

Learning Environment of Manufacturing and Service Sectors of Pakistan: A Comparison

Abdul Majeed, Farrukh Naveed, Muhammad Sohaib, Ijaz Haider, and Muhammad Ihsaan

Author(s) Biography

Abdul Majeed is MS Scholar at National University of Modern Languages Faisalabad, Pakistan
Email: amajeed192@gmail.com

Farrukh Naveed is MS Scholar at National University of Modern Languages Faisalabad, Pakistan
Email: farrukhnaveed22@yahoo.com

Muhammad Sohaib is MS Scholar at National University of Modern Languages Faisalabad, Pakistan
Email: sohaib_w58@yahoo.com

Ijaz Haider is MS Scholar at National University of Modern Languages Faisalabad, Pakistan
Email: ijaz_haider14@yahoo.com

Muhammad Ihsaan is MS Scholar at National University of Modern Languages Faisalabad, Pakistan
Email: mihsaang@yahoo.com

ABSTRACT: *The objective of this paper is to examine the supportive learning environment between manufacturing and service sectors of Pakistan. For this purpose four elements of “supportive learning environment” have been studied which are further divided into eighteen variables provided by Garvin, Edmondson et al. (2008). Original questionnaire is used to collect data from manufacturing as well as service sectors of Pakistan. For the evaluation of results arithmetic mean and factor analyses were applied. To ensure the reliability of data Cronbach’s Alpha value was measured. Results show that supportive learning environment is better in service sector as compare to manufacturing sector of Pakistan.*

Keywords: Learning organization, service sector organization, manufacturing sector organization, supportive learning environment.

In the current era, most organizations have realized the importance of the continuous learning because if they do not learn from their environment and competitors they will not survive in the near future and these organizations will leads to die. Organization learning not depends on getting new skills and advancement in technology it depend on learning faster at all level of the organization.

According to (Senge) “learning organization is an organization where people continually expand their capacity to create the results they truly desire, where new and expensive patterns of learning to see the whole together.”

There are five sub systems of learning organizations which are defined by (Marquardt 2002) in this book “Building the learning organization”. (1) Learning is the most important subsystem of any learning organization it includes learning levels, organization learning types and learning skills. (2) Organization is the place or body where process and practices takes place, it has further four components which are vision, culture, strategy and structure. (3) People of every organization, plays a key role in his success and learning process. These people include manages and leaders, employees, customers, business partner supplier and vendor and community also. (4) Knowledge management is very essential for the learning organization, it consist of six elements which are acquisition, creation, storage, analysis and data mining, transfer and dissemination and application and validation.(5)Technology sub system allows the organization to share information and learns more rapidly with the help of technological tools and networks. These five subsystems are necessary to build a learning organization and these subsystems are also interrelated.

Continuous learning is essential for improvement and demands a dedication for learning so “a learning organization is an organization skilled at creating, acquiring and transferring knowledge and modifying its behavior to reflect new knowledge and insights (Garvin 1993). Describes five building blocks which are essential for learning organization and learning organization are skilled in these activities which are (1) systematic problem solving (2)experimentation (3) learning form experience (4) learning from other (5) transferring knowledge(Garvin 1993).

Organizational research concluded that there are mainly three broad areas which are very important for evaluation of organizational learning and its adaptability defined by (Garvin, Edmondson et al. 2008).These are “supportive learning environment, concrete learning

process and practices and leadership behavior that support learning”.

In this study, the focus is on the “supportive learning environment” of manufacturing and service sector of Pakistan .By using the toolkit of (Garvin, Edmondson et al. 2008) article “is yours a learning organization”. One organization is selected from each sector as a sample and the name of the organizations are not disclosed. This study shows that there is a difference in the level of learning environment of these two sectors.

Literature Review

The idea of learning organization is not new, it has been established now as the (Senge) book “the fifth discipline” is the landmark in the field of learning organization. He describes that, those organizations will survive in and excel who will discover the ways to tap people commitment and develop a capacity in the future to learn at all levels of the organization. As learning in the organization is possible only when organizations love to learn which is included in the human nature also, as no one has to teach an infant to learn, he learns by self from the environment.

According to (Marquardt 2002) most of the organization of current era, have realized the importance of learning organization. If they want to survive, they have to learn better and faster. (Senge 2008) says speed of the organizational learning is the only source of their sustainable competitive advantages. In the long run, only the best learning organization can give the best performance. Because the old model “the top thinks and the local acts” not further applicable, learning and thinking should be at all levels. (Garvin 1993) defines to become a learning organization three “M’s” framework is essential which defines the “meaning” a well established applicable definition of learning organization “management” shows a clean operational guidelines for process and practice and finally the “measurement” which can check the level and the rate of learning.

