The creation and development of learning organizations: a review

Mohit Kumar, Justin Paul, Madhvendra Misra and Rubina Romanello

Abstract

Purpose – *In this paper, using the antecedents, decisions and outcomes (ADO) framework, the factors/key performance indicators (KPIs) most relevant for creating or building a learning organization (LO) are identified. This study aims to contribute to the field of knowledge management (KM) in terms of introducing KPIs to foster a business organization with a continuous learning process, mechanisms of knowledge creation and memorization.*

Design/methodology/approach – *In total, 57 papers were selected for this systematic literature review (SLR) from Web of Science and Scopus covering the period 1985–2019.*

Findings – *The 12 most relevant KPIs are identified based on the literature survey conducted in the field of LO.*

Research limitations/implications – *The managerial implications of this review paper will be an added advantage to the modern business organization worldwide that have adopted KM practices to foster knowledge management with information technology (IT) infrastructure. As IT infrastructure focuses on knowledge acquisition, dissemination and storage but the KPIs revealed through this review will help in transforming stored information as learning for the organization to improve its overall performance.*

Originality/value – *This review synthesizes prior studies and provides directions for future research.*

Keywords *Learning organization, Organizational learning, Systematic literature review, Key performance indicator, ADO framework*

Paper type *Literature review*

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1. Introduction

Academics and practitioners have increasingly recognized knowledge management (KM) and learning as key elements in the development of competitive advantage (Del Giudice and Della Peruta, 2016; Santoro *et al.*, 2019). The concept of *Learning organization* (LO) was popularized during the 1990s and lies in the creation of a learning environment that promotes continuous development among the stakeholders of the organization (Örtenblad, 2018). The creation of a learning environment and culture within an organization is aligned with certain factors or key performance indicators (KPIs). Knowledge acquisition, storage and distribution are the key knowledge management (KM) practices at the base of this process in an organization. Also, these elements represent the prerequisites for the creation of the learning culture within an organization that defines a learning organization according to the KM practices (Senge, 1991; Garvin, 1993; Gardiner and Whiting, 1997; Sambrook and Stewart, 2000; Park and Kim, 2018). This paper aims to identify and explore the KPIs essential for creating or developing a learning organization based on an SLR. While past studies such as Drew and Smith (1995), Goh (1998), Thomas and Allen (2006), Palos and VeresStancovici (2016); has discussed many of the KPIs necessary for the creation of an LO and the transformation process of an existing organization into a learning organization, yet a comprehensive literature review on the most relevant and significant KPIs has not been developed. This paper attempts to address this gap by reviewing articles on LO published in leading journals between 1986 and 2019 (both included).

The identification of KPIs that are important for creating a learning organization and, from a broader perspective, represent a KM practice that helps businesses, individuals, academics and researchers to select only the most relevant ones on which focus, avoiding the dispersion of resources for goals that will not result in increased performance for the firm (Andreeva and Kianto, 2012). Introducing fundamental KPIs into organizations will result in increased competitiveness and more sustainable growth (Pedler *et al.*, 1991; Teare and Dealtry, 1998; Bui and Baruch, 2010; Wilson and Beard, 2014).

Using an SLR methodology (Mallett *et al.*, 2012; Ampatzoglou *et al.*, 2015; Paul and Rialp-Criado, 2020), we shortlisted the papers that deal with a building or creating an LO and discussing the KPIs required. Peter Senge, in his remarkable book *The Fifth Discipline* (Senge, 1990), discusses five landmark characteristics of a learning organization (personal mastery, mental models, shared vision, team learning and systems thinking). This paper attempts, first, to discover other KPIs, apart from Senge (1990, 1991)'s works, that are significant and have been discussed in various other articles published in leading journals during the considered period of time. This review comprehensively draws on a variety of disciplines to identify the most significant KPIs across multiple disciplines. The authors of this review attempt to analyze the relevant works on LO, including the ones that have established a strong argument in terms of KPIs that contribute to an organization becoming an LO. The review analyzes and identifies gaps existing in this literature and suggests areas for future research (Watkins and Kim, 2018). This work reviews the literature published from the inception of the philosophy of LO in the year 1985 until 2019 (both included) to record essential KPIs and build a KPI matrix relevant to any type or form of organization.

This paper adopts the systematic review method and applies the antecedents, decisions and outcomes (ADO) framework developed by Paul and Benito (2018) to identify and explore various KPIs, select the most relevant factors from the identified majority and analyze the outcomes in the form of final prioritized most relevant factors for creating a learning organization. SLR is a contemporary technique suitable for reviewing the literature in a detailed and holistic manner and providing a systematic synthesis of the topic of interest (Ampatzoglou *et al.*, 2015). When compared to traditional review methods, SLR is a more transparent way to filter the literature, focusing strictly on the topic of interest. An added advantage is that this technique allows careful analysis of past and current work without bias involved in the inclusion/exclusion of any literature (Mallett *et al.*, 2012). In traditional literature review methods, even when developed comprehensively, authors tend to become more subjective and lack a multifaceted review of the literature available at the time of conducting their research. SLR is less affected by these limitations (Denyer and Tranfield, 2009; Paul and Rialp-Criado, 2020).

This review article aims to contribute to learning organization literature by summarizing the state-of-the-art of extant research and identifying the most relevant KPIs for the creation and development of learning organizations. Some prior reviews were published on this topic (Limwichitr *et al.*, 2015; Hallam *et al.*, 2014) which, however, used traditional ways of selecting articles, giving less prominence on scientific selection based on clearly defined inclusion-exclusion criteria. This review differs from extant reviews on this topic for its scientific selection of articles and also for presenting results based on antecedents, decisions and outcomes (ADO) framework based on Paul and Benito's (2018) model. This review represents a bridge between LO and KM literature, as it aims at identifying the most relevant KPIs based on the number of articles analyzing each indicator, showing the ones that are more important to create a LO.

The article is structured as follows. The next session presents the methodology. The third session synthesizes the state-of-the-art of literature, followed by findings and the discussion organized based on the ADO framework. The final part includes managerial implications and conclusions.

2. Methodology

The purpose of this review is to make a comprehensive analysis of published articles on the topics related to the development of a learning organization or the transformation of an organization into an LO. A review article can be developed either using a framework such as ADO (Paul and Benito, 2018), hybrid (Dabić *et al.*, 2020), meta-analytic review (Rana and Paul, 2020) or conceptual with the goal of theory development (Paul and Mas, 2020; Kumar *et al.*, 2020) or a narrative structured review (Rosado-Serrano *et al.*, 2018; Mishra *et al.*, 2020). By adopting the framework-based SLR method, this review aims to answer the following research questions: what are the key KPIs contributing to or responsible for, building an LO or transforming an existing organization into an LO? (Tuggle, 2016). Following Denyer and Tranfield (2009)'*s* approach, this paper follows five important steps of the SLR method to objectively carry out the review process. These steps are as follows:

- formulating a research objective/question;
- determining the search of studies;
- selecting and evaluating the studies;
- analyzing and synthesizing the studies; and
- reporting and discussing the results.

