

Publication Performance and Scientific Impact of Unesa Postgraduate Lecturers

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ABSTRACT

The performance of scientific publications of the Postgraduate lecturers at Universitas Negeri Surabaya is one of the important indicators in measuring the quality of learning as well as the reputation of the institution. Therefore, the performance requires continuous support. This study seeks to describe the performance of scientific publications of 128 home base postgraduate lecturers at Universitas Negeri Surabaya within 2019-2020 period. The scientific impact analysis is viewed from Google Scholar document number of citations, whereas the publication performance is seen from the number of Scopus indexed documents. T-test was employed for statistical analysis. Results show an increase in the number of citations and a fall for Scopus indexed documents. Why this trend happens is elaborated in the discussion.

Keywords: *Publication, Scientific Impact, Postgraduate Lecturers.*

1. INTRODUCTION

Research is one of the key roles in higher education which requires every lecturer to conduct research every year. Research performance is not only measured from research reports, but also the publication of research results. This includes the quality of scientific publications and the scientific impact of those publications. Research is primarily measured by publication. Publications serve as the main indicator to evaluate academic staff performance as well as institutions.

Knowledge is the most important resource in a university which can improve academic staff performance. Knowledge acquisition, sharing, and utilization are three types of knowledge management.

Universitas Negeri Surabaya (Unesa) strives to improve scientific research as one of the key components in personal development. In recent years, Unesa has attempted to increase research productivity through several programs and policies. Most Indonesian higher learning institution reforms their academic activities to improve publication performance.

As part of a higher learning institution that caters to postgraduate education, Unesa emphasizes the importance of publication performance serving as an indicator of learning quality and institution reputation.

Therefore, publication performance requires continuous encouragement and support.

In general, the publication performance of Indonesian researchers placed 45th in Scimago Journal Rank (1996-2020) after Malaysia, Singapore, and Thailand. In 2020 it ranked 21st, a leap from 48th compared to its position in 2015. The leap shows there is a tremendous improvement in the scientific publication performance of researchers and academics in Indonesia.

However, it seems that the increase in the performance of this scientific publication reached its peak in 2019. The performance in 2020 remained stable in the 21st place. Further analysis is needed to investigate this phenomenon.

Internally, one of the obstacles for lecturers in conducting scientific publications is the lack of understanding of the use of technology to publish [1]. Knowledge of publication technology, especially understanding computers, is closely related to increasing the productivity of lecturers' scientific publications [2].

In addition to internal factors, the performance of academics' scientific publications is also influenced by the environment, for instance, the academic environment such as professional associations and institutional encouragement. A situated publication environment

plays an important role in academic publication performance [3].

English scientific publications have proven to have a positive impact on an institution's image, particularly from a stakeholder's perspective as they indicate an increase in human resources [4]. Therefore, efforts to increase the number of scientific publications continuously are very important for the image of the institution.

Little has researched studies of the performance of scientific publications by academic staff at Unesa, primarily an analysis of the number of citations and the productivity of publications in reputable international journals. This study seeks to describe the performance of scientific publications by Unesa postgraduate lecturers in terms of citations from Google Scholar documents and the number of Scopus indexed documents in an a-two-year period of 2019-2020.

The analysis is important to improve its rank among other higher learning institutions both at national and global levels. In addition, it serves as a basis for policy-making by university leaders including providing research grants and holding research training programs.

Gyorffy et al. [5] argued that the amount of the grant turned out to have a weak correlation with the performance of lecturers' scientific publications. The earlier publication history of lecturers proved to be an accurate predictor of lecturers' performance.

This research is an initial effort to map the performance of academic publications at Unesa postgraduate program. It aims at providing an overview of the performance of lecturer's publications within the years 2019 and 2020.

2. METHODS

The unit of analysis in this study is the Unesa postgraduate lecturers in 2019-2020, that is 128 lecturers from 23 study programs. The period was chosen at the same time a publication division was established at the Postgraduate program. Scientific publication data were taken from the Sinta Ristekbrin dataset, a website that records the lecturer's scientific publication supported by Indonesian Board for Research and Innovation. The data were analyzed using descriptive statistics.

To analyze an increasing of scientific publications by Unesa postgraduate lecturers, the authors used 2019 and 2020 data and tested them using the t-test with the following procedure:

2.1. Normality Test

To test whether the data has a normal distribution or not [6]. The hypotheses for the normality test are:

H_0 = Data normally distributed, significance > 0.05

H_1 = Data is not normally distributed, significance < 0.05

2.2. t-test (Paired Sample Test)

To seek an increase of scientific publication performance by using a two-sample t-test [7].

The procedure is as follows:

a) Determine statistical hypotheses

H_0 = There is no difference between the scientific publication performance of Unesa postgraduate lecturers in 2019 and 2020

H_1 = There is a difference between the scientific publication performance of Unesa postgraduate lecturers in 2019 and 2020

b) Determine the significance level of 5% or 0.05.

c) Provisions:

If the significance value of $t > 0.05$ or the value of t count $> t$ table, then accept H_0

If the significance value of $t < 0.05$ or the value of t count $< t$ table, then reject H_0

d) Draw conclusions

3. RESULTS AND DISCUSSION

The number of postgraduate lecturers at the State University of Surabaya who have a Google Scholar account is 128 lecturers. The total number of document citations in 2019 was 9,623 and increased to 10,182 citations in 2020. However, outlier data were excluded from data analysis to obtain normal data. Meanwhile, the number of scientific article publications indexed by Scopus was 164 documents in 2019 and decreased to 117 documents in 2020.