(Garvin, Edmondson et al. 2008) identify that in increasing competition where advancement in technology and customer preferences changes, a clean vision, good incentives to employs and training is not good enough to face there challenges, only those organization will survive whose employees are skilled at creating acquiring and transferring knowledge so these organization will adopt the changes quickly as compare to their competitors. (Marsick and Watkins 2003) express that Organization wants to become a learning organization but implementation is difficult to describe and most of the times not based on research that builds a learning culture. So a model has been developed

who based on literature and as well on the case studies of the organizations. (López, Peón et al. 2005) illustrated that organizational learning contributes positively both innovation and competitiveness and that leads better economics and financial results.

(Prewitt 2003) classify, various research shows that leader may play the single most important role in the determining the success or failure of learning organization efforts. To improve the chances of success, organization first attend to developing learning leaders before implementing any learning organization efforts. (Ali, Bajwa et al.) accomplished, level of supporting learning environment is greater in private organization as compare to public organization. (Rasheed, Hussain et al.) concluded that, the level of supportive learning environment is at initial stage and needs improvement. (Rasheed, Ali et al.) elaborate, there was a need to improve the ways of concrete learning process and practices in manufacturing as well service sector of Pakistan. The level of learning is almost same of these two sectors and needs improvement.

(Ummar, Lodhi et al.) study shows about both education as well as manufacturing sector lacks the active and effective role of leadership. It concludes that education sector even lags behind the manufacturing sector and leadership should be enhanced. (Main, Rauf et al. 1991) explains that the textile sector of Pakistan shows only openness to new idea, a variable from first building block needs improvement.

Research Methodology

Target population of this study, are from manufacturing sector as well the service sector of Pakistan. The purpose of this study is to analyze and compare the “supportive learning environment” of both sectors. For this purpose, one manufacturing and one service organization is chosen on the basis of convenient sampling. Employees of the both sectors, at all level of management including top level management, middle level management and frontline employees are included in the frame of sample. 60 employees of both sectors are surveyed and 30 questionnaires from each sector are filled up. The tool of this research is the questionnaire developed by (Garvin, Edmondson et al. 2008) in his article “Is yours a learning organization”.

The original toolkit consists of three parts that covers all three building blocks, which are “supportive learning environment, concrete learning procedure, and leadership behavior that support learning”. But only the first building block “supportive learning environment” is taken to carry out this research. “Supportive learning environment” divided into further four parts, which are

“psychological safety, appreciation of differences, openness to new ideas and time for reflection. The entire questionnaire filled in the existence of the researcher and doubts from respondents entertained politely. This questionnaire is selected because of its high level of acceptance and goodwill of journal to measure level of learning in the organization.

Arithmetic mean has been applied on the collected data, factor analysis (data reduction technique) also applied to ensure the dimensions of the data. To check the reliability of data collected cronbach’s Alpha is applied. High efforts are made, to make sure the accurateness of data. All the techniques are applied by using spss 16.0.

Variable and Analysis

This study has the four dimensions to judge the level of “supportive learning environment” in an organization.

- Psychological safety
- Appreciation of Differences
- Openness to new ideas
- Time for reflection

These four elements have 18 variables. Every variable is tested with the help of likert scale ranging from 1= highly inaccurate to 7= highly accurate. Every response is multiplied by 100 and then divided by 7. The question with (*) sign are coded reversely.

This building block have the following variables provided by (Garvin, Edmondson et al. 2008).

Psychological Safety
1. In this organization, people can speak up about what is on their mind.
2. In this organization when people make mistakes, it goes against them.*
3. In this organization, people can talk on their problems about working.
4. In this organization, people have keen interest to share information about what does and work.
5. Keeping your cards close to your vest (power) is the best way to get ahead in this organization
Appreciation of Differences
6. In this organization, differences in opinion are welcomed.
7. In this organization it is valued, what people say.
8. In this organization differences of opinions are handled separately and privately.*
9. In this organization, people are open to alternative ways of getting work done.
Openness to New Ideas
10. In this organization, people value new ideas.
11. Unless an idea has been around for a long time, no one in this organization wants to hear it.*
12. In this organization, people are interested in better ways of doing things.
13. In this organization, people often resist untried approaches (methods).*
Time for Reflection
14. In this organization, people are overly stressed.*
15. In this organization, people have time to review how work is going.
16. In this organization, schedule pressure gets in the way of doing a good job.*
17. In this organization, people are too busy to invest time in improvement.
18. In this organization, people have no time for reflection.