2.1 Formulation of the research question

The research question gives direction to the research, bringing focus to the topic of research without diverting from the main issue. While several areas might be explored during the research process, the prime concern is guided by the research question. In this paper, the authors have formulated a research question (RQ) that defines the purpose of the review:

RQ. What are the most relevant KPIs for creating or developing a learning organization?

2.2 Searching for studies

We formulated the search strategies to identify the relevant studies in a particular area. To locate studies for the review purpose, we used the ISI Web of Science (WoS) and Scopus database. The search strategy included the search words *creating OR developing OR building* AND *learning organization OR organizational learning*, following advanced search criteria using the Boolean operators OR and AND. These words were searched in titles of the publications following the *Language English* and *Document types, Articles*, considering the relevant period 1985–2019. These combinations of words were used to find all the relevant articles published on the topic to date. The reason for using the Web of Science and Scopus database was twofold: first, to reduce the ambiguity and duplicity of papers to be selected and second, this database provides the period starting with the year 1985, which is the time of inception of the broad area of this review topic, the learning organization. The search became precise and unnecessary articles from before 1985 were not taken into consideration. Filters restricted the search to keywords present in titles and keywords of publications to avoid irrelevant items. The first search, made in October 2019, resulted in 168 articles (Figure 1).

2.3 Selection and evaluation of studies

The 168 articles identified through the first search were further refined by considering research articles only, therefore excluding conference proceedings, books, book reviews and meeting abstracts. The refinement of the search resulted in 78 research articles, 4

Figure 1 Number of articles published in the period 1985–2018

Source: Google Scholar (search in October, 2019) OL&LO= Organizational Learning & Learning Organization

editorials and 4 reviews – a total of 86 published articles. The authors then thoroughly reviewed these articles by carefully reading their abstracts, keywords and full texts and matches made according to the objectives of this article. To be included in this review, articles had to fulfill the following inclusion criteria (Table 1):

- be focused on building or creating a learning organization;
- discuss some or a few factors (KPIs) essential to create or build a learning organization; and
- be published in quality journals (with high impact factor and reputed indexing/ranking).

Moreover, the exclusion criteria illustrated in the table below further refined the database to select only the quality articles relevant for the topic: articles not matching or unable to answering research questions were excluded from the systematic review process. After applying the inclusion/exclusion criterion for the best selection of articles for review, the selection of texts was purposefully reduced from 86 to 67. Table 1 illustrates the reasons why 19 articles were excluded. However, the exclusion procedure led to excluding only articles that met less than two of the selecting criteria. For example, the article written by

Table 1 Inclusion/exclusion criteria

Inclusion	*Exclusion*
Papers and articles focusing on building or creating a learning organization	Papers and articles focusing on learning as a single process or in a particular domain rather than as a whole
Papers discussing factors (KPIs) essential to create or build a learning organization	Papers, which do not discuss any factors (KPIs) for building or creating a learning organization
Papers published in indexed/ranked journal following our review objectives	Papers and articles that are not journal articles
	Not in English
	Not cited (zero citation)
	No usage count
	No abstract or full text available

Source: Authors' own work

Ries *et al.* (2016) was published in a quality journal but did not meet the review objective, having zero citations and a zero usage count; therefore, it was excluded. This procedure led to the exclusion of another 10 articles for similar reasons.

Seven articles were not available with full text and were, therefore, also excluded from the final selection of the articles. The final refined list consists of 57 articles/papers focusing on building or creating LO and discussing KPIs that are required to build, create or develop LO.

2.4 Reporting and discussing the results

Following the structure of prior review articles (Jones *et al.*, 2011; Romanello and Chiarvesio, 2019; Dhaliwal *et al.*, 2020), the analysis of articles was conducted to extrapolate some critical information such as the number of publications over the years, publication sources, country of origin, research methodologies. Then, a synthesis of results was developed based on the antecedents, determinants, outcomes (ADO) model (Paul and Benito, 2018), which allows to summarize and clarify the relationships between different factors that emerged from the literature.

3. Exploration of systematic literature review method

After applying the selection and evaluation criteria for the best selection of studies for the review purpose, the next phase is the analysis and synthesis of studies. Similarly, synthesis refers to aggregating all the studies with different perspectives to make sense of them and serve the purpose of the review (Paul and Benito, 2018; Paul and Rialp-Criado, 2020). The following sub-paragraphs summarize specific aspects describing the extant literature, including:

- the timeline of publications;
- publication sources;
- country of origin;
- research methodology used in the selected articles;
- application area; and
- data reporting and discussion.

3.1 Time-line of publication

Publications considered for this review range from those published in the mid-nineties to those most recently published (2019), when the term *learning organization* was coined. The oldest published article (selected for the review purpose) dates back to 1998 while the two most recent articles were published in 2018. In total, 22 articles fall in the most recent category (2014–2018), representing 38% of articles selected for review.

3.2 Publication source

The studies selected were published in 30 different journals; all SSCI (WoS) and SCOPUS indexed, which reveals the quality of the selected papers. Journals such as *The Learning Organization* (Emerald Group Publishing Ltd.), *Management Learning* (Sage Publications Inc.) and *Journal of Organizational Change Management* (Emerald Group Publishing Ltd.) Contain more than one article on the topic of review. Interestingly, the most cited studies do not necessarily correlate to reputed journals, but to works that are relevant and groundbreaking. Table 2 illustrates the number of articles published in each selected journal.

Table 2 Articles included in this review from different journals

Journals	*No.*	*Publication year*	*Index/rank*
African Journal of Business Management	1	2010	WoS, Scopus
American Educational Research Journal	1	2010	WoS, Scopus
American Journal of Health-System Pharmacy	1	2018	WoS, Scopus
Canadian Journal of Development Studies	1	2010	WoS, Scopus
Community Development Journal	1	2013	WoS, Scopus
Disaster Prevention and Management: An International Journal	1	2009	WoS, Scopus
Economics and Management	1	2014	WoS, Scopus
Educational Administration Quarterly	1	1999	WoS, Scopus
Educational Management Administration & Leadership	1	2014	WoS, Scopus, ABS
Engineering Management Journal	1	2008	WoS, Scopus
Evaluation	1	2015	WoS, Scopus, ABS
Family Practice	1	2004	WoS, Scopus
German Journal of Human Resource Management	1	2010	WoS, Scopus
Group & Organization Management	1	2010	WoS, Scopus
Health Research and Educational Trust	1	2006	WoS, Scopus
Information Systems Management	1	2001	WoS, Scopus, ABS
International Journal of Advanced and Applied Sciences	1	2016	WoS, Scopus
International Journal of Educational Sciences	1	2017	WoS, Scopus
International Journal of Health-Care Management	1	2018	WoS, Scopus
International Journal of Hospitality Management	1	2017	WoS, Scopus, ABS
International Journal of Human Resource Management	2	2001, 2012	WoS, Scopus, ABS
International Journal of Intercultural Relations	1	2002	WoS, Scopus, ABS
International Journal of Managing Projects in Business	1	2015	WoS, Scopus, ABS
International Journal of Nursing Practice	1	2011	WoS, Scopus
Journal of Applied Behavioral Science	1	2009	WoS, Scopus, ABS
Journal of Business Research	1	2013	WoS, Scopus, ABS
Journal of Cleaner Production	1	2006	WoS, Scopus, ABS
Journal of Community Psychology	1	2015	WoS, Scopus, ABS
Journal of Library Administration	1	2017	WoS, Scopus
Journal of Management in Engineering	1	2000	WoS, Scopus, ABS
Journal of Organizational Change Management	2	1999, 2007	WoS, Scopus, ABS
Journal of Strategic Information Systems	1	1999	WoS, Scopus, ABS
Journal of Technology Transfer	1	2015	WoS, Scopus, ABS
Journal of Workplace Learning	1	2014	WoS, Scopus, ABS
Journal of Knowledge Management	1	2016	WoS, Scopus, ABS
Knowledge Management Research & Practice	1	2014	WoS, Scopus, ABS
Learning, Culture and Social Interaction	1	2016	WoS, Scopus
Library Review	1	2015	WoS, Scopus
Long Range Planning Journal	1	1999	WoS, Scopus
Management Learning	1	2017	WoS, Scopus, ABS
Medical Teacher	1	2006	WoS, Scopus
Organizational Dynamics	2	2017, 1998	WoS, Scopus, ABS
South African Journal of Education	1	2010	WoS, Scopus
SPE Drilling & Completion	1	2000	WoS, Scopus
Systemic Practice and Action Research	1	2017	WoS, Scopus, ABS
Systems Research and Behavioral Science Journal	1	2008	WoS, Scopus
Technology Forecasting and Social Change	1	1999	WoS, Scopus
The Academy of Management Journal	1	2000	WoS, Scopus, ABS
The Australian Library Journal	1	2014	WoS, Scopus
The Leadership Quarterly	1	2009	WoS, Scopus, ABS
The Learning Organization	2	2016, 2017	WoS, Scopus
Total Quality Management	2	2010, 1999	WoS, Scopus, ABS
The Phi Delta Kappan Journal	1	2001	WoS, Scopus
Total	57		

