The Comparison of Scimago Institutions Rankings (SIR), Scopus, and SINTA Profile

by Agus Hariyanto

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The Comparison of Scimago Institutions Rankings (SIR), Scopus, and SINTA Profile: A Case of The Top Indonesian Institutions

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The Comparison of Scimago Institutions Rankings (SIR), Scopus, and SINTA Profile: A Case of The Top Indonesian Institutions

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Abstract

This research aimed to explore the profile of the top Indonesian institutions based on the Scimago Institutions Rankings (SIR) 2021 and to clarify whether there was any consistency among the SIR, the Scopus, and the SINTA profile of the top Indonesian institutions. The authors considered a desk study through a bibliometric analysis. All data were extracted from Scimago, Scopus, and SINTA database. The top 25 institutions (including 29 universities with a double in some rank positions) from Indonesia in the SIR 2021 were analyzed their profile at the end of April 2021. Universitas Indonesia (UI) is the best in SIR followed by UIN SGD and UNHAS. Among those Indonesian universities or institutes, twenty-first of them were in the first cluster. The remained eight universities positioned in the second cluster. However, there is no consistency between the SIR and the Scopus profile and the SIR and the SINTA profile among those top Indonesian institutions. There is no guarantee that an institution with a good Scopus and SINTA profile will rank highly in the SIR. On the other hand, institutions with a middle position in the Scopus and SINTA profiles could be the top ten of SIR.

Key words: Scimago Institutions Rankings (SIR), Scopus, SINTA, top institutions, Indonesia

Introduction

Higher education University rankings have an essential impact on higher educational institutions (HEIs) (Chowdhury & Rahman, 2021). There are various rankings such as Academic Ranking of World Universities (ARWU), QS World University Ranking, Times Higher Education World University Ranking and Impact Ranking (THE WUR-IR), Scimago Institutions Rankings (SIR), 4ICU University Ranking, UI Green Metrics, UNS Java metrics, and Webometrics Ranking. Significantly, the Scimago that provide journal rankings (SJR) and institutions rankings (SIR) is a size-independent, web-based metric aimed at measuring the university rank and the current average prestige per paper of journals (Ali & Bano, 2021).

In the middle of April 2021, Scimago released a list of the best campuses or colleges in the world. Scimago Institutions Rankings (SIR), a rating agency that combines three different indicators, also released a list of the best campuses. One of them is universities in Indonesia. From the SIR results, the University of Indonesia (UI) again listed its name as the best university in Indonesia (Scimago, 2021). Launching the SIR page, the SIR is a rating agency that combines three different indicators, namely based on performance: research (weight 50 percent), innovation results (weight 30 percent), and social impact (weight 20 percent) as measured by web visibility, divided into three groups intended to reflect the scientific, economic, and social characteristics of the institution (Scimago,

1

2021). Each indicator includes "size-dependent" and "size-independent" aspects. With this method, SIR provides statistics on the overall scientific publication and results of other activities.

Meanwhile, the Ministry of Research, Technology and Higher Education (MRTHE) Indonesia provided material and non-material assistance to several universities that could get good rankings. As can be guessed, they are the "Ivy League" of Indonesia, such as UI, ITB, and UGM. The university's internal efforts and the government have borne fruit with the ranking of Indonesian universities in the QS World University Rankings from year to year. In addition to using world higher education rankings, MRTHE also ranks universities in Indonesia. It has been done for the past few years. With an assessment focus on the quality of human resources (HR), management, student activities, and research and publications, each year, the MRTHE releases rankings of universities in Indonesia, both public and private. Since 2015, UGM, ITB, IPB, and UI have always occupied the top four. In general, in the top 50 rankings, state universities (PTN) still dominate compared to private universities (PTS) (Lukman, Yaniasih, Maryati, Silalahi, & Sihombing, 2016).

There are many academic databases in the world (Lukman, 2017), including: Scopus, Sciencedirect, Web of Science (WoS), Google Scholar, Microsoft Academic Search, Dimensions, EBSCO, ProQuest, DOAJ, Researchgate, JStore, PubMed, Crossref, Copernicus, etc. Scopus is a database (data center) of scientific literature or citations owned by the world's leading publisher, Elsevier. Scopus was introduced to the broader community in 2004 (Scopus, 2021). Scopus usually competes with the WOS published by Thomson Reuters, the largest data center globally. In Indonesia, there is a database called SINTA.

