A SECTORAL AND REGIONAL BENCHMARKING STUDY WITH THE DIMENSIONS OF LEARNING ORGANIZATION QUESTIONNAIRE (DLOQ) SCALE MEASUREMENTS

ÖĞRENEN ÖRGÜT BOYUTLARI ANKETİ (ÖÖBA) ÖLÇEĞİ İLE SEKTÖREL VE BÖLGESEL BİR KIYASLAMA ÇALIŞMASI

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Abstract

The aim of benchmarking studies is to enable the relevant sector professionals to identify gaps in the performance of the organization. Thus, they can provide a more objective perspective for them to gain a competitive advantage. The aim of this study is to collect the criterion values of the Dimensions of the Learning Organization Questionnaire (DLOQ) in terms of being a learning organization for the model of Watkins & Marsick (1993) which was created to measure the performance of organizations. In this context, in the last decade, academic articles with the keyword "DLOQ" were scanned. Finally, 40 articles were used to calculate the total comparison score. As a result, benchmarking figures were obtained on a sectoral and regional basis and an evaluation was made on a sample application. It is seem that European and Asian organizations show the best performance in terms of their benchmark figures, while the worst in the Middle East. On the other hand, Electronics & IT is by far the best performing sector.

Keywords: Learning organization, The Dimensions of the Learning Organization Questionnaire (DLOQ)

Öz

Kıyaslama (Benchmarking) çalışmalarının amacı, ilgili sektör profesyonellerinin organizasyonlarının ilgili birimlerinin performansındaki boşlukları tespit etmelerini sağlamaktır. Böylece, rekabet avantajı elde etmeleri için daha objektif bir bakış açısı sağlayabilirler. Bu çalışmanın amacı, kuruluşların öğrenen örgüt olma performansını sektörel ve bölgesel olarak değerlendirmek için Watkins & Marsick (1993) tarafından geliştirilen Öğrenen Örgüt Boyutları Anketi (ÖÖBA) (Dimensions of Learning Organization Questionnaire:DLOQ) ölçümlerini ele alarak kıyaslama değerleri oluşturmaktır. Bu bağlamda, son on yılda, "DLOQ" anahtar kelimesine sahip akademik makaleler taranmış, toplam karşılaştırma puanını hesaplamak için 40 makale kullanılmıştır. Sonuç olarak sektörel ve bölgesel bazda kıyaslama rakamları elde edilerek örnek bir uygulama üzerinde bir değerlendirme yapılmıştır. Elde edilen kıyaslama değerlerine bakıldığında Avrupa ve Asya'daki kurumlar en iyiler iken, Orta Doğu'dakiler en kötü performansı göstermektedir. Diğer taraftan Elektronik ve BT sektörü açık ara en başarılı sektör olarak karşımıza çıkmaktadır.

Anahtar Kelimeler: Öğrenen organizasyon, Kıyaslama, ÖÖBA, DLOQ

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1. Introduction

The first decade of the 21st century brought rapid changes in global, environmental, and technological habitat of business organizations and compelled them to adapt fast. As a living organism, nowadays, each business needs to maintain a competitive and flexible composition to gather sustainable growth. In order to reach that goal internally, establishing a learning organizational culture is a well – known human resources management tool (Marquardt, 2002). Concerning having a measurable parameter related to this effort, Watkins & Marsick (1993) have developed a learning organization model, which is using the defined Dimensions of the Learning Organization Questionnaire (DLOQ). The first practice of the scale was realized by Watkins & Marsick (1997) and the adaptation of different languages process begun in 2003 (Watkins & Marsick, 2003). Although the scale in question was used for individual evaluation in many studies since that date, it is not possible to comment on what the results obtained mean when compared to the sector or region examples. In order to make a comparison in this way, both companies and academicians need reliable benchmark figures. If the results of the research are not evaluated within the context of benchmarking, evaluations made based only on the scale results cannot be objective and may leed sector professionals to wrong decisions. Considering the state-of-art usage of DLOQ results, one can realize that it is not sufficient for accurate evaluations. Thus, it seems significant to develop reliable benchmark information that relies on significant academic researches. Since it is seen in the literature that any type of benchmark study has not been published before, the main aim of this study determined to generate an objective benchmark, based on academic researches that were realized on a global scale in the last decade.

