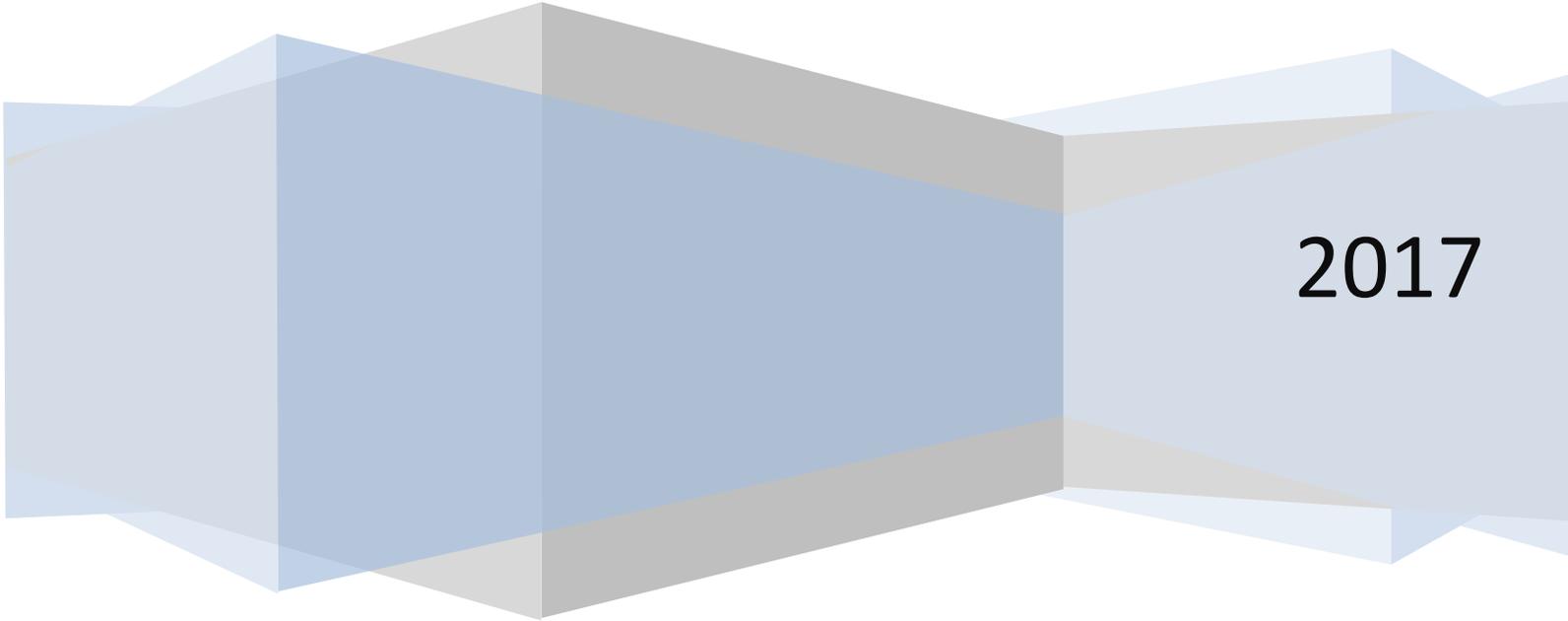**National Accreditation Board for Higher Education**
Executive Board

Study on the effectiveness of accreditation process

Final report

Bagyo Y. Moeliodihardjo
Biemo W. Soemardi
Anang Kurnia
Dahrul Syah

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Contents

1 Introduction

Resource based economy is currently shifting toward knowledge based economy, and the synergy between the economic development and higher education becomes inevitable in improving competitiveness. In recent years the contribution of higher education is becoming more central in improving competitiveness, particularly as efficiency enhancer and innovation as well as sophistication. The vision of the current government of Indonesia is to improve its global competitiveness and acquire a respectful standing among other nations.

According to the World Economic Report, as illustrated in exhibit-1, the contribution of higher education to the Indonesian competitiveness is only scored at 4.5 (out of 7) in the aspect of *higher education and training* in 2017-2018. Its contribution is even worse in the aspect of innovation which is scored at 4.0 [WEF 2017]. Higher education cannot meaningfully contribute in improving the Indonesian competitiveness without a significant quality improvement, and quality assurance is an integral part of it. As accreditation process is an important aspect in the quality assurance process, it is essential to ensure its effectiveness. Until recently accreditation focused more on aspects in input and process, and less on output and outcome. This study aims to evaluate the effectiveness of accreditation by measuring the correlation between the accreditation result and the quality of institution or programs. This study is also expected to come up with suggestions to improve the instruments used in the accreditation process.
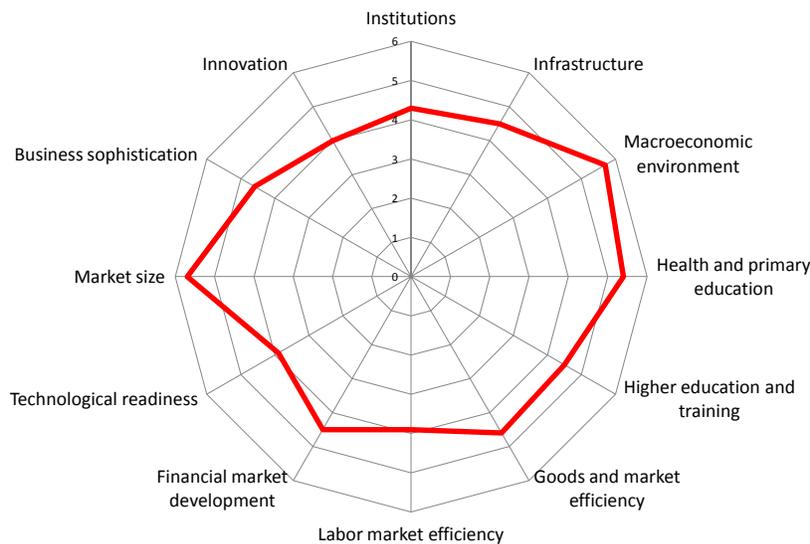
Exhibit-1: Competitiveness index of Indonesia [WEF 2017]

2 Quality assurance in the Indonesian context

Quality assurance mechanism should be carried out internally and externally. Although MoRTHE requires the establishment of internal quality assurance unit within each institution, the quality culture has not been well developed in most instances. External quality assurance process for higher education is carried out among others through accreditation (for institutions and programs) and certification (for

individual graduates in particular programs). The recently enacted ministerial decree 62/2016 requires both internal and external quality assurance to utilize the Higher Education Database (*Pangkalan Data Pendidikan Tinggi* or PDPT). The internal quality assurance will become much more important in the near future, due to BAN-PT's plan to make the Internal Quality Assurance Unit (*Sistem Penjaminan Mutu Internal* or SPMI) as its central counterpart in carrying out the accreditation process.

