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A Systematic Literature Review : The Influence of Information Technology and Organizational Learning on Performance

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A Systematic Literature Review : The Influence of Information Technology Enabler And Organizational Learning on Performance

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ABSTRACT

This Study is to discuss about literature review of Information technology enabler is a strategic asset in creating competitive advantage. The contribution of information technology investment to company performance does not appear immediately, but is independent in supporting business activities. The ability and mastery of information technology is not necessarily effective in contributing to company performance. Organizational learning plays a role in mediating the relationship between Information Technology enablers and company performance. This study aims to conduct a systematic literature review of research in the field of Information Technology Enabler and learning organization and performance with data from all international research publications. This study uses the Systematic Literature Review method and the research data using the Services Analyze Search Results from Scopus and the VOSviewer application. The data obtained in this study amounted to 113 academic documents published from 1994 to 2020 globally. The results showed that the most productive institutions and individual researchers at the global level in the publication of Enabler Information Technology and Leraning Organization and Performance with the most researchers were Huo, B. and Lobo, S.R. and Samaranayake, P. with 2 documents. Then the most publications occurred in 2020 with 20 documents, the most documents by country from the Enabler Information Technology and Leraning Organization and Performance Studies were the United Kingdom and the United State with 18 documents. The results of the systematic literature review can be concluded that there is a significant effect of information technology enablers and organizational learning on organizational performance.

Keyword : Information, Technology Enabler, Learning Organization, Systematic Literature Review dan Performance.

INTRODUCTION

The business world is currently in a situation of increasingly high competition. The situation has changed, where there is no longer a norm for companies not to destroy each other, but a business orientation has developed how to undermine the competitiveness of competitors and create advantages so that competitors cannot last long. This change in business orientation is then called the era of "hypercompetition" (D'Aveni R.A, 1994). The increasing intensity of competition has changed the view of resources that are strategic value for companies from physical resources to the dominance of knowledge resources (Sangkala, 2006). Large ownership of physical resources is not a guarantee that a company will last long. Bell is of the view that the level of competition that occurs among business people today is the impact of globalization which is facilitated by the use of increasingly sophisticated information and communication technologies (Bell, Hausel,

2001). Marquardt and Reynold explain that many companies that fail to survive facing such intense competition are because they are unable to learn and adapt themselves to changes in the environment or market (Marquardt & Reynold, 1994). Then in an article entitled "The Knowledge Advantage, Strategy and Leadership" (March-April 1996 Edition) Lauran Prusak stated, researchers in the field of sustainable competitive advantage have come to the conclusion that there is only one thing that makes a company competitive, namely how to use what is already known, and how something that is known can be used quickly to find out something new [Prusak L, 2001].

This is where organizational learning comes into play. In the world of education, better and more efficient management of information will certainly spur increased competitiveness to get an increase in the performance of an organization. Various important information in carrying out the activities of the organization which is supported by the mastery of information technology which is rapidly developing will help make this happen. Knowledge and skills that are reliable and adequate in the mastery / capability of information technology (information technology competency), are important factors in efforts to increase competitiveness as reflected in company performance (firm performance). In addition, based on a study of various literatures, it shows that organizational learning also plays a significant role in mediating the effect of information technology on company performance (Tippins & Sohi, 2003). This study aims to analyze the influence of IT capabilities mediated by organizational learning on organizational performance. This research was conducted with a structural equation model with data collected from managers or staff of organizational leaders.

LITERATURE REVIEW

Information Technology and Management Strategy

Not all companies invest heavily in information technology. Various literature studies show that IT investment does not directly contribute, but there is also a significant role of organizational learning in mediating the relationship between information technology capabilities (IT competency) and firm performance. Information is an absolutely necessary resource. Managing information effectively can provide a basis for growing competitive advantage. Looking at many sources from creation to a cost (Sampler, 1998), information becomes an invisible asset, when properly managed, it can be used to leverage other resources. The ability to obtain information about markets and customers helps to ensure that companies are better able to adapt to changing environments and obtain a competitive advantage more quickly than competitors' information (Barney, Wright, and Kechen, 2001). Competitive advantage will be easier to obtain if the various required information is available. Serious consideration and attention is directed to IT influence can be managed properly and directed according to management strategy, as various researches are aimed at finding the ability of resources to generate competitive advantage.

Resource-Based View

Economists in the 1960s assumed that company resources were actually relatively more homogeneous in an industry, where deviations from industry norms would result in decreased performance. It was only in the 1980s that some strategic management experts began to broaden the idea that company resources were not really homogeneous. This concept then developed and became more easily accepted in various circles, so that several relevant studies continued to be developed. The conclusions of some of the results of these studies state that the actual resources owned by the company can be a source of excellence, and can improve company performance

(Wernerfelt, 1984: 171-180; Barney, 1986: 1231-1241, 1991: 99-120, Rumelt, 1991: 167-185; Amit & Schoemaker, 1993; 33-46). These experts are of the view that the heterogeneous resources owned by the company are the basis of excellence. This view was then widely adopted by management experts because the results of the research at that time were able to show that companies that use heterogeneous resources have a higher economic level than other companies (Arora & Gambarella, 1997).