In accordance with the objective of the study, firstly a piece of brief information about "Learning Organizations" and its main measurement tool, "The Dimensions of the Learning Organization Questionnaire", which has been used by both scholars and practitioners, will be given in the following sections. In the fourth section, the methodology and results of the study will be detailed. In that section, studies that were used in the benchmarking study will also be discussed and final benchmark figures will be given. In conclusion, the final evaluation of the study will be done with suggestions for future research.

2. What is a Learning Organization?

All business actors try to find an innovative way to improve their performance in terms of competitiveness. Being one step ahead to competitors is crucial but some improvement programs could fail than succeed. According to Garvin (1993), there are five ways for organizations to respond to new challenges:

- Solving problems systematically,
- Experimenting new approaches to work,
- Learning from past experience,
- Learning from other companies and customers, and
- Transferring knowledge throughout your organization.

These factors are also a shorter way of mastering a learning organization. As a short description, a learning organization is an institution, which is able to develop its capabilities on a continuous basis for long-term benefits (Senge, 1990). The contribution and roles of employees are very effective in the existence of learning organizations. According to Marquardt (2002), the building blocks that form the learning organization system, organization, people, information, and technology are interrelated and necessary for the organization. When one of these elements is weaker than the other, it will affect the

relationship. Learning is the center of learning organizations. According to Martin Marquardt's (2002) model, components of organizational learning framework, and five learning organization disciplines of Peter Senge (1990) are shown in Figure 1 below.

Components of Marquardt	Senge's Five Disciplines
• Learning dynamics • Organizational change • Empowerment of employees • Knowledge management • Technology using	• Systems thinking • Personal mastery • Mental models • Building shared vision • Team learning

Figure 1. Learning organization concepts

According to Pedler and Aspinwall (1999), the learning process in learning organizations is planned as determining, implementing, evaluating, and developing business policies and strategies. Continuous improvement can be achieved by including experimental approaches and feedback loops integrated into the planning processes. Watkins and Marsick (1993: 263) introduced four levels of learning in terms of nature, action points, and measurable outcomes (see Table 1).

The organizational learning approach has been discussed for half a century, and this debate is increasing day by day. Institutions should be committed to learning and updating themselves against the changes and challenges in the world. They should update and synchronize themselves with rapid developments. By responding to environmental changes in this way, they must strive to survive by harmonizing the organization, gaining widespread science and knowledge. Organizations need to be more successful to survive. In this way, they learn earlier, faster, and better than their competitors. Today, traditional structures do not have the necessary skills to adapt to rapid environmental changes. Businesses should change their structures to survive and equip themselves with up-to-date tools to gain the ability to withstand global changes. One of the most important tools for this is to internalize the concept of organizational learning. This approach should always be in a style that learns, includes change and organization, rather than traditional movements and behavior. The strategic importance of learning stems from the positive synergy created by sharing experiences, results, errors, knowledge, and ideas. Organizations must create such a synergy and use it by turning it into an advantage. Therefore, issues such as learning and continuous development have been identified as the subjects that organizations emphasize the most.

Table 1. Learning organization framework

Levels of Learning	Nature	Actions	Outcomes
Individual	Change in behavior, knowledge, motivation, capacity to learn	Continuous learning opportunities Inquiry and dialogue	Continuous learning for continuous improvement
Teams	Change in a group's capacity for collaborative and synergistic work	Collaboration and team learning	Collaborative, connected, collective, creative
Organization	Change in organizational capacity for innovation and new knowledge	Systems to capture and share learning Empowering people	Connected, captured and codified, capacity-building
Society	Change in overall capacity of community and society	Connection to environment	Connected by enhancing community's capacity-building

Source Watkins & Marsick (1993)

Watkins, Yang, and Marsick (1997, 1998, 2004) are the main contributors to this field with their well-known research that suggests a measurement tool for identifying and assessing organizations in terms of being a learning organization. In order to meet the main perspective behind their tool, detailed information will be given in the following chapter. Furthermore, different attempts for quantifying the level of being a learning organization will be discussed.