Since its establishment in 1994, the National Accreditation Board for Higher Education (*Badan Akreditasi Nasional – Perguruan Tinggi* or BAN-PT) has conducted accreditation for thousands of higher education institutions and programs. As stipulated in the Law 12/2012 on Higher Education, BAN-PT is the sole agency mandated to conduct the mandatory accreditation process in higher education. In 2016 BAN-PT has restructured its organization, separating the policy making from the accreditation process. Since 2016 the Accreditation Board is only responsible for developing policies whilst the Executive Board is responsible for carrying out the accreditation process.

After operating as the single accreditation agency in the country since 1994, Discipline based Accreditation Agency (*Lembaga Akreditasi Mandiri* or LAM) is just recently introduced in addition to BAN-PT. A LAM, which reports to BAN-PT, is established for a particular professional education program, e.g. medical and engineering.

In addition to accreditation, certification of individual graduates also indicates the level of quality. The certification is carried out by professional association or organization in its respective the field of expertise. In the medical field, all graduating medical students are required to go through the certification process conducted by the Indonesian Medical Council (*Konsil Kedokteran Indonesia*). In other fields, such as accounting and engineering, certification is voluntary.

3 Accreditation process

The accreditation process is carried out by a panel of peers, called the assessors. The documents submitted are first administratively inspected, particularly in the aspect of completeness of the required documentation. The process is conducted in two phases, namely the adequacy evaluation and the site evaluation. The result of both assessments is then used as the basis of defining the accreditation status. In the absence of other credible indicators to measure quality, in many cases the accreditation status is considered as the main indicator of education quality. A rather disturbing example is the following administrative criterion in civil service admission process: "*graduated from institutions with accreditation status B or A*".

3.1 Criteria

The criteria for assessment in the accreditation process consist of 7 national standards, namely

    a)   The statement of Vision, Mission, Objective, Goal, and Strategy;
    b)   Governance, Leadership, Management system, and Quality assurance system;
    c)   Students and Graduates;
    d)   Human resources;
    e)   Curriculum, Learning process, and Academic atmosphere;
    f)   Funding, Infrastructure, and Information system; and
    g)   Research, Community service, and Collaboration.

The national standards for higher education are developed by the Board of National Education Standards (*Badan Standar Nasional Pendidikan* or BSNP).

3.2 Result

The number institutions offering higher education in Indonesia is 4,551 as September 2017 and only 1,012 (22.24%) of them have been accredited. From 26,233 programs registered in the Higher Education Database (PDPT) only 18,874 (71.95%) have been accredited [PDPT 2016]. Table-1 shows that the proportion of programs successfully acquired accreditation A is less than 12% or only 2,256, whilst the proportion for institutions is much smaller at 2.5%. It shows that quality is still a critical problem in higher education. Programs and institutions are provided with an opportunity to appeal on the result. As for September 2016, appeal from 13 institutions and 108 programs have been processed

Table-1: The result of programs and institutions accreditation [BAN-PT 2017]

	PROGRAMS				INSTITUTIONS			
	A	B	C	Total	A	B	C	Total
Public institutions	1625	2424	530	4579	30	44	7	81
Private institutions	634	5084	4069	9787	24	340	682	1046
Public Islamic institutions	206	706	223	1135	3	36	20	59
Private Islamic institutions	11	463	926	1400	0	19	191	210
Service Institutions[1]	49	238	50	337	4	33	7	44
Total	2525	8915	5798	17238	61	472	907	1440

Table-2 presents the list of institutions acquired accreditation status A. Since this study focuses only on institutions under the MoRTHE, four institutions are omitted from the list (the Military Academy and 3 Islamic institutions under the Ministry of Religious Affairs).

Table-2: Institutions with accreditation status A [BAN-PT 2016][2]

Univ Pertahanan	Universitas Brawijaya	Univ Muhammadiyah Yogyakarta
Institut Teknologi Bandung	Universitas Negeri Jakarta	Universitas Islam Indonesia
Institut Pertanian Bogor	Universitas Jember	Univ Muhammadiyah Malang
Institut Teknologi Sepuluh Nopember	Universitas Syiah Kuala	Universitas Gunadarma
Politeknik Elektronika Negeri Surabaya	Universitas Negeri Yogyakarta	Universitas Kristen Petra
Politeknik Negeri Bandung	Universitas Negeri Semarang	Universitas Surabaya
Politeknik Negeri Semarang	Univ PN Veteran Jawa Timur	Universitas Telkom
Universitas Indonesia	Universitas Negeri Medan	Univ Muhammadiyah Prof. DR. Hamka
Universitas Gadjah Mada	Universitas Negeri Padang	Universitas Bina Nusantara
Universitas Diponegoro	Universitas Lampung	Universitas Sanata Dharma
Universitas Hasanuddin	Universitas Sriwijaya	UniKa Widya Mandala Surabaya
Universitas Padjadjaran	Universitas Udayana	Univ Multimedia Nusantara
Universitas Sebelas Maret	Universitas Negeri Makassar	Universitas Mercu Buana
Universitas Airlangga	Universitas Mulawarman	Univ Katolik Indonesia Atma Jaya
Universitas Andalas	STIE Perbanas Surabaya	Universitas Katolik Soegijapranata
Universitas Negeri Malang	STP Pelita Harapan	Universitas Dian Nuswantoro

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[1] Service institutions are operated under government institutions outside the Ministry of Research, Technology, and Higher Education (MoRTHE). Examples of such institutions are the Military Academy,

[2] Only institutions under MoRTHE

3.3 Higher Education Database

As stipulated in the Law 12/2012 on Higher Education, the Ministry of Research, Technology, and Higher Education (MoRTHE) shall provide valid and trusted information on higher education. In order to implement it, MoRTHE has establish a special unit to establish, develop, maintain a Higher Education Database (*Pangkalan Data Pendidikan Tinggi* or PDPT). It is mandatory for all higher education institutions to submit up to date data to the PDPT. Since the accreditation process relies on information acquired from PDPT, the institution's up to date information in PDPT becomes a prerequisite for accreditation.

4 Institutional quality

In order to define the effectiveness of accreditation, the quality of the higher education programs and institutions should be measured. However, finding the consensual definition of quality in higher education is not an easy task. Higher education in Indonesia is a highly diverse system, whereby some established institutions are aspiring to be listed in the 500 best institutions in the world, some vocational based institutions are aiming to implement production oriented education, some are more focus on teaching oriented education, and some have not yet acquired an accreditation status. Some experts are in the opinion that "*quality is in the eye of the beholder*" [Vroeijenstein, 1995].