Several streams of views adopted by companies before the development of views on competitive strategies based on company resources, namely (Sangkala, 2006; 10-13). First, Market Based View (MBV) pioneered by Porter. The rationale for this view is to look at the market first, analyze the external environment, and look at a very dynamic company, especially towards competitors, customers, suppliers and substitute products. Second, Opportunism-Based Model (OBM), three things that are the basic questions of organizational theories, namely, why do companies still exist? What determines the scale and scope of a company? Why are companies different ?. And third, Resource-Based View of the Firm (RBV). This approach has more potential to provide an answer to the question “why are some companies more successful than others? (Barnet, Greve & Park, 1994: 11-28). Conceptually RBV is a resource that is heterogeneously distributed across companies. Resources can be in the form of special physical assets such as equipment, human resources. Comparative advantage will be created when the resources owned by the company are valuable and scarce. These Resources cannot be replicated, nor replaced.

Information Technology Enabler

The increasing intensity of competition, the fast changing business environment, and the emergence of various uncertainties require flexible and adaptive management. Information technology is needed to deal with these conditions. In various literatures, information technology is emphasized as a strong competitive weapon. Some resource analysts argue against this, doubting the resilience of the competitive advantage that applications of information technology provide. The development of information technology and its different application will characterize the company (Ross, Beath and Goodhue, 1996; Bharadwaj, 2000). The success of companies that adopt information technology as a strategic resource for information technology is not determined by the use of the latest information technology applications. However, success is more determined by the ability to develop and apply information technology to be part of seizing business opportunities that change continuously.

Bharadwaj describes information technology capabilities as "a company's ability to mobilize and deploy information technology-based resources in combination with other resources". Bharadwaj divides resources based on information technology into three categories, namely measurable information technology, human resource information technology, and immeasurable information technology. Information technology infrastructure includes the physical infrastructure components of information technology, including: computers, communication technology and databases and technical platforms. Human resource information technology includes: technical and managerial skills in information technology. Meanwhile, immeasurable information technology includes customer orientation, knowledge assets, and synergy. According to Tippins and Sohi (2003), the ability of information technology is an extension where companies know and effectively utilize information technology to manage information within the company. Included in this concept is the assumption that the company also controls IT objects (software, hardware, IT personnel). The development of information technology objects must be in line with the company's ability to identify information technology. Companies that master the objects of information

technology do not lead to the success of information technology capabilities if they forget the knowledge to utilize the objects effectively. This study adopts the concept proposed by Tippins and Sohi (2003), which divides the components of information technology capabilities into 3 components, namely: information technology knowledge, information technology operations and information technology objects.

Organizational Learning

According to Dodgson (1993), there are three reasons why organizational learning is currently very modern. First, the concept of "organizational learning" is gaining fame among large organizations as they try to develop structures and systems that are more adaptable to environmental changes. Second, it changes the increasing environmental uncertainty facing companies, thereby increasing the urgent need for companies to learn to do things in different ways. Third, learning has a broad analytical value. Learning is a dynamic concept and its use in theory emphasizes the continual changing nature of organizations. This is also an integrative concept and can unite the various levels of analysis. Different understandings about learning, there is rarely agreement regarding the definition of "learning". Different concepts of "learning" in different ways. Argyris and Schon (1978) argued, "Organizational learning occurs when members of the organization act as learning agents for the organization, reacting to changes in the internal and external environment by detecting and correcting errors in organizational theory which is used to paste their examination results in a shared image and map of organization. In this study, researchers used and adopted the understanding of the concept of organizational learning put forward by Gomez, Lorente and Cabrera (2005) where organizational learning is reflected in four things, namely: managerial commitment, systems perspective, openness and experimentation, and knowledge transfer and integration.

Companies that carry out organizational learning are companies that have expertise in creating, retrieving, and transferring knowledge, and modifying their behavior to reflect new knowledge and experiences. This organizational learning process is carried out with various knowledge creations. Companies that are able to better manage knowledge through the absorption of various important information will be more successful than other companies. In order to achieve and maintain a competitive advantage in a rapidly changing business environment, organizations must be able to increase their learning capacity (Marquardt, 1996: 15). In a company that adopts an organizational learning system, knowledge transformation takes place at all levels of management, individuals, work groups and a larger internal scope. Knowledge is stored in various ways, such as: databases, recording, even through individual or group memories, depending on the level of importance. This information should also be easily accessible and available when needed.

A number of activities can be taken by companies in conducting knowledge creation. According to Marquardt, these activities include: (1) learning actions, including efforts to find problems and implement solutions; (2) systematic problem solving, carried out by training employees to be able to generate ideas and collect information, analyze and present data, plan actions to be taken; (3) experiments as an effort to motivate employees to possible problems that will arise; (4) learning from past experiences, analyzing failures and successes, transferring knowledge and recording the learning in a way that maximizes company profits Knowledge transfer can be done in various ways, including (Sangkala, 2006; 87): (1) a individuals communicate through writing for example providing memos, reports, letters, bulletins; (2) training, using both internal and external consultants, formal courses, on-the-job training; (3) internal seminars; (4) briefings; (5) internal publication (in video, print or audio form); (6) tour (7) job rotation; (8) advise.