Source: Authors' own work

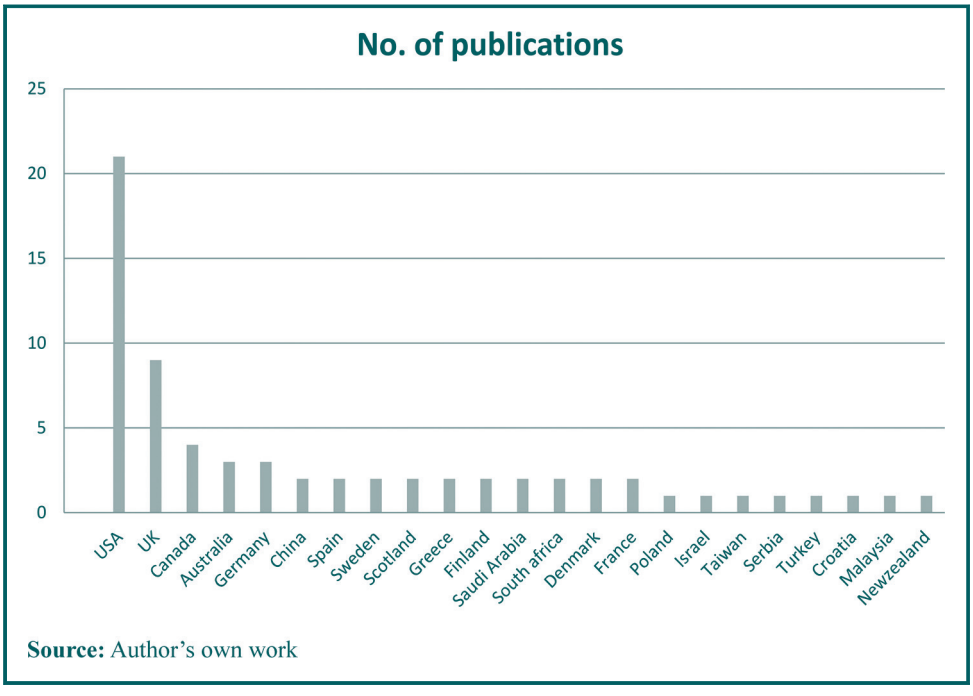
3.3 Country of origin

Concerning the geographic location of the studies selected for this review, Figure 2 illustrates that they are widely dispersed. The concept of LO and its application to different circumstances is applied in different countries around the world, including 24 countries, both developed and developing nations. That said, most of the studies were developed by American authors and considering the USA as an area of study: specifically, 21 studies representing about 37% of total articles considered. As described in Figure 2, the USA is followed by the UK (9), Canada (4) and Australia (3). Among the developing countries, there are articles studying China and Malaysia and some countries from East Europe such as Croatia, Serbia and Poland.

3.4 Explanation of research methodology used in the selected articles

From the methodological perspective, qualitative studies dominate this literature. However, as illustrated in Table 3, there are 17 conceptual papers, which represent half of the total studies selected. The remaining are research papers, case studies, review papers and

Figure 2 Country-wise publications



Source: Author's own work

Table 3 Type of studies conducted in selected articles

Category	*Methodology used*	*No.*
Conceptual studies	Concept and theory discussion	17
Qualitative case studies	Structured and semi-structured interviews, observations and thematic analysis were used	15
Empirical/quantitative case studies	Structured questionnaire, interviews, factor analysis, SEM and performed	7
Empirical/quantitative research studies	Regression analysis, factor analysis, SEM, mediation and moderation analysis, etc	9
Qualitative research studies	Interviews and observations	7
Reviews	Literature reviews	2

Source: Authors' own work

expert commentary. The 16 research papers (including both qualitative and quantitative research studies) present different methodologies, but the regression studies are more common. However, in general, among the empirical papers, most are case studies. There are 15 qualitative case studies and 6 quantitative studies.

3.5 Application area of selected articles

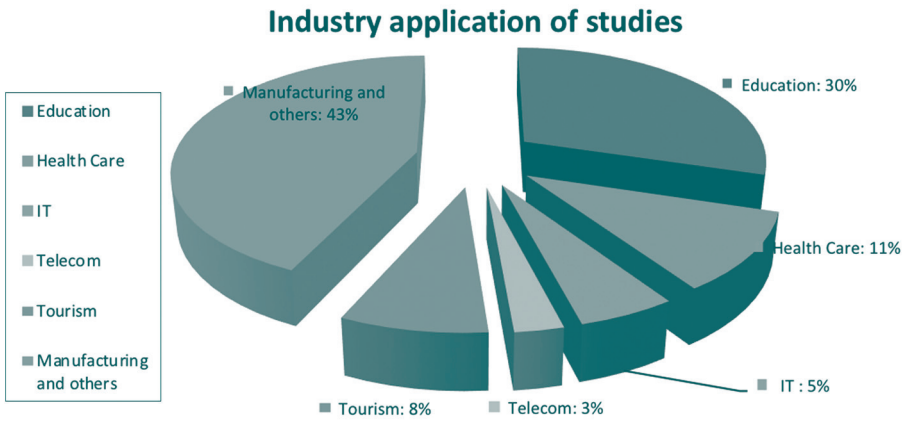
The selected studies belong to several areas or domains where a learning organization can be created or built. Examples of case studies and research papers include industrial organizations. As seen in Table 3, more than 20 papers out of the 38 papers comprising case studies and research papers both quantitative and qualitative conducted their studies on industries mainly service-providing companies; 16 papers assume the perspective of general management and have manufacturing organizations as their samples/cases for study, 11 belong to education, 4 to health-care and 6 related to IT, telecom and, tourism, etc., study (Figure 3). This analysis reveals that the dominance of the service industry is high in the creation or building of LO.

