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A Systematic Literature Review of Benchmarking Implementation in various Industries

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A B S T R A C T

Benchmarking is recognized as an essential instrument for continuous quality enhancement. Many industries must get best practice, whether from competitors or similar industries to get best analyze of success factor and failures. This paper aims to explore benchmarking in various industries around the world to find the gaps between each industry and what makes the focus of benchmarking implementation from each country are different. In this paper, the author has reviewed 60 articles distributed from 2015 to 2020 in a variety of journal research and journal review. Systematic literature reviews are the approaches used in this study since a precise, consistent, and clear methodology, with a variety of steps, guarantees sufficient rigor and clarity in the literature review process. Authors have a review in multi-perspective to help researcher, academics and practitioners more deeply understand and take a closer look at the growth, development, and applicability of this technique. In this paper shown if each industry has different purpose and kind of benefit of benchmarking implementation. Authors have classification the various paper-based on goals and scope of achievement from benchmarking applicable. In addition, this paper also needs to find a better solution from each gap of benchmarking in the pandemic situation with industry 4.0 approach.

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1. INTRODUCTION

A wide variety of creative management philosophies, methods and techniques have been forced to consider in today's intensely competitive, rapidly evolving global economic organizations. One such technique that has been widely used is the benchmarking of the process. Benchmarking is a way of discovering

the best performance achieved - either by a specific company, by a competitor, or by a completely different industry. Decision makers are actively searching for strategies to enhance efficiency. Benchmarking is one of those techniques that has become popular in recent times. While benchmarking is not recent, it has now found more subscribers and holds a popular role, helping to boost efficiency.

Managers must have a full view of their own corporate plan and select long-term and short-term success benchmarking metrics that are compatible with the operational strategy. (Meybodi, 2015a). Various strategies, such as benchmarking, open up organizations to new approaches, concepts and resources to enhance their success in trying to solve challenges within organizations. (Rashed & Un, 2018). Benchmarking, both individually and in tandem with other essential techniques such as inspiration, will solve this problem. (Goncharuk et al., 2015). The benchmarking analysis was carried out in a production company. The opinions of the clinicians were collected and they engaged in the study to support the practical validity of the study (S. Vinodh & Aravindraj, 2015). Benchmarking offers a much-needed framework for understanding objective success indicators and should support a systematic peer analysis (Swihart et al., 2018).

Despite the fact that a growing number of reports have been conducted on benchmarking of best practices, there are important criticisms that must be accepted (de Castro & Frazzon, 2017). Through using the benchmarking process during the project, business practitioners may enhance project efficiency and develop constructive plans for future phases (Yun et al., 2016). Performance benchmarking is carried out by measuring the gap in plant performance (Patil et al., 2016).

Most of the article has been structured as follows. A literature review of benchmarking is given in the next section. Section 3 presents a research method. Data, results, and discussion are present in section 4. And conclusion and future present in final section.
This paper aims to explore benchmarking in various industries around the world to find the gaps between each industry and what makes the focus of benchmarking implementation from each country are different.

In that context, it conducted the literature review with objective in mind:

- Describing the concept of benchmarking
- Proposing a definition of the implementation of benchmarking in different industries
- To explain some of the studies that demonstrate how benchmarking has been used.

2. LITERATURE REVIEW

Benchmarking is a method for recognizing, exchanging, and utilizing information and best practice. It is a constant process of identifying and applying best practices that can contribute to superior results. Benchmarking is used to measure performance using a specific indicator. There are three types of benchmarking that can be defined based on what is being compared: performance benchmarking is compared to performance indicators (often financial, but also operational) to determine how effective one's own company is compared to others. Method benchmarking is an analysis of methods and techniques to execute business processes to learn from the best and to develop one's own processes. Strategic benchmarking is a comparison of strategic decisions and arrangements made by other companies to gather insights and improve one's own strategic planning and positioning. Benchmarking can be used by a variety of decision makers and organizations to build future policies for reform. The industry should also use benchmarking to improve its peer performance (Sangwan & Choudhary, 2018).

Benchmarking is a systematic and organized mechanism for the quest for those activities that contribute to outstanding results, Observing, and exchanging information on these practices, adopting certain practices to address the needs of one's own organization and applying them. Benchmarking focuses on growth, complementing other progress initiatives; the terms best practice, quality improvement and quality are also used

interchangeably. The exploration of new methods is one of the most significant advantages of benchmarking. Benchmarking identifies the areas of focus and opportunities for progress, offers an impetus for reform, and helps in setting goals and formulating plans and strategies.