Performance

The measurement of business performance has captured the attention of researchers for centuries. One stream of research views business performance as the result of business processes in an organization. Voss and Voss (2000) argue that there is a positive relationship between strategic orientation and business performance. Other currents emphasize the relationship between market share and profitability. Previous studies have shown incomplete results regarding these market relationships. The inconsistent results were due to the imperfect unit of study variables, the characteristics of the samples used and the different measurement techniques (Szymanski, Bharadwaj and Varadarajan, 1993). According to Biggadike (1979: 8), performance is used to show market performance and performance. Performance is shown in measurements such as return on investment, cash flow over investment, return on sales. Market performance is shown in absolute and relative market share achieved.

Prieto and Revilla (2006) in their research using performance and non-measurement. Performance is shown by return on sales, profitability, sales growth, improved work productivity, and improved production costs. Meanwhile, non performance is measured by customer satisfaction, customer growth, employee satisfaction, product and service quality and company reputation. Organizational performance measurement carried out in this study develops the dimensions used by Prieto and Revilla (2006), namely performance and profitability, and non-financial performance which consists of the ability to retain customers and market growth.

METHOD

This study used a literature review study method from various journals in the Scopus and Google Schoolar databases. In the flow of Figure 1 below are the search mechanism and protocol for indexing journals such as Scopus and Google Scholar. Then a search was carried out in the Scopus database using the keyword information technology enabler and the results were 2736 articles. Search results on Scopus with the syntax Title-abs-key (information and technology and enabler) and selecting document types in the form of articles obtained 1126 articles, Title-abs-key (information and technology and enabler) and (limit-to (doctype, "ar")), and with 1610 articles delimited. Then with the syntax and using a search with the addition of the keyword learning organization, the results were 269 articles. with the syntax (Title-abs-key (information and technology and enabler)) And (learning and organization) and (limit-to (doctype, "ar")) and eliminated by 857 articles. then using a search with the addition of the keyword performance with the results of 197 articles. (Title-abs-key (information and technology and enabler)) And (learning and organization) and (Performance) and (limit-to (doctype, "ar")) and eliminated 141 articles. (Title-abs-key (information and technology and enabler)) and (learning and organization) and (performance) and (limit-to (doctype, "ar")). and (limit-to (subarea, "spark plug")) with an elimination of 83 articles. In addition, it also displays documents based on the subject area obtained by 114 articles, and finally using the search for documents in English, there are 113 results, (Title-abs key (information and technology and enabler)) and ((learning and organization)) and (performance) and (limit-to (doctype, "ar")) and (limit- o (subarea, "spark plug")) and (limit-to (language, "english")) and with the result of eliminating 1 article document.