SINTA (Science and Technology Index) is an Indonesian portal that contains the measurement of the performance of Science and Technology, including the performance of researchers, journal performance, the performance of science and technology institutions, and journal authors (SINTA, 2021). SINTA itself was just launched on December 30, 2017, by the Ministry of Research and Technology, Indonesia. SINTA serves as a forum for research results to be published online. With the presence of SINTA, it is hoped that researchers and lecturers can contribute to adding to journals or scientific papers that are made. SINTA contains information on measuring science and technology performance, including researchers, journals, science and technology institutions, and journal authors. Apart from measuring science and technology performance, SINTA is also an international indexing tool for archiving journals, books, articles, and other scientific works (Lukman et al., 2018). SINTA is not the same as indexing portals such as Google Scholar, Garuda Portal, Indonesian Publication Index (IPI), and Indonesia science and technology index (Inasti) (Rahardja, Harahap, & Dewi, 2019). SINTA has more exclusive features such as citation (index in a year for Google Scholar and Scopus), networking (knowing who has worked together), and research output (journals, articles, books that have been published), and Sinta Score (S score) (Lukman, 2017).

According to Philip G. Altbatch, an international higher education expert from Boston College, United States, there are two reasons behind the growing interest in ranking in higher education (Altbach, 2016): *First*, ranking as a form of accountability. As supporters and users of higher education, both the government and the community certainly want to know the quality of higher education. The ranking is considered to be an effective way of meeting this demand. Ranking can be a reference for the government in policy-making, especially in determining programs and allocating funds for higher education. Also, it can be used by the community to determine the best college choice for their children. *Second*, it is ranked as a "magnet". Universities widely use the ranking as a strategy to achieve other goals such as prestige, funding, students, and the best lecturers. As the need for higher education continues to increase, competition between universities is inevitable. Higher education is constantly making efforts to be the best. The ranking is an alternative system that is both effective and efficient to meet this need.

By gaining the legitimacy of its position as the best, a university will gain greater trust from the government, the private sector, and the community (Chowdhury & Rahman, 2021). It certainly impacts increasing cooperation with the government and the private sector, which will increase the university coffers. In addition, there will be more students and lecturers who are interested in entering. As a result, these universities have a greater chance of getting the best students and lecturers.

Finally, the research questions of this study are:

1. What is the profile of the top Indonesian institutions based on the Scimago Institutions Rankings 2021?
2. Is there any consistency between the Scimago Institutions Rankings and the Scopus profile of the top Indonesian institutions?
3. Is there any consistency between the Scimago Institutions Rankings and the SINTA profile of the top Indonesian institutions?

Research Methods

The authors considered a desk study through a bibliometric analysis (Suprapto et al., 2021; Suprapto, Prahani, & Deta, 2021). All data were extracted from Scimago (2021), Scopus (2021), and SINTA (2021). The data collection process was conducted on 26 April 2021. We chose the top 25 universities from Indonesia following the Scimago institutions' rankings 2021 released on their websites. Then, we explored those universities in Scopus and SINTA database. All data were analyzed and structured systematically. Thoroughly, 29 Indonesian institutions were analyzed of their performance based on the Scimago data and compared with their Scopus and SINTA profile. All universities or institutes are public universities in Indonesia. The distribution of their locations is shown in Figure 1. Java Island contributed the most institutions. 18 of 29 are located on Java Island. Meanwhile, Sumatra contributed six institutions. The remained institution from Sulawesi (2 institutions), Borneo, Bali, and Papua contributed to one institution.

Figure 1. The location of the top 29 Indonesian institutions (Note: the number is linked with Figure 2)

Results and Discussion

Figure 2 illustrated the graph processed from the Scimago database that released in the middle of April 2021. The rank statistically based on performance: research (weight 50 percent), innovation results (weight 30 percent), and social impact (weight 20 percent). It was 29 institutions placed in the