Therefore the study team has decided to avoid "straight jacket" or "one fits for all" approach in defining quality. The approach chosen is to define quality based on the institutional mission statement, and identify the relevant indicators to measure quality. In assessing institutional quality, the team proposes to focus on those acquired accreditation status A, as illustrates in table-2.

4.1 Mission differentiation

In the early days of the introduction of higher education, universities were established with a single purpose: to serve the church, and later the imperial chamber. Since universities only had a single master, life was much simpler back then. Nowadays higher education institutions have to cope with multifaceted challenges coming from a wide variety of stakeholders, e.g. trustees, government, employers, industries, parents, students, and the public at large.

In the medieval age universities focused their activities in research, whereby education was integrated within the training aspect of research. In these days higher education should conduct separate activities in education, research, and community services. In the 11th century student apprentices were boarding to be physically close and spent long discussion hours with their professor. In the current digital age, a student could earn a degree without even ever visited the university campus. To cope with such tremendous challenges, practically there is no single institution would be able to provide excellent products and services, each institution has to choose its mission, and focus to excel in its endeavor to achieve it.

4.2 Clustering of institutions

The MoRTHE has just recently announced a clustering of institutions based on the data acquired from the Higher Education Database (PDPT). At first we would like to use the clustering as a tool for defining institutional quality. We found out, however, that one of the key indicators used in defining the group is the accreditation result. Hence it is impossible to compare the institutions' cluster position against the accreditation result.

Alternatively the team proposes to group institutions in the following 3 (three) clusters based on its specific mission: Research institutions, Vocational institutions, and Teaching institutions. We found out that information to indicate quality for teaching institutions is currently unavailable; hence we have to exclude this category from this report. A significant number of institutions cannot be grouped in any of the aforementioned clusters due to lack of focus and quality. All indicators are acquired from the national database on higher education (PDPT).

5 Analysis of the accreditation process

5.1 On site verification

Types of institutions in the Indonesian higher education are *Institut, Sekolah Tinggi* (college), and *Universitas[3].* In general the final score is slightly better than the score given during desk evaluation, as illustrated in exhibit-2. However, this exhibit also shows that the final score of a number of *universitas* has dramatically dropped after site visit evaluation (bottom right). It demonstrates the effectiveness of site visit in verifying the information acquired from the documents submitted.
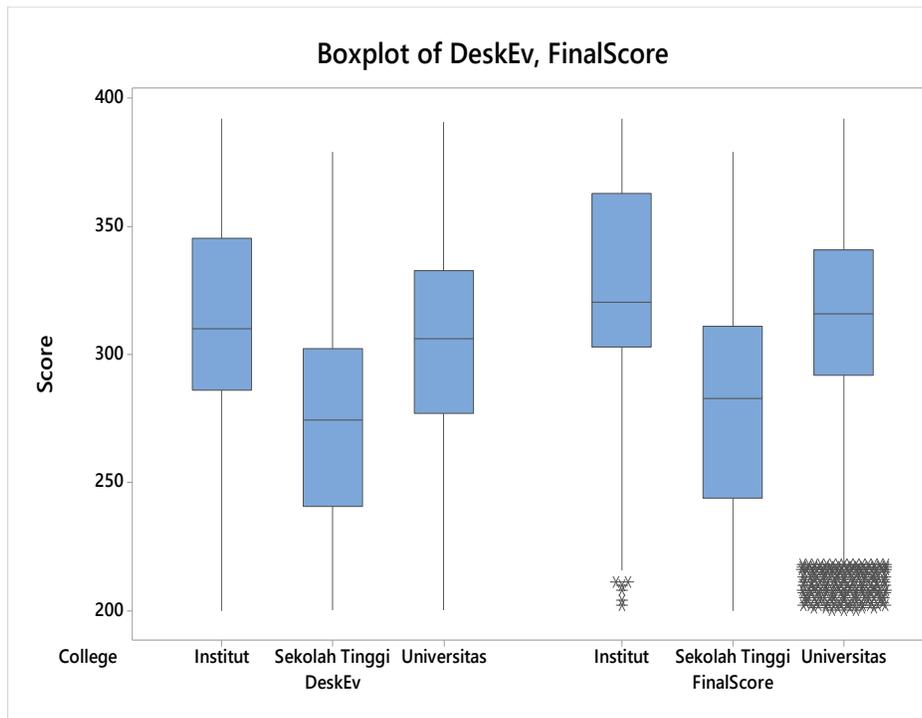

Exhibit-2: Desk score and Final score for each type of institution [BAN-PT 2017][4]

According to our observation, the discrepancy between scores given during desk evaluation and site evaluation for *universitas* is mostly due to the following reasons:

a) Some institutions experienced difficulties in filling up the accreditation form as required by BAN-PT. In order to meet the requirement some hired a consultant to carry out the task, resulting in a good

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[3] The most recent type of institution introduced, the *Akademi Komunitas* (Community College), has not been included in the accreditation process

[4] The solid rectangles represent 50% of the population

fill up form. Since the submitted form does not reflect the realities, the score significantly drops when the assessors conduct site visit.

b) In some cases the information submitted in filling up the form become outdated when site visit is conducted. This is particularly true when the form was prepared close to the end of academic year, whilst the visit was conducted in the subsequent academic year. Data that significantly affected by such delay are among others, number of graduates, enrolment, internal as well as external efficiency.

c) Although BAN-PT very rarely encountered irregularities, we do not exclude the possibilities of such incident to happen in the assignment of scores. An unsatisfactory accreditation result could have a devastating impact to the survival of an institution, particularly in the private sector, whereby student tuition is practically the only source of revenue. It might push some officials within the visited institutions to persuade dishonest individuals for making a deal during desk evaluation. Since most private institutions are *universitas*, it is understandable that the case of score discrepancy is observed mostly in this category.