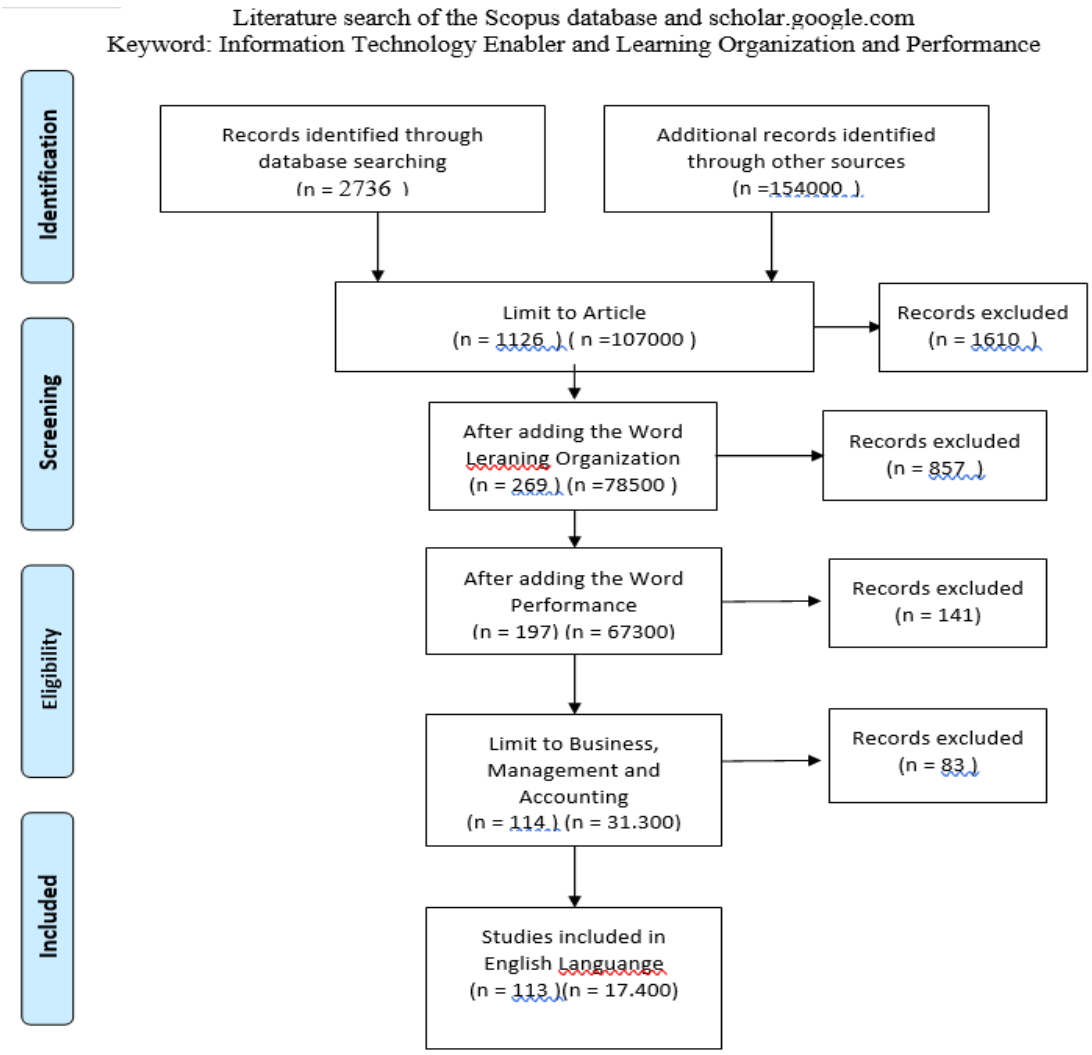

Figure 1. Searching Literature in Scopus Database and Google Scholar

This systematic literature review (SLR) measures the status of publication maps in the field of Enabler Information Technology and Leraning Organization and Performance at the international level in the last 26 years. The research article data was obtained from the Scopus database using the document search facility in December 2020. This study uses the ability to display data visualization analysis and illustrations with the analyze search results feature available on the Scopus facility and coupled with the VOSViewer application. The VOSviewer tool can be used to display visualizations, such as visualizing networks between researchers, organizations, year of articles, and countries, as well as exploring an increasing number of studies, keywords, researcher collaborations, trending research concepts, most cited research, and concepts. research that is still rarely done. Then manage it by identifying keywords related to Enabler Information Technology and Leraning Organization and Performance to search for and identify related articles from international researchers globally in the Scopus database, and get 113 academic documents published from 1994 to 2020. Research limits retrieval data until 2020 regardless of 2021 (exclude 2021) so that the annual data obtained describes the condition of the research in one whole year

from January to December. Key commands that are applied when mining data in Scopus are (TITLE-ABS-KEY (information AND technology AND enabler)) AND ((learning AND organization)) AND (performance) AND (LIMIT-TO (DOCTYPE, "ar")) AND (LIMIT-TO (SUBJAREA, "BUSI")) AND (LIMIT-TO (LANGUAGE, "English"). This SLR performs type analysis strategies and counting methods such as type of analysis of co-authorship with unit of analysis author (unit of analysis of authors, Organization, Countries), and a full counting method. This study also uses a type of analysis of co-occurrence with a unit of analysis of co-occurrence. All keywords) and full counting and fractional counting methods, then perform visualization based on network visualization, Overlay Visualization, and Density Visualization to obtain various information about the document network, besides that displays analysis based on title and abstract of the document. The application used is VOSViewer to get a network of research concepts through keyword visualization.

RESULT AND DISCUSSION

This result and discussion will explain all the results of data analysis based on author publications and networks between authors, subject area areas, documents per year from sources, various network visualizations in the Information Technology Enabler and Learning Organization and Performance studies. The results of document data analysis are based on the Author of the Enabler Information Technology and Leraning Organization Studies and Performance. Figure 2 and table 1 show the authors who have the greatest contribution in publishing in the field of Enabler Information Technology and Leraning Organization and Performance. Author with the most publications in the fields of Enabler Information Technology and Learning Organization and Performance are Huo, B and Lobo, S.R and Samaranayake, P. with 2 documents each. Then followed by Abbasnejad, B. and Acton, T. and Agyemang, M and Ahankoob, A. and Akhavan, P. and Al Mehairi, H.A. and Alibekova, G. with 1 document each.