3

top 25 University in Indonesia. It was double institutions in the eleventh, twentieth, and twenty-third rank. The situation was clear that Universitas Indonesia (UI) is the best in Scimago institutions rankings followed by UIN SGD and UNHAS. Globally, UI has ranked 651. Meanwhile, UINSGD and UNHAS were in position 689 and 695, respectively. Then, UNAIR (top 25) has ranked 762 globally. Among those universities or institutes, twenty-first of them were in the first cluster. The remained eight universities positioned in the second cluster: UNSRI, UNSOED, UNMUL, UNNES, UNMUS, UM, UNEJ, and UNHALU.
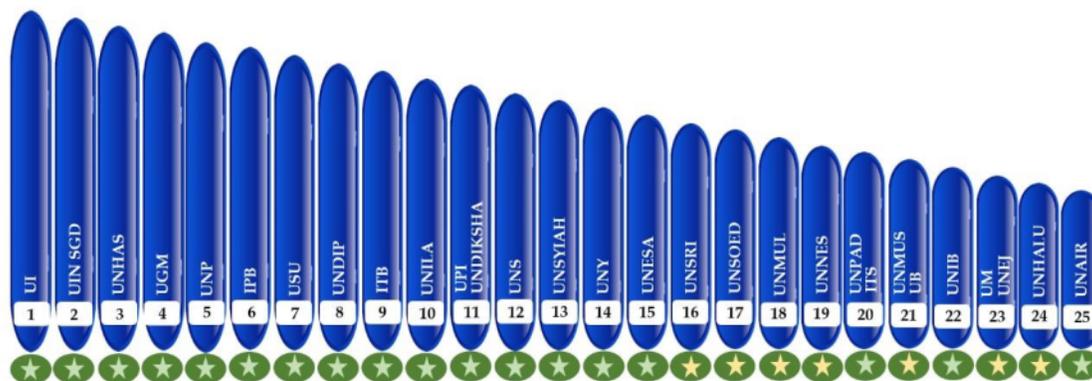
Figure 2. The visualization of the Scimago institutions rankings (SIR) among the top Indonesian institutions

Table 1 indicates that the research component with a weight of 50% tends to decrease with the institution's ranking. However, for the innovation and societal aspects that weigh 30% and 20%, it does not mean that institutions ranked below consistently show low performance. in other words, institutions in 25th place show better innovation performance than 15th. It also applies to the societal aspect. Table 2 also depicts top rank institutions based on the subject area. It was clear that the dominance of UI in business, management and accounting, dentistry, medicine, pharmacology, toxicology, pharmaceutics and psychology.

Table 1. The percentile comparison of the top one, fifteen, and twenty-five

Institution	Percentile			
	Overall	Research (50%)	Innovation (30%)	Societal (20%)
UI (1st)	32nd	11th	87th	15th
UNESA (15th)	56th	20th	98th	70th
UNAIR (25th)	67th	40th	92nd	33rd

Table 2. Top rank institutions based on the subject area

Subject area	Top institution	Rank
Business, Management and Accounting	UI	1st
Dentistry	UI	1st
Medicine	UI	1st
Pharmacology, Toxicology and Pharmaceutics	UI	1st
Psychology	UI	1st
Earth and Planetary Sciences	UNHAS	3rd
Engineering	UNHAS	3rd
Environmental Science	UNHAS	3rd
Mathematics	UNHAS	3rd
Biochemistry, Genetics and Molecular Biology	IPB	6th
Veterinary	IPB	6th
Agricultural and Biological Sciences	USU	7th
Social Sciences	ITB	9th
Chemistry	UNSYIAH	13rd
Energy	UNMUL	18th
Computer Science	ITS	20th

Meanwhile, UNHAS is number one in earth and planetary sciences, engineering, environmental science, and mathematics. Then, IPB performs their best in biochemistry, genetics, molecular biology, and veterinary. With each excelling in one area, USU, ITB, UNSYIAH, UNMUL, and ITS performed their best in agricultural and biological sciences, social sciences, chemistry, energy, and computer science, respectively.

Now, we compare it to the Scopus database (Figure 3). Accordingly, among those 29 institutions, the top ten ranks based on the number of whole documents (blue line) are UI, ITB, UGM, IPB, UNAIR, ITS, UNDIP, UB, UNHAS, and USU. These institutions also belonged to the top 50 Indonesian institutions in Scopus indexed publication profile for years (Lukman, Yaniasih, Maryati, Silalahi, & Sihombing, 2016). In contrast, the institutions such as UIN SGD, UNP, UNILA who ranks in top ten of Scimago institutions rankings (SIR), did not become dominant in Scopus profile. This situation was also similar to UNDHIKSA, UNMUL, UNMUS, UNIB, and UNHALU. The rationale is that these universities might dominate innovation and social impact even though their research is less than the top institution in Scopus, as simulated in Table 1. If there is a consistency between the SIR and the Scopus profile, then the trend curve of Figure 3 should be as shown in Figure 2. Thus, there is no consistency between the SIR and the Scopus profile.