There are four types of benchmarking depending on the form of company used as a benchmarking partner.: (1) Internal benchmarking in which distinguishments are rendered with another organizational community; (2) Competitive benchmarking comparing bitter competitors; (3) Industrial benchmarking that is not an imminent competitor but is part of the same sector; (4) Generic benchmarking comparing approaches and practices outside the field.

3. RESEARCH METHOD

The tool used in this research is a systemic literature analysis because of a precise, clear, and straightforward methodology that involves a sequence of phases to ensure that relevant, thorough, and transparent literature review is carried out. Authors conclude that it is important to carry out a systematic analysis of every region, to consider the level of prior research that has been done and to recognize the gaps and areas that require further research in the field.

The goal of this paper is therefore to present a comprehensive overview of all the papers published by leading journals and specialist journals in benchmarking from 2015 to 2020, to explore the most popular themes published in the field of benchmarking around the world and to explore the gaps in each topic beyond Indonesia.

3.1 Approach and Steps

The approach involves 10 key processes to carry out a systematic literature review: (1) analysis aims and objectives: after review of the popular gaps found in literature, the intent and objectives shall be identified. (2) The protocol shall include the study spectrum, technique, specifications, evaluation, and retrieval of the data. The protocol shall be defined. This method is approached through the process of systemic literature review. (3) Establish appropriate criteria: study criteria would help ensure that only the most relevant documents are used and that non-related documents are omitted. (4) Literature search and retrieval: electronic research for related papers in top scholarly journals and, where possible, manual research in bibliography lists. (5) Selection of article: based on study parameters. (6) Quality evaluation of the related studies: use suitable quality assessment methods for the articles. Each article should be labeled for its content, based on the technique used. (7) Data collection: from each study used in the test, gather the related data. (8) Synthesis (analysis): using effective approaches for integrating derived facts, such as quantitative or qualitative checking, or both. (9) Reporting: comprehensive reporting on the structural literature study and the results of the review. (10) Distribution: Publication in an academic journal of a structural study to contribute to the field of information.

3.2 Criteria

Inclusion and exclusion requirements are specified to make it understandable to the public that any of the publications they are familiar with have been omitted from the study. Simplifying analysis by criterion, first by reading the title, then the abstract, as appropriate, lets the researcher avoid wasting time and resources. Adopting this strategy, the writers of informed papers by title, then abstract, if possible, and indicating that all papers complying with the inclusion criterion have been included, although the use of this procedure implies that not all irrelevant papers will be omitted as shown in Fig. 1.

