, in order to minimize those gaps, and create opportunities to learn. Organizational learning is strongly influenced by the behavior of leaders [26],[21]. Leadership reinforcement explains the role of leaders as an influencing behavior encouraging dialogue and debate, knowledge transfer and reflection. The key indicators measuring the leadership role in the organizational culture include: leaders are seen as coaches or mentors extending advices and support to other employees, providing feedback, providing opportunities for learning, encourage employees towards learning new skills, application of new learning in work through experimentation, rewarding for the creative work, and encourage for knowledge sharing.

## VI. THEORETICAL FRAMEWORK

The visible practices explored in the literature review can be divided into four groups: practices characterized by the culture of collective leadership, practices characterized by the culture of creativity and innovation, practices characterized by the culture of learning organization, and the practices explaining the leadership role encouraging creativity and innovation. The definitions of the four cultural variables with corresponding visible practices are shown in the table 1. The proposed model shown in figure 1 is explaining the hypothesized construct. The rectangles are representing composite manifest variables. The proposed model assumes that the culture of the learning organization as an outcome variable which is the ultimate objective in this research. The other two variables; CL and CR are two explanatory variables in the model, whereas the CR is mediating between the CL and LO. The LC is a moderator in the relationship between CL and CR.

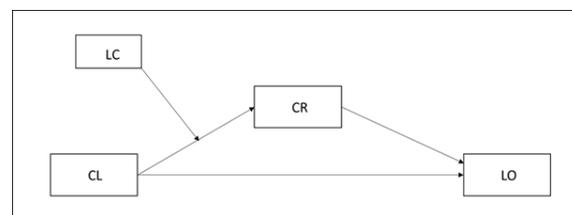


Figure-1: Conceptual Model

In the table 1, column 1 shows the composite manifest variables. The column 2 shows the operational definition of the indicators measuring the composite manifest variables.

Table-1: Operational definitions of variables and indicators

| Construct   | Operational definition   |
|---|--|
| LO<br>(Culture of learning organization in the organization ) | 1. Degree to which employees feel that they are involved in acquisition of the knowledge critical to their jobs.<br>2. Degree to which employees feel that they are involved in applying the acquired knowledge in their jobs.<br>3. Degree to which employees feel that they are involved in knowledge sharing practices during their jobs.<br>4. Degree to which employees feel that they are taking scientific approach in their work.<br>5. Degree to which employees feel that they are involved in learning about data (e.g. data collection, analysis, and reporting).<br>6. Degree to which employees feel that they can avail expert advisory facility in their jobs. |

|  |   |
|--|---|
| <p>CR<br/>(Culture of creativity and innovation in the organization )</p>  | <ol style="list-style-type: none"> <li>1. Degree to which employees feel that they have challenge in their jobs (e.g. challenge of outcome, challenge of performance).</li> <li>2. Degree to which employees feel that they are taking risks in their jobs.</li> <li>3. Degree to which employees feel that they enjoy freedom in their jobs (e.g. freedom in planning, and the way the work is done).</li> <li>4. Degree to which employees feel that enough resources are provided in their jobs to complete their tasks (e.g. furniture, tools etc.).</li> </ol>   |
| <p>CL<br/>(Culture of collective leadership in the organization )</p>  | <ol style="list-style-type: none"> <li>1. Degree to which employees feel that they are adhered to the organization's overall objectives / goals. (e.g. Vision, Mission, Values, Objectives).</li> <li>2. Degree to which employees feel that they are clear about the objectives and goals in their own jobs/work.</li> <li>3. Degree to which employees feel that they are involved in the decision-making process.</li> <li>4. Degree to which employees feel the ownership in the organizational achievements.</li> <li>5. Degree to which employees feel that consensus prevails among themselves for actions organization is taking to achieve overall goals.</li> <li>6. Degree to which employees feel that trust prevails among themselves while sharing the information.</li> <li>7. Degree to which employees feel that an effective internal communication system takes place in the organization.</li> </ol>  |
|  | <ol style="list-style-type: none"> <li>8. Degree to which employees feel that teamwork prevails at various levels in the organization to execute challenging tasks.</li> </ol>  |
| <p>LC<br/>(Leadership commitment in the organization to encourage creativity, knowledge acquisition, sharing, and application)</p> | <ol style="list-style-type: none"> <li>1. Degree to which employees feel that their leaders acts as coach/counsellor/or mentor.</li> <li>2. Degree to which employees feel that their managers/supervisors extend support for the challenging tasks in their jobs.</li> <li>3. Degree to which employees feel that their managers/supervisors provide valid and reliable feedback of their performance.</li> <li>4. Degree to which employees feel that their leaders encourage them towards learning.</li> <li>5. Degree to which employees feel that their leaders provide opportunities to learn during their jobs.</li> <li>6. Degree to which employees feel that they are rewarded for the creative and innovative works and ideas.</li> <li>7. Degree to which employees feel that they are encouraged to observe other employees during their jobs.</li> <li>8. Degree to which employees feel that their leaders support to seek and extend peer support in their jobs.</li> <li>9. Degree to which employees feel that they are rewarded for the creative and innovative works and ideas.</li> <li>10. Degree to which employees feel that their leaders encourage to apply their new learning in their jobs.</li> <li>11. Degree to which employees feel that their leaders provide resources to store best practices in organization's central database.</li> <li>12. Degree to which employees feel that they have access to the organization's central database to take advantage form the</li> </ol> |