3.6 Data reporting and explanation for selected articles

The analysis of the literature has led to the identification of KPIs that are essential for building a learning organization by including both classical studies in the fields of LO and organizational learning, as well as in related fields. Of the KPIs, 17 were identified as relevant to the creation or development of an LO or the transformation of an existing organization into an LO. This exhaustive list of 17 KPIs has been identified by considering authors who have discussed between 1 and 10 relevant KPIs/indicators in different combinations, from the list of 17 KPIs in their papers. However, when considering the frequency of use, only 12 KPIs were used more than 10 times and were, therefore, considered as the most relevant. Table 4 describes the frequencies of all 17 KPIs analyzed in the selected 57 papers, while Table 5 provides information about the authors of the papers.

This process (Tables 4 and 5) assist us to identify KPIs predominantly used, and therefore considered more relevant, responding to our research question chosen. The KPIs are coded in the abbreviated form as shown in Table 4. The analysis has revealed that *shared*

Figure 3 Industry-wise application of studies



Source: Authors' own work

Table 4 Frequencies of factors (KPIs) in publications

Factors (KPIs) s	*Coding#*	*No. of publications per year*[*]
Shared learning	SHLR	*32* (1998, 1999, 2001, 2006, 2008, 2009, 2010, 2011, 2012, 2013, 2015, 2016, 2017 and 2018)
Team-working and learning	TWLR	*31* (1999, 1998, 2000, 2001, 2002, 2004, 2006, 2008, 2010, 2011, 2014, 2015, 2017 and 2018)
Systems creation	SYSCRTN	*30* (1999, 2001, 2004, 2006, 2008, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017 and 2018)
Leadership and structure	LDRSHP	*27* (1998, 1999, 2002, 2006, 2008, 2010, 2011, 2014, 2017 and 2018)
Management commitment	MACMT	*19* (1999, 2000, 2002, 2009, 2014, 2015, 2017 and 2018)
Shared vision	SHVISN	*18* (1998, 1999, 2006, 2009 and 2010)
Connecting to the external environment	CONEX	*17* (1999, 2004, 2006, 2009, 2013, 2014, 2015 and 2017)
Information acquisition and dissemination	INAQDISS	*16* (1999, 2001, 2006, 2008, 2009, 2014, 2015 and 2016)
Self-development	SLFDVLP	*14* (1998, 2006, 2009, 2010, 2011, 2014, 2015 and 2018)
Networked learning	NWLR	*13* (1999, 2008, 2009, 2011, 2006, 2010, 2015, 2014 and 2017)
Learning culture	LRCTR	*13* (2008, 2010, 2011, 2013, 2014, 2015, 2016 and 2017)
Participative decision-making	PDM	*12* (1998, 2000, 2001, 2007, 2008, 2011, 2012, 2014, 2015 and 2017)
Empowerment	EMPRT	*8* (1999, 2001, 2002, 2006, 2015 and 2017)
Experimenting	EXP	*8* (1999, 2002, 2006 and 2015)
Embedded systems	ES	*4* (2010, 2017 and 2016)
Learning climate	LRCMT	*3* (2014, 2015 and 2017)
Organizational readiness	ORGRDNS	*2* (1998 and 2001)

Source: Authors' own work. *Repetitive years excluded, #an abbreviated form of the KPIs

learning (SHLR) and *organizational readiness* (ORGRDN) are considered, respectively, the highest and lowest used indicators among the 17 KPIs, respectively. *Shared learning* may refer to a complete package of shared thinking, shared interpreting and shared working over one aspect or several aspects as a whole. Team learning facilitates shared learning; *shared learning* as a KPI was discussed in 32 papers reviewed – almost equal to the *team working and learning* (TWLR). It is possible that the concepts of shared learning and team learning are used interchangeably in some of the papers. TWLR is the KPI that involves teams learning in a collective learning paradigm. This factor ensures shared learning based on a free flow of knowledge and information from one member to another, without any hierarchical barrier. Teamwork is a part of collaborative work systems that are ingrained in individual and group values, beliefs and behavior collectively directed toward the achievement of organizational objectives (Lick, 2006; Schippers, 2014). Such clarification among basic meaning for defining the contributing factors/KPIs make us available to deduce with 17 related but differently contributing factors to create or build a learning organization. The essence of organizational learning also lies within collective or group learning that fosters co-mentoring to integrate knowledge and create new solutions, converged with team learning and the philosophy of shared vision coined by Peter Senge

Table 5 Contributing factors (KPIs) matrix

N.	*Authors factors (KPIs)s*	*LRCTR*	*MACMT*	*EMPRT*	*INAQDISS*	*ORGRDNS*	*TWLR*	*NWLR*	*LRCMT*	*LDRSHP*	*SLFDVLP*	*SYSCRTN*	*SHLR*	*CONEX*	*PDM*	*EXP*	*SHVISN*	*ES*	*Total*
1	Hitt (2000)		Y												Y				2
2	Liao *et al.* (2017)						Y					Y							2
3	Scribner *et al.* (1999)		Y		Y		Y			Y			Y	Y					6
4	Hannah and Lester (2009)				Y		Y	Y		Y	Y	Y		Y			Y		8
5	Resar (2006)						Y			Y		Y							3
6	Roth and Kleiner (1998)					Y	Y			Y	Y	Y	Y			Y			7
7	Dervitsiotis (1998)		Y				Y			Y						Y	Y		5
8	Gallucci *et al.* (2010)									Y			Y				Y		3
9	King (2001)					Y	Y					Y	Y						4
10	Sackmann *et al.* (2009)		Y							Y							Y		3
11	Vidal-Salazar *et al.* (2012)												Y			Y			2
12	Jones (2001)	Y					Y												3
13	Lick (2006)			Y	Y		Y			Y	Y	Y	Y	Y	Y	Y			10
14	Ford *et al.* (2000)						Y					Y				Y	Y		4
15	Jokelainen *et al.* (2011)	Y																	1
16	Holmqvist (1999)							Y				Y	Y	Y					4
17	Manring and Moore (2006)		Y				Y	Y		Y	Y	Y	Y	Y			Y		9
18	Yeo and Marquardt (2010)	Y	Y					Y		Y	Y	Y	Y		Y	Y	Y		10
19	Stinson *et al.* (2006)						Y			Y	Y	Y					Y		5
20	Shaw *et al.* (2004)						Y					Y		Y					3
21	Yu *et al.* (2013)	Y										Y	Y	Y					4
22	Tolbert *et al.* (2002)		Y	Y			Y			Y									4
	Total (A)	5	7	2	3	2	14	4	0	12	6	12	10	7	3	6	8	0	