5.2 Instruments, responses, scores

In order to gain understanding of the effectiveness of the instrument used, the team conducted rigorous statistical analysis of each item in the instrument. The findings in each item were then used to examine the corresponding question raised in the instrument and the score given by the assessors. This report will not present the result of the entire 160 items analyzed[5], instead it will only highlight the following salient points as identified. The team concludes that the 2 diagrams presented in exhibit-3 and exhbit-4 already represents the study.

a) The perfect answer for most items in the instrument has been widely and easily known by the evaluated unit (*assessee*) that it usually claimed highest figure to be able to get the perfect score. For example in order to get the perfect score, the evaluated unit always fills the maximum number to respond the question on the frequency of student - lecturer consultation per semester. The same responses are also found in other questions with similar nature, such as the frequency of lecturer's attendance, number of library collection, and number of publication per teaching staff.

b) Due to limited time allocation, the responses submitted are not verified properly by the assessors during site visit. The situation become worse since the self evaluation report does not present the findings and problems identified; otherwise it could become a potential tool to confirm the claim. Only the mechanism used in carrying out the self evaluation is required to be presented in the report. In such situation, it becomes impossible to differentiate the quality of units being evaluated; hence these items are not appropriate to be used in an assessment process.

c) In fact, based on the statistical analysis conducted in this study, the team found only one item that could strongly differentiate the quality of evaluated units, as illustrated in exhibit-3. Although we do not conduct rigorous statistical analysis for responses submitted in S-2 and S-3 program assessment, considering the similarity of nature of the questions and issues in each item, we are confident enough to say that the findings would not be much different.

Exhibit-3 presents the selectivity of the evaluated program or the ratio between the number of applicants and the number of incoming students in the admission process. This item represents a statistically sound response, whereby response from programs with accreditation status A, B, and C are

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[5] Only Form F1 for S-1 study program, its relevant resource unit, and self evaluation report. The full report of the result of the statistical analysis is available upon formal request to the Executive Board of BAN-PT.

relatively distributed according to its quality. A significant number of programs with accreditation C are just offered in the last 2-3 years that their selectivity is not satisfactory.
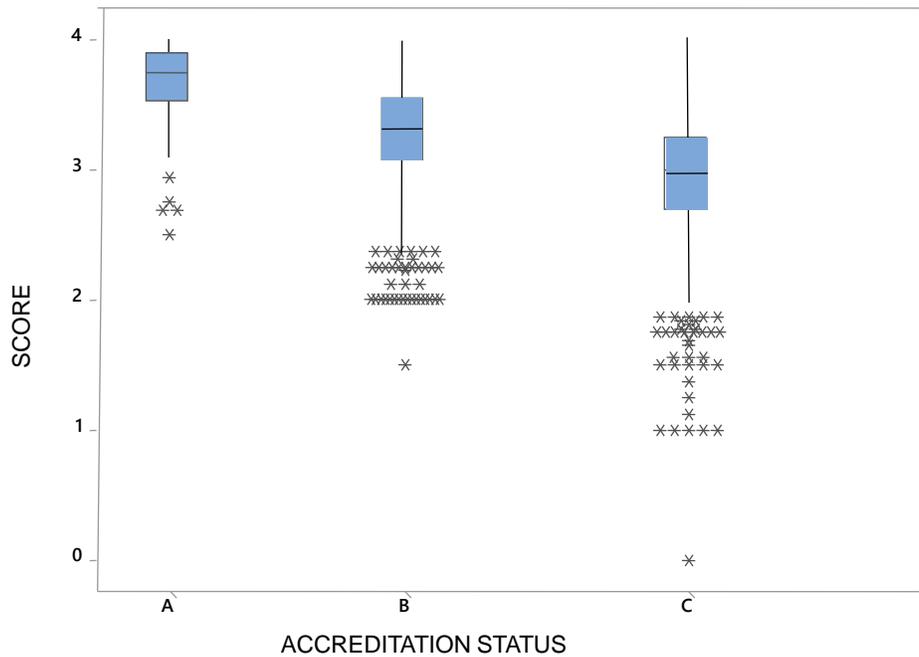

Exhibit-3: Statistical analysis of the selectivity of the study program

Exhibit-4 presents the responses for question on the average duration for students to finish their final project. It is commonly understood that the time spent to finish the final project is supposed to be not more than 2 semesters or 12 months. Therefore most responses are within the range of $8 - 12$ months in order to get perfect score of 4 for this item, as illustrated in exhiit-4.
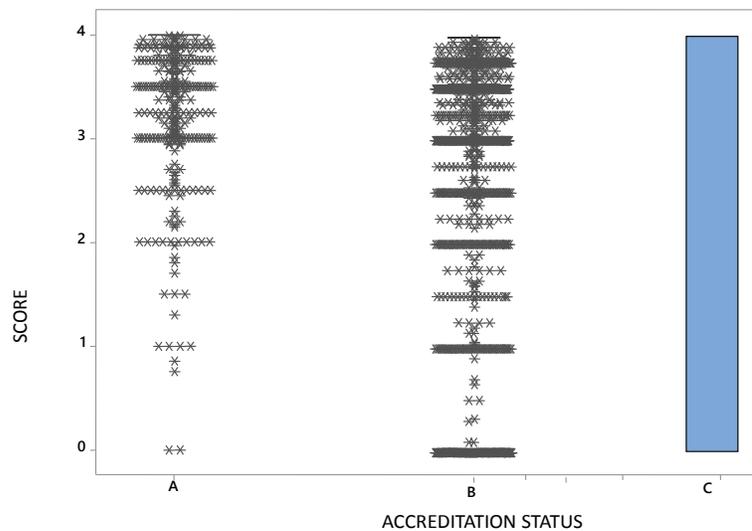

Exhibit-4: Statistical analysis of the average duration for students finishing their final project

The responses from program with accreditation A and B are distributed along 0-4 scores. Although a significant number of responses crowds between 3 and 4, the number is insufficient to reach 50% (represented by a solid rectangle). A significant number of programs with accreditation C are just offered in the last 2-3 years that most do not have enough number of students taking the final project (represented by a solid rectangle for the entire range of scores).

6 Analysis of the accreditation result

6.1 Research institutions

Institutions grouped in the research cluster have a proven record of achievements in research, such as number of research performance (fund and grants acquired), international publication, and the strength of staff to conduct research. Since MoRTHE regularly conducts monitoring and evaluation of institutions' research capacity through its research grants and data gathering mechanism (PDPT), information is relatively accurate and up to date. Table-3 illustrates the scoring of research strength of 922 institutions by its accreditation status[6].

Table-3: Institutional research capacity by accreditation status [MoRTHE 2017]

Criteria	Accreditation	Mean	StDev	Minimum	Median	Maximum
Research performance[7]	A	2	0.92	0.42	1.75	4
	B	0.71	0.48	0.03	0.67	2.54
	C	0.23	0.25	0	0.12	1.21
Staff publication[8]	A	0.5	0.67	0	0.31	3.64
	B	0.01	0.06	0	0	0.41
	C	0	0	0	0	0
Number of PhD holders	A	0.29	0.14	0.06	0.27	0.71
	B	0.11	0.09	0	0.1	0.76
	C	0.04	0.05	0	0	0.36
Number of Professors &	A	0.29	0.15	0.02	0.31	0.72
Associate Professors	B	0.13	0.13	0	0.09	0.54
	C	0.03	0.08	0	0	0.57

In term of quality, table-3 shows that in general it correlates nicely with the accreditation status. It reflects the consequences of using similar indicators (inputs based indicators) in both the accreditation process and the clustering procedure. Only staff' publication could be considered as an output indicator.