3.1. Scientific Impact Performance

The scientific impact performance of lecturers at the Postgraduate State University of Surabaya was measured using the number of their citations recorded in Google scholar. Overall, the number of citations increased in 2020. Four study programs experienced a decline in 2020 including education management, geography education, sports education, and art & culture education. Figure 1 illustrates the number of citations recorded in Google scholar within two years of 2019-2020.

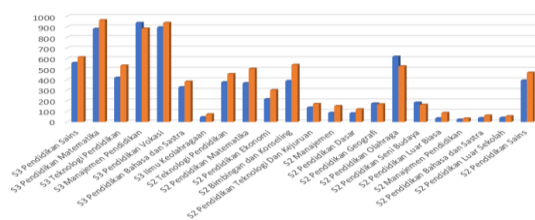


Figure 1 Number of Citation Google Scholar 2019-2020.

Overall, each lecturer's citation average reached 54 in 2019 and experienced a slight increase of 61 citations in 2020. The authors employed a t-test to measure how significant the increase was. Results show the increase was highly significant as illustrated in Table 1. Where the t-test results in the table below show a significant difference between citations in 2019 and 2020.

Table 1. Results of Google Scholar Citation t-Test

	2019	2020
Mean	328.3182	372.4091
Variance	85567.75	87217.78
Observations	22	22
Pearson Correlation	0.981148	
Hypothesized Mean Difference	0	
df	21	
t Stat	-3.61923	
P(T<=t) one-tail	0.000804	
t Critical one-tail	1.720743	
P(T<=t) two-tail	0.001609	
t Critical two-tail	2.079614	

To sustain an increasing trend of publication performance particularly the number of citations recorded in Google scholar, a few alternatives such as posting in lecturer's social media should be implemented. Scholars argue there is a correlation between the number of scientific articles posted on social media and the citation number obtained [8]. Even though the correlation is weak, uploading a short teaser of scientific articles will contribute to an increase of lecturer's citation at the State University of Surabaya Postgraduate program. In addition, posting on social media will improve organic scientific impact. Updated and phenomenal scientific work posted on social media will serve as diffusion and innovation.

3.2. Reputable International Journal Performance

Lecturer's performance in the reputable international journal was measured using secondary data; i.e. Scopus data. Scopus indexing keeps records of scholars and researchers who publish their research findings in the form of scientific articles. Illustration on the progress of Unesa lecturer's scientific articles indexed by Scopus between 2019 and 2020 are shown in Figure 2.

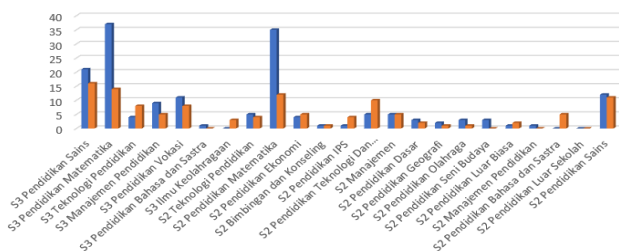


Figure 2 Number of Scientific Articles Indexed by Scopus in 2019-2020.

Overall, the number of Unesa Postgraduate lecturer's scientific articles indexed by Scopus experienced a fluctuation. In other words, it has an increase, a fall, and a stable position for different study programs at the same time.

Each lecturer published 1.3 and 0.9 scientific articles indexed by Scopus on average in 2019 and 2020 respectively. Results of the t-test on scientific articles indexed by Scopus are shown in Table 2.

Table 2. Results of t-Test on the Number of Scopus Indexed Scientific Articles

	2019	2020
Mean	7.130434783	5.08695652
Variance	107.027668	2
Observations	23	22.8102766
Pearson Correlation	0.800116122	8
Hypothesized Mean Difference	0	23
df	22	
t Stat	1.375394066	
P(T<=t) one-tail	0.091426861	
t Critical one-tail	1.717144374	
P(T<=t) two-tail	0.182853722	
t Critical two-tail	2.073873068	

Based on Table 2. results, there was no significant difference between the number of scientific articles indexed by Scopus in 2019 and 2020. However, Table 2. also indicates a slight decline which has to be taken into account from a broader perspective.

Nationally, the number of documents indexed by the Scopus of Indonesian academics indeed passed its peak in 2019. The same trend occurs at Unesa postgraduate program. Although various policies to boost the number of reputable international publications are implemented, it will take some time to see the positive effects of the policies.

Although academics at Unesa postgraduate program are senior academics who are potentially productive in publishing Scopus indexed articles, table 2. particularly in 2020 showed a distinct fact; i.e. a slight decrease. Recent findings claim that lecturers prefer to increase publications when they have high academic productivity, extrinsic career motives, and senior [9].

It may be true that the amount of the grant has a weak correlation with the performance of lecturers' scientific publications [5]. Both the amount and type of funding sponsors become a barrier for policymakers to boost the number of lecturers' scientific publications [10].

Improving the scientific atmosphere by encouraging lecturers to conduct a research project with international academics becomes one of Unesa postgraduate program policies. Nevertheless, international research collaborations are generally constrained by physical distance, quality, and accessibility [11]. Postgraduate program leaders and lecturers are hands in hand to

resolve this barrier and aim to improve the quantity and quality of scientific publications indexed by Scopus.

4. CONCLUSION

The significant increase in the number of Google Scholar citations for Unesa postgraduate academics in 2019-2020 was not followed by an increase in the number of scientific publications indexed by Scopus. Although several policies have been implemented, it seems that it will take longer to obtain a significant impact. A similar trend occurs in the number of international publications by Indonesian academics. Various policies to encourage lecturer's scientific academic performance particularly in publication must still be pursued.

AUTHORS' CONTRIBUTIONS

All authors conceived and designed this study. All authors contributed to the process of revising the manuscript, and in the end, all authors have approved the final version of this manuscript.

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