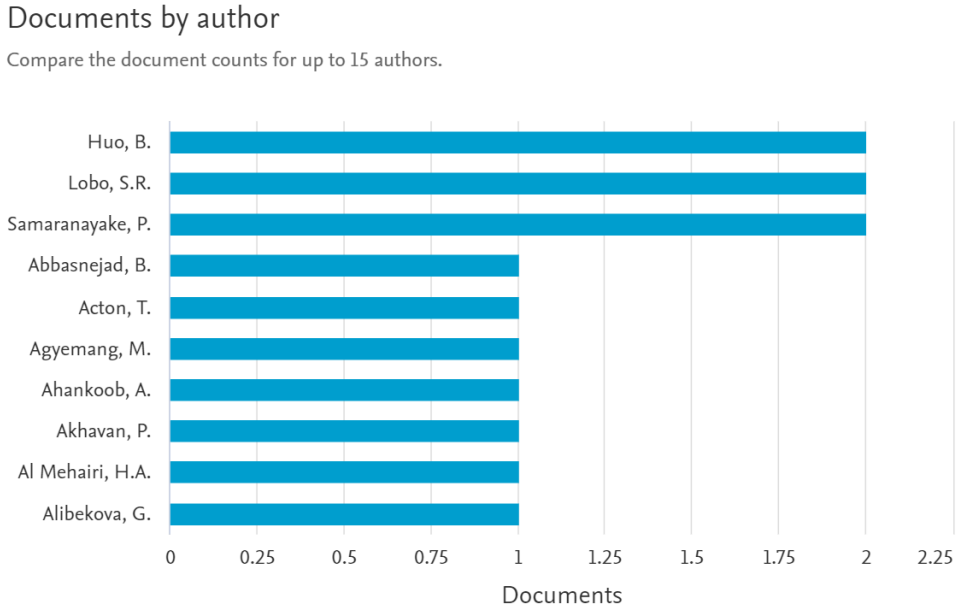

Figure. 2. Most Individual Authors of ITR Publication

Table 1. Author Document Analysis

No	Author	Number of Documents
1	Huo, B.	2
2	Lobo, S.R.	2
3	Samaranayake, P.	2
4	Abbasnejad, B.	1
5	Acton, T.	1
6	Agyemang, M.	1
7	Ahankoob, A.	1
8	Akhavan, P.	1
9	Al Mehairi, H.A.	1
10	Alibekova, G.	1

In table 1. the author's network document shows that the highest number of documents is in the author Huo, B and Lobo, S.R and Samaranayake, P. with 2 documents each, followed by Abbasnejad, B. and others with 1 document each.

The results of document data analysis based on country from the Enabler Information Technology and Leraning Organization and Performance Studies. Figure 3 and table 2 show the countries that have the largest contribution in publishing in the field of Enabler Information Technology and Leraning Organization and Performance, namely the United Kingdom and United States with 18 documents, followed by India with 13 documents. Then Australia with 9 documents. Then China and Spain with 8 documents each, Taiwan with 7 documents, German and Italy and Netherlands with 5 documents each.

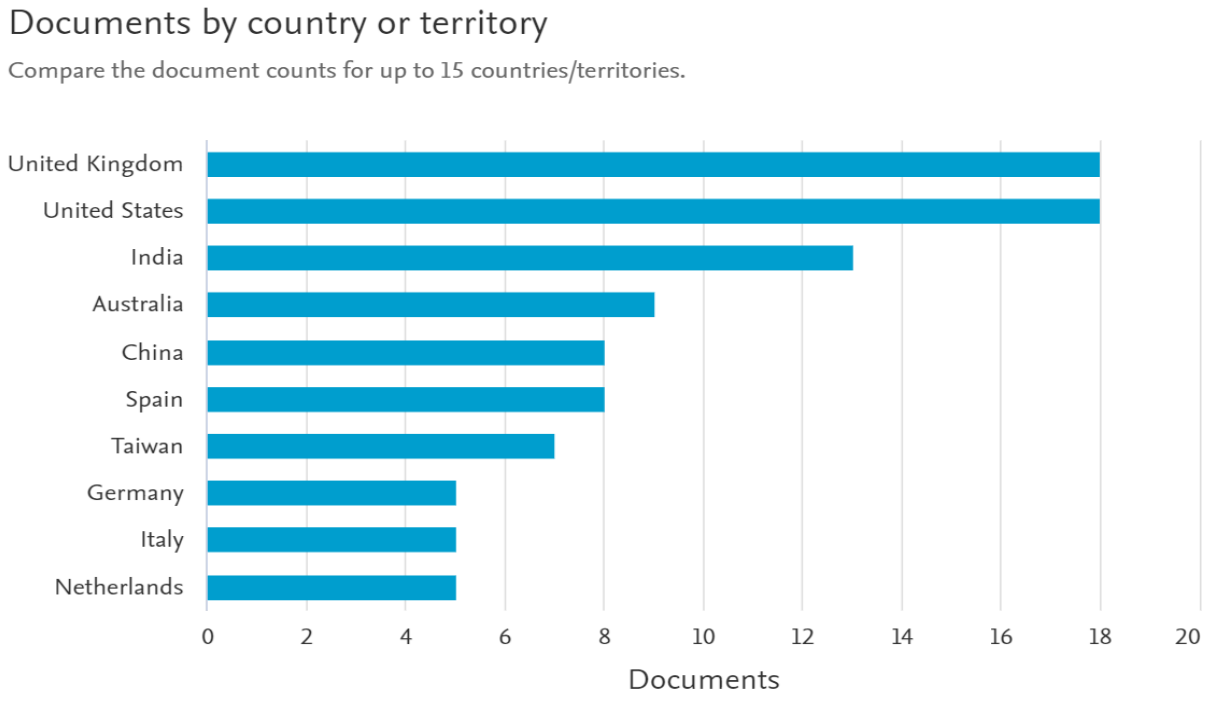

Figure 3. Country Number of ITR Per Year

Table 2. Analysis of document networks between countries

No	Country	Number Of Document
1	United Kingdom	18
2	United States	18
3	India.	13
4	Australia	9
5	China	8
6	Spain	8
7	Taiwan.	7
8	Germany	5
9	Italy	5
10	Netherlands	5

In table 2. the document network between countries shows that the highest number of documents is in the United Kingdom and the United States with 18 documents, followed by India with 13 documents. Then Australia with 9 documents. Then China and Spain with 8 documents, Taiwan with 7 documents, German and Italy and Netherlands with 5 documents each.