The MoRTHE's initiative to develop clusters of institutions deserved an appreciation. However an interesting phenomenon triggered a question: an institution which does not have _any_ publication indexed by SCOPUS has acquired an accreditation status A, as presented in table-3. At present the team still in the process of defining specific output indicators for teaching and vocational institutions, in attempt to measure institutional quality in the remaining two clusters.

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[6] N: A = 48; B = 277; C = 597
[7] Data quoted from the Directorate of Research and Community Service – MoRTHE. Indicators used are mostly input indicators, i.e. resources, research management, revenue generated, and publications.
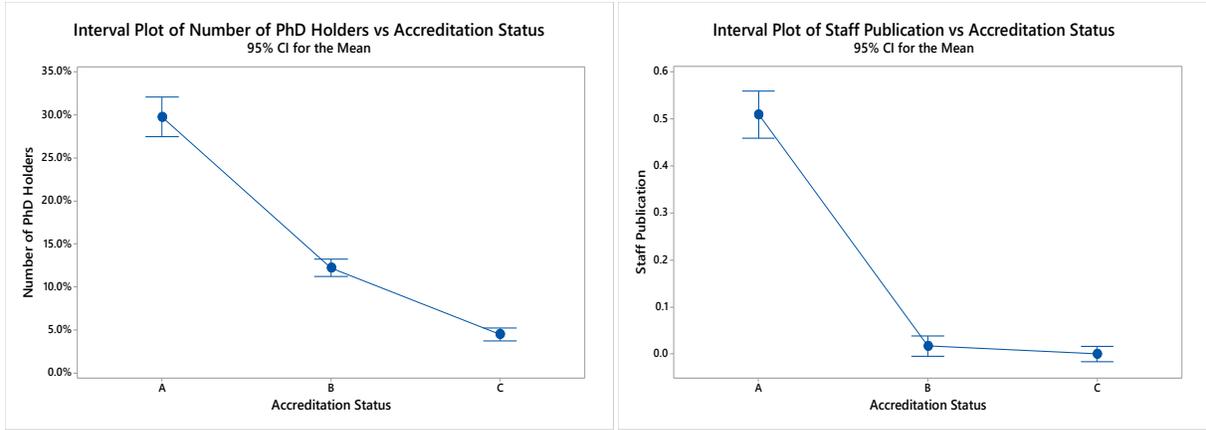[8] Indexed by SCOPUS

Exhibit-5 Publication per staff and number of PhD holders [MoRTHE 2017]

The second diagram presented in exhibit-5 shows that the ratio of publications per staff drops significantly for institutions with accreditation status A to B, to the same level as C. Compare to the diagram presented for number of PhD holders (input indicator) in the first diagram, the drop is more gradual and less drastic. The number of publications is an output indicator, whilst the number of PhD holders is an indicator representing input (resources). Since the accreditation result more conforms to the first diagram, it indicates that the accreditation process takes less consideration on output and too heavy on inputs (available resources).

6.2 Vocational institutions

Only 3 vocational institutions acquired accreditation status A that its statistics could not be used as a solid basis in drawing conclusions. Furthermore among the 3 institutions, only one has published articles indexed by SCOPUS (*Politeknik Elektronik Negeri Surabaya)*. We could only present the graphics as shown in exhibit-6, whereby similar phenomenon found in exhibit-5 for research institutions is clearly observed.
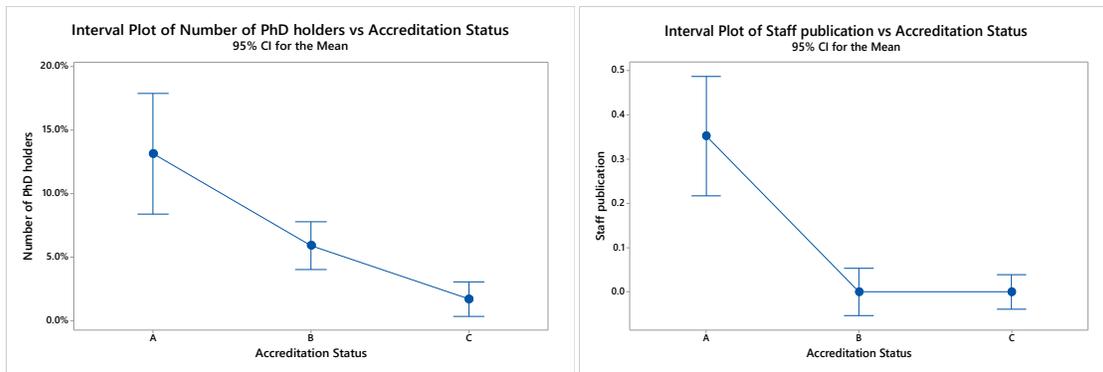
Exhibit-6 Publication per staff and number of PhD holders in vocational institutions [MoRTHE 2017]

6.3 Program quality

Measuring the quality of programs is a bit more complicated compare to institutional quality, since the variety of program offerings is very high. In order to make the problem more manageable, the team proposes to group programs into two major categories, namely professional programs and academic programs. Professional programs are programs that lead to a certain profession, e.g. medical doctor,

engineer, accountant, and school teacher. Academic programs are programs that lead to a broad spectrum of occupations, e.g. history, basic sciences, or philosophy. Between those two extremes, there are hundreds of different programs which are considered in the "gray" area.

By taking into consideration the limited time and resources provided for this study, the team focus only on a few samples of professional programs, i.e. medical, accounting, civil engineering, and primary school teacher. Initially we planned to include some academic programs, such as mathematics and basic sciences. Unfortunately, as to date, we are not very successful in acquiring the necessary data on the academic programs that we have to abandon the plan. The following sections present the findings of this study.

6.3.1   Medical education

Two separate programs exist in medical education, namely academic and profession. Students should be graduated from the academic program before entering the professional program, which include apprenticeship in the hospital to acquire practical clinical experiences.

Since 2015 the MoRTHE requires all final year medical students to go through a competency test before graduation or an exit examination. The test comprises two stages, namely Computer Based Testing (CBT) and Objective Structured Clinical Examination (OSCE). Only graduates passed the exit examinations are eligible to receive a certificate of competency for medical doctor from the Indonesian Medical Council (*Konsil Kedokteran Indonesia*). This certificate of competency is a mandatory requirement for all practicing medical doctor. Table-4 presents the result of the exit examination conducted in 2015 (8283 participants) and 2016 (8119 participants).