Sl. N.	Authors factors (KPIs) s	LRCTR	MACMT	EMPRT	INAQDISS	ORGRDNS	TWLR	NWLR	LRCMT	LDRSHP	SLFDVLP	SYSCRTN	SHLR	CONEX	PDM	EXP	SHVISN	ES	Total
23	Dashwood and Puplampu (2010)		Y							Y		Y							3
24	Moloi (2010)									Y		Y	Y				Y		4
25	Freiling and Fichtner (2010)	Y					Y			Y	Y	Y	Y	Y	Y			Y	9
26	Mathiassen *et al.* (1999)		Y				Y	Y				Y							4
27	Liljenberg (2015)		Y				Y			Y			Y		Y				5
28	Roux-Dufort and Metais (1999)																Y		1
29	Oliver and Jacobs (2007)						Y				Y		Y		Y				4
30	Liu and Low (2009)							Y				Y	Y	Y	Y				5
31	Trainor (2008)	Y			Y		Y			Y		Y	Y						6
32	Martensen and Dahlgaard (1999)			Y	Y		Y			Y									4
33	Lancaster and Di Milia (2015)	Y							Y	Y	Y		Y				Y		7
34	Adamska and Minárová (2014)				Y						Y	Y	Y						4
35	White (2008)				Y			Y				Y	Y		Y				5
36	Cassells (1999)		Y		Y		Y	Y				Y		Y					6
37	Jaaron and Backhouse (2017)			Y				Y	Y			Y	Y	Y				Y	7
38	Lennie *et al.* (2015)	Y	Y		Y		Y			Y		Y	Y			Y			8
39	Limwichitr *et al.* (2015)	Y	Y	Y				Y		Y		Y	Y	Y			Y		9
40	Kim (2014)		Y							Y				Y					3
41	Hallam *et al.* (2014)	Y	Y				Y	Y	Y				Y				Y		7
42	Mohr and Dichter (2001)			Y	Y		Y			Y		Y			Y		Y		7
43	Liu (2017)				Y		Y						Y	Y					4
44	Shin *et al.* (2017)			Y	Y								Y	Y	Y				5
45	Francescato and Aber (2015)			Y											Y	Y			3
46	Ahern *et al.* (2015)		Y											Y					2
47	Radenković *et al.* (2014)				Y		Y						Y		Y				4
	Total (B)	6	9	7	10	0	12	7	3	11	4	13	16	9	9	2	6	2	

(*continued*)

Table 5

N.	*Authors factors (KPIs)* s	*LRCTR*	*MACMT*	*EMPRT*	*INAQDISS*	*ORGRDNS*	*TWLR*	*NWLR*	*LRCMT*	*LDRSHP*	*SLFDVLP*	*SYSCRTN*	*SHLR*	*CONEX*	*PDM*	*EXP*	*SHVISN*	*ES*	*Total*
Sl. N.	Authors factors (KPIs) s	LRCTR	MACMT	EMPRT	INAQDISS	ORGRDNS	TWLR	NWLR	LRCMT	LDRSHP	SLFDVLP	SYSCRTN	SHLR	CONEX	PDM	EXP	SHVISN	ES	Total
48	Can (2011)	Y					Y			Y	Y	Y	Y				Y		7
49	Rixse and Thorogood (2000)						Y					Y					Y		3
50	Ravichandran and Mishra (2018)		Y	Y						Y									3
51	Ward *et al.* (2018)		Y				Y	Y		Y	Y		Y				Y		7
52	Hawkins *et al.* (2017)				Y			Y					Y					Y	4
53	Rupčić (2017)		Y		Y						Y	Y	Y						5
54	Sinclair (2017)	Y					Y			Y		Y	Y				Y		7
55	Shurafa and Mohamed (2016)				Y														1
56	Fedai *et al.* (2016)	Y					Y					Y		Y					4
57	McQueen and Janson (2016)										Y		Y					Y	3
	Total (C)	3	3		3	0	5	2	0	4	4	5	6	1	0	0	4	2	
	Total (A) + (B) + (C)	13	19	8	16	2	31	13	3	27	14	30	32	17	12	8	18	4	

Source: Authors' own work

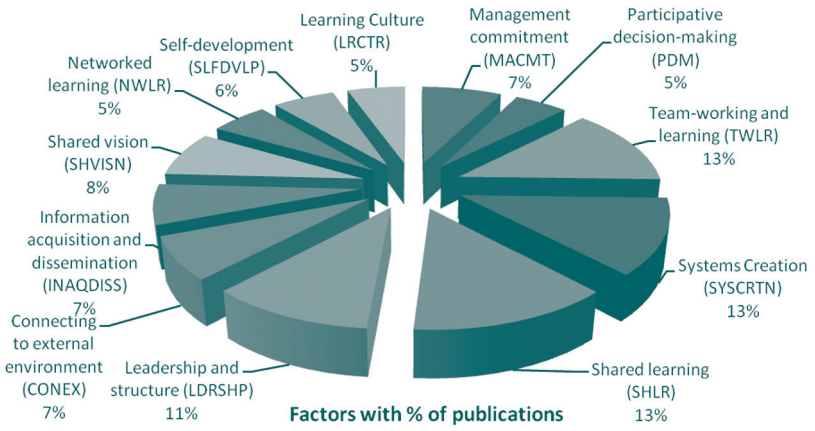
(1990). All these reasons can explain why most authors have made this KPI important in their work, as it has been discussed in 32 of 57 papers.

In contrast, *organizational readiness* (ORGRDN) is discussed in only 2 papers. Defining this factor is difficult because acceptability and adaptability at each level of organizational structure or in a multilevel learning structure are not easily achieved concurrently. Strong leadership support is needed to introduce, implement and retain learning at all levels in multilevel organizations (Alon and Higgins, 2005). However, *management commitment* (MACMT), which is also a KPI discussed in this review as a relevant factor, is significant to make an organization ready to learn and to facilitate organizational learning at each level. That is why *management commitment* (MAMCT) was found to have been used to a moderate degree, specifically, in 19 of 57 papers reviewed. *Shared learning* (SHLR) and knowledge transfer could be an outcome of team learning, where information acquisition, dissemination and shared interpretation have all contributed to knowledge management (Pereira *et al.*, 2019). Both concepts can contribute to the building of LOs. Considering the relevance of all the KPIs identified, it could be suggested that a few factors/KPIs have close links with each other, although all of them have importance and cannot be used interchangeably or applied one instead of another. For instance, *team working and learning* (TWLR) can represent both an individual or group-focused approach for LOs, whereas *shared learning* (SHLR) is a process or function-focused approach within groups to foster learning. *Leadership and structure* (LDRSHP) refers to organizational structure and expresses the hierarchy of management and authority relationship in an organization. Leadership is meant for motivation, inspiration and an urge for team spirit to achieve organizational goals (Alon and Higgins, 2005; Schippers, 2014). Individual ability to acquire, retain, disseminate information and knowledge is best reflected within the organizations when individuals are free to think, initiate and interact (Grant and Baden-Fuller, 2018). Leadership structures must foster a free environment; information acquired from external environmental sources is of key importance, as it is marginal growth in the current knowledge base of individuals and essential for knowledge management practices among learning organizations (Park and Kim, 2018). Thus, *leadership structures* (LDRSHP) play an important role in *connecting to the external environment* (CONEX) in *information acquisition and dissemination* (INAQDISS) processes. Effective dissemination processes also help internal information flows that lead to shared understanding, shared interpretations and ultimately *shared vision* (SHVISN) that serves the organization in the future (Senge, 1990; Pereira *et al.*, 2019). *Leadership and structure* (LDRSHP) is a significant factor in ensuring the learning addresses every unit in the organization with the help of a *shared vision*. An organization that achieves the network of learning and the continuous interplay of learning activities could result in a *learning culture* (LRCTR) (Stinson *et al.*, 2006). Once a true learning culture is developed, the organization can be classified as a learning organization (LO).