3. Organisational Learning Measurement

Since organizational learning is accepted as a popular concept for generating a more participative work environment with a flexible and innovative culture, a relevant question appeared for each manager: Has our organization been a learning organization or not? Measuring organizational learning is relatively harder than defining it. After related literature reviewed, several tools were found for the evaluation and measurement. Scholars attempted to generate a measurement tool listed in Table 2 below (Daryani, Ardabili & Amini, 2014).

Table 2. Measurement tools and related scholars to a assess learning organisation

Scholar	Year	Publication
Weich and Leon	1993	Sensemaking in Organization
Pearn, Roderick and Mulroney	1995	Learning Organizations in Practice
Sarala and Sarala	1996	Oppiva Organisaatio-Oppimisen
Ganns	1996	The Learning Organization and the Need for Directors Who Think
Otala	1996	To avoid organizational crises, unlearn
Tannenbaum	1997	Enhancing continuous learning: diagnostic findings from multiple companies
Redding and Catalanello	1997	Learning Organization Capability – Survey Questionnaire, Sample Items
Mayo and Lank	2001	The Human Problem of Industrial Civilization
Neefe	2001	Comparing Levels of Organizational Learning Maturity of Colleges and Universities Participating Traditional and Nontraditional (Academic Quality Improvement Project) Accreditation Processes
Marquardt	2002	Building the Learning Organization: Mastering the 5 Elements for Corporate Learning
Watkins and Marsick	2004	The construct of the learning organization: dimensions, measurement, and validation
Moiylanen	2005	Diagnosing and measuring learning organization

Source: Daryani, Ardabili and Amini (2014:324)

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In their well-known study, Watkins and Marsick (1997) proposed seven dimensions of of the learning organization. They consist of CL = Continuous Learning, DI = Dialogue & Inquiry, TL = Team Learning, ES = Embedded Systems, EP = Empowered People, SC = System Connection, and SL = Strategic Leadership. By doing so, they also proposed an instrument called Dimensions of Learning Organization Questionnaire (DLOQ), beneficial to organizations for composing their learning organization culture (Marsick & Watkins, 1999; Sidani & Reese, 2018). Definitions of their seven dimentions were determined by factor analysis of 42 questions of DLOQ (Yang, Watkins & Marsick, 2004) with a high Cronbach alpha value (α>0,80) (see Table 3). Evaluation and validation analysis in local languages are realizing by academics for nearly 15 years. Adaptations to 14 different languages were done in first ten years after introduction (Marsick, 2013: 129). Since years, DLOQ has considered as framing and assessment tool of human resources related practices, and also contributor to learning organization related research and theory generating (Kim, Egan & Tolson, 2015). With a visionary perspective, business managers in global spread have been using this tool to gain an objective evaluation in terms of predefined dimensions of learning organization for their companies since then.

Nevertheless these dimensions of DLOQ were generated based on a theoretical framework; Örtenblad (2002) suggested four overarching frames. They are organizational learning, workplace learning, learning climate, and learning structure perspective. Also, the validity of the DLOQ has been showed to be satisfactory in many studies according to factor analysis results (Hernandez & Watkins, 2003; Wang, Yang & McLean, 2007; Yang, Watkins & Marsick, 2004).