In this study the proportion of students passed the exit examination is selected as an indicator representing the quality of program. Since students could repeatedly take the test before passing the examination, we only use the data recorded for first takers.
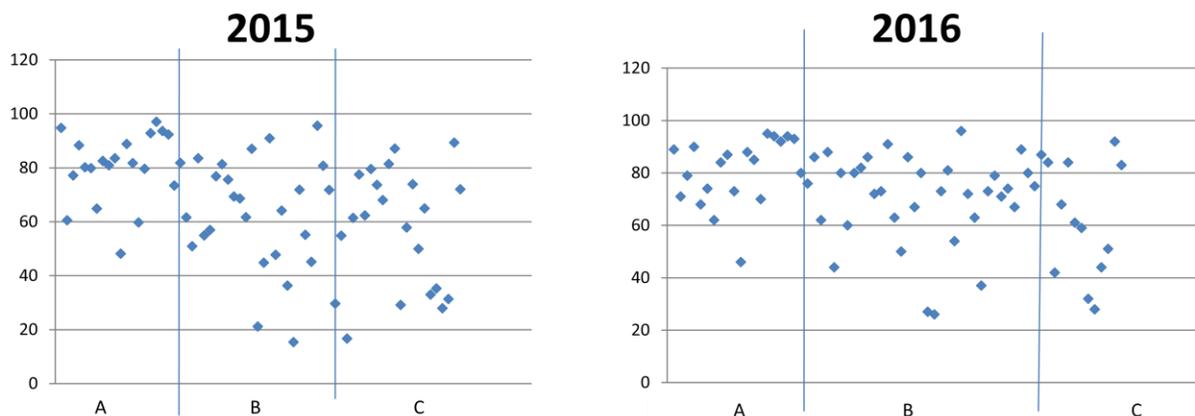
Exhibit-7 Success rate of students in the exit examination in 2015-2016 [LAMPT-Kes 2017]

Exhibit-7 illustrates the scattered diagram of students' success rate in the exit examination for each Faculty of Medical Sciences. The horizontal axis represents the accreditation status of the Faculty of Medical Sciences. In order to prevent misleading perceptions, programs with 30 or less participants are omitted in the diagram. Basically the diagram for 2015 and 2016 shows a quite similar trend. The following interesting points are observed,

Table-4: Accreditation status and success rate in the exit examination [LAMPT-Kes 2017]

Institution	Accreditation status		Exit exam		Institution	Accreditation status		Exit exam	
	Academic	Profession	2015	2016		Academic	Profession	2015	2016
Univ. Diponegoro	A	-	94.84%	89.00%	Univ Muh. Malang	B	B	91.01%	86.00%
Univ. Hasanuddin	A	-	60.57%	71.00%	Univ Muh. Makasar	B	B	47.73%	67.00%
Univ. Lampung	A	-	77.23%	79.00%	Univ Muh. Semarang	B	B	64.15%	80.00%
Univ. Padjadjaran	A	-	88.35%	90.00%	Univ Batam	B	B	36.36%	27.00%
Univ. Sriwijaya	A	-	80.21%	68.00%	Univ. Cenderawasih	B	B	15.38%	26.00%
Univ. Jend Soedirman	A	A	79.87%	74.00%	Univ Islam Indonesia	B	B	71.91%	73.00%
Univ. Sumatera Utara	A	A	64.91%	62.00%	Univ Muh. Sumatera Utara	B	B	55.17%	81.00%
Univ. Jember	A	A	82.56%	84.00%	Univ. Halu Oleo	B	B	45.16%	54.00%
Univ. Andalas	A	A	80.93%	87.00%	Univ Kristen Duta Wacana	B	B	95.65%	96.00%
Univ. Udayana	A	A	83.52%	73.00%	Univ Warmadewa	B	B	80.77%	72.00%
Univ. Sam Ratulangi	A	A	48.21%	46.00%	Univ. Lambung Mangkurat	B	B	71.82%	63.00%
Univ. Pelita Harapan	A	A	88.89%	88.00%	Univ Prima Indonesia	B	B	29.63%	37.00%
Univ. Negeri Surakarta	A	A	81.76%	85.00%	Univ. Kristen Indonesia	B	B	54.84%	73.00%
Univ. Syiah Kuala	A	A	59.76%	70.00%	Univ Islam Bandung	B	B	16.67%	79.00%
Univ. Airlangga	A	A	79.66%	95.00%	Univ Islam Sultan Agung	B	B	61.43%	71.00%
Univ. Brawijaya	A	A	92.89%	94.00%	Univ Kristen Maranatha	B	B	77.54%	74.00%
Univ. Gadjah Mada	A	A	97.06%	92.00%	Univ Muh. Jakarta	B	B	62.34%	67.00%
Univ. Indonesia	A	A	93.64%	94.00%	Univ Muh. Yogyakarta	B	B	79.53%	89.00%
Univ. Atmajaya	A	A	92.35%	93.00%	Univ Mulawarman	B	B	73.68%	80.00%
Univ. Tarumanegara	A	A	73.45%	80.00%	Univ Yarsi	B	B	68.10%	75.00%
UIN Syarif Hidayatullah	B	-	81.82%	76.00%	Unversitas Trisakti	B	B	81.42%	87.00%
UniKa Widya Mandala	B	-	0%	0.00%	Univ Alkhairaat	C	-	0	100.00%
Univ Kristen Krida Wacana	B	-	61.61%	86.00%	Univ. Bengkulu	C	-	100.00%	92.00%
Univ Malikussaleh	B	-	50.94%	62.00%	Univ HKBP Nommensen	C	-	87.18%	84.00%
Univ. Mataram	B	-	83.58%	88.00%	Al-azhar Mataram	C	-	29.17%	42.00%
Univ Muh. Surakarta	B	-	54.92%	44.00%	Univ. Pattimura	C	-	57.89%	68.00%
Univ Muslim Indonesia	B	-	56.98%	80.00%	Univ Swadaya Gunung Djati	C	-	73.91%	84.00%
Univ Wijaya Kusuma	B	-	76.89%	60.00%	Univ Palangka Raya	C	C	0	92.00%
Univ Hang Tuah	B	B	81.35%	80.00%	Univ Abdurrab	C	C	50.00%	61.00%
Univ Riau	B	B	75.63%	82.00%	Univ Muh. Purwokerto	C	C	0	0.00%
Univ. Jend Ahmad Yani	B	B	69.40%	86.00%	Univ. Jambi	C	C	64.94%	59.00%
UPN Veteran Jakarta	B	B	68.63%	72.00%	Univ Islam Sumatera Utara	C	C	33.03%	32.00%
Univ Islam Malang	B	B	61.67%	73.00%	Univ Abulyatama	C	C	35.29%	28.00%
Univ. Tanjungpura	B	B	87.10%	91.00%	Univ Malahayati	C	B	27.99%	44.00%
Univ Muh Palembang	B	B	21.21%	63.00%	Univ Methodist Indonesia	C	C	31.37%	51.00%
Univ Baiturrahmah	B	B	44.83%	50.00%	Univ. Nusa Cendana	C	C	89.36%	92.00%
					Univ. Tadulako	C	C	72.09%	83.00%

a) Despite its relatively older existence, strong human resources and infrastructure, as well as A accreditation status, one institution (Universitas Sam Ratulangi) is considered as an outlier. In 2015 and 2016, only 48% of its students who participated in the CBT and OSCE were passed. This is far below the average figure (80%) for programs with accreditation status A.