As highlighted by the above discussion, the 17 KPIs identified in the analysis are different but still related to each other and can be considered contributing factors to create or develop LOs. As illustrated in Table 4, only 12 KPIs have been used in more than 10 studies out of the selection (57 papers). For this reason, the most relevant KPIs are the 12 indicators that have been used more than 10 times (i.e. used in more than 10 studies of the 57 papers).

Figure 4 illustrates the classification of KPIs according to the number of publications addressing the factor. According to this criterion, shared learning (SHLR), systems creation (SYSCRTN) and team working and learning (TWLR) are equally important as they appear in 13% of publications. These are followed by leadership and structure (LDRSHP) (11%), shared vision (SHVISN) (8%) and three other KPIs present in 7% of publications:

Figure 4 Factors (KPIs) in number of publications (percentage)



Source: Authors' own work

management and commitment (MACMT), INAQDISS and connecting to the external environment (CONEX). The remaining factors have been investigated in fewer publications.

4. Antecedents, decisions and outcomes framework

The analysis led to the proposal of a conceptual framework based on the antecedents, decisions and outcomes identified in the literature, as summarized in Figure 5.

Figure 5 Conceptual framework for creating a learning organization

4.1 Conceptual framework

A conceptual framework based on the findings of this review will help in understanding the basic aspects of developing an organization as LO along with a summary of how concepts such as KM, OL, could make more relevant the concept of LO. A learning organization has been defined in many ways by the authors working in this field. With so many definitions, several concepts have been developed and almost every concept based on a definition of LO is true to its context (Shin *et al.*, 2017; Örtenblad, 2004). Although there is some disambiguation between related terms such as organizational learning and learning organization, there was sufficient justification provided to solve the doubts. In fact, in most cases, authors have considered this disambiguation insignificant, as it has been, to a great extent, based on the mere labeling or terminology of the two concepts (Örtenblad, 2004, 2018). Learning organization and organizational learning are, however, different concepts and this has been proven by various authors in their own way in their research studies (Watkins and Marsick, 1993; Teare and Dealtry, 1998; Garvin, 1993). Beyond this debate, there is currently a need to look at the broader aspects of LO: how is learning generated, centered and transferred? How could learning be used for organizational success? Although some questions were already addressed in specific fields, particular attention to these concepts when related to LO is still lacking in extant research (Liao *et al.*, 2017; Shaw *et al.*, 2004). A broad area covering organizational learning and learning organizations is knowledge management (KM) and focusing more on business organizations as learning organizations' involvement of knowledge management practices could give better outcomes (Pandey and Dutta, 2013; Pereira, 2019). Thus, in this paper, however, not directly focusing on knowledge management practices, the key performance indicators (KPIs) are suggested as underlying practices that could foster knowledge management and learning in organizations.

A thorough analysis of publications reveals that theories for defining and familiarizing the concept of learning organization or transforming an organization into an LO are abundant. Among the final 57 selected papers, Senge (1990)'s a theoretical framework and his 5 disciplines of LO are discussed in the majority of papers, including both empirical and conceptual papers. In addition, many case studies were drawn on the organizational learning approach, including single- and double-loop learning used prominently in several studies. Watkins and Marsick's Dimensions of Learning Organization Questionnaire, 1999 (DLOQ) has also been extensively used, either directly or by adopting some of its components such as in the case of surveys and interviews conducted within the organization. In terms of the relevant question of how an organization can become a learning organization, this review highlighted the key performance indicators/factors that served the purpose of both clarifying the meaning of LO and paving the way to become one.

The papers considered for this review might not have established their own theories regarding developing or creating LO but they have (in most cases) discussed and applied the pragmatic approach, using the theories and concepts already established or contributed by eminent authors in this respect. For instance, Anders Örtenblad (2001)'s a critical measurement of the development and existence of LO as an integrated model (Örtenblad, 2004) discusses four aspects of LO, *learning at work, organizational learning, developing a learning climate and creating a learning structure.* A more scientific way of discussing the findings and results is presenting in subsequent sections in form of the ADO framework, where KPIs are classified accordingly as antecedents, decision and outcome factors.

LOs have to be more comprehensive and multifaceted so that they can solve puzzles prevailing among experts and organizations as to whether and how to become an LO (or not) (Hannah and Lester, 2009). In the session below, the following ADO framework identifies evolutionary factors (antecedents), characteristics (decisions) and the KPIs

(outcomes) relevant to building a learning organization (Paul and Benito, 2018). It is applied in line with the review objective to find out the most relevant KPIs and how these KPIs help in characterizing the learning organization and defining and discussing the outcomes of the article reviewed for the purpose of this study in a comprehensive manner. ADO approach will help in discussing the KPIs evolving process through usage and application made by different authors at different points of time. The ADO approach is applied to answering RQ and to know how decisive the identified most relevant 12 KPIs are in creating or developing a learning organization or defining an existing organization as a learning organization if found those relevant KPIs. In addition, the ADO approach also can tell the outcomes of the factors if applied or adopted in organizations dealing with both product and service sector organizations.

4.2 Antecedents

The learning process is the first step (in analyzing why an organization needs to be an LO) through which excellence can be achieved. Learning processes are defined by focusing on organizational learning (not necessarily specific for all learning organizations). For example, Huber (1991) describes 4 steps that learning processes have to complete and sustain for a (relatively long) period in an organization.

Knowledge management (KM) practices and organizational learning start with the first step of *information or knowledge acquisition* where information can be acquired from various sources, either internal or external to an organization. The next step is *information or knowledge dissemination*, which entails the distribution of knowledge or information to the organizational members (Nonaka, 1995; Loermans, 2002). The process of acquisition and dissemination of information perform either by individuals and groups or by the leaders (Dashwood and Puplampu, 2010; Liljenberg, 2015). The third step is information or knowledge interpretation. During this phase, the tasks of leaders, functional heads and managers become significant because the interpretation of information or knowledge has to serve the organization's wider purpose interact (Grant and Baden-Fuller, 2018). For this reason, this process must be applied in a manner that suits the organizational objectives (Nonaka, 1995; Slater and Narver, 1995). This process is called "shared interpretation," as the interpretation matches the requirements of the shared objectives or vision of an organization. Senge (1991) also notes that this shared vision accounts for the dissemination of the organization's vision statement to every member of the organization. It also results from shared interpretation and learning (Hallam *et al.*, 2014). According to Huber (1991)'s theory, the fourth and last step entails memorizing information or knowledge acquired. To this purpose, organizational memory is made strong and flexible enough so that knowledge can be used whenever required, at any point in time in the future and be practiced as learning within the organization (Nonaka, 1995; Roth and Kleiner, 1998).