Figure 4 illustrates the SINTA profile of the top Indonesian Universities. SINTA (Science and Technology Index) is an Indonesian portal that contains the measurement of the performance of Science and Technology, including the performance of researchers, journal performance, the performance of science and technology institutions, and journal authors. It uses Google Scholar, Scopus, and WoS metadata to present the SINTA score (S score) (Lukman et al., 2018). The number of citations and S score impacts to university reputation (Rahardja, Harahap, & Dewi, 2019). Whenever there were any differences between SIR and Scopus profile among the top Indonesian university, a similar situation also happened in the SINTA profile. Sinta V2 score indicated that UI, ITB, UGM, IPB, and UNAIR are the top five. Surprisingly, for UIN SGD, UNP, UNILA, these institutions were not performed well in their SINTA score, however their position in the top ten of SIR. The results of the three years S score were also not much different. Thus, there is no consistency between the SIR and the SINTA profile among the top Indonesian university.
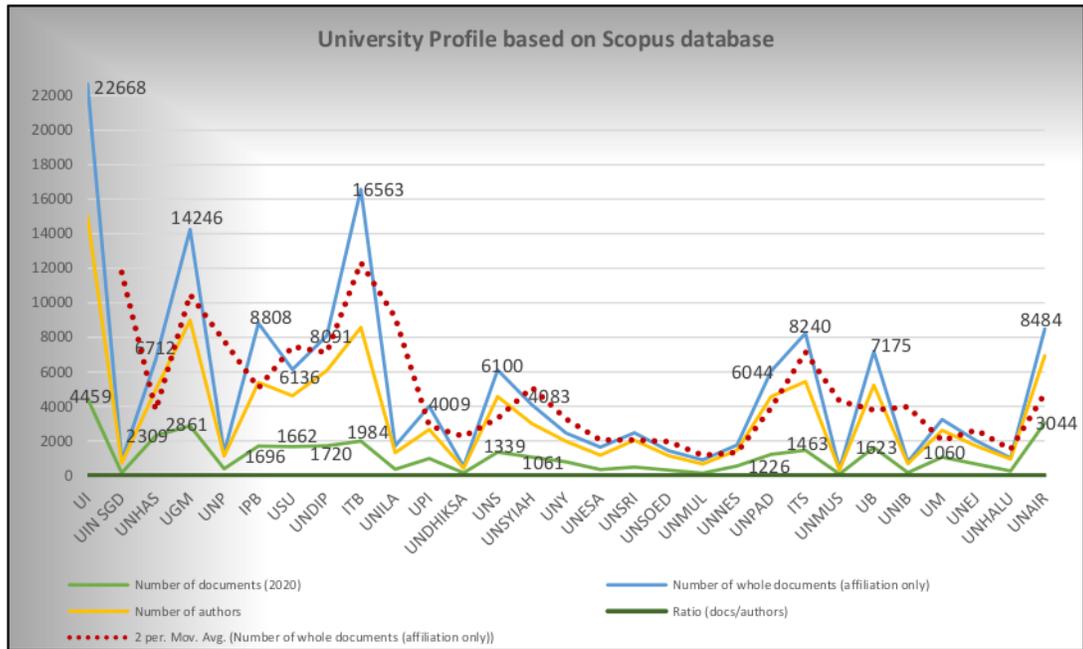
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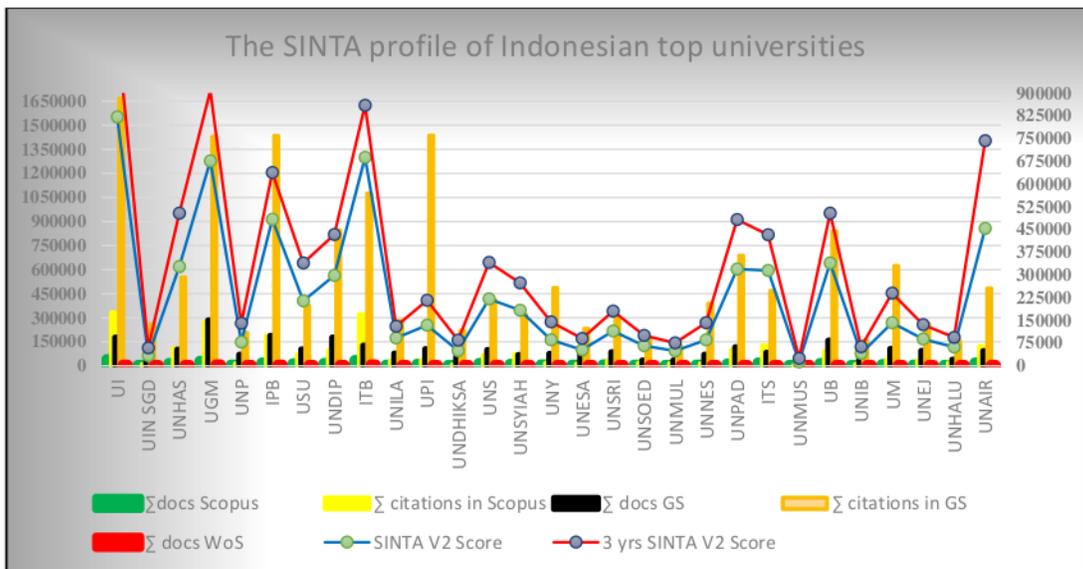Figure 3. Scopus profile among the top Indonesian universities