b) Although Universitas Muhammadiyah Yogyakarta only acquired accreditation status B, its success rate was 89%; whilst Universitas Nusa Cendana achieved 90% success rate with accreditation status C.

c) The scattered diagrams presented in exhibit-3 shows that the findings for 2015 is very much similar with 2016. More significant changes in students' achievement might only be observed in a longer time series. Unfortunately the exit exam has only been introduced in 2015.

d) The accreditation results for programs with accreditation status A correlates nicely with the students' success rate, whilst the correlation is weak for programs with accreditation B and C.

6.3.2 Accounting education

In the field of accounting, in average only 37% of students admitted to the program take the opportunity to participate in the certification process. In this study the success rate is assumed to represent the quality of the accounting program. Since the job market has not required a certificate to practice as an accountant, the certification is still voluntary. Table-4 illustrates the proportion of accounting graduates who participated in the certification tests. It shows that a significant proportion of accounting graduates choose professions that do not require certification to practice.

Compare to medical education, the success rate in acquiring "*professional chartered accountant*" certificate is very low. In order to acquire the certificate, participants should take the following 7 subjects:

- corporate reporting;
- ethics and corporate management;
- advanced financial management;
- strategic management and leadership;
- information system and internal control;
- tax management; and
- advanced management accounting.

A participant does not have to take all subjects at once, and given 3 years at most to pass the 7 subjects. Most tests are conducted 3 times each year at each designated test location / institution. Since the certification process is voluntary, not all accounting graduates take the examination. It should also be noted that information on participants' graduating class is not available that it is impossible to conduct cohort analysis. Table-5 shows that the success rate of accounting graduates from various institutions in the certification process in 2017 is 15.18%.

Participants pursuing a certification should take a training program provided by accredited institutions (PPAk). These training providers should receive accreditation from IAI as well as BAN-PT. At the end of the program students should take examination on the 7 subjects. The correlation between the accreditation status of the professional program and the success rate of participants is assumed to reflect the effectiveness of the accreditation process.

Table-5: Participants' success rate in the 7 subjects tested in 2017 [IAI 2017]

Testing institution	Participants		Certified		Success rate			Accreditation status[9]
	Testing institution	Outside institution	Testing institution	Outside institution	Testing institution	Outside institution	TOTAL	
PERBANAS	2	4	1	0	50.00%	0.00%	16.67%	NA
STIE YKPN	35	13	7	0	20.00%	0.00%	14.58%	NA
STIESIA Surabaya	1	4	1	2	100.00%	50.00%	60.00%	B
Univ STIKUBANK	1	6	0	0	0.00%	0.00%	0.00%	B
Univ Muhammadiyah Malang	6	0	0	0	0.00%	-	0.00%	NA
Univ Airlangga	4	19	3	0	75.00%	0.00%	13.04%	A
Univ Andalas	13	22	0	2	0.00%	9.09%	5.71%	B
Univ Brawijaya	24	76	3	10	12.50%	13.16%	13.00%	A
Univ Diponegoro	2	9	0	1	0.00%	11.11%	9.09%	A
Univ Gadjah Mada	2	35	0	1	0.00%	2.86%	2.70%	A
Univ Hasanuddin	19	28	1	2	5.26%	7.14%	6.38%	B
Univ Indonesia	14	44	6	29	42.86%	65.91%	60.34%	A
Univ Islam Bandung	0	3	0	0	-	0.00%	0.00%	B
Univ Islam Indonesia	1	1	0	0	0.00%	0.00%	0.00%	B
Univ Jenderal Soedirman	10	10	0	0	0.00%	0.00%	0.00%	A
Univ Lambung Mangkurat	1	4	0	0	0.00%	0.00%	0.00%	NA
STIE Malangkucewara	0	8	0	2	-	25.00%	25.00%	A
Univ Kristen Maranatha	2	2	2	0	100.00%	0.00%	50.00%	B
Univ Mercu Buana	4	17	1	6	25.00%	35.29%	33.33%	NA
Univ Mulawarman	10	4	0	0	0.00%	0.00%	0.00%	C
Univ Padjadjaran	3	36	1	5	33.33%	13.89%	15.38%	A
Univ Riau	21	5	0	1	0.00%	20.00%	3.85%	B
Univ Sanata Dharma	5	9	0	0	0.00%	0.00%	0.00%	B
Univ Syiah Kuala	34	11	1	1	2.94%	9.09%	4.44%	C
Univ Tarumanegara	8	6	1	0	12.50%	0.00%	7.14%	B
Univ Trisakti	14	48	3	4	21.43%	8.33%	11.29%	A
Univ Udayana	15	22	0	3	0.00%	13.64%	8.11%	B
Univ Widyatama	33	24	0	3	0.00%	12.50%	5.26%	A
Univ Sam Ratulangi	1	0	0	0	0.00%	-	0.00%	C
Univ Sriwijaya	22	9	3	1	13.64%	11.11%	12.90%	C
Univ Sumatera Utara	0	2	0	0	-	0.00%	0.00%	B
TOTAL	307	481	34	73	11.07%	15.18%	13.58%	

Since participants in an examination are not exclusively students from the training program (PPAk) at the testing institution, we do not take into account participants from institutions other than the testing institution in measuring the program quality.