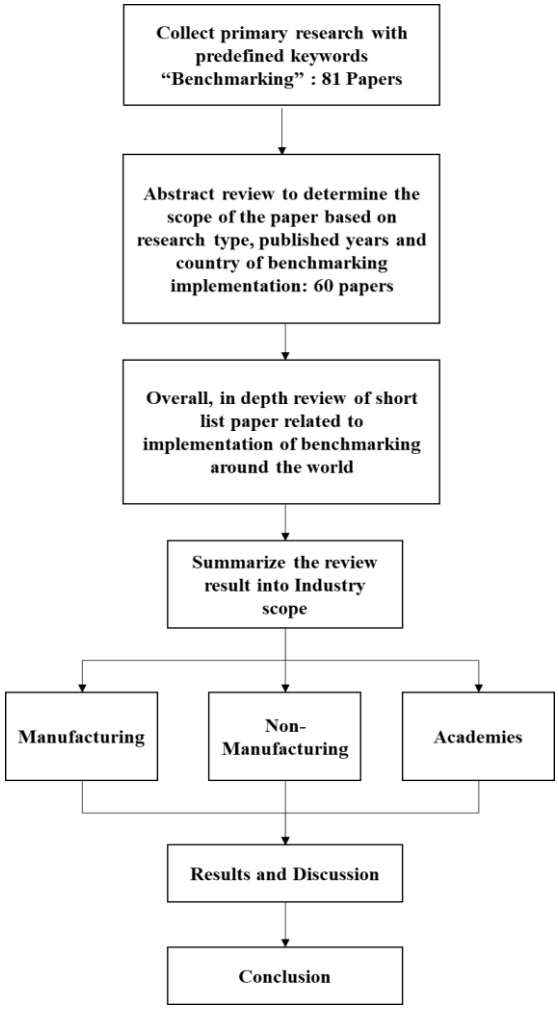

Fig. 1. Study framework

3.3 Material & Outcomes

Journal literature written based on 45 journals within 11 international journal, 14 Specialist Journal, 3 proceedings and several conference within related to Benchmarking around the world. That are published in public database and the top 5 there is Emerald, Elsevier, Springer, Dove Press, and Inderscience Enterprises. Searching keyword used benchmarking, benchmark, and international. To make up to date and short the thousand public journal into more specific topic, a few journals rejected from the finding, as show in Table 1. Beneficiary, motivation factor, restriction and impeding factors are the most prominent concepts that appear in the literature. These topics are described in this paper as the most popular themes in literature, as shown in Fig. 2.

Table 1. Research criteria

Included	Excluded
Articles published between 2015~2020	Any publication before 2015
Articles published beyond Indonesia	Any Indonesia
Academic Journals	Published and research Books and Online Search

4. RESULT AND DISCUSSION

As appeared in Table 2, Several key problems have been established after a long journey and an in-depth analysis of the existing literature on benchmarking, which are listed in this section of the paper. Authors have a review 60 articles in multi-perspective to help researcher, academics and practitioners more deeply understand and take a closer look at the growth, development, and applicability of this technique. Authors have classification the various paper-based on goals and scope of achievement from benchmarking applicable.

Table 2. An existing literature review of benchmarking around the world

No.	Paper Identity	Research Object	Result	Location	Publisher
1	(Seth et al., 2020)	Manufacturing Industry	The WCM productivity of the Indian manufacturing sector has remained constant over the study period. Second, the capacity to produce internal capital, scale, age, productivity, gross domestic product, and interest rate have a major effect on WCM performance.	India	Emerald

Table 2. An existing literature review of benchmarking around the world (continued)

No.	Paper Identity	Research Object	Result	Location	Publisher
2	(Melander, 2019)	Industrial Firms	The VoC approach is ideal for integrating with other types of customer participation, such as project involvement and pilot training. Via VoC, companies could benchmark across sectors and regions.	Sweden	Emerald
3	(Szende et al., 2019)	Hospitality Industry	provide advice and feedback to curricula authors on how to improve hospitality curricula.	USA	Routledge
4	(Sandhu et al., 2019)	Public organizations	95 per cent of the targeted companies set up their own PMOs for market environment growth.	UAE	Emerald
5	(Raoufi et al., 2018)	Academics (University)	Provide an incentive for colleges and industry to recognize topical areas that have drawn the interest of curricula architects, as well as to identify possible curriculum gaps compared to comparator systems.	USA	Elsevier
6	(Cohen et al., 2018)	Manufacturing Industry	Labor cost no longer dominates manufacturing location decisions; rather, firms decide based on complex trade-offs among a variety of factors.	USA	Informs
7	(Fang et al., 2018)	Sustainable Urbanization	Having the overarching goal of realistic urbanization, the proposed system will help stakeholders identify various levels of sustainable urbanization success by providing reliable sustainable urbanization performance ratings.	China	Emerald
8	(Rogers et al., 2018)	Paper and Pulp Industry	Provide a clear overview of future technical developments, but there is some inconsistency in calculating potential effects.	UK	Elsevier
9	(Sahu et al., 2018)	Supply Chain	The authors have conceptualized the VIKOR, SAW & GRA technique to rate and benchmark the green efficiency of separating alternative industries from the available industries.	India	Emerald
10	(Mangla et al., 2018)	Supply Chain	'Provision of effective information sharing and technical advances in the system' and 'Management of commitment, encouragement and engagement CFs had the greatest effects on the effective application of LM.	India	Emerald
11	(Rashed & Un, 2018)	Manufacturing Industry	Various resources, such as benchmarking, expose organizations to innovative approaches, strategies and tools to enhance their success in trying to address issues within organizations.	Bangladesh	Global Journal
12	(Ramos et al., 2018)	Manufacturing Industry	The implementation of LM behaviors that lead to CP was also tested using the proposed LCPB process.	Brazil	Elsevier
13	(Sangwan & Choudhary, 2018)	Manufacturing Industry	Benchmarking may be used by the numerous policy influencers and organizations to develop potential policies for change. The industry should also use benchmarking to boost its peer efficiency.	India	Emerald