The results of data analysis of the Annual Document from the Enabler Information Technology Study and Leraning Organization and Performance. In Figure 4 and table 3 shows a visualization. The number of academic document publications on Enabler Information Technology and Leraning Organization and Performance has increased every year. The highest peak of publication in 2020 with 20 documents. Research on Enabler Information Technology and Leraning Organization and Performance has been started since 1994. The number of international publications on Enabler Information Technology and Leraning Organization and Performance has shown a fluctuating increasing trend every year. It is also possible that in 2021 there will be an increase in research on Enabler Information Technology and Leraning Organization and Performance. The number of documents per year in the publication of Enabler Information Technology and Leraning Organization and Performance is in 2018 and 2019 with 4 documents and 11 documents respectively and not as many as 2020.

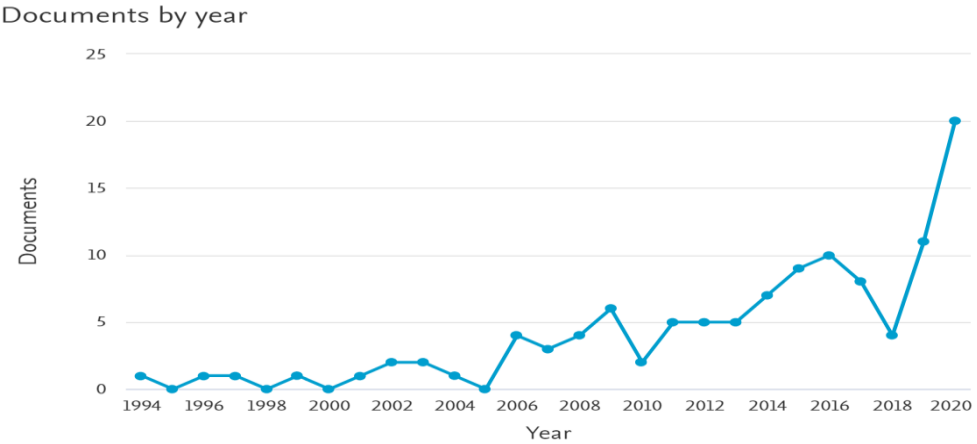

Figure. 4. Number of Documents Per Year of the Enabler Information Technology dan Leraning Organization and Performance Publication

Table 3. Document Analysis Per Year

No	Publikasi Per Tahun	Number of Documents
1	2020	20
2	2019	11
3	2018	4
4	2017	8
5	2016	10
6	2015	9
7	2014	7
8	2013	5
9	2012	5
	. .	. .
10	1994	1

In table 3.Document Analysis Documents Per Year shows that the highest number of documents was in 2020 with 20 documents, followed by 2019 and 2016 respectively 11 documents and 10 documents.

The results of data analysis on collaboration between Author and Enabler Information Technology and Leraning Organization and Performance studies. Figure 5 and Table 4 show a visualization that there are 12 groups of construction patterns in the author's collaborative network in the Enabler Information Technology and Leraning Organization and Performance study studies compiled with the VOSViewer application. The minimum criteria for the number of documents per author is 2 documents. Authors who have the highest research include Rowley J with 2 documents and 151 citations and with total link strength 11. Then Huo B with 2 documents and 85 citations and with total link strength 5. After that Yang B with 2 documents and 4 citations and with total link strength 5 and so on.