4.3 Decision factors

Decision factors represent the essence of learning developed in any organization. The role of a learning organization pertains to creating an environment that fosters the mechanism of learning within the organization, allowing it to store information or knowledge acquired and use it for longer periods of time (Roth and Kleiner, 1998). Organizational learning could be defined as a phenomenon or an activity that evolves and facilitates learning in any organization. However, an LO is an entity that makes efforts to converge the process of learning into its own system, to let it be repetitively practiced and continuously improved (Huber, 1991; Slater and Narver, 1995; Örtenblad, 2001). LOs aim to create an environment or instill a climate that fosters this mechanism of learning within the organization, where information or knowledge acquired can be stored and used for long periods (Roth and Kleiner, 1998). The existence of a *learning environment or climate* is a distinctive feature of learning organizations. Without this key attitude, no learning takes place, as the underlying

components of the learning process such as information interaction, sharing and distribution, will not work (Pereira *et al.*, 2019). In fact, in the absence of a learning environment, the LO members will be unable to integrate and convert their information into knowledge, their knowledge into reformed behavior and the reformed behavior into learning. Reasons explaining this inability may include hesitation, bias, internal rivalry, personal disputes, etc. The creation of a learning environment is a key factor to generate and facilitate learning in an LO.

The creation of a learning environment means creating an environment that is inviting, participative, hassle-free and appreciative. As organizational members have different roles and responsibilities, it can become difficult to encourage interaction, especially when addressing the conversion of one's tacit knowledge into explicit knowledge that has to be shared with others (Nonaka, 1995) and this is what KM practices demand. Although organizational members share information, their tacit knowledge can contribute a greater share to generate learning when it becomes implicit either through the use of IT resources following KM perspectives or possible when an environment of shared learning is created, an LO perspective (Loermans, 2002). To successfully create a learning environment, the roles of *leadership and teamwork* are also important (Dashwood and Puplampu, 2010; Schippers, 2014; Liljenberg, 2015). Some leaders from the top or middle management must embody the role of team or group leaders who view all organizational members as a team, encourage members to come forward and share their experience, learning and, also, mistakes, which could become sources of learning within the organization (Gardiner and Whiting, 1997; Dashwood and Puplampu, 2010; Liljenberg, 2015). Another successful factor relates to the involvement of different organizational departments. The learning process must not be centered in one department such as the research and development unit or the innovation wing of the organization. Rather, learning processes must be all-pervasive and linked to everyone in every functional domain to achieve *networked learning* (Richardson, 1995). Organizational learning refers to a learning process or mechanism that takes place in one or a few functional departments because it fulfills the learning mechanism requirement, whereas a learning organization meets the defining criteria when a pervasive *networked learning* process could be practiced (Richardson, 1995; Örtenblad, 2001).

LOs are entities that call for learning creation at each level of their core processes (Shin *et al.*, 2017; Örtenblad, 2018). Learning becomes the distinctive feature and either an explicit or implicit objective of the organization, which then aims in achieving organizational effectiveness. As highlighted by Pedler and Burgoyne (2017), in the contemporary context, modern organizations need to act as LOs absorbing the learning processes as their core and practicing it across their functions to achieve overall business excellence (Pedler and Burgoyne, 2017). An LO can become a source of learning for other organizations which are not business rivals or for new members joining the organization. The transition of a knowledge base from the organization's current members to the next level of employees is a form of learning itself (Liao *et al.*, 2017). In an LO, the storage of knowledge and the practice of learning are done in parallel and universally to reduce the chances of losing knowledge and seeing learning perishing with the passage of time and the departure of organizational members (Pandey and Dutta, 2013; Pereira *et al.*, 2019). In LOs, learning acquired by individuals should not be developed in isolation or among small member groups over a particular period. Rather, learning must represent a continuous function, which should be nourished throughout the interaction by organizational members (Huber, 1991; Nonaka, 1995). *Participative or shared learning* is a significant driver for any organization aiming to become an LO.

Participative learning or shared learning is also an attribute that is delivered through the development of a learning culture in an organization (Watkins and Marsick, 1993; Stinson *et al.*, 2006). As described earlier in this section, the importance of leadership and

teamwork when establishing a *learning culture* is in the hands of leaders and top management teams. A learning culture guides every individual in an organization, whether he/she is an employee, middle-order or top-level executive, to promote learning at their own level and percolate it vertically or horizontally within the organizational structure (Marsick and Watkins, 2003; Stinson *et al.*, 2006). *Learning culture* frees individuals from cognitive bias as they feel free to learn and teach each other. A learning environment provides the freedom and availability of resources that are necessary to generate learning and favor its transmission to the next level or through a physical unit, whereas a learning culture entails the development of a sense of learning and its dissemination. *Learning culture* encourages the promotion of learning within the organization, despite individuals' own restrictions due to their personalities, values and beliefs. A learning environment could represent an external orientation toward learning, while a learning culture could be intended as the internal orientation toward learning which spreads without restrictions. A *learning culture* is embedded in a learning environment. However, the creation of both a learning environment and a learning culture is again heavily dependent on the leadership and commitment of top management in organizations.

LOs can be created or developed with strong commitment and support from management. The top management has the authority to fully use resources in a manner that will result in organizational excellence in terms of productivity, customer satisfaction and profitability (Pedler and Burgoyne, 2017; Shurafa and Mohamed, 2016). Better learning leads to the best utilization of resources, both human and non-human. Thus, learning could have a cyclic impact on the outcome of organizational activities and the induction of ideas to better use resources. One concern is that sometimes learning could be inappropriate or achieves different outcomes than expected (or amount to less than originally hoped for). In these cases, only top management has the authority to inculcate double-loop learning in place of single-loop or adaptive learning (Fiol and Lyles, 1985; Slater and Narver, 1995; Jaaron and Backhouse, 2017).

As an organization's vision, mission and objectives can change only as double-loop learning demands (Fiol and Lyles, 1985; Jaaron and Backhouse, 2017), this is at the discretion of top management and *participative decision-makers*. Top *management's commitment* toward the success of the organization is, however, the underlying thought and belief of every organization's existence and success at every level are achieved through continuous improvement and development (Shurafa and Mohamed, 2016). Management must understand that there is a constant need for organization-wide learning to increase and develop to ensure sustained success in a competitive environment (Andreeva and Kianto, 2012). To sum up, there is no specific time to be a learning organization – continuous learning through knowledge acquisition and universal dissemination is always needed.

4.4 Outcomes

Studies are found in various contexts, with differently quantified numbers of KPIs that are suitable to a specific organization, industry or firm. In terms of outcomes, this review has underlined a number of KPIs necessary to create or develop an LO, leading to improve the effectiveness of the organization. For example, the measurement of the effectiveness of learning organizations can be done using two parameters: first, the increase in employees' productivity and second, the satisfaction of other stakeholders, including customers (Tuggle, 2016). The Dimensions of Learning Organization Questionnaire (DLOQ) – a comprehensive set of questions introduced by Marsick and Watkins (2003) – is widely used to successfully measure the effectiveness of learning organizations and is more inclined toward the human resource development practices of organizations. However, only a few studies have used DLOQ as a measurement tool when considering other perspectives such as financial performance and marketing efficiency. To date, only 3 papers have addressed

the topic of customer confidence (Adamska and Minárová, 2014) and customer or employee feedback (Wirtz *et al.* 2010; Islam *et al.*, 2014). Apart from these, it is rarely possible to find any published work investigating consumer or end-user feedbacks in terms of satisfaction as an outcome of an organization's continuous improvement, particularly not in the context of an established learning organization (Islam *et al.*, 2014; Pantouvakis and Bouranta, 2013). Among organizational stakeholders, the focus is only on employees, primarily considering their empowerment, participation and learning. Although this is necessary, other stakeholders, including the end-users, are essential and should also be taken into consideration. End-users feedback can also be a relevant KPI for the creation of a learning organization, as every organization is evaluated according to its performance outcomes (which can be revealed through end-users feedback). This feedback can also serve as a parameter to analyze whether a learning organization is performing well (Pedler *et al.*, 1991).