Table 2. An existing literature review of benchmarking around the world (continued)

No.	Paper Identity	Research Object	Result	Location	Publisher
14	(Shakoor et al., 2017)	Retail Store	A new benchmark method has been deduced for future cuts in services that have been used in the morning to contribute to substantial potential gains and reductions in waste.	UAE	Research India Publications
15	(Njoku et al., 2017)	Cement Industry	Rather important opportunities for improving profitability in the Nigerian cement industry and the oil-hungry economy, such as Nigeria, are still massive volumes of energy that could be released for use in other sectors of the economy.	Nigeria	Springer
16	(de Castro & Frazzon, 2017)	Academic Literature	Even though a growing number of studies relating to benchmarking of best practices have been released, there are important criticisms that must be accepted.	-	Emerald
17	(Tomelero et al., 2017)	Manufacturing Industry	The LEB approach has allowed the participating organizations to explain the different practices involved in the management of their cutting resources, although field experiments have shown that all nine organizations are very serious with environmental protection and successful use.	UK	Taylor & Francis
18	(Peruzzini et al., 2017)	Industry 4.0	Investigates the available technology for tracking customer interface (UX) and describes a range of resources to be used in the Industry 4.0 scenario to ensure the well-being, protection and satisfaction of employees and enhance overall factory performance.	Italy	Elsevier
19	(R. A. A. P. S. Vinodh, 2017)	SME	A case study of small and medium-sized businesses engaged in heavy engineering production is presented. Thus, the inferences drawn from the analysis have a realistic tendency.	India	Emerald
20	(Kumar & Kumar, 2016)	Manufacturing Industry	The Lean Manufacturing Characteristics (LMA's) of the manufacturing sector, which influence the overall LM climate, have been identified and analyzed for the consequences for management decisions.	India	Growing Science
21	(Yun et al., 2016)	Construction	Through using the benchmarking process during the project, business practitioners may enhance project efficiency and develop constructive plans for future phases.	USA	Elsevier
22	(Ilić & Nikolić, 2016)	Waste Management	The findings of the study revealed the constraints, actual costs, and time criteria for the creation of an effective institutional framework capable of making strategic decisions and maintaining sufficient capacity for the production and execution of infrastructure projects in the waste management field.	Serbia	Elsevier

Table 2. An existing literature review of benchmarking around the world (continued)

No.	Paper Identity	Research Object	Result	Location	Publisher
23	(Leal Filho et al., 2016)	Waste Management	Established that the broad variety of techniques and solutions available in urban waste management are not being completely used.	UK	Elsevier
24	(Taschner, 2016)	SME	The method structure developed offers realistic guidelines for small and medium-sized businesses seeking to conduct a logistic benchmarking exercise.	Germany	Emerald
25	(Minetola et al., 2016)	Manufacturing Industry	The dimensional accuracy of the FDM systems compared is recorded by component quality using the IT grades associated with the basic ISO sizes.	Italy	Elsevier
26	(Patil et al., 2016)	Manufacturing Industry	Performance benchmarking is done by measuring the gap in plant performance.	India	Inderscience Enterprises
27	(Eiff, 2015)	Healthcare	International similarities between hospitals delivering patient services in various healthcare environments have a tremendous capacity to produce leapfrog outcomes in terms of medical efficiency, organization of service supply, efficient job arrangements, sourcing and distribution procedures, or management, etc.	Europe	Emerald
28	(Ammons & Roenigk, 2015)	Government	A set of local governments engaging in a best practice benchmarking initiative as a step towards creating a public sector benchmarking theory.	UK	Oxford University Press
29	(Goncharuk et al., 2015)	Performance Management	Benchmarking, both individually and in tandem with other essential techniques such as inspiration, will solve this problem.	Ukraine	-
30	(Decker & Yee, 2015)	Additive Manufacturing	Compared to the most two widely used benchmarking items in the fields of mass, print time, length, percentage of volume allocated to observable evaluation functions, and quantity of features.	USA	Inderscience Enterprises
31	(Peristeris et al., 2015)	Manufacturing industry	The GSCF system has proven to be a valuable method for a systematic study of supply chain management systems and procedures for suppliers in the fast-moving consumer goods market, with possible implications for companies in the supply chains of other sectors.	South Africa	AOSIS Open Journals
32	(S. Vinodh & Aravindraj, 2015)	Manufacturing Industry	The benchmarking analysis was carried out in a production company. The opinions of the clinicians were collected, and they engaged in the study to support the practical validity of the study.	India	Emerald
33	(Tan et al., 2015)	Manufacturing Industry	E2BM facilitates the quantification of energy usage differences between production processes and the associated best practices, and thereby shows the scope for energy savings that can be accomplished.	Singapore	Elsevier
34	(Rendon, 2015)	Military	Through benchmarking and strengthening its procurement procedures, the DoD will win the struggle to ensure the credibility, accountability and openness of its financial activities.	USA	Emerald