Figure 4. SINTA profile among the top Indonesian universities

The use of ranking in the world of higher education is not without problems. In determining higher education rankings, the often-used method is to gather opinions from the academic community,

especially the campus management, regarding other campuses. So, rather than objectively assessing the quality of an institution, higher education rankings tend to be a more subjective popularity race. College rankings also often focus only on several factors such as external funding, the number of publications, the proportion of lecturers with doctoral or professor qualifications, and student quality (e.g., GPA). Unfortunately, these factors do not always indicate the quality of a university. For example, the number of publications does not necessarily match the quality or usefulness of the article.

Higher education institutions stronger in science get more significant opportunities and funding from external parties than universities more focused on the social field (Altbach, 2016). Not to mention, most institutions that conduct higher education rankings rarely include teaching factors. However, this factor is significant in determining the quality of education in a tertiary institution. Each university certainly has its own goals, missions, and uniqueness. College rankings often rule this out. All colleges are considered uniform, so they are judged in the same way. The diversity of universities rarely gets space. They are ultimately forced to emulate a specific institutional model, the university with the best ranking. Universities with characters that are not in line with the focus of the ranking will certainly be excluded.

It would be even better if the ranking system created by the government at this time were improved by upholding the principles of openness, comprehensive, fairness, and accommodating to the diversity of tertiary institutions in Indonesia. If the government currently uses the classification of universities in ranking, in the future, it can be made more specific, for example, based on the type of institution (from university to high school) and the field of disciplines. No less critical, quality improvement based on ranking must also be seen and felt directly by the academic community at the university, the community, and the government.

Conclusion

The exploration of the profile of the top Indonesian institutions based on the Scimago Institutions Rankings (SIR) 2021 gives a lens to each institution to do self-evaluation. The institutions ranked below the average can learn many things from the top institutions. On the other hand, top institutions can evaluate how to maintain their position. It was 29 institutions placed in the top 25 institutions in Indonesia. Universitas Indonesia (UI) is the best in SIR followed by UIN SGD and UNHAS. Globally, among those universities or institutes, twenty-first of them were in the first cluster. The remained eight universities positioned in the second cluster. UI have also dominance in business, management and accounting, dentistry, medicine, pharmacology, toxicology, pharmaceutics and psychology. Meanwhile, UNHAS is number one in earth and planetary sciences, engineering, environmental science, and mathematics. Then, IPB performs their best in biochemistry, genetics, molecular biology, and veterinary.

However, there is no consistency between the SIR and the Scopus profile. In the same situation, there is no consistency between the SIR and the SINTA profile. It means that there is no guarantee that an institution with a good Scopus and SINTA profile will rank highly in the SIR. On the other hand, institutions with a middle position in the Scopus and SINTA profiles could be the top ten of SIR. It has happened because it is supported by innovation and societal aspects, which are also part of the weighting of SIR.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests, institutional, or personal relationships which have, or could be perceived to have, influenced the work reported in this article.

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Appendices

Appendix 1
Top 25 Scimago Institutions Rankings (SIR) of Indonesian Universities

National SIR Rank	Global SIR Rank	Institution	Best Quartile
1	651	UI	1
2	689	UIN SGD	1
3	695	UNHAS	1
4	697	UGM	1
5	702	UNP	1
6	704	IPB	1
7	708	USU	1
8	712	UNDIP	1
9	714	ITB	1
10	715	UNILA	1
11	720	UPI	1
	720	UNDHIKSA	1
12	724	UNS	1
13	726	UNSYIAH	1
14	735	UNY	1
15	736	UNESA	1
16	747	UNSRI	2
17	748	UNSOED	2
18	750	UNMUL	2
19	752	UNNES	2
20	753	UNPAD	1
	753	ITS	1
21	754	UNMUS	2
	754	UB	1
22	756	UNIB	1
23	759	UM	2
	759	UNEJ	2
24	760	UNHALU	2
25	762	UNAIR	1

Appendix 2
Scopus Profile of Indonesian Universities
(Data per 26 April 2021)

SIR Rank	Institution	Number of documents (2020)	Number of whole documents (affiliation only)	Number of authors	Ratio (docs/authors)	Patent results
1	UI	4459	22668	14988	1,51	98
2	UIN SGD	148	861	721	1,19	0
3	UNHAS	2309	6712	4966	1,35	0
4	UGM	2861	14246	8996	1,58	14
5	UNP	393	1317	1130	1,17	0
6	IPB	1696	8808	5390	1,63	100
7	USU	1662	6136	4611	1,33	3
8	UNDIP	1720	8091	6073	1,33	0
9	ITB	1984	16563	8567	1,93	84570
10	UNILA	354	1721	1309	1,31	0
11	UPI	973	4009	2667	1,50	0
	UNDHIKSA	150	519	418	1,24	0
12	UNS	1339	6100	4566	1,34	0
13	UNSYIAH	1061	4083	2992	1,36	0
14	UNY	782	2455	1976	1,24	0
15	UNESA	335	1636	1176	1,39	0
16	UNSRI	488	2472	2043	1,21	0
17	UNSOED	309	1425	1139	1,25	0
18	UNMUL	127	904	650	1,39	0
19	UNNES	550	1771	1460	1,21	0
20	UNPAD	1226	6044	4567	1,32	0
	ITS	1463	8240	5427	1,52	1521
21	UNMUS	76	377	311	1,21	0
	UB	1623	7175	5229	1,37	0
22	UNIB	163	789	677	1,17	0
23	UM	1060	3244	2612	1,24	0
	UNEJ	665	2000	1704	1,17	0
24	UNHALU	254	1016	950	1,07	0
25	UNAIR	3044	8484	6915	1,23	0

Appendix 3
SINTA Profile of Indonesian Universities
(Data per 26 April 2021)

SIR Rank	Institution	∑docs Scopus	∑ citations in Scopus	∑ docs GS	∑ citations in GS	∑ docs WoS	SINTA V2 Score	3 yrs SINTA V2 Score
1	UI	20045	176621	93750	882401	2284	1551300	540129
2	UIN SGD	949	5278	13589	137530	17	64532	46838
3	UNHAS	7773	57407	53905	292266	681	619620	332020
4	UGM	14264	143671	150219	756919	2871	1277230	437742
5	UNP	1839	7147	37388	109270	65	149040	116492
6	IPB	9323	98165	99649	759235	1791	913152	292290
7	USU	6323	37790	54851	199506	282	404698	237255
8	UNDIP	7700	51109	93833	447466	665	563114	255539
9	ITB	17141	169504	67207	569329	2914	1299530	324244
10	UNILA	1848	16681	41188	148537	278	173581	72255
11	UPI	4361	19298	56108	760427	157	254118	154307
11	UNDHIKSA	515	4097	31391	115997	53	94983	65955
12	UNS	7066	33895	53335	217800	414	416584	228234
13	UNSYIAH	4204	37571	36168	169334	526	346389	171181
14	UNY	2734	9412	40440	257264	96	162750	111609
15	UNESA	1648	6081	40030	123221	60	99950	71170
16	UNSRI	2974	15803	45750	163620	190	216617	124664
17	UNSOED	1661	10390	18711	95302	210	125575	63812
18	UNMUL	1025	7807	18397	65306	122	93172	49511
19	UNNES	2268	8261	37592	205030	64	162823	105417
20	UNPAD	5902	52653	62534	363868	810	602888	308409
20	ITS	9050	66705	43730	247904	793	594859	222047
21	UNMUS	436	1363	2782	6576	1	24333	22970
21	UB	7661	48729	83770	443962	738	640753	311666
22	UNIB	789	5622	30677	83041	105	76898	41523
23	UM	3546	18975	56669	329965	200	269238	184310
23	UNEJ	2210	15168	49982	138757	254	167180	90539
24	UNHALU	1227	10958	21241	79857	135	117472	59929
25	UNAIR	9034	64246	49730	255717	819	857142	545636

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