Factor analysis is applied on all the variables by using SPSS 16.0. Variables are extracted at three different levels with the help of factor analysis. Firstly, all the important variables are extracted to see the commonly key factors from the whole data in the manufacturing and service sector of Pakistan where four components are extracted in appendix 4. At the second stage of analysis, 6 components are extracted only from service sector as shown in appendix 5 and at the last stage, 7 components are extracted exclusively from manufacturing sector are publicized in appendix 6. To check the appropriateness of this factor model, Bartlett's test of sphericity is applied which test the null hypothesis and shows that variables are uncorrelated in the population. The value of KMO index if greater than 0.5 is always good. Both of the tests in appendix 3 show that factor analysis is appropriate for data.

Discussion on Results

Arithmetic mean is applied on the responses of collected data of manufacturing and service sectors. The tool of (Garvin, Edmondson et al. 2008) is used from his article "Is yours a learning organization"

Table 1 shows the Benchmark score which consist of scale score of 100. Scaled score are divided into four parts from bottom to top quartile. Median lies clearly between them. Two quartiles are below from median; bottom quartile, second quartile and remaining two quartiles are above from median which are third quartile and top quartile. A range value is defined for each quartile. If the mean value of a variable falls in 1 two quartiles, it needs improvement in that area. If it falls in last quartiles its shows that, this is the strong area of the organization.

Table 1 Benchmark scores

Supportive Learning Environment	Scaled Scores				
	First Quartile	Second Quartile	Median	Third Quartile	Top Quartile
Psychological safety	31-66	67-75	76	77-86	87-100
Appreciation of differences	14-56	57-63	64	65-79	80-100
Openness to new ideas	38-80	81-89	90	91-95	96-100
Time for reflection	14-35	36-49	50	51-64	65-100
Learning environment composite	31-61	62-70	71	72-79	80-90

Source: (Garvin, Edmondson et al. 2008)

Table 2 Mean values

Component of Supportive learning environment	Service Sector Mean	Manufacturing Sector Mean
Psychological safety	67.61857	35.33286
Appreciation of differences	59.40429	37.73857
Openness to new ideas	63.57143	35.47571
Time for reflection	64.09571	32.76143
Learning environment composite	63.6725	35.32714

Table 2 shows the mean value of every dimensions of "supporting learning environment" which will be checked out against the benchmark score of each factor. As table 2 shows that the mean value of first two components "psychological safety and appreciation of differences" of service sector falls in second quartile and needs improvement while the mean value of manufacturing sector falls in first quartile which means these factors are at its initial stage in this organization. Third factor "openness to new ideas" the mean value of both sectors falls in first quartile and needs special attention. Fourth factor, "time for reflection" the mean value of service sector falls third quartile which means employees have the time for reflection in this organization, on the other hand, the mean value of manufacturing sector falls in first quartile and require strong improvement. Composite mean of all variables of service sector falls in second quartile while composite mean value of manufacturing sector falls in first quartile. Appendix 1 shows the mean value of each variable of both sectors. In appendix 2 cronbach's alpha is applied to check the reliability of data which value is 0.921 while cronbach's alpha value more than 0.60 is good.

Conclusion and Recommendations

It is the long standing debate that which organization, manufacturing, or service is more responsive to its working environment. This paper attempts to numerically analyze the "supportive learning environment" of both sectors. This study shows that both sectors needs improvement in all areas of working environment while the manufacturing sector is lacking more in learning environment as compare to service sector.

The future studies can be conducted on other two building blocks of learning organization, provided by (Garvin, Edmondson et al. 2008) which are concrete learning process and leadership that reinforce learning.

The same building block can also be used to compare the banking and textile sector, education and manufacturing sector etc.

The limitation of this study is that, it cannot be applicable to all sectors because data was collected from limited response dents and it cannot be generalize to all sections and organizations.

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Appendixes

Appendix 1

Variables	Service Sector		Manufacturing Sector	
	Mean	Std.Dev	Mean	Std.Dev
In this organization, people can speak up About what is on their mind.	1.8333	.59209	4.8333	1.80198
In this organization when people make Mistakes, it goes against them.*	3.9667	1.18855	4.5333	1.19578
In this organization, people can talk on their Problems about working.	2.1667	.53067	4.8333	1.68325
In this organization, people have keen interest To share information about what does And doesn't work.	2.0667	.44978	4.7667	1.50134
Keeping your cards close to your vest (power) Is the best way to get ahead in this organization.*	2.3333	.80230	4.7000	1.85974
In this organization, differences in opinion Are welcomed.	2.00000	.787839	3.16667	1.487496
In this organization it is valued, what people Say.	2.5667	1.07265	4.2000	1.58441
In this organization differences of opinions are Handled separately and privately.*	2.5000	.82001	4.1667	1.96668
In this organization, people are open to Alternative ways of getting work done.	3.5000	1.07479	5.1000	1.72906
In this organization, people value new ideas.	2.1667	.69893	3.8667	1.75643
Unless an idea has been around for a long time, No one in this organization wants to hear it.*	3.4333	3.58813	3.9000	1.58332
In this organization, people are interested in Better ways of doing things.	2.1000	.54772	5.1667	1.57750
In this organization, people often resist untried Approaches (methods).*	2.2333	.67891	4.8667	1.59164
In this organization, people are overly stressed.*	3.6000	1.19193	4.6333	1.95613
In this organization, people have time to review How work is going.	2.4333	.89763	4.5333	1.43198
In this organization, schedule pressure gets in the Way of doing a good job.*	1.8667	.57135	4.4667	1.65536
In this organization, people are too busy to invest Time in improvement.	1.7667	.56832	5.1000	1.70900
In this organization, people have no time for Reflection	1.8000	.61026	3.7000	1.70496