Interpretation of the data which is gathered with the implication of DLOQ, methodological approach of the study and results are obtained in the following chapter

Table 3. Definitions of dimensions of the learning organization questionnaire (DLOQ)

Dimension	Definition
CL = Continuous Learning	Learning is designed into work so people can learn on the job; opportunities are provided for ongoing education and growth
DI = Dialogue & Inquiry	People express their views and listen and inquire into the views of others; questioning, feedback, and experimentation are supported
TL = Team Learning	Work is designed to encourage groups to access different modes of thinking, groups learn and work together, and collaboration is valued and rewarded
ES = Embedded Systems	Both high- and low-technology systems to share learning are created and integrated with work, access is provided, and systems are maintained
EP = Empowered People	People are involved in setting, owning, and implementing joint visions; responsibility is distributed close to decision making so people are motivated to learn what they are held accountable for
SC = System Connection	People are helped to see the impact of their work on the entire enterprise, to think systemically; people scan the environment and use information to adjust work practices; and the organization is linked to its community
SL = Strategic Leadership	Leaders model, champion, and support learning; leadership uses learning strategically for business results

Source: Marsick (2013: 130)

4. Methodology and Results

As formerly mentioned, in contrast with the actuality and objective measurement performance of the tool, the evaluation process is making in an arbitrary way. Total or dimensional scores of organizational performance are roughly evaluated by the total mean value of the scale according to the central point of the Likert-scale, which was used in questionnaire Watkins and Marsick (1997). On the other hand, some subjective measures, rather than central points, could also be accepted by some academics (Ponnuswamy & Manohar, 2016; Sharifirad, 2011).

In this study, it is aimed to generate an objective benchmark based on academic researches that were realized on a global scale in the last decade. Within this scope, well – known indexes, such as Ebsco, Springer, ScienceDirect, Jstor[2] were scanned and 186 (with duplications) academic papers with the "DLOQ" keyword was found in total. Only 40 of them consist of average evaluation figures of all 7 dimensions. Some of the rest had the same results with the selected articles, or DLOQ results were used as a variable in different analyses, such as regression, and measurement results were not provided. And some were review (critique) articles. Mentioned 40 research articles were assorted according to their sample properties such as region and sector info. All average values of dimensions were adapted to the 7-point Likert Scale. All analysis was performed in IBM SPSS version 24.0 and overall average figures for various sectors and different regions calculated according to different dimensions of DLOQ. In Table 4 and 5, given sectors were dealt with in inspected researches and clustered values are computed accordingly. Regions, on the other hand, refer to the region where the researches were conducted.

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[2] A total list of scanned databases could be reached via http://gss.ebscohost.com/zyapici/dev/dbaz/databases.html

Table 4. Regional-based benchmark figures

Region	N	Dimensions of Organizational Learning							
		Continuous Learning	Dialogue & Inquiry	Team Learning	Embedded Systems	Empowered People	System Connection	Strategic Leadership	Overall Evaluation
Asia (a)	17	5,10	5,18	5,04	5,12	5,02	5,24	5,39	5,06* (d)
Australia (b)	2	4,76	4,96	4,50	4,92	4,74	4,61	5,03	4,79
Europe (c)	6	5,33	5,53	5,35	5,08	5,33* (d)	5,16	5,59	5,34* (d)
Middle East (d)	7	4,50	4,55	4,37	3,60	3,98	4,33	4,66	4,03
North America (e)	6	4,64	4,45	4,42	4,21	4,24	4,59	4,63	4,45
South America (f)	2	5,24	5,26	5,28	5,16	5,13	5,32	5,07	5,21
Grand Total	*40*	*4,97*	*5,04*	*4,90*	*4,75*	*4,80*	*4,99*	*5,18*	*4,82*

* Statistically significant difference in %90 confidence level according to Tukey test. Letters are indcicated significantly different regions in terms of average performance, which are shown in parentheses next to the corresponding value.