|  |                                |
|--|--------------------------------|
|  | organization's best practices. |
|--|--------------------------------|

**VII. RESEARCH OBJECTIVE**

The goal in this study is to understand the mechanism between three cultural conditions, and how the culture of learning organization is derived through the culture of collective leadership and culture of creativity and innovation.

**VIII. RESEARCH QUESTION**

The investigation on the following three research questions will help in achieving the research objective:

- 1) Does LO depend on CL and CR?
- 2) Does CR mediate between CL and LO?
- 3) Does LC moderates between CL and CR?
- 4) Does significant moderated mediation exist between CL, CR and LO?

**IX. RESEARCH QUESTION**

The hypotheses in this model are:

- H1: CR mediates between CL and LO and there is an indirect relationship between CL and LO through CR*  
*H2: LC moderates the relationship between CL and CR*  
*H3: Model conforms with the moderated mediation conditions.*

**X. METHODOLOGY**

The purpose of this study is to unveil the relationship between three cultural factors, and in the presence of leadership commitment examine the moderated mediation in the model. The quantitative analysis was done on the data collected with the help of the Healthcare Learning Organization Scale (HLOS), which was developed for the current study. Items used in this scale were borrowed from author's previous researches [2],[3]. The four variables involved in the proposed model were captured through thirty items as defined in the table 1. Six items for the LO, four items for CR, eight for the CL, and twelve for measuring LC were used. The overall reliability statistics Cronbach's Alpha is 0.93 which is the strong evidence for the scale reliability. Scale items were also examined by the exploratory factor analysis (EFA) to validate the HLOS, and then the proposed framework was examined for the conditional process modelling by loading the variables on the Hayes's PROCESS [53] adds-on to the SPSS (Appendix-B). The Kaiser-Mayer-Olkin of sample adequacy statistic is more than 0.95, which provides the evidence of presence of proportion of variance in the variables that might cause by underlying factors. Similarly, the Bartlett's test of sphericity is below 0.05, which is the evidence that the correlation matrix in not identity matrix, and suitable for extracting the underlying factors from the items.



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The main objective of quantitative research is to obtain a representative sample from the population and to achieve generalizability, and for that probability sampling is the suitable technique [50]. The target population in this study is the healthcare organizations. Five organizations were selected at random and questionnaire was distributed among employees to capture the evidence of the cultural conditions prevailing in their culture. Total responses received were 333, out of which 320 were included for analysis after removing cases with unengaged responses and missing values (Table 5 Appendix A).

As a rule of thumb, at least 10 to 15 subjects per variable are considered enough sample [51]. The five-point Likert scale is used in the scale to obtain the continuous level of measurement [54]. The degree of skewness and kurtosis is in an acceptable range. The mean value of all variables is below 3 which shows the majority disagreement about the presence of indicators supporting the underlying culture. This provides evidence that specific cultural conditions exist at the moderate level, which pose challenging situation for the healthcare organizations in Dubai to achieve sustainable competitive advantage. The pattern matrix in table-3 (Appendix-A) shows that thirty items are grouped into the four clearly distinct factors. Non-orthogonal oblique Promax rotation with maximum likelihood extraction converged in 4 iterations and verified by the Scree Plot (figure-2 Appendix-A). The four factors are explaining 78% of the total variance (Table 4 Appendix-A).