5. Directions for future research

We provide directions for future research based on the identified research gaps from the work done in this area to date, following the thumb rules set for developing an impactful review article (Paul and Rialp-Criado, 2020).

5.1 Antecedents

As already discussed, antecedents are the processes of learning comprising four elements, including information acquisition, information dissemination, information interpretation and creating an organizational memory. A future learning entity such as an LO, is a form of organization that supports continuous learning of individuals to transform their learning into intellectual capital within the organization. Moreover, organizational learning is a process wherein individuals learn first and their learning will be kept inside the organization, minimizing the risk of losing it if individuals leave the organization. However, this is only a narrow definition of a learning organization. The first gap identified by this review concerns the differences between these two terms. Authors and experts working in this field have more views in this regard. It is known that the two terms have been often used interchangeably, although there are differences in two categories, *forms* and *processes* (Örtenblad, 2001, 2018). The lack of clear differentiation brings ambiguity and creates hurdles for critical review to overcome in future research – the antecedents for LOs and organizational learning could be considered differently, according to the different lines of distinctions between the two concepts. However, KM covers both the concept of OL and LO and in such a way it could be an umbrella term for both but if it is an objective to find such factors which can essentially be implemented as KPIs to develop an LO, KM perspective is needed to explore more. In this sense, future research may place more emphasis on clarifying whether key factors are considered drivers to create a LO or, from a narrow perspective, to foster organizational learning within organizations.

5.2 Decision factors

Decision factors determined under an ADO framework could help to reduce the difficulty in measuring the effectiveness of learning organizations, which was the second major gap found through the SLR review. The commitment of top management, participation of employees in decision-making, teamwork, shared learning, etc. are all decision factors that help in the creation of an LO, which can lead to improving the effectiveness of organizations. In conclusion, as it emerged from the analysis of the literature, the creation or building of a LO needs management commitment and support, facilitative leadership, teamwork, a learning environment/climate and learning culture as essential factors. While the literature that guides organizations toward creating, building or developing an LO is

available in abundance, only one study has described a quantified number of factors or KPIs needed. Also, it is difficult to assess, from the available literature, to what extent KPIs significantly affect learning organizations or, anyhow, contribute to learning organizations in general (Watkins and Kim, 2018). Future research could assume a comprehensive perspective to examine the impact of large sets of KPIs on these processes.

5.3 Outcomes

As emphasized in this review, the effectiveness of learning organizations has been mostly measured in terms of employees' productivity, whereas more research should address the satisfaction of other organizational stakeholders. In particular, as most researchers have considered employees' reactions so far (e.g. Wirtz *et al.*, 2010), future studies should investigate feedbacks of customers and end-users and increases of customer confidence as outcomes of learning organizations (Islam *et al.*, 2014; Adamska and Minárová, 2014). KM practices must implement with the quest to deliver customer satisfaction through customers' information storage and memorization and its transformation as learning among the business organizations.

6. Managerial implications

It was found that the majority of total studies were conducted in the services sector such as education, health-care, hospitality and tourism. For this reason, KPIs identified in this study may apply to learning organizations operating in the service sectors more than organizations in the manufacturing industry because the nature of a service organization is different from that of manufacturing – the functionality is based on a different philosophy, etc. however, manufacturing organizations also adopt KPIs discussed, as information processing, memorizing and learning through stakeholders feedback could be same for both service and manufacturing organization, implementation could differ.

6.1 Implications for practitioners

From the practitioners' point of view, our findings can help managers to identify the key indicators that better suit to transform their organization into a learning organization. This review provides a summarizing framework describing antecedents, decisions and outcomes, which can be used to identify the most promising KPIs for their business organization. This can become particularly useful in light of the increasing use of ICT means and remote work from home, as KPIs could better suit the purpose to increase the performance of organizations on the one hand and turn organizations into learning organizations able to remain competitive in the international landscape on the other hand. Organizations focused on continuous learning and implementing those practices effectively tend to avoid obsoleteness and saturation points that most organizations face in their normal life span.

6.2 Implications for policy-makers

Our study can provide implications for policy-makers as public organizations could benefit from the adoption of a learning culture and private sector. In this sense, the leadership has the responsibility to make the learning culture run smoothly through the formulation of policies, norms and practices that can be used in the public sector. Policy-makers can take advantage of KPIs discussed in the review as guiding principles for introducing a culture of learning and innovation in their organization through efficient information processing acquired from organizational stakeholders. Policy-makers could benefit from the arguments discussed in this review, as it highlights KPIs and outcomes that could become the object of

policy-makers analyzes and decisions in the recent future, particularly in relation to public sectors and organizations.

7. Conclusion

A systematic literature review was conducted on 57 papers selected to identify the KPIs relevant for creating or building an LO, with the help of an ADO framework (Paul and Benito, 2018). This review has attempted to establish the most relevant KPIs essential for the creation of a learning organization and their importance in terms of their popularity and frequency of use in different organizations that claim to be LOs. In summarizing the findings of the review, it can be said that the focus on relevant KPIs for building an LO is still in a nascent phase. A clear understanding of the learning organization and its creation is possible if a few KPIs such as management commitment, teamwork and shared learning, are in the minds of organizational leaders and other organizational stakeholders. Various articles have been published in the area of learning organizations and the KPIs that have been discussed in past review papers are mostly from the 17 KPIs which are discussed in this review paper. However, these KPIs are defined in a scattered way and lack the focus required to create an exhaustive list.

In an attempt not to undermine the works and contributions of others, the authors of this review have identified and prioritized the most relevant KPIs for creating a learning organization. The prioritization of KPIs could involve some other techniques such as the use of an analytical hierarchy process (AHP) or interpretive structural modeling (ISM), but due to time and resource constraints, it has not been possible in this review. Also, the generalization of this review could be difficult to Asian or Southeast Asian business organizations because, in the list of selected papers studies of the UK, the US and European countries were dominating. However, it may well be attempted in the future as an extension to this review.

Although this review attempted to be as comprehensive as possible, the authors recognize that a few articles were left out because of the strict search protocol. However, this review article covers a broad period, including the seminal works of authors working in fields related to the learning organization. This review article has attempted to conduct an analysis based on all the 57 papers that cover different areas of study such as management, industry, health-care, education, society and the economy, to find relevant KPIs. The broad scope of this review, in terms of time and variety of areas, partially compensates for the shortcomings, offering a new, remarkable contribution to summarize the extant literature on LO and offering insights for future avenues of research on this topic.

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