Table 5. Sectorial-based benchmark figures

Sector	N	Dimensions of Organizational Learning							
		Continuous Learning	Dialogue & Inquiry	Team Learning	Embedded Systems	Empowered People	System Connection	Strategic Leadership	Overall Evaluation
Architecture	1	4,41	4,31	4,22	4,22	4,24	4,34	4,48	4,32
Army	2	4,28	4,45	4,07	4,32	4,12	4,07	4,47	4,25
Banking	4	4,88	4,96	4,91	4,85	4,79	4,79	5,18	4,91
Education	8	5,45	5,66	5,41	5,21	5,31	5,33	5,66	4,64
Electronics & IT	3	5,52	5,58	5,53	5,37	5,29	5,56	5,53	5,48
Healthcare	5	4,57	4,85	4,50	3,73	4,36	4,79	5,04	4,58
Manufacturing & Services	15	5,01	4,95	4,87	4,92	4,81	5,02	5,15	4,96
Non-profit organization	2	4,81	4,82	4,80	4,50	4,70	5,06	5,00	4,81
Grand Total	*40*	*4,97*	*5,04*	*4,90*	*4,75*	*4,80*	*4,99*	*5,18*	*4,82*

Variety in figures according to different dimensions, sectors, and regions could be readily seen in Table 4 and Table 5. Especially there is a statistically significant difference between Europe and Asia with Middle East region in terms of Total evaluation and between Europe with Middle East region in "Dialogue & Inquiry" dimension with %90-confidence level according to Tukey test (ANOVA results for Total Evaluation F=2,539; p=0,047, Dialogue & Inquiry F=2,317 p=0,068). Because of the low sample size figures did not provide a significant difference. Nevertheless, absolute diversity is apparent among regions and sectors.

In terms of being understandable how to tackle a benchmarking study, a demonstration is presented. Evaluation was made by the following figures that are obtained from two different applications of DLOQ from Turkey (Yumuşak, Yıldız & Yıldız, 2012) and Pakistan (Khan, Tanveer & Saleem, 2013) separately. The main reason for choosing these two studies is their research approach, methodology and similarity in terms of the sector under consideration. Both studies realized in education sector to compare public and private schools and both of them found private schools were superior to public ones according to interpretation of their own results. In their methodological perspective, a factor analysis was performed to obtain seven learning organization dimensions and reliability of the analysis was assessed according to Cronbach-alpha figures. In both studies, data was found as reliable (Turkey=0,97, Pakistan= 0,95). Their data collection approaches were the same and were done with the use of 5-point Likert scale from 100 (50 from public, 50 from private) teachers. In order to obtain comparable figures with the same measurement level, 7-point scale indexed performance values are derived from the dimensioned scale. Figures indicate the averages of private and public schools of Turkey and Pakistan. For a proper evaluation, first, they are compared with the overall education sector benchmark (see Table 6).

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Table 6. Comparison with education sector benchmark figures

Dimension	Public Schools				Private Schools				Education Sector Benchmark
	Pakistan		Turkey		Pakistan		Turkey		
CL = Continuous Learning	↓	4,51	↓	4,42	→	4,91	↑	5,81	5,45
DI = Dialogue & Inquiry	↓	4,56	↓	4,79	→	5,25	↑	5,70	5,66
TL = Team Learning	↓	4,65	↓	4,47	↑	5,21	↑	5,26	5,41
ES = Embedded Systems	↓	4,58	↓	4,44	↑	5,05	↑	5,26	5,21
EP = Empowered People	↓	4,38	↓	4,34	↓	4,56	↑	5,26	5,31
SC = System Connection	→	4,9	↓	4,47	↓	4,73	↑	5,07	5,33
SL = Strategic Leadership	↓	4,83	↓	4,65	→	5,00	↑	5,54	5,66

According to comparison of individual figures with sectorial benchmarks, only private schools in Turkey showed better performance in terms of all learning organization dimensions. As reported by Pakistani study, private schools were found successful in terms of their evaluation. However, stated benchmarking results showed that both school types are

under average in Pakistan.[3]

Comparisons according to different regions were illustrated in Table 7 and 8. Considering that Pakistan is an Asian counrty, performance values of Pakistani schools were compared with Asia benchmark figures. The same comparison was performed by observing the European benchmark figures for Turkey.