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[9] NA = Accreditation is expired and has not been re-accredited yet

The scattered diagram presented in exhibit-8 shows that top accreditation status does not guarantee that graduates will be successful in the certification process, whilst lower accreditation status does not deter its graduates to perform better in the certification process. Only institutions with accreditation status B could be considered as clustered at 0% - 10%. Therefore we conclude that for the accounting program, the accreditation status does not correlate with the program quality.
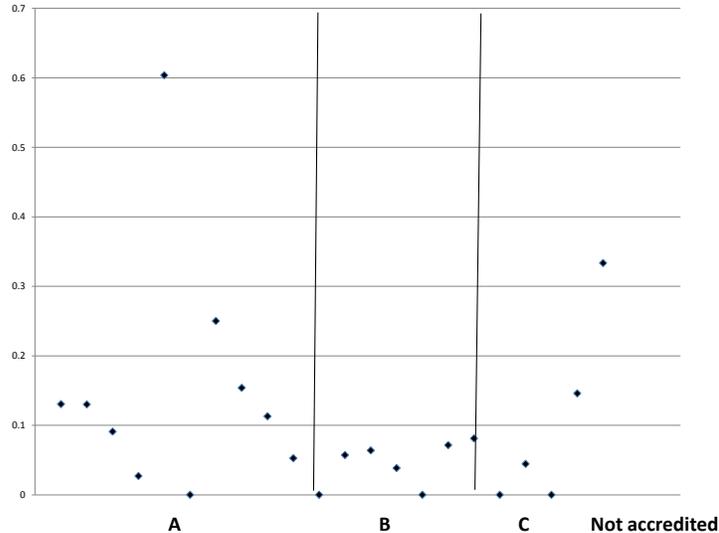

Exhibit-8 Success rate of participants from testing institution [IAI 2017][10]

6.3.3 Civil engineering

Engineering education covers a very broad area, from hard sciences such as mechanical and civil engineering to the softer ones like engineering management. Due to such wide coverage, it is difficult to assume that measuring the quality of a particular engineering education area can represent the overall engineering discipline, especially in terms of educational outcomes. In this study the attainment of professional certification of individual graduates is taken to represent the quality of education program.

However, in Indonesia engineering professional certification remains big issue that the quality of professional certification itself is often questioned, mainly due to the diverse professional association bodies. In the past, professional certification was not mandatory to works in engineering sector. But eventually, either required by the industry or mandated by law and regulation, in order to be qualified to work in engineering profession, one must demonstrate his/her competency by means of professional certification.

Currently, Law no 11 - 2014 on Engineering defines engineers are those who hold professional title in engineering. Further, the law also defines that engineer's certificate of competence as the formal written evidence that engineers have passed engineering competency tests. However, there is no clause in the law that professional certification is compulsory to practice engineering. Thus, questions on the effectiveness of engineering certification regulation remains, as no engineer has yet to recognize the benefit of being certified other than having the title of engineer itself. Since (engineering) professional

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[10] Only institutions with more than 5 participants are included in the diagram

certification is not mandatory, it is then difficult to figure out is there any correlation between accreditation (as a measure of quality of education) to the professional qualification / certification.

On the other side, Law no 2 – 2017 (to amend Law no 18 – 1999) in Construction Services, boldly states that everyone who are working in the construction sector (or industry) must be certified, both for experts and skilled workers. Consequently, certification becomes mandatory and graduates of engineering education who, regardless of his/her engineering area, is going to work in the construction industry must be proven qualified through certification. Certification is awarded by professional associations and registered by the National Construction Service Development Board (*Lembaga Pelayanan Jasa Konstruksi* or LPJK). Nevertheless, attempt to find correlation between education accreditation and certification may not be straight forward, because not all engineering graduates are going to work in construction. More, even many professionals and practitioners in the industry are still arguing the true meaning of engineering certification due to the practices of awarding certification. There is still question on the effectiveness of certification by professional associations, as an instrument to safeguarding quality of engineering professional competence. While some strong and more established professional associations are consistently able to maintain their integrity and stringent quality control process, many others have a tendency to use the certification process for commercial purposes.
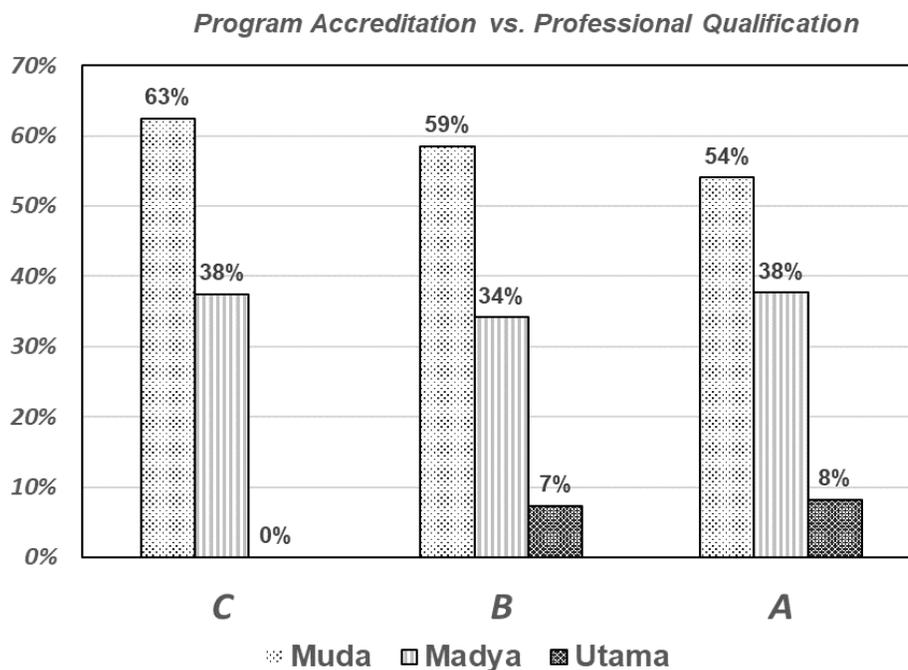

Exhibit-9 Level of achievement in the certification process [LPJK 2017][11]

A limited study involving members of 5 professional associations finds the correlation between accreditation status of programs with the level of qualification of 585 graduates from engineering study programs during the last 10 years (2008-2017). The following five associations are selected based on their reputation and area of specializations relevant to civil engineering education program;

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[11] Only institutions with more than 5 participants are included in the diagram

a)   *Himpunan Ahli Konstruksi Indonesia* (HAKI)   - Structural Engineering
b)   *Himpunan Ahli Teknik Tanah Indonesia* (HATTI)   - Geotechnical Engineering
c)   *Himpunan Ahli Teknik Hidraulik Indoensia* (HATHI)   - Hydraulic Engineering
d)   *Himpunan Pengembangan Jalan Indonesia* (HPJI)   - Road Engineering
e)   *Ikatan Ahli Manajemen Proyek Indonesia* (IAMPI)   - Project management

The engineering qualification is stratified into three levels: junior engineer (*Ahli Muda*), associate engineer (*Ahli Madya*) and senior engineer (*Ahli Utama*), to reflