

Leap Strategies to Increase International Publication of Indonesian Higher Education: An Example of Semarang State University

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Abstract: Publication in international reputable journal is an important indicator for reputational difference for higher education institution. This study aims to identify the main factors that contribute the low performance of publication in an Indonesian university and then develop strategies to increase the number of publications of Semarang State University academics in reputable international journals. The study finds four main constraints why the publications are low. Strategies are then arranged to be used as a reference for the University policy makers to accelerate the increase. The strategy we put together is expected to increase the publication by approximately 600%. Before the strategies are implemented, the university only contributes 15 documents annually. In 2016 after some implementation of the strategies, the publication of the university rose into 86 documents in 1 year. The strategy in fact we hope can contribute to 710 each year, so that the university can jump to the same level with other elite universities in the nation. This research recommends ten grand strategies that should be taken to increase the university publication.

Key words: Publication, UNNES, citation, strategy, reputable

INTRODUCTION

Publication in reputed international journals is an important indicator of the reputation of a university. (Czellar and Lanares, 2013) suggests that publication helps to determine reputational differences of scientific and academic institutions. Quality of research and publication marks the advancement of knowledge and research of the university. "One of the major outputs of educational organization is to produce knowledge through publication and citation in high-indexed journals" (Wu, 2013).

The number of international scientific publications and citation will be indicator for the scientific activity (Garcia and Menendez, 2005) of a higher education institution. Besides, the number of international publications and citations are important indicators for the university to get recognition from international accreditation agencies. For domestic purposes, university in Indonesia also should demonstrates good reputation of publication in international journals to get recognized as PTNBH (Independent State University).

The international context for publication is the global economy. The current global economy is knowledge economy based on innovation and research (Etzkowitz and Leydesdorff, 1997; Wetter, 2011; Torres and Schugurensky, 2002) suggested the impact of quality research and economic performance of the nation. Research publication strengthens the comparative

Table 1: Comparison of scopus

Year	Malaysia	Thailand	Indonesia
2016 (April)	6.630	3.864	2.062
2015	24.460	11.886	6.706
2014	27.911	13.244	6.219
2013	25.004	12.171	4.997

advantage of the nation (Cohen *et al.*, 2002; Gholizadeh *et al.*, 2014). Unfortunately, compared to Malaysia, Singapore and Thailand, the number of publication of Indonesia is still very low. Table 1 shows the comparison of Malaysia, Thailand and Indonesia's publication in scopus in the last 3 years. Barber and Merton (1957), Cole and Cole (1967) have suggested that the knowledge of the reputation of individuals and institutions are important elements in the scientific community for the development of knowledge and the structure of science.

In order that knowledge can be produced and scientists can be recognized, Garcia and Menendez (2005) suggests that there must be competition in research and the need for peer review. Bonaccorsi *et al.* (2008) made a recommendation on a personal level. They suggested that scholars need to make time to be able to collaborate because the academic reputation of the faculty is highly dependent on the presentation of studies in academic events.

Why journal studies more appreciated than books? According to the Directorate of Higher Education Indonesia, a journal study has three functions, namely as

a register as an archive and as a certification of knowledge. Journal studies function as registers that a study has been conducted and the rights attached to the person who examined. Books are not considered as such because not all books are the result of research while already Dikonvensikan journal studies and research results. Examples of research results not every book is a book of instruction as introductory introductory sociology or anthropology whose content is a summary of the previous books.

Although, publications in international journals of high reputation is very important, the number of international publications Semarang State University in reputable international journals is still very low. Scopus data shows that total UNNES publication, until 2015 are 95 studies. Very small compared with the other emerging universities like the University of Syiah Kuala which has a total publication of above 600 studies and UNDIP above 800 studies. Because of this consideration is necessary to develop a comprehensive strategy to tackle this problem. Why is the publication low and what strategies should be developed? This study develops a formula which is expected to raise the publication into 600%.

Literature review: What can we learn from the results of existing research on strategies to improve the international publication? Fox and Milbourne assert that a clear vision and strategy is a key condition for an increase in international publications. "Any short term or long term plan devised by higher education universities definitely influences policy making, vision and missions, the which in turn has its impact on university publication exercises".

According to Fox and Milboutine, international cooperation (joint publication) subscriptions to electronic journals of repute can improve international publications. The study on 150 economists by Fox and Milbourne found that the 10% reduction in teaching load may add as much as 20% of research output. One strategy that can be used by developed countries and Milbourne Fox is to make the publication's reputation as a condition to obtain research funding. Australia, Spain, Finland and the EU is a developed country and the publication requirement to get research budget.

The second strategy to improve the publication is to increase internationalization. "Regarding publication rate, this process can be enhanced by attracting international student's especially for postgraduate students, lecturers by exchanging with other countries and by collaboration both with international universities and international

companies". Collaboration with International Universities in Africa may increase by 20% the number of publications.

The third strategy according to Fox is to multiply the number of accredited journals internationally. "The number of local and international journals in a country may have a great impact on the publication rate of that country". Here is the large number of international journals four countries and many international publications. This data shows that the higher the number of international journals, the higher the number of international publications. Malaysia has 82 international journals in 2013, Japan 535, Taiwan, China 86 and 590. The number of journals is directly proportional to the number of scientific publications.

Fourth, the factors that affect the publication are the qualifications, experience and age. "Besides academic qualification and experience, personal factors such as age, gender and teamwork abilities can affect the performance of academia in publication exercises. Hence, HEIs peopled with a desirable number of lecturers and researchers with outstanding expertise and sufficient experience can aim at generating high quality publications.

The fifth factor to accelerate the publication is a doctoral student and post-doctoral. "Doctoral students are also considered as a vehicle for knowledge dissemination" (Enders, 2004). Dengtan related publications can mempublikiasi PhD students during their research into a PhD student or after mereja completed. The number S3 indicates the number of scientific research to generate knowledge. "Research conducted by doctoral students is an effective element in the overall knowledge production in universities. Therefore, training doctoral and post-doctoral students is actually a reproductive process in academic environments, the which is linked with shifts in academic knowledge production (Enders, 2004).

MATERIALS AND METHODS

This study used focus group discussions and analysis of scopus database. In scopus, the researcher extract the following data: how many are the university total publication? How many researchers wrote those studies? How many citations did the university collect? What is the rank of the university among Indonesian universities? How does the publication grow from year to year? What faculty produced most? With what institution did the university collaborate to produce the documents? Theresearchers also interview some lecturers in the department who produced most.

RESULTS AND DISCUSSION

Scopus records of UNNES publication: The study finds twelve facts about UNNES publication. Those twelve facts are summarized into the following six descriptions. First, until 18 December 2016, the total of UNNES publication indexed in scopus is 176 documents. The largest percentage of the publication is Aip Conference Proceedings (26 documents or 15% of the total documents) the second largest publication is journal of physics conference series, 13 document (7%). Second, The total number of 176 studies written by 70 lecturers from a total of 1033 lecturers of UNNES. This means that less than 10% of lecturers UNNES writing international journal indexed in scopus. Total citations of publications in SCOPUS UNNES is 393 times with the H index 9.

Third, the ranking of UNNES publication among higher education in Indonesia is number 41. In 50 profiles of national publications, the new higher education just released UNNES is not included because at the time of the research (early 2016) the publication UNNES is <100 studies. From college LPTK, UNNES is ranked 3 under Universitas Pendidikan Indonesia (355) State University of Malang (234). In early 2016, UNNES is ranked 7 below UPI, UNJ, UNM, UNY, UNM and UNESA.

Fourth, Publication UNNES significant occurred in 2016, namely the addition of 83 documents. The previous year only add 20 publications with an annual average 15 studies. The comparison with other universities, additional publications in 2016 are as follows: ITB 1127, 765 UI, UGM 883, 324 UNDIP, UPI 148, UNJ 30 Unsyiah 122, UNS 298. UNJ seen from the amount of growth from year to year looks no publication strategy. Figure 1 shows UNNES still have to work hard because that which needs to be achieved within 3 year by UNNES already with a specific strategy is achievement UI year. Additional significant in 2016 as a policy rewards Mr. Rector, faculty-led strategy to provide assistance or incentives publication, writing clinics by LP2M and support the developer journals.

Fifth, The first study published in scopus is an study written by Waluya in Proceedings of the ASME design

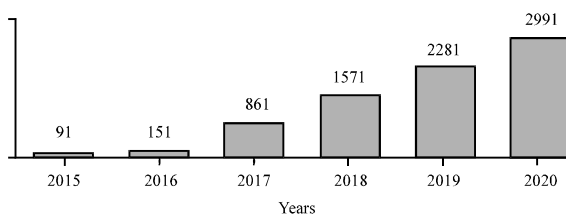


Fig. 1: Projection of international publication

Engineering technical conference with an study entitled "On asymptotic approximations of first integrals for weakly nonlinear oscillators".

Sixth, total 176 studies consist of a percentage as follows: Engineering 28.4%; Physics and Astronomy 26.7%; Environmental Science 14.8%; Social Sciences 11, 9%; Agricultural and Biological Sciences 8.5%; Chemistry 8.5%; Mathematics 8.5%, etc. Publication of the most sequentially is F-MIPA, FT, FE, FBS, FIP, FIS, Nikken, FH. Lecturer at the highest scopus publication is Ian Yulianti as many as 24 documents in scopus. Writing at most collaborated with the UGM (28 docs) UNDIP 15 docs, University Sains Malaysia and Universiti Teknologi Malaysia 11 docks.

Roots of low publication: For starters, the causes of the low international publications UNNES for seven main issues: there has been no comprehensive design to encourage international publication; the language barrier; The quality of the studies that have not been feasible for international publication; many researchers do not know journals indexed scopus; the study did not produce publications; thesis, theses and dissertations that have not been oriented to international publications and most importantly yet the growth of innovative creative culture.

The directorate of higher education in Indonesia identify six main reasons of low publication of Indonesian universities. The first is the lack of access to good research references. Many Indonesian universities do not have access to good electronic journal providers due to the expensive cost of journal subscriptions. As a result, many researchers fail to support their research with up-to-date references to show the arts of the research. The second is the limited access of a research laboratory facility. The third is the lack of research collaboration with experienced international researchers to overcome language shortcomings and academic language.

The fourth is there is no assistance to write and submit in international journals. The fifth is the lack of internationally reputed journals in Indonesia. Until May 2016, there are only 25 journals are indexed in scopus. Therefore, the need for efforts to improve the quality of the journal Indonesia by fulfilling the criteria required by the indexer institution in good standing (Scopus and web of science). The sixth reason is the expensive costs of publications in international journals.

Publication costs are high is one of the problems often complained of by thereseachers when published studies in international journals of repute. Most institutions also do not allocate the costs of publication so that the cost borne by thereseacher. Institutions also do not reward as incentive to thereseacher whose

research has been published in international journals of repute. Incentives can take the form of research grants, participation in international seminars, free of administrative tasks, fellowship abroad as well as participation in international cooperation.

Strategies to promote publication: After assessing the existing problems in UNNES, the study recommends eleven strategic steps to be taken to improve the international publication. Prediction maximum growth in UNNES study with crazy strategy in 2017 was 710 studies. UNNES publication projection is 2306 by 2020, if successful with the annual growth rate of 710. ITB currently has a document scopus 6713, UGM 4111, UI 5254; IPB in 2648; ITS 1976. Strategies to improve include policy publications for post-graduate programs, giving reward, writing clinics, the increase in subscriptions of electronic journals, translation assistance, review and proof reading by professional native language editor, an international conference with proceedings indexed, support funds for the publication and submission to journals indexed by impact low factor. We will explain the eleven strategies as follows.

First, strategies for post-graduate programs: The Ministry of Research and Higher Education already ruled that student graduation requirement for doctoral students are publication in international journals. All big ten universities already implemented this policy, since 2012. This is the time for the university to implement this policy too. In fact, universities should not only implement the decision of the higher education but also sets standards above. If the ministry requires only one publication, then UNNES should require two studies for its students. Masters students should also be required to publish in international journals.

So far, masters degree students are only required to publish one study in the journal nationally accredited. Previous studies showed that the productivity of scientific publications located in the graduate program (Enders, 2004; Thune, 2009, 2010). Therefore, the study advice graduate programs should be extended, if necessary, the procentage of the students population is greater than those studying in undergraduate program. UNNES does not need such radical policy in the near future but post-graduate students should be encouraged to graduate with international publications.

Second, language strategies to overcome difficulties: Language problem is a serious problem lurking the lecturers in state universities in Indonesia. Fundamental weaknesses in English, let alone writing scientific studies, have become the barriers for international publication.

Many studies rejected because the study is not written in a native speaker standard. Therefore, to help level English native speaker level, then the university can help with renting a language professional native speaker editor. Included in this strategy is the support of translation. Because the native speakers are also expensive, it can be bridged with the support of professional local translators. The existence of a good translator in English enough to help increase productivity in international journals.

Third, university policy to lecturers: Professor is one of the pillars of international publications in the university. In fact, professor has a lot of research. However, those researches normally end in library selves as research reports. The works should be properly processed and published in international journals. Senior lecturers should be required to publish in international journals for promotion.

Fourth, access to adequate international journals: Subscription of international journal provides such as Sage, Routledge, Elsevier, Cambridge and Oxford could increase the likelihood of publication as much as 200%.

Fifth, intensive writing clinics: Intensive writing clinics help international publication. This is particularly true for writing clinics which combines language review and review of contents and assistance to submit the studies to international journals. Implementation of a successful clinical review should be organized according to the discipline. This could be held in each faculty or department with the help of peer review of each individual faculty. The time allocated should also be long enough to correct the aspects of language and aspects of the substance. The same program needs to be intensified in post-graduate programs.

Sixth, journals indexing in scopus and webs of science: One journal indexed in scopus publication can increase as much as 400%. The target of the faculty of the journal indexed scopus. If each faculty has one journal indexed in scopus, the publication can contribute 28 studies each year.

Seventh, organizing international conferences with proceeding indexed in scopus: Every faculty in UNNES own international conference every 2 years or every year. And, this activity usually spend lots of money. At least, the faculty should provide approximately 200 mln. To support the conference. In order that those huge funds are not wasted, the conference proceedings should be published in scopus indexed proceedings.

Eighth, international research collaboration:

Collaboration with experienced native speaker and coauthoring can also increase international publications (Glanzel and Schubert, 2005; Goldfinch *et al.*, 2003; Katz and Hicks 1997). The university will increase its international research collaboration.

Ninth, research intensive selection: This indicator includes three strategies. The first is the obligation of the international publication for a major research grant over 50 mln. Studies in the university research centre (LP2M) should be directed to result in international publication. The research mostly just end up in the report-statements. The research should be transformed into scientific studies published in international journals. Second, Selection of research grants already reflect international publications. In the selection process, the researchers must be able to show what strategy should be done so that research can be published in international journals. Researchers must be able to show scopus indexed journals that will be of interest to the journal publication. Third, the research in the university should result into quality research report. A research report published in the journal intrenasional failed because of the way of writing does not meet the standards of research that could bring novelty, arguments and scholarship.

Tenth, rewards for publication: Insentives for international publication can significantly motivate researchers to publish their studies. The university attempts to contribute 20 mln. for every study published in international journals. Such effort need legal umbrella from the Ministry of Finance.

Eleventh, nurturing the culture of creativity and innovation: An important strategy to increase research impact is fostering the culture of innovativion and creativity within university life. Thus in addition to the tactical steps discussed above, the increase of excellence in research require total reconstruction of the culture on campus in order to create free and dynamic academic climate (Metcalf and Ramlogan, 2008; Ciabattari, 2013; Kaufman, 2013) recommends that such effort should include intergrating research and writing within the curriculum of the university (Ebrahim *et al.*, 2013, 2015) emphasise the fostering of innovation within the institution to increase impact and citation. Peer review can increase innovation with higher education. Figure 1 is the projection of the publication after the implementation of all these strategies:

Moghadam *et al.* (2012, 2015) have identified ten factors that contribute to the intensity of the publication. These ten include: higher education policy to emphasize the university as research institution; governmental fund; internationalization; number of international journals; qualification of lecturers and researchers; number of doctoral and post-doctoral students; number of exchange lecturers; university industry relationship; publication grants and grants authority; field of publication; facility and equipment; collaboration with well-published universities; scholarly communication and knowledge sharing; university innovative activities. From this list of factors that contribute to publication, we can conclude that the rate of publication depends upon the excellence of the university in all aspects of its organization. The attempts to increase international publication should also include the attempts to build university excellence in its teaching, research, service and management.

CONCLUSION

After assessing the existing problems in UNNES, the study recommends strategies to improve the rate of publication. These strategies include giving incentives and reward, writing clinics, policy publications S3, the increase in subscriptions of electronic journals, translation assistance, help review proof reading by professional native language editor, an international conference with proceedings indexed, support funds for the publication and submission to journals indexed with low impact factor. Despite, the strategies to increase publication, the research also recommend that the university should also develop strategies to produce high impact research. Therefore, the university should nurture culture of creativity and innovation within all aspects of university organisation and research.

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