Table 7. Comparison with Asia benchmark figures

Dimension	Pakistan				Asian Benchmark	
	Public Schools		Private Schools			
CL = Continuous Learning	↓	4,42	↓	4,91	↑	5,10
DI = Dialogue & Inquiry	↓	4,79	↑	5,25	↓	5,18
TL = Team Learning	↓	4,47	↑	5,21	↓	5,04
ES = Embedded Systems	↓	4,44	↓	5,05	↑	5,12
EP = Empowered People	↓	4,34	↓	4,56	↑	5,02
SC = System Connection	→	4,47	↓	4,73	↑	5,24
SL = Strategic Leadership	↓	4,65	↓	5,00	↑	5,39

With reference to Asian benchmark figures of learning organization dimensions, Pakistani private schools performed better in terms of "Dialogue & Inquiry" and "Team Learning" dimensions. When we checked performances of Turkish schools, the public ones seem unsuccessful in all dimensions compared to European benchmark figures. But private Turkish schools are performed well in terms of "Continuous Learning", "Dialogue & Inquiry" and "Embedded Systems" dimensions compared to all European institutions' evaluations.

Table 8. Comparison with Europe benchmark figures

Dimension	Turkey				European Benchmark	
	Public Schools		Private Schools			
CL = Continuous Learning	↓	4,51	↑	5,81	→	5,10
DI = Dialogue & Inquiry	↓	4,56	↑	5,70	↓	5,18
TL = Team Learning	↓	4,65	↓	5,26	↑	5,04
ES = Embedded Systems	↓	4,58	↑	5,26	↓	5,12
EP = Empowered People	↓	4,38	↓	5,26	↑	5,02
SC = System Connection	↓	4,90	↓	5,07	↑	5,24
SL = Strategic Leadership	↓	4,83	↓	5,54	↑	5,39

5. Conclusion

In general, scales are widely used in many areas of social sciences. They provide significant advantages to academics and professionals in measuring phenomena that are not eligible, especially for metric evaluation. However, it is very important for the practitioners that the measured performance of a related phenomenon can be evaluated. Also, the measurements should be able to lead them making proper comparisons through the accurate evaluation of the results. In this research, benchmarking figures, based on academic publications, were obtained from DLOQ measurements, which has been widely applied in the field for many years. However, in the literature, no such benchmarking study has been published so far. In this regard, it is hoped that this study will meet an important need for both scholars and professionals.

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[3] In order to improve readiness of values, above, under and no difference arrows added each number which shows that whether related evaluation is above, below or same with the average of compared item.

As a result of the study, the benchmarking figures are provided both researchers and sector professionals a comparative and more objective source for appraisal of interested organization's performance in terms of being a learning organization. In order to make meaningful and consistent assessments, benchmark values were calculated separately on sectoral and regional bases. In addition, both the total performance benchmark figures and separate benchmark figures for 7 different dimensions of DLOQ were obtained.

The regional benchmarks figures indicate that institutions in Europe and Asia show the best performance, while the worst in the Middle East. When checking the sectoral benchmarking values, Electronics & IT is by far the best performing sector.

In the scope of the research, besides providing sectoral and regional benchmarking values that have not been studied before, an example benchmarking study is also presented. Two methodologically similar studies are taken on-the-spot. In both studies, scholars mentioned that their inspected institutions are performed well in terms of being a learning organization. Nevertheless, the comparative results of the benchmarking study showed that local evaluations do not yield objective insights. Hence, it is clear that without benchmarking studies, decision-makers would not identify actual improvement areas for their institutions.

As well as the strengths of it, this study has a limitation that it was realized only with scanning Ebsco, Springer, ScienceDirect, Jstor databases, and proposed benchmark figures cover only results of research papers indexed in these sources. For future research, in order to increase the soundness of benchmarking values, the number of inspected research results could be increased by adding DLOQ related results of more academic articles, which were written in local languages. Likewise, master and Ph.D. theses could be taken into scope. In addition to increasing sample studies, with the help of DLOQ measurements of different institutions from an interested sector or region, a segmented benchmark study can be performed by clustering similar ones according to their performance in terms of different dimensions of learning organizations.

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