Table 2. An existing literature review of benchmarking around the world (continued)

No.	Paper Identity	Research Object	Result	Location	Publisher
35	(Meybodi, 2015b)	Manufacturing Industry	The advantages of the JIT concepts go beyond the control of inventory. These concepts can be applicable in other fields, such as efficient success assessment.	USA	Emerald
36	(Meybodi, 2015a)	Manufacturing Industry	Managers must have a full view of their own corporate plan and select long-term and short-term success benchmarking metrics that are compatible with the operational strategy.	USA	Emerald
37	(Wang & Wu, 2016)	Digital watermarking	Using collective decision-making for separate evaluator interests. On the basis of the TOPSIS group, various aggregation operators were established and compared.	Malaysia	John Wiley & Sons
38	(Friedrich et al., 2020)	plastic waste recycling industry	The better the content of the recycles, the lower the amount of the impurities and the cleaner the recycles, the higher the price.	Austria	CISA
39	(Durrans et al., 2020)	Academics (University)	A similar approach to benchmarking can be implemented by creators of new or established renewable energy engineering degrees to comply with the program requirements and pedagogical expectations needed by industry and academic peers.	Australia	MDPI
40	(Mahmoud et al., 2019)	Manufacturing Industry	Effectiveness of the suggested model, where the OECL increased by 13.7%.	Egypt	-
41	(Ridgeway et al., 2019)	Healthcare	Five hospitals have met their 30-day mortality rate benchmark, with the amount needed to inflict damage varying from 55 to 137. Seven hospitals have surpassed their readmission benchmarks, with the amount required for damage varying from 22 to 71.	USA	Dove press
42	(Ananda & Pawsey, 2019)	Water Industry	Benchmarking service efficiency lets the urban water industry transition from compliance-based policy to best-practice regulation.	Australia	Springer
43	(Grolinger et al., 2018)	Energy	Benchmarking facilitates the recognition of low-performing structures, creates a framework for evaluating performance progress, enables the establishment of energy conservation goals and promotes energy savings by providing a competitive environment.	UK	Springer
44	(Hamza et al., 2018)	Healthcare	In total, 71 of 2,099 patients developed SSI – 0.8 per cent, 19.8 per cent and 10.8 per cent after gastric, colon and SB surgery.	Kuwait	Dove press
45	(Ghonamy & El-Mikawi, 2018)	Construction	It is important to be implemented because it allows building firms to understand their power and failure and to achieve quality improvement and improvement.	Egypt	-

Table 2. An existing literature review of benchmarking around the world (continued)

No.	Paper Identity	Research Object	Result	Location	Publisher
46	(Swihart et al., 2018)	Academics (University)	Benchmarking offers a much-needed framework for understanding objective success indicators and should support a systematic peer analysis.	USA	Society of American Foresters
47	(Jurišević et al., 2018)	Energy	Results of the study carried out listed pre-school and elementary school buildings as targets for refurbishment, as their average real heat intake is the highest (186 and 176 kWh/m2/a, respectively)	Serbia	Springer
48	(Ahn & Kwon, 2018)	Healthcare	ECBT was slightly higher and quicker than CCBT in decreasing social contact anxiety, fear of unfavorable appraisal, decision bias, and dysfunctional self-confidence than CCBT.	South Korea	Springer
49	(Brettenny & Sharp, 2018)	Water Industry	The MPI is described as a valuable instrument for regulators and decision makers seeking to evaluate the efficiency of their benchmarking initiatives.	South Africa	Creative Commons
50	(Aarsnes et al., 2018)	Stick-Slip Industry	For each controller showing the presence and amplitude of the oscillations, the primary friction parameters are parametrized.	Norway	Elsevier
51	(Cao et al., 2017)	Healthcare	Declining CVD mortality rates during 1981-2010 led on average to more than half of the LE40-84 gains; proportional gains were 2.3 (men) and 1.7 (women) years, and 0.5 (men) and 0.8 (women) years in extremely high and medium and high HDI populations, respectively.	USA	Springer
52	(Dépigny et al., 2017)	Agriculture	Build a practical method for determining the suitability of plantain varieties to various conditions. The current research highlights the need for greater knowledge of plantain physiology to boost model plantain development and establish a variety-specific development strategy.	Africa	Springer
53	(Iversen & Ellekilde, 2017)	Industrial Robot	The findings show that the preparation algorithms are direct Include optimization is helpful in reducing bin-picking period times.	Denmark	Emerald
54	(Kyath, 2017)	Food Industry	The most productive outlook was the transferee characteristics (80.22%) and the partnership building (83.87%) showing that the Filipino food processing professionals had pleased and trusted their suppliers.	Philippines	Med Crave
55	(Moraru, 2017)	Industry	Increase the amount of use of peer benchmarking and innovation in the management of Romanian organizations.	Romania	EDP Sciences

Table 2. An existing literature review of benchmarking around the world (continued)

No.	Paper Identity	Research Object	Result	Location	Publisher
56	(Oh et al., 2017)	Healthcare	Forty military organ donors were compared to 116 civilian donors. The exchange rate for military cohorts was 75.5 per cent and more organs were recovered per donor (4.6 vs. 4.0, p 1⁄4 0.02) with more transplants (4.2 vs. 3.5, p 1⁄4 0.01). Multivariate examination of sex, age, and form of organ donation found little difference in the chances of complete organ donation in the military versus civilian cohort (odds ratio 2.1, 95% CI 0.87e5.24, p 1⁄4 0.10).	USA	Elsevier
57	(Sazegara et al., 2017)	Fire Technology	Furniture calorimeter tests It is found that, to achieve fair estimates of the ignition times for the mock-up armchair and TV set-up, it is important to account for the near-flame movement by changing the radial distance by 10–30 mm.	New Zealand	Springer
58	(Galiullina et al., 2017)	Governance	PDAs should serve as self-organizing structures to involve growth organizations and processes 'in the right place at the right time' and use synergetic control techniques ('stimulate trigger points') for constructive synergetic results.	Russia	-
59	(Fry et al., 2016)	Healthcare	Benchmarking risk-adjusted AOs recognizes potential for better treatment in elective colon surgery in Medicare patients.	USA	Elsevier
60	(Lindqvist et al., 2016)	Manufacturing Industry	The high degree of industrial know-how in the region, developed around the Finnish lumber industry, is a strong base for additive manufacturing technology.	Finland	Elsevier

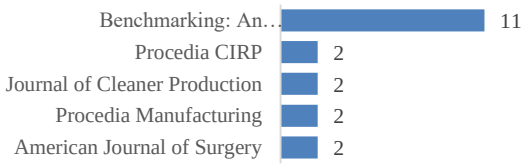

Fig. 2. Top 5 Published journal of benchmarking

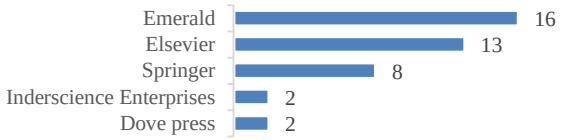

Fig. 3. Top 5 Public journal publisher of benchmarking

4.1 Growth of Benchmarking publication

The distribution of journal published in last 5 years as shown in Fig. 4. From the data collected most researcher publish the article for benchmarking around the world in 2018 with 17 academic journals. And as shown in the graphics since 2015 to 2018 the publisher has good growth of journal published, and 2018 to 2020 have decrease of published journal related to benchmarking. This also indicated that in those years, the researcher found the problems that have been solved using benchmarking.

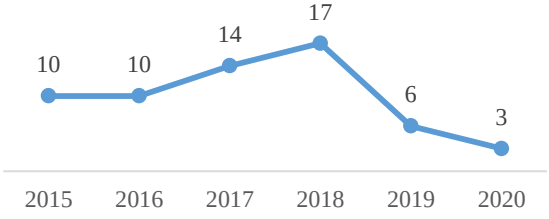

Fig. 4. Year to year published journal of benchmarking

4.2 Distribution of publications across different countries

Since on this paper are exclude Indonesian publication, US are the most country with researcher used benchmarking for their problem solution almost 13 academic journals are published from this country, then follow by India with 8 journals and United Kingdom with 5 journals, and 2 journals from South Africa an UAE. Totally 30 Country of researchers are recorded, and authors just choose the top 5 as shown in Fig. 5.

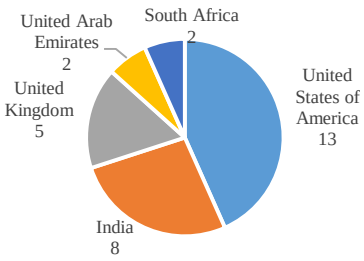

Fig. 5. Top 5 Distribution journal of benchmarking by country

4.3 Benchmarking paper object themes

In this section of the paper, tables and figure are used to illustrate the results. Benchmarking on the paper was found to have included various substance and topic as shown in Fig. 6.

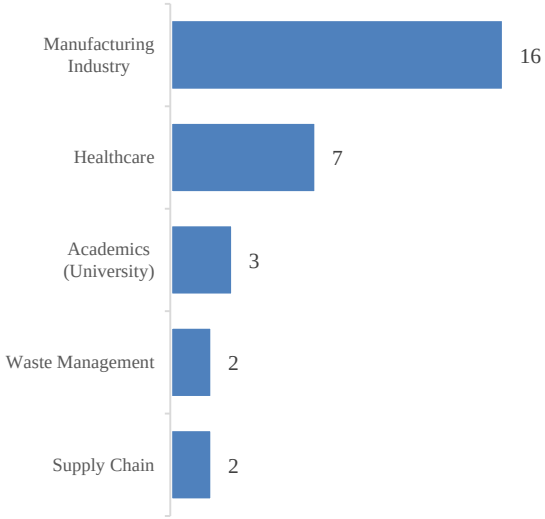

Fig. 6 .Top 5 object themes of benchmarking

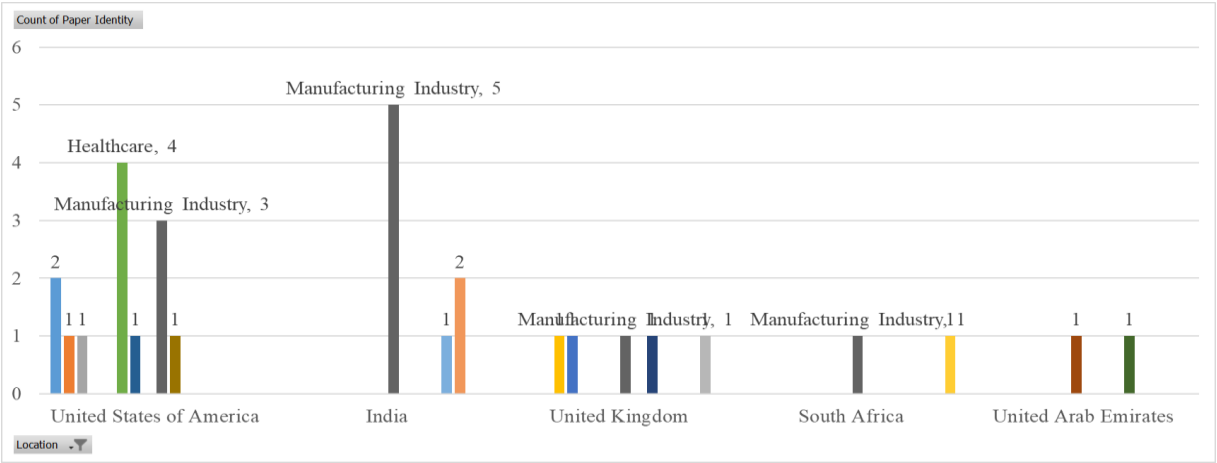

Fig. 7. Comparison researchers focus in each country

As shown in Fig. 7, mostly each researcher has different focus based on the situation in each country. Most of the research objects in India focus on the manufacturing industry because India is a developing country with a lot of manufactures standing there. In contrast to India, many objects of research in the US focus on the healthcare industry, that shows most US researcher more critical of the healthy matter.

4.3.1 The benefit of successful implementation of benchmarking

At Table 2 Above and Fig. 6, showing the most dominant of implementation benchmarking there is in manufacturing

industry, healthcare, and academics. Of 60 paper collected in Table 2 mention 16 papers are discussion about the implementation of benchmarking in manufacturing industries, then follow in healthcare with 7 papers and the third is academic with 3 papers. Authors has short into top 5 based on type of industries. And the top advantage referred to in the paper are:

- Improved performance
- Improved productivity
- Enhances work quality
- Increase customer satisfaction
- Alignment Strategic goals and objective
- Cost effective for establish the idea
- Time efficient for establish the idea

4.3.2 Motivation factor of benchmarking implementation in various industries

Unfortunately, there is no commonly recognized benchmarking method and managers face unique obstacles when preparing to incorporate benchmarking. One of them there is steps what each company used is un-standardize, some steps are remove or add depend on business process of each company. Benchmarking may also be defined as a systematic method where the framework of the benchmarking process is also built by the implementation of a step-by-step process model that offers a shared language within organizations.

Benchmarking usually involved 7 of main stage (Rashed & Un, 2018):

- Assessment of the main performance factor
- Allocate weight to each main success factor
- Evaluate the benchmarking partners
- Collect information on benchmarking
- Recognize differences in results
- Consequences of outcomes of benchmarking
- Introduction of improvements

4.3.3 Limitation of benchmarking in various industries

There are several problems that can be met in business outside Indonesia at the time of the introduction of the benchmarking framework. Benchmarking-related issues can arise due to the inability of an entity to properly execute the procedure. Without any assurance that there will be a cost-benefit, benchmarking involves a substantial investment of assets such as time, staff, and capital, etc. Owing to the scarcity of time and money, most firms chose not to compare. The constrains can became fertile areas for future exploration. The main barriers of benchmarking implementation in various industry around the world are:

- Lack of recognition of relevant benchmarking partners
- Lack of comparability of data
- Lack of resources
- Lack of help for employees
- Lack of confidentiality
- Lack of internal benchmarking expertise advantages smaller than the cost involved
- Time consuming
- Lack of awareness of the principle of benchmarking

4.3.4 Gaps in the benchmarking literature and challenges for future research

Benchmarking has become a common technique and is used to achieve a comparative edge. Benchmarking is a powerful method for setting goals; it is vital to keep successful and to learn new ideas. Benchmarking has proved to be the best discipline to enable employees to reflect on the customer and to make substantial customer retention gains.

This analysis, however, is not without limits. Such environmental and political, social issues and different possibilities that can play a major role in the application of the benchmarking framework. The one challenges must be faced on each industry who want to implement the benchmarking on this time that is because each country have faced the pandemic situation there is make some benchmarking implementation will be hard to describe what company need to align. Some activity in 7 steps is reduce or change with another solution to keep meet the goals.

For further research, the challenges is how to avoid the lack of benchmarking implementation during pandemic situation

many companies can implemented digital technology which usually has used in industry 4.0 implementation such us video conference, Augmented reality, Artificial intelligence, and Machine Learning. Maximize the digital technology used in implementation of benchmarking give industry increase the cost efficiency and time effectiveness. Also, can be make the scope more widely.

5. CONCLUSION

This report is a preliminary attempt to determine the status of benchmarking implementation in different industries in each country around the world, in the US, as the country with the most benchmarking implementation as a solution to the problem. This research has offered some insight into both the extent and purpose of the benchmarking practices. Particular attention has been paid to recognizing the challenges facing the market during the execution of successful benchmarking programs. In addition, an effort has been made to examine the possibilities and challenges that businesses see as beneficial and troublesome in pursuing a benchmarking initiative. Manufacturing, healthcare, and academics are the industry sectors which usually display above-average levels of benchmarking activities.

Each researcher in each country has different focus based on situation that happening. Most US researcher focus on healthcare industry and most India researcher focus on industry manufacture. aim of benchmarking in healthcare industry that are improved on cost, risk management & quality of care, and satisfy patients expectation. In contrast to healthcare industry, industry manufacturing used benchmarking as improvement tools to improve product quality, increase sales, business performance and efficiency.

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