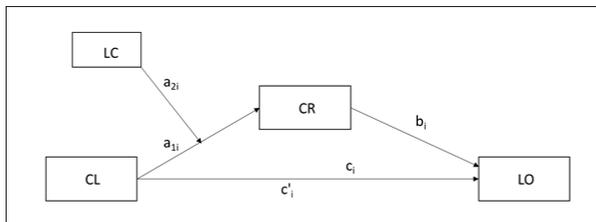


Figure-3: Path Model

The figure 3 guides us to determine the Total Effect (TE), Indirect Effect (IE) and the Direct Effect (DE). The relationship between these effects can be shown with the identity:  $TE = DE + IE$ ,

Where,  $DE = c'_i$  which is the path from CL to LO

$IE = a_{1i}b_i$  which is the path from CL to LO through CR

By substituting the values of DE and IE in TE, we get:

$$TE = c'_i + a_{1i}b_i$$

The figure-4 shows the Statistical Model of the proposed framework.

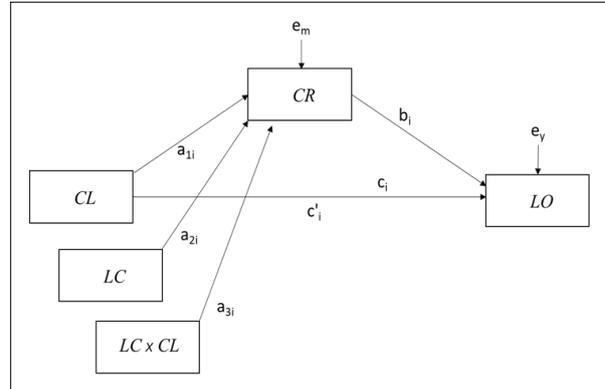


Figure-4: Statistical model of the proposed framework

## XI. MODERATED MEDIATION

To examine the evidence of mediator, the model variables (without moderator LC) were loaded on the hierarchical regression in SPSS and see whether the explanatory variable (CL) becomes insignificant with the addition of mediator or not. In the first block, only the single predictor (CL) was included. In the second block both CL and CR were loaded as explanatory variables.

*H1: CR mediates between CL and LO and there is an indirect relationship between CL and LO through CR*

Table-5 shows the output of the hierarchical regression on the SPSS. The estimates show that with the addition of mediator (CR), the explanatory variable (CL) becomes insignificant ( $p\text{-value} > 0.05$ ). This is the indication of presence of mediator in the model.

Table-5: Evidence of the presence of mediator in the model

| Models  | Pred     | Dep. Var. | Adj. R <sup>2</sup> | ANOVA p-Value | B               | Sig.           |
|---------|----------|-----------|---------------------|---------------|-----------------|----------------|
| Model-1 | CL       | LO        | 0.008               | 0.05          | -0.146          | 0.05           |
| Model-2 | CL<br>CR | LO        | 0.195               | 0.000         | -0.114<br>0.400 | 0.100<br>0.000 |

The p value of estimates of CL is not significant, therefore it is the case of full medication, and we can infer that all relationships between CL and LO are transmitted through the mediator(CR).

*H2: LC moderates the relationship between CL and CR*

In case of the moderator on the  $a_i - Path$ , two variables CL and LC were examined for the effect on the CR, by applying hierarchical regression technique. In the first block, CL and LC were loaded without the interaction term, and in the second block the interaction term was also added.

The table-6 shows the SPSS output of the hierarchical regression and confirms that the model 1 is significant at 10% significance level;  $F(2, 317) = 2.26, p = 0.10$ . After including the interaction term, the models-2 becomes significant at the 5% significance level;  $F(3, 316) = 2.776, p = 0.04$ .

Similarly,



for the overall goodness of the fit index R-square, with the interaction between CL and LC accounted for significantly more variance than just without the interaction, *R-squared Change* = 0.012 , *p-value* = 0.05, indicating that there is potentially significant moderation between CL and LC. If we examine the estimated values of the parameters of CL and LC, it is evident that by adding interaction term the interaction term and CL are significant.

**Table-6: Evidence of the moderator in the  $a_i$  – Path**

| Model s | Pred .           | Dep. Var. | Adj. R <sup>2</sup> | ANOVA p-Value                | B                           | Sig.                 |
|---------|------------------|-----------|---------------------|------------------------------|-----------------------------|----------------------|
| 1       | CL<br>LC         | CR        | 0.008               | F(2, 317) = 2.26<br>p = 0.10 | - 0.095<br>0.101            | 0.25<br>0.05         |
| 2       | CL<br>LC<br>Int. | CR        | 0.016               | F(3, 316) = 2.78<br>p = 0.04 | - 0.429<br>- 0.135<br>0.105 | 0.02<br>0.30<br>0.05 |

Due to the evidence of the presence of mediator and moderator , the proposed framework was examined for the conditional process modelling by loading the variables on the Andrew F. Hayes PROCESS [53] add-on to the SPSS. The PROCESS output can be found at the Appendix-B.

The PROCESS Output Matrix has six section. Section 1 and 6 are the metadata explaining author, version, version, and notes. The section 2 to 5 are providing evidence to support model hypothesis. Section 2 lists the variables of the model and the sample size.

**H4: LC moderates the relationship between CL and CR**

The section 3 of the PROCESS output matrix provides the evidence about the interaction effect of LC on the relationship between CL and CR. The interaction term LC was added to the  $a_i$  – Path. By adding the interaction term, the equation of the  $a_i$  – Path can be written as:

$$CR = \theta_1 + a_{1i}CL + a_{2i}LC + a_{3i}CL \times LC + e_m$$

After fitting the OLS estimates of the equation(2), the value of the coefficients are determined.

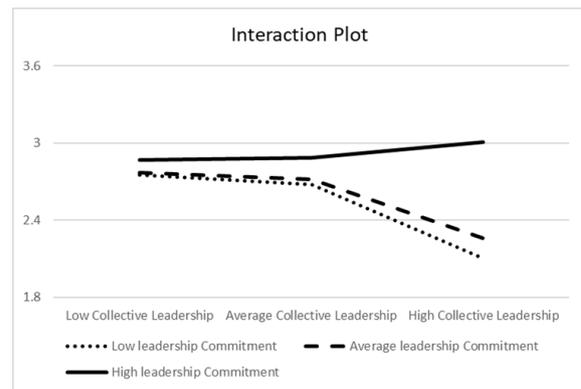
The value of  $a_i = \frac{\partial CR}{\partial CL}$  , or  $a_{1i} + (a_{3i})LC$

PROCESS Matrix provides the effects on CR due to change in the CL at three levels (low, medium and high) of the moderator (LC)

**Table-7: Moderation Between CL and CR**

| Moderator | Values (LC) | Effects (CR) | p    | LLCI   | ULCI   |
|-----------|-------------|--------------|------|--------|--------|
| Low       | 1.333       | -0.288       | 0.02 | -0.544 | -0.032 |
| Average   | 1.917       | -0.227       | 0.03 | -0.439 | -0.015 |
| High      | 4.667       | 0.062        | 0.5  | -0.166 | 0.291  |

It is evident that moderator effect is significant at low and medium level of the LC. The interaction plot shows in figure-4 was drawn on MS-Excel by using the output of the Andrew F. Hayes PROCESS add-on to the SPSS for visualizing conditional effect of CL on LO.



**Figure-6: Interaction Effect**

Figure-6 shows the interaction plot. On x-axis levels of CL are measured, and on the y-axis level of creativity is shown. The three lines are showing the moderator effect. When leadership commitment is low, with the increase in the level of collective leadership the level of creativity decreases as shown by the small dotted line. Whereas, when there is high leadership commitment in the organization towards learning organization, with the increase in the level of collective leadership, the level of creativity increases as shown by the solid black line.

The section 4 of the PROCESS matrix explains the IE from CL to LO through CR. The values of the  $b_i$  and the  $c'_i$  as shown in the regression equation 4:

$$LO = \theta_1 + c'_i CL + b_i CR + e_y \text{ ----- (1)}$$

The values of the  $b_i$  and the  $c'_i$  can be determined by fitting the equation-1. The OLS estimates of coefficients are:  $c'_i = 0.39987$  ( $p = 0.000$ ) and  $-0.11398$  ( $p = 0.09$ ) respectively. The direct effect  $c'_i = -0.1139$ . The indirect effect =  $(a_{1i} + (a_{3i})LC) b_i$ . The total effect can be calculated at different values of LC. PROCESS output matrix provides different levels of moderator LC which can be used to determine the total effect.

**H3: Model conforms with the moderated mediation conditions.**

The index of moderated mediation is significant which qualifies the presence of the moderator in the model. The PROCESS matrix output is shown below

**Table-8: Index of moderated mediation**

|    | Index   | BootSE  | BootLLCI | BootULCI |
|----|---------|---------|----------|----------|
| LC | 0.04204 | 0.02101 | 0.00285  | 0.08527  |

This index provides the most direct test for evidence of moderated mediation. The conditional indirect effect of CL on LO through CR is  $(a_{1i} + (a_{3i})LC) b_i$ .

## Conditional Process Model of the Learning Organization in the Dubai Healthcare Sector

The second component in this expression is called index of moderated mediation, which is equal to  $b_i(a_{3i})LC$ . It quantifies the effect of LC on the indirect effect of CL on LO through CR.

### XII. DISCUSSION AND CONCLUSION

The model hypotheses are examined in the light of empirical evidence produced by the data. The analysis provides the evidence that employees in healthcare organizations feel that leadership commitment is not highly observed, and they moderately found encouraging staff learn in a real sense. The evidence is also showing moderate level of the engagement in the research and development activities or they are not engaged across the board. The involvement in the shared decision making is also below average, so as the collaboration among employees. This leads to the weaker commitment among employees to take up the challenge on their own jobs. As a result, risk-taking attitude for experimentation and creativity is weak. This is confirmed by the moderate level score of the culture of creativity and innovation. The weak positions at the culture of creativity and innovation also affects the score in the culture of leaning organization. The employee's involvement in the knowledge acquisition, application, and sharing is clearly weak.

On the other hand, the data evidence support relationship between three cultural constructs, and verifies the moderated mediation or the conditional process model among the three cultures. Study has confirmed that the culture of collective leadership is the gateway which influences the culture of learning organization directly as well as indirectly through culture of creativity and innovation. The role of leadership has also been confirmed and its moderating position on the path between culture of collective leadership and the culture of creativity and innovation. This confirms reference[21],

reference[54], who believed that leaders must be committed to achieve learning goals for creating organizational success, and for that employees must be willing and able to engage in continuous learning process. Leadership should create opportunities for learning and experimentation for application of learning. Moreover, the study also endorses reference[41] and reference[26], who considered that when their mistakes were not considered as another source of learning, would discourage employees to exercise creativity in their jobs. The study provides the evidence in support of reference[10] that knowledge management practices visible in organizations act as an enabler of a learning organization, which encourage sharing of knowledge among employees by developing trust and encourage effective communications.

Creating the culture of a learning organization is an essential responsibility of the leadership in the healthcare organizations. When employees are involved in the decision-making, they learn, they position their work level goals in alignment with the organizational level goals. As a result, the challenge in the jobs provoke their creativity. If leadership encourage such creative practices among employees, the innovative outcomes will be produces. The challenge of outcomes, performance and competition will encourage employees to identify critical knowledge, acquire that knowledge, share it and apply in their jobs for higher efficiency. They can innovate existing processes, adopting new methods of treatment and observation, design innovative approaches and assessment methods to create a successful experience for the patients. On the other hand, learning new skills will also help them in their career growth. Their higher potential will be the competitive advantage for the organization.

### Appendix-A

**Table-2: Descriptive statistics of the composite variables.**

|                |         | CL   | CR    | LO      | LC    |
|----------------|---------|------|-------|---------|-------|
| N              | Valid   | 320  | 320   | 320     | 320   |
|                | Missing | 0    | 0     | 0       | 0     |
| Mean           |         | 2.25 | 2.75  | 2.8443  | 2.98  |
| Std. Deviation |         | .98  | 1.46  | 1.34774 | 1.55  |
| Skewness       |         | 1.33 | .31   | .197    | .04   |
| Kurtosis       |         | .18  | -1.76 | -1.688  | -1.95 |

**Table-3: Pattern Matrix**

|                         | Factor |      |   |      |
|-------------------------|--------|------|---|------|
|                         | 1      | 2    | 3 | 4    |
| Collective Leadership 1 |        | .771 |   |      |
| Collective Leadership 2 |        | .736 |   |      |
| Collective Leadership 3 |        | .797 |   |      |
| Collective Leadership 4 |        | .874 |   |      |
| Collective Leadership 5 |        | .915 |   |      |
| Collective Leadership 6 |        | .850 |   |      |
| Collective Leadership 7 |        | .891 |   |      |
| Collective Leadership 8 |        | .805 |   |      |
| Creativity 1            |        |      |   | .919 |
| Creativity 2            |        |      |   | .892 |
| Creativity 3            |        |      |   | .937 |
| Creativity 4            |        |      |   | .933 |
| Leadership Comit. 1     | .921   |      |   |      |

|                     |      |  |  |  |
|---------------------|------|--|--|--|
| Leadership Comit. 2 | .919 |  |  |  |
|---------------------|------|--|--|--|

|                      |      |  |      |  |
|----------------------|------|--|------|--|
| Leadership Comit. 3  | .892 |  |      |  |
| Leadership Comit. 4  | .921 |  |      |  |
| Leadership Comit. 5  | .923 |  |      |  |
| Leadership Comit. 6  | .926 |  |      |  |
| Leadership Comit. 7  | .927 |  |      |  |
| Leadership Comit. 8  | .921 |  |      |  |
| Leadership Comit. 9  | .889 |  |      |  |
| Leadership Comit. 10 | .916 |  |      |  |
| Leadership Comit. 11 | .896 |  |      |  |
| Leadership Comit. 12 | .896 |  |      |  |
| Learning Org 1       |      |  | .806 |  |
| Learning Org 2       |      |  | .899 |  |
| Learning Org 3       |      |  | .872 |  |
| Learning Org 4       |      |  | .917 |  |
| Learning Org 5       |      |  | .713 |  |
| Learning Org 6       |      |  | .913 |  |

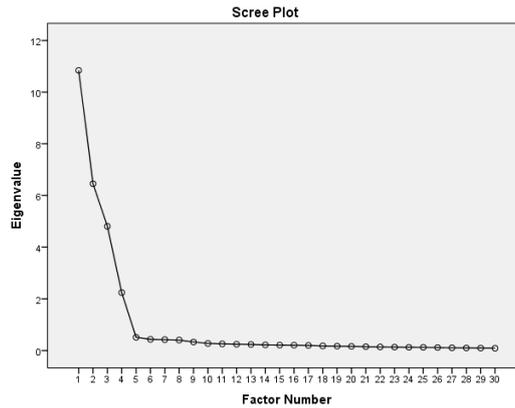


Figure-2: Scree plot.

Table-4: Total variance explained

| Factor | Initial Eigenvalues |               |              | Extraction Sums of Squared Loadings |               |              | Rotation Sums of Squared Loadings |
|--------|---------------------|---------------|--------------|-------------------------------------|---------------|--------------|-----------------------------------|
|        | Total               | % of Variance | Cumulative % | Total                               | % of Variance | Cumulative % | Total                             |
| 1      | 10.842              | 36.140        | 36.140       | 10.638                              | 35.461        | 35.461       | 10.366                            |
| 2      | 6.455               | 21.516        | 57.656       | 5.558                               | 18.526        | 53.987       | 5.723                             |
| 3      | 4.808               | 16.026        | 73.682       | 5.016                               | 16.718        | 70.706       | 5.831                             |
| 4      | 2.244               | 7.479         | 81.161       | 2.277                               | 7.588         | 78.294       | 4.486                             |
| 5      | .513                | 1.709         | 82.870       |                                     |               |              |                                   |
| 6      | .433                | 1.443         | 84.313       |                                     |               |              |                                   |
| 7      | .423                | 1.410         | 85.723       |                                     |               |              |                                   |
| 8      | .406                | 1.353         | 87.075       |                                     |               |              |                                   |
| 9      | .331                | 1.105         | 88.180       |                                     |               |              |                                   |
| 10     | .275                | .917          | 89.097       |                                     |               |              |                                   |
| 11     | .259                | .863          | 89.960       |                                     |               |              |                                   |
| 12     | .244                | .814          | 90.774       |                                     |               |              |                                   |
| 13     | .237                | .788          | 91.563       |                                     |               |              |                                   |
| 14     | .220                | .732          | 92.295       |                                     |               |              |                                   |
| 15     | .213                | .708          | 93.003       |                                     |               |              |                                   |
| 16     | .206                | .687          | 93.690       |                                     |               |              |                                   |
| 17     | .198                | .661          | 94.351       |                                     |               |              |                                   |
| 18     | .180                | .601          | 94.952       |                                     |               |              |                                   |
| 19     | .171                | .569          | 95.521       |                                     |               |              |                                   |
| 20     | .162                | .540          | 96.061       |                                     |               |              |                                   |
| 21     | .151                | .502          | 96.563       |                                     |               |              |                                   |
| 22     | .140                | .467          | 97.029       |                                     |               |              |                                   |
| 23     | .133                | .442          | 97.471       |                                     |               |              |                                   |
| 24     | .124                | .415          | 97.886       |                                     |               |              |                                   |
| 25     | .124                | .412          | 98.298       |                                     |               |              |                                   |
| 26     | .117                | .390          | 98.688       |                                     |               |              |                                   |
| 27     | .107                | .356          | 99.044       |                                     |               |              |                                   |
| 28     | .101                | .337          | 99.381       |                                     |               |              |                                   |
| 29     | .095                | .318          | 99.699       |                                     |               |              |                                   |
| 30     | .090                | .301          | 100.000      |                                     |               |              |                                   |

Table-5: Demographic distribution of respondents

## Conditional Process Model of the Learning Organization in the Dubai Healthcare Sector

|  | Frequency  | Percentage | Valid (%) | Cumulative (%) |
|--|------------|------------|-----------|----------------|
| <b>Gender of respondents</b>                               |            |            |           |                |
| Female   | 235        | 73.4       | 73.4      | 73.4           |
| Male   | 85         | 26.6       | 26.6      | 100            |
|  | <b>320</b> | <b>100</b> |           |                |
| <b>Classification of job positions of respondents</b>      |            |            |           |                |
| Staff  | 112        | 35.0       | 35.0      | 35             |
| Professionals  | 208        | 65.0       | 65.0      | 100            |
|  | <b>320</b> | <b>100</b> |           |                |
| <b>Types of hospital</b>                                   |            |            |           |                |
| Private  | 112        | 38.5       | 38.5      | 38.5           |
| Public   | 179        | 61.5       | 61.5      | 100            |
|  | <b>291</b> | <b>100</b> |           |                |
| <b>Age of Respondents</b>                                  |            |            |           |                |
| 20-30  | 54         | 16.9       | 16.9      | 16.9           |
| 30-40  | 159        | 49.7       | 49.7      | 66.6           |
| 40-50  | 84         | 26.3       | 26.3      | 92.8           |
| Above 50   | 23         | 7.2        | 7.2       | 100.0          |
|  | <b>320</b> | <b>100</b> |           |                |
| <b>Academic/Professional qualifications of respondents</b> |            |            |           |                |
| Diploma/Certificate  | 45         | 14.1       | 14.1      | 14.1           |
| Undergraduate  | 67         | 20.9       | 20.9      | 35.0           |
| Professional Degree  | 163        | 50.9       | 50.9      | 85.9           |
| Postgraduate   | 45         | 14.1       | 14.1      | 100.0          |
|  | <b>320</b> | <b>100</b> |           |                |

### Appendix-B

```

***** PROCESS Procedure for SPSS Version 3.3 *****
Written by Andrew F. Hayes, Ph.D. www.afhayes.com
Documentation available in Hayes (2018). www.guilford.com/p/hayes3
*****

Model : 7
Y : LO
X : CL
M : CR
W : LC

Sample
Size: 320

*****
OUTCOME VARIABLE:
CR

Model Summary
      R      R-sq      MSE      F      df1      df2      p
.16023   .02567   2.11476   2.77550   3.00000   316.00000   .04146

Model
      coeff      se      t      p      LLCI      ULCI
constant   3.40013   .45196   7.52306   .00000   2.51090   4.28937
CL         -.42865   .19138  -2.23981   .02580   -.80518   -.05211
LC         -.13529   .13271  -1.01945   .30877   -.39640   .12582
Int_1      .10514   .05425   1.93784   .05353   -.00161   .21188

Product terms key:
Int_1 :      CL      x      LC

Covariance matrix of regression parameter estimates:
      constant      CL      LC      Int_1
constant   .20427   -.07962   -.05343   .02055
CL         -.07962   .03663   .02055   -.00935
LC         -.05343   .02055   .01761   -.00661
Int_1      .02055   -.00935   -.00661   .00294
    
```



```

Test(s) of highest order unconditional interaction(s):
      R2-chng      F      df1      df2      p
X*W      .01158      3.75521      1.00000      316.00000      .05353
  Focal predict: CL      (X)
  Mod var: LC      (W)
Conditional effects of the focal predictor at values of the moderator(s):

LC      Effect      se      t      p      LLCI      ULCI
1.33333      -.28847      .13013      -2.21676      .02735      -.54450      -.03244
1.91667      -.22714      .10775      -2.10801      .03582      -.43913      -.01514
4.66667      .06199      .11617      .53363      .59398      -.16657      .29055
  
```

Data for visualizing the conditional effect of the focal predictor:  
 Paste text below into a SPSS syntax window and execute to produce plot.

```

DATA LIST FREE/
CL      LC      CR      .
BEGIN DATA.
1.62500      1.33333      2.75099
1.87500      1.33333      2.67887
3.87500      1.33333      2.10194
1.62500      1.91667      2.77173
1.87500      1.91667      2.71494
3.87500      1.91667      2.26067
1.62500      4.66667      2.86951
1.87500      4.66667      2.88501
3.87500      4.66667      3.00899
END DATA.
GRAPH/SCATTERPLOT=
CL      WITH      CR      BY      LC      .
  
```

```

*****
OUTCOME VARIABLE:
LO
  
```

```

Model Summary
      R      R-sq      MSE      F      df1      df2      p
.44720      .19998      1.46232      39.62125      2.00000      317.00000      .00000
  
```

```

Model
      coeff      se      t      p      LLCI      ULCI
constant      2.00053      .21716      9.21241      .00000      1.57328      2.42777
CL      -.11398      .06907      -1.65026      .09988      -.24986      .02191
CR      .39987      .04624      8.64799      .00000      .30890      .49085
  
```

```

Covariance matrix of regression parameter estimates:
      constant      CL      CR
constant      .04716      -.01123      -.00627
CL      -.01123      .00477      .00017
CR      -.00627      .00017      .00214
  
```

```

***** DIRECT AND INDIRECT EFFECTS OF X ON Y *****
Direct effect of X on Y
      Effect      se      t      p      LLCI      ULCI
-.11398      .06907      -1.65026      .09988      -.24986      .02191
  
```

Conditional indirect effects of X on Y:

```

INDIRECT EFFECT:
CL      ->      CR      ->      LO
      LC      Effect      BootSE      BootLLCI      BootULCI
1.33333      -.11535      .04913      -.21520      -.02136
1.91667      -.09083      .04050      -.17277      -.01307
4.66667      .02479      .04513      -.06492      .11477
  
```

```

Index of moderated mediation:
      Index      BootSE      BootLLCI      BootULCI
LC      .04204      .02101      .00285      .08527
  
```

```

***** ANALYSIS NOTES AND ERRORS *****
Level of confidence for all confidence intervals in output:
95.0000
Number of bootstrap samples for percentile bootstrap confidence intervals:
10000
  
```

# Conditional Process Model of the Learning Organization in the Dubai Healthcare Sector

W values in conditional tables are the 16th, 50th, and 84th percentiles.

----- END MATRIX -----

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