Appendix 2
Reliability Statistics

Cronbach's Alpha	N of Items
.921	18

Appendix 3
KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.783
Bartlett's Test of Sphericity	Approx. Chi-Square
	df
	Sig.
	854.662
	153
	.000

Appendix 4
Component Matrix

	Component			
	1	2	3	4
In this organization, it is easy to speak up what is in your mind.	.805	-.437	.091	-.051
If you make a mistake in this organization, it is often held against you *	.324	.460	.157	.670
People in this organization are usually comfortable talking about problems and disagreements	.849	-.234	.066	-.002
People in this organization are eager to share information about what does and doesn't work	.888	-.203	-.015	.051
Keeping your cards close to your vest is the best way to get ahead in this organization*	.715	-.078	-.125	.414
Differences in opinion are welcome in this organization.	.610	-.152	-.483	-.240
Unless an opinion is consistent with what most people in this organization believe, it won't be valued.*	.691	.387	-.080	-.244
This organization tends to handle differences of opinion privately or off line, rather than addressing them directly with the group.*	.677	.230	-.413	.005
In this organization, people are open to alternative ways of getting work done.	.582	.235	.018	.333
In this organization, people value new ideas.	.722	-.074	-.251	-.007
Unless an idea has been around for a long time, no one in this organization wants to hear it.*	.060	.285	.676	-.248
In this organization, people are interested in better ways of doing things	.829	-.321	.233	-.022
In this organization, people often resist untried approaches*	.845	.080	.141	.133
People in this organization are overly stressed.*	.408	.702	-.053	-.101
Despite in the workload, people in this organization find time to review how the work is going.	.702	-.422	.349	.093
In this organization, schedule pressure gets in the way of doing a good job*.	.776	.144	.230	-.302
In this organization, people are too busy to invest time in improvement*.	.869	.047	-.080	-.139
There is simply no time for reflection in this organization.*	.620	.424	.062	-.230

Appendix 5
Rotated Component Matrix

	Component					
	1	2	3	4	5	6
In this organization, it is easy to speak up what is in your mind.	.803	-.212	.196	-.265	.225	.002
If you make a mistake in this organization, it is often held against you *	.049	.154	.021	.866	-.038	.061
People in this organization are usually comfortable talking about problems and disagreements	.655	.086	-.015	.122	.368	.409
People in this organization are eager to share information about what does and doesn't work	.488	-.061	.354	.094	.581	.140
Keeping your cards close to your vest is the best way to get ahead in this organization*	-.068	-.339	.354	.607	.388	.019
Differences in opinion are welcome in this organization.	.145	-.026	.442	-.317	.358	.564
Unless an opinion is consistent with what most people in this organization believe, it won't be valued.*	-.192	.724	.354	.174	.283	.103
This organization tends to handle differences of opinion privately or off line, rather than addressing them directly with the group.*	-.013	.182	.852	.143	.057	.116
In this organization, people are open to alternative ways of getting work done.	-.092	.114	-.117	.136	.880	.095
In this organization, people value new ideas.	.366	-.005	.710	.147	-.098	.214
Unless an idea has been around for a long time, no one in this organization wants to hear it *	.009	.624	-.285	-.011	.115	-.611
In this organization, people are interested in better ways of doing things	.889	.009	.041	.081	-.187	.112
In this organization, people often resist untried approaches*	.248	.299	.199	.674	.278	.045
People in this organization are overly stressed.*	-.105	.735	.521	-.001	-.039	-.063
Despite in the workload, people in this organization find time to review how the work is going.	.809	-.183	3.86 7.5	.314	-.125	-.292
In this organization, schedule pressure gets in the way of doing a good job*.	.299	.727	-.090	.043	-.225	.338
In this organization, people are too busy to invest time in improvement*.	.003	.315	.130	.189	.141	.777
There is simply no time for reflection in this organization.*	-.243	.722	-.006	.133	.063	.071

Appendix 6

Rotated Component Matrix

	Component					
	1	2	3	4	5	6
In this organization, it is easy to speak up what is in your mind.	.803	-.212	.196	-.265	.225	.002
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