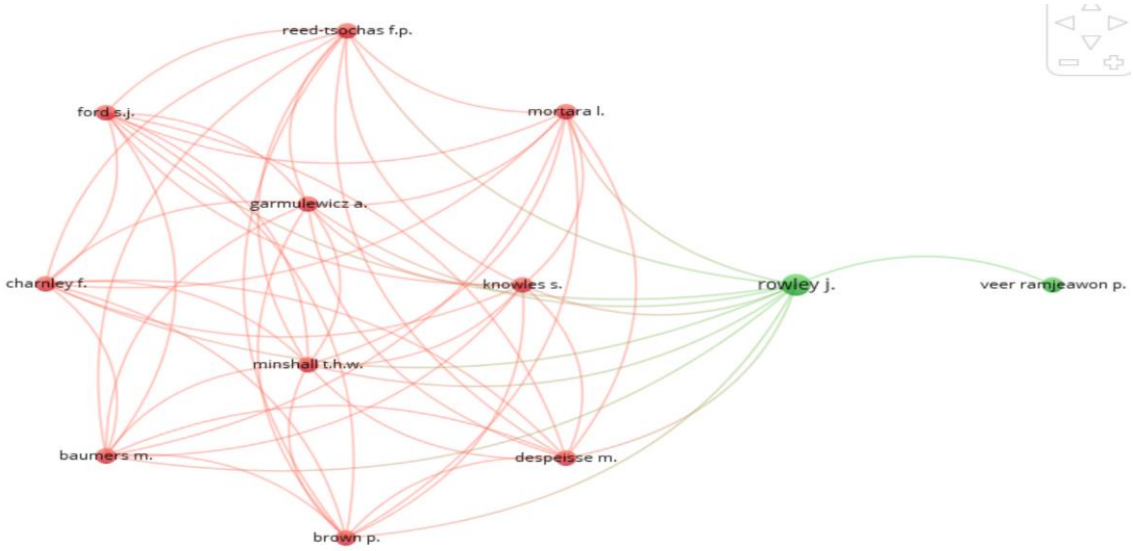

Figure 5. Network between Author

Table 4. Network between Author

Selected	Author	Documents	Citations	Total link strength
☑	rowley j.	2	151	11
☑	huo b.	2	85	5
☑	yang b.	2	4	5
☑	lobo s.r.	2	18	4
☑	samaranayake p.	2	18	4
☑	baumers m.	1	117	10
☑	brown p.	1	117	10
☑	charnley f.	1	117	10
☑	despeisse m.	1	117	10
☑	ford s.j.	1	117	10
☑	garmulewicz a.	1	117	10
☑	knowles s.	1	117	10
☑	minshall t.h.w.	1	117	10
☑	mortara l.	1	117	10
☑	reed-tsochas f.p.	1	117	10
☑	abbasnejad b.	1	1	4
☑	agyemang m.	1	0	4
☑	ahankoob a.	1	1	4
☑	almeida r.	1	0	4
☑	bianchi i.s.	1	0	4

The results of data analysis visualization of research development based on the title and abstract with the theme map for the study of Enabler Information Technology and Leraning Organization and Performance

In Figure 6 and table 5 shows a visualization of the development of research with the search method based on titles and abstracts, the results are obtained with the most documents related to the title Value with 49 occurrences and 0.14 relevance. then creation with 23 occorrences and 0.41 relevance. after that ltd, trust, web, stage and so on.

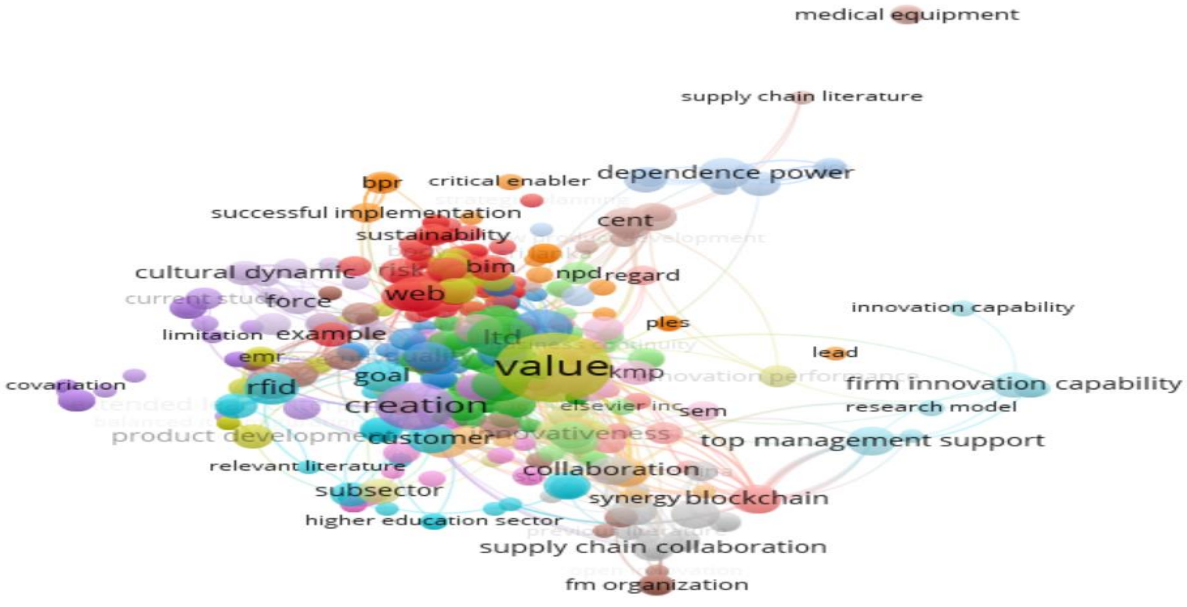

Figure 6. Title and Abstract Visualization

Table 5. Title and Abstract Networks

Selected	Term	Occurrences	Relevance
☑	value	49	0.14
☑	creation	23	0.41
☑	ltd	17	0.42
☑	trust	14	0.61
☑	web	13	0.93
☑	stage	12	0.80
☑	rfid	11	1.21
☑	agility	10	1.03
☑	dependence power	10	0.94
☑	goal	10	0.46
☑	supplier integration	9	1.28
☑	blockchain	9	0.90
☑	top management support	9	0.74
☑	customer	9	0.66
☑	market	9	0.63
☑	methodology	9	0.49
☑	quality	9	0.44
☑	interaction	9	0.42
☑	component	9	0.38
☑	ksb	8	1.10
☑	supplier involvement	8	1.05

The results of the data analysis visualization of the development of events are many researches on the theme map for the study of Enabler Information Technology and Leraning Organization and Performance

Whereas in Figure 7 and table 6 shows a visualization of the development of the number of research events with a search method based on co-occurrence with an all-keyword analysis unit, results are obtained with research documents on Knowledge management, Information Technology, Information Management, Innovation, Knowledge Sharing, Information Systems, Societies and Institution, Competition, Competitive Advantage, Supply Chains Management and Enabler.

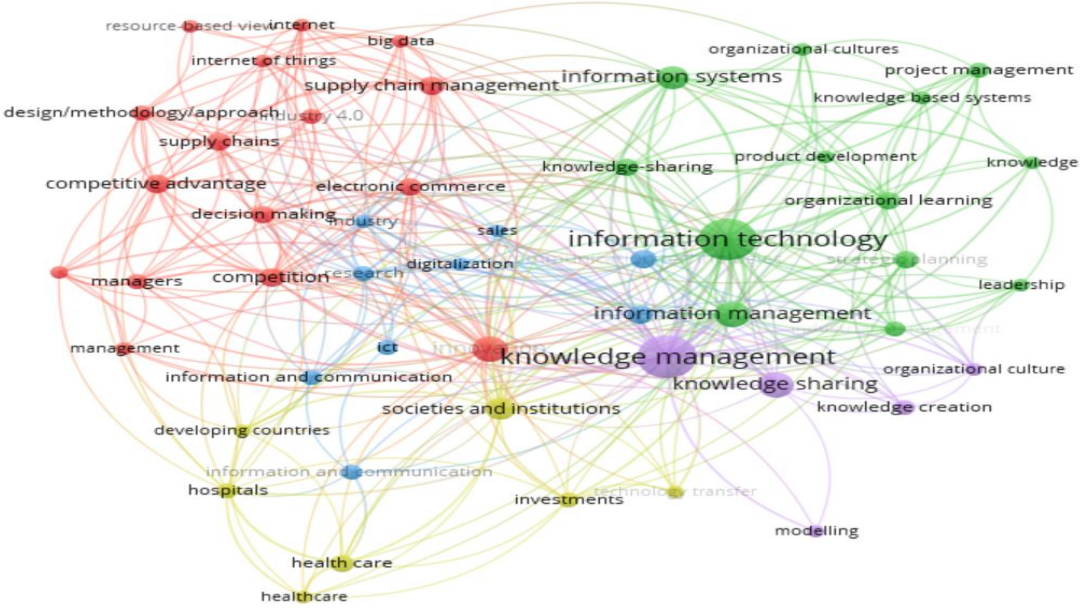

Figure 7. Occurance All Keyword Visualization

Table 6. Occurance All Keyword Network

Selected	Keyword	Occurrences	Total link strength
☑	knowledge management	31	55
☑	information technology	30	46
☑	information management	11	26
☑	innovation	11	19
☑	knowledge sharing	11	13
☑	information systems	9	19
☑	societies and institutions	8	22
☑	competition	6	18
☑	competitive advantage	6	13
☑	supply chain management	6	12
☑	enablers	6	8
☑	communication technologies	6	7
☑	knowledge-sharing	5	19
☑	organizational learning	5	12
☑	strategic planning	5	12
☑	decision making	5	11
☑	electronic commerce	5	10
☑	health care	5	7
☑	supply chains	5	5

CONCLUSION

Based on the results of the literature review that has been done, it can be concluded that there is a mediating relationship between information technology capabilities on performance through organizational learning. Then the results of the review show that individual researchers at the global level who are the most productive in the field of Enabler Information Technology and Leraning Organization and Performance publications with the most researchers are Huo, B. and Lobo, S.R. and Samaranayake, P. with 2 documents. Then the most publications occurred in 2020 with 20 documents. And with the most documents by country are the United Kingdom and the United State with 18 documents. Systematic literature review can be concluded that there is a significant effect of information technology enablers and organizational learning on organizational performance.

In terms of contributing to the implications for knowledge, this study proposes a convergence axis classification consisting of Publications in the field of Enabler Information Technology and Leraning Organization and Performance. to characterize the pool of knowledge generated from each decade of literature. As practical implications, identify key themes in the field of Enabler Information Technology and Leraning Organization and Performance. leads to understanding study development to understand general topics and contexts, as well as research gaps. With all this, new studies can be directed towards overcoming the lack of study and advancing knowledge in the field. The most researched themes also show the contribution of research in the field of Enabler Information Technology and Leraning Organization and Performance. for innovation, technology and information, management, and performance.

CONTRIBUTION

The conclusions obtained as a result of this study reinforce the results of previous studies, where information technology and organizational learning have a role in strengthening its relationship to company performance. This means that increasing the ability of Information

Technology will improve organizational learning abilities, and increased organizational learning abilities will affect company performance.

IMPLICATION

The conclusions obtained from this research can be used as a reference for the company's consideration in determining steps or policies. Information technology investment may not be able to contribute directly to company performance, but it can directly and long term become a strategic asset for the company to gain a competitive advantage in facing competition. Information technology will contribute more to company performance if its use is followed by organizational learning in an effort to explore the potential of information technology resources. the organization's ability to combine information technology capabilities (information technology knowledge, information technology operations, information technology objects and information technology connectivity) followed by organizational learning through managerial commitment, perspective systems, openness and experimentation, as well as knowledge transfer and integration, will have an impact on increasing organizational performance.

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