



Implementation of Benchmarking Method for Higher Education Institution: A Literature Review

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A B S T R A C T

Benchmarking is a systematic and continuous process by comparing the products, processes, and results of an organization with other similar organizations. Benchmarking is generally done by comparing it to an organization that has a better level because it aims to provide input for internal improvement in the organization so that it becomes better than the position before the benchmarking was done. Educational institutions also need to carry out a benchmarking process as this can contribute to determining learning and promotion strategies, improving the learning process and curriculum development, improving physical infrastructure facilities, improving operations, performance. In this study, the method used is a literature review of 35 journals, then the classification is done based on the country and the type of benchmark performed. The results show that until 2020 the benchmarking process is still being carried out and continues to be carried out in various countries, both in developed countries to developing countries. However, from the literature that has been reviewed, there are still gaps to examine the strengths and weaknesses of higher education in terms of implementing the digitalization of educational systems, the quality of graduates with a digital education system, and implementing digital libraries in universities. Types of benchmarking processes and benchmarking strategies can be carried out to research the implementation of digital education, this is because it is a type of benchmarking process and strategy that can determine global competition

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1. INTRODUCTION

Benchmarking is the process of comparing the performance of business processes and metrics including cost, cycle time, productivity, or other qualities that are broadly considered benchmarks for industry standards or best practices (Rusdiana, 2014). Edith Cowan University defines benchmarking as a systematic and continuous process for comparing products, services, processes, and results from one organization to another (Scott, 2011). From the results of these benchmarks, the organization can get an overview of the organization's performance situation so that it can apply best practices to achieve the desired goals.

Benchmarking activities can be carried out individually and in organizations that want to compare the capabilities of self and organization with the capabilities of others and other similar organizations. These benchmarking activities are not necessarily one-time events, but can also be ongoing activities so that organizations can benefit from achieving organizational activities best practices for them. Benchmarks provide an overview of an organization's performance and help understand its relevance to specific standards.

In the past, benchmarks were used to identify friendly organizations or those with friendly relationships that did not have the purpose of business competition, but current perceptions seem to have changed to be more competitive for the business competition that may be overlooked as competitors or as business partners. One of the important benefits of a benchmark is that it provides a quality assessment that provides a valid, up-to-date overview. Other benefits of the benchmarking process are as follows: (i) promoting continuous improvement, (ii) creating organizations to find best practices, innovative ideas, and effective operating procedures, (iii) to be a reminder to organizations due to competitive competition. with similar organizations, (iv) inspire managers to compete, (v) provide objective goals based on existing shortcomings in the organization, (vi) can be the basis for setting (new) more challenging but realistic goals, (vii) Able determine how goals can be achieved (important action points to achieve them), (viii) To obtain new 'breakthroughs' that are more

effective and efficient in improving the organization, and (ix) Inspire the emergence of new ideas that can enhance organizational growth.

Educational institutions involved in educational services. In addition, competition between schools is becoming increasingly difficult. Therefore, in this education, education providers are asked to be creative in exploring the uniqueness and excellence of their schools so that they are needed and desired by the customers of educational services. The emergence of internationally minded schools and the birth of public and private schools offering superior facilities, attractive learning programs, even at a reasonable cost, can add to the increased educational competition (Kustian et al., 2018)

Educational institutions need to benchmark against similar businesses, university benchmarking results can also serve to improve processes in all divisions, improve university level, contribute to promotion for determining university strategy, and can contribute to the physical assessment of infrastructure. This is done to provide a better quality of education that will also affect the sustainability of the education industry (Bridgland & Goodacre, 2005; Caeiro et al., 2020; Gheorghe & Nicolae, 2015; Khalil et al., 2015; Oliveira & Figueira, 2017; Robertson & Trahn, 1997; Tijssen et al., 2009).

Before comparing with other educational institutions, it is necessary to consider several methods in the benchmarking process (Rusdiana, 2014), namely (a) identify what problems will be the subject, (b) identify industries/ organizations/institutions that have activities/businesses that similar, (c) identify industries that are leaders/leaders in similar areas of business. (d) review the industry for measurement and practice. (e) visit the company's 'best practices' to identify key areas of business practice, and then (f) implement new business practices and improvement processes.

The benchmarking process also has a classification of each type. Here are some types of benchmarks that organizations can perform (1) benchmark on process, (2) benchmark on financial, (3) benchmarks from

an investor perspective, (4) benchmark on performance, (5) benchmark on product, (6) benchmark strategy, (7) best-in-class benchmarks, and (8) benchmark on operational. from the above types of benchmarks, researchers will classify several countries in 5 continents that have conducted research using these different types of benchmarks, so information will be obtained

on how many types of specific benchmarks are studied on one continent.

2. LITERATURE REVIEW

A literature review was conducted to determine the meaning, application, type, and benchmark measures, especially in educational institutions. Table 1 shows the list of literature selected for analysis.

Table 1. Existing literature review of higher education institution benchmark

No	Author(s)	Country	Benchmark type	Result
1	(Tijssen et al., 2009)	Netherland	Operation	University performance appraisal is also a promotional tool for university public relations and marketing
2	(Bridgland & Goodacre, 2005)	Australia	Strategy	externally documented and verified performance information should be used as input for the planning process, as part of the quality assurance process
3	(Robertson & Trahn, 1997)	Australia	Process	Comparing of staff, process development, organizational structure framework, interpreting information between libraries at the University of Technology Queensland (QUT), and the University of New South Wales (UNSW) from the perspective of procurement, cataloging, document submission, and research support services.
4	(Oliveira & Figueira, 2015)	Portugal	Strategy	Social media communication strategies in the process of mediation and building/maintaining the reputation of the organization including the promotion of educational services.
5	(Khalil et al., 2015)	Malaysia	Performance	Risk management is a different academic field from each other. Risk identification can help improve building performance by linking performance optimization with the comfort and satisfaction of building users
6	(Uysal, 2015)	Turkey	Performance	The ranking order calculated by ELECTRE is the order of service quality of the institution. The results can be used by managers to evaluate and improve the quality of services to other agencies
7	(Oliveira & Figueira, 2017)	Portugal	Strategy	Development of social media content strategies according to the results of the grouping system
8	(Achim et al., 2009)	Romania	Function	In the higher education evaluation system, there are norms, rules, standards, and quality assurance indicators. Therefore, there should be a quality assurance team to develop quality and quality monitoring.
9	(Caeiro et al., 2020)	Portugal	Function	The results obtained make it possible to identify the need to determine the general purpose of the existing assessment tools and limitations. This tool requires an increase in its development, namely to consolidate the external effects of higher education on sustainability, to integrate participatory processes, and assess non-traditional aspects of sustainability.
10	(Gheorghe & Nicolae, 2015)	Romania	Strategy	The sports facility on campus can be a measure of the actual performance of higher education. So that it can be applied as a medium for the promotion of institutions.

Table 2. Existing literature review of higher education institution benchmark (continued)

No	Author(s)	Country	Benchmark type	Result
11	(Salleh et al., 2016)	Malaysia	Function	This paper discusses methods of measuring energy efficiency management in school buildings. Results from 3 main evaluation factors, namely building design, service design, and knowledge of energy efficiency
12	(Baskan & Hursen, 2010)	Turkey	Process	The results show that all countries need high-quality teaching staff, so some countries implement the same thing, which is to provide training
13	(Raoufi et al., 2018)	USA	Process	Technical and vocational institutions must cooperate, so the hope is to assess the knowledge, skills, and technological needs of advanced industry segments, such as clean energy/green energy, modern medical equipment, etc. Coordinating the curriculum by following technology developments is a way to prepare graduates. So that they are ready to be absorbed by the needs of developed industries
14	(Kahveci et al., 2012)	Turkey	Strategy	In Turkey, 2 rules are governing higher education institutions rules of DPT and YODEK, with these 2 rules will cause difficulties for educational institutions. Therefore, it is proposed together between 3 institutions to develop an integrated model so that the purpose is also to facilitate benchmarks in determining general targets and indicators for higher education institutions.
15	(Giuri et al., 2019)	Italy	Strategy	The result of this research is that universities with high expertise and prestige are more oriented on income generation strategies than knowledge transfer in the field of site development
16	(Anafinova, 2020)	Hungary	Function	Public universities in Kazakhstan are encouraged to move towards model research universities
17	(Falola et al., 2020)	Niger	Process	Research support, pedagogical support, and technical support are predictors of the faculty's response to quality research productivity, sharing knowledge, and administrative efficiency.
18	(Boelen, 2016)	Swiss	Best in class	The best in medical education can be achieved if medical schools increase their potential to influence the planning, production, and use of graduates in response to the health needs and challenges of community priorities towards the health system
19	(Sakuliampaibon et al., 2015)	Thailand	Strategy	The benchmarking process it is found a gap between the best vocational schools and Bangkok primary schools. Finally, a set of strategic plans and activities is proposed for a group of Catholic primary school administrators
20	(Wince, 2018)	Indonesia	Process	Benchmarking can apply in a library system to develop dynamic and sustain
21	(Binangkit & Siregar, 2020)	Indonesia	Strategy	The internationalization process of education institutions needs employees' improvement and the fastest decision-making system.
22	(Kustian et al., 2018)	Indonesia	Strategy	Marketing strategies in educational institutions can also be in the form of promotion of educator qualifications, the geographical location of educational institutions, activities within the institution, and tuition fees.
23	(Kurniawan, 2020)	Indonesia	Process	Benchmark planning is formulated through comprehensive planning and team building. Benchmarking is applied by selecting and adjusting the results of the benchmark and taking into account the state of the institution

Table 3. Existing literature review of higher education institution benchmark (continued)

No	Author(s)	Country	Benchmark type	Result
24	(Aini et al., 2019)	Indonesia	Operation	Increase the use and improvement of library website systems in UIN Jakarta, UIN Yogyakarta, and UIN Malang
25	(Dolly & Mukhaiyar, 2020)	Indonesia	Product	Curriculum development to meet the basic needs of qualified, competent, and professional graduates by AUN-QA standards.
26	(Plaček et al., 2015)	Czech Republic	Process	Determine the level of organizational economic involvement into benchmarks and thus lead to the removal of key barriers to the implementation of identified benchmarks based on SWOT analysis and questionnaire surveys. The practical application of this model will lead to the achievement of a higher level of potential for this tool in higher education
27	(Al-khalifa, 2015)	Saudi Arabia	Process	Benchmarking is the ongoing process of systemic learning, comparing and applying best practices to improve performance
28	(Hudson et al., 2010)	Turkey	Strategy	There is no benchmark for the school coaching process in Turkey. Setting benchmarks for mentoring training can help educators identify needs and develop programs that meet these needs. This can also have an impact on improving teaching practice
29	(Yeomans, 2012)	Canada	Process	DSS (Decision Support System) enables the level of each school by contextually assessing their relative appeal to the identified school group. As a result, DSS is used to assess the performance of each school in the district explicitly and to set realistic energy improvement targets. Reaching this benchmark will reduce energy costs across the system by twenty-five percent
30	(Kimura et al., 2017)	Hong Kong	Process	The proposed benchmark recognizes the complexity of the use of English in the classroom, thus using four types of scales to accommodate the linguistic features of teacher language proficiency.
31	(Pham & Bui, 2019)	Vietnam	Process	Provide a clear voice to stakeholders including the Ministry of Education and Training (MOET), policymakers, higher education institutions (HEIs), and teachers to adjust policies and produce innovative pedagogical strategies.
32	(Rusdiana, 2014)	Indonesia	Process	Explain the basics of benchmarking in general
33	(Scott, 2011)	Australia	Process	Provides an overview of the literature related to benchmarks
34	(Al-khalifa, 2015)	Saudi Arabia	Process	Benchmarking is the ongoing process of systemic learning, comparing and applying best practices to improve performance
35	(Henderson-Smart et al., 2006)	Australia	Process	The fact that this model is based on evidence in its approach and focuses on teaching and learning also marks it as an original and significant development in this field.

(Robertson & Trahn, 1997) conducted a benchmark study related to the arrangement of

library catalogs. It is also stated by (Aini et al., 2019; Wince, 2018) that libraries also need to

be benchmarked to realize dynamic and sustainable library development such as enhancing and developing websites as digital media for libraries. Research (Bridgland & Goodacre, 2005) shows that when implementing the expected benchmarking, documentation, and validation program, this is useful as input for the planning process to create the expected quality assurance. Benchmarking is an important part of educational institutions, therefore (Henderson-Smart et al., 2006) offer a model that can be applied to all levels of education from primary to tertiary education. Due to the importance of the benchmarking process in educational institutions, research (Achim et al., 2009; Kurniawan, 2020) suggests forming a quality assurance team in educational institutions that serves to develop quality and monitor its quality. With the presence of a quality assurance team in educational institutions, it is hoped to increase the level of institutions, so that this can be the purpose of the promotion of educational institutions (Kustian et al., 2018; Tijssen et al., 2009). (Paliulis & Labanauskis, 2015) also revealed that benchmarks are effective in improving the quality of performance in higher education institutions and can complement the existing quality management system

(Hudson et al., 2010) research in Turkey revealed that there are no student mentoring standards in Turkish educational institutions, thus setting benchmarks for mentoring practices that can help teachers identify student needs so they can develop programs to meet their needs. participants can improve the quality of education in Turkey. This is also supported by research from (Baskan & Hursen, 2010) in Turkey who revealed that to provide the best quality of educational institutions, qualified instructors are needed, therefore, some countries apply training, training model applied in Turkey is very similar to training model applied in the countries of Southern Cyprus and Greece, this is because they have the same culture, history, economy, and politics. In a study (Kahveci et al., 2012) that Turkey there are 2 rules on educational institutions regulated by the Ministry of Development or the so-called DPT and Academic Assessment and Higher Education Quality Commission (YODEK). Therefore, an integrated model is proposed so that its purpose

is also to facilitate benchmarks in determining general targets and indicators for higher education institutions. To measure the quality of service of educational institutions in Turkey, (Uysal, 2015) uses the ELECTRE method to evaluate and improve the quality of service to other agencies.

Energy consumption and building quality in higher education institutions are also inseparable from the observations of other researchers, for example (Yeomans, 2012) from Canada is more focused on energy-based research, with the DSS (Decision Support System) method for ranking educational institutions in the region to determine targets a more realistic increase in energy, thus reducing energy costs. Other studies from (Salleh et al., 2016) also conduct energy management in educational institution buildings in Malaysia, building design evaluation, service design, and knowledge of energy efficiency are important factors in managing energy efficiency. Building quality is also an area of academic research where risk identification can help maintain building quality to provide comfort and satisfaction to building users (Khalil et al., 2015). In addition to the quality of the building, the environment in which sports activities on campus can also be considered in the promotion of educational institutions (Gheorghe & Nicolae, 2015). Media promotion can also be done through social media, (Oliveira & Figueira, 2017) designing social media content strategies following the results of grouping so that exactly the target and the main goal is to increase institutional income.

In Thailand, there is an education gap between vocational schools and non-vocational Catholic schools, this is stated by (Sakuliampaiboon et al., 2015). Another study from (Plaček et al., 2015), provides a multi-tiered model that enables educational institutions to achieve a higher level of potential in terms of organizational economics. however, unlike research from (Pham & Bui, 2019) in Vietnam, they provide different inputs to stakeholders (Ministry of Education and Training, Policymakers, and Institutions of Higher Learning) to adopt policies and produce more innovative pedagogical strategies. This is also stated by (Falola et al., 2020) that it is necessary to study the various institutional

supports to make more appropriate and relevant initiatives.

In research (Giuri et al., 2019) revealed that educational institutions that focus on specialization and high prestige are more oriented on strategies to increase income than on knowledge transfer. In contrast to research from (Anafinova, 2020) which shows that universities in Kazakhstan are more encouraged to be a model for research universities.

3. RESEARCH METHOD

The literature survey consists of thirty-five articles explaining benchmarking on higher education institution. Fig. 1 shows the research

framework of this study. This study started by collecting some literature related to benchmarks in the service industry, especially educational institutions. The next step is to classify the various literature by name and year criteria of article writing, country and/or continent, type, and results. The various articles take from many sources for example: Google Scholar, Science direct, Researchgate, Elsevier, Springer, etc. The types of manuscripts analyzed are books, journals, and proceedings. The search keywords used are "benchmarks", "benchmarks in institutional education", "benchmarks in the education industry".

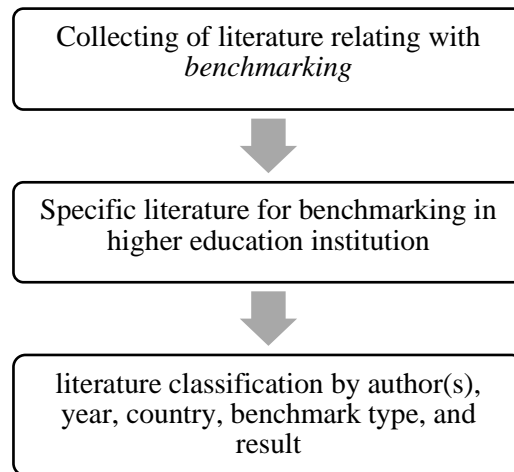


Fig. 1. Research framework

4. RESULT AND DISCUSSTION

From the 35 literature in table 1, this journal consists of several countries in the world, from Europe, Africa, Asia, Australia, and America. As many as 20% of articles are from Indonesia, then Australia and Turkey are 11% each. Figure 2 shows the details of the article distribution section by country.

Referring to 35 kinds of literature, 7 of the 9 types of benchmarks have been used and it seems that many Indonesian researchers have studied the benchmarking process, strategy benchmarks, benchmark operations, and what is no less important is product benchmarking.

In Fig. 3, it is explained about the different types of benchmarks, that studies based on process benchmarks and strategy benchmarks are mostly done. These are the main criteria for winning the global competition. By knowing the processes and strategies, these 2 segmentations need attention for improvement. Then in Fig. 4, shows research data on higher education benchmarks grouped into 5 continents. In global competitiveness, from the Fig. 4. It is shown some European higher institution more focus on strategy, while in Asian countries still focus in internal process.

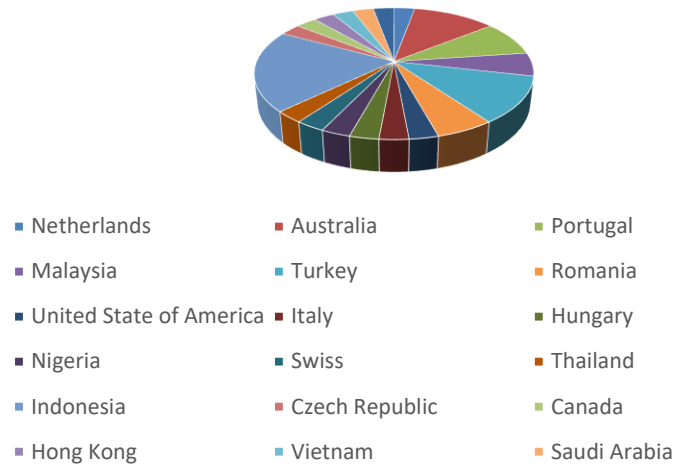


Fig. 2. Journal distribution by country

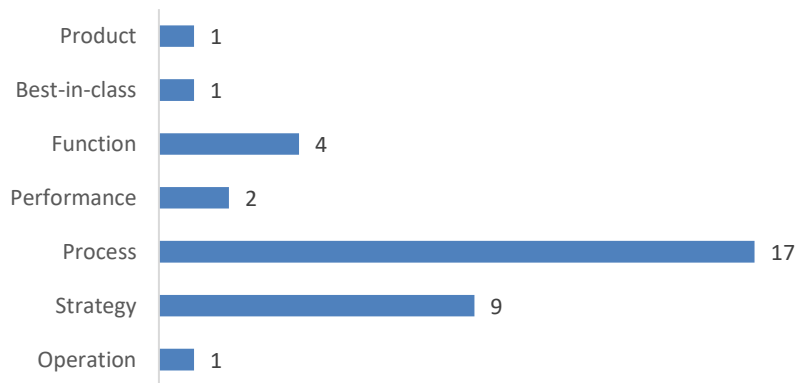


Fig. 3. Journal distribution by benchmarking type

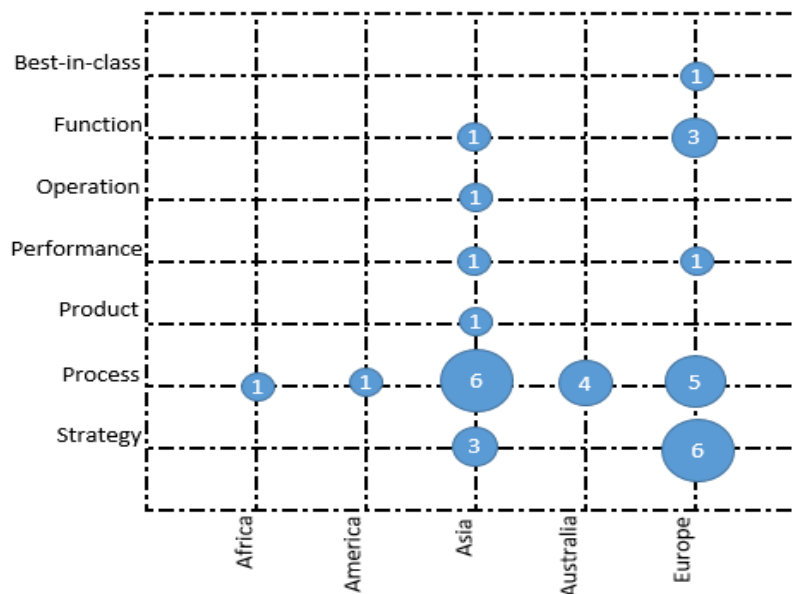


Fig. 4. Journal distribution by 5 continent

5. GAP AND FURTHER RESEARCH

Based on various journals above, there are still research gaps that need to be explored by future researchers. This gap is a benchmark for digitalization institutions. From all articles, only two articles discuss about social media approach which has been done by Oliveira & Figueira in 2015 and 2017. As we know that the industrial 4.0 revolution or the digital era is an absolute phenomenon.

Educational institutions need to implement a digital education revolution because in terms of time effectiveness, operational costs, energy and room capacity will have a positive impact to the performance of educational institutions. Higher education institution also still need to face and follow the development of the digital era to be able to compete with competitors at home and abroad.

Educational institutions have to implement a digital education system to be able to reach

wider customers / students, provide convenience in the learning system, compete in global competition, and can anticipate catastrophic risks such as the Covid-19 pandemic which is still happening around the world.

In further research, there is a need for research on benchmarks in terms of digitization of educational institutions such as the effectiveness of online learning/e-learning process, digital promotion strategies, digital education products, as well as assignment/tests/final projects in digital form. Figure 4 shows a framework of further research in education institution.

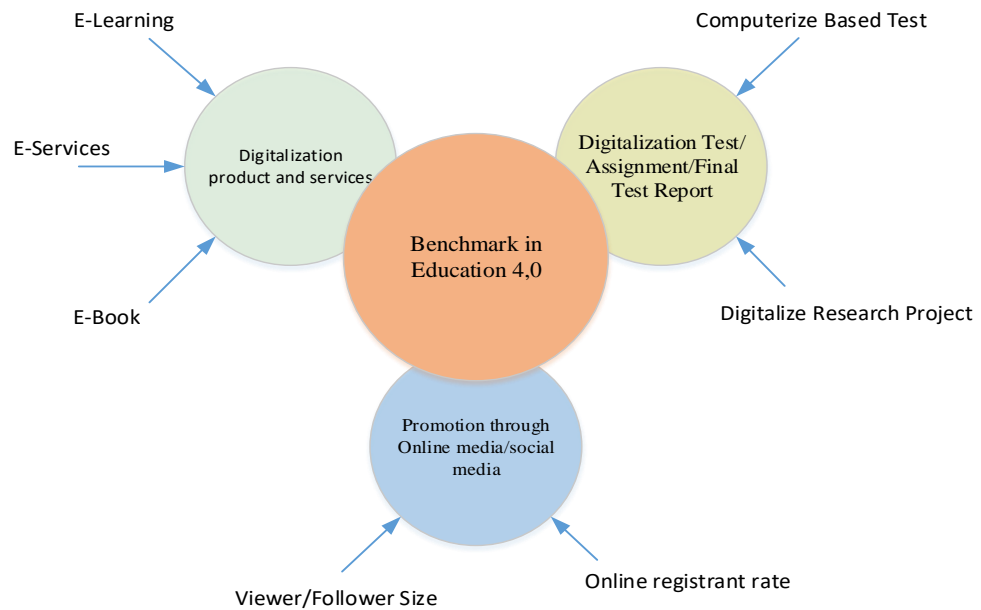


Fig. 5. A further research framework for benchmark in education institution 4.0

6. CONCLUSION

Benchmarking process or comparison process or benchmarking process is a systematic and continuous process of comparing products, processes, and results from one organization with another similar organization. Benchmarking is generally done by comparing it to an organization that has a better level because it aims to provide input for internal improvement in the organization so that it becomes better than the position before the benchmarking was done. In educational institutions, the benchmarking process can contribute to determining learning and promotion strategies, improving the learning process and curriculum development, improving physical infrastructure facilities, improving operations, performance, so that the hope that can be achieved is to have a positive impact at the educational institution level best in his class. This study has contributed in enriching the scientific literature in terms of benchmarking in higher education institutions, however this study still lacks literature in terms of financial benchmarks and financial benchmarks from an investor perspective, and also implementation education 4.0, so there is

still an opportunity to examine comparisons on others material likes financial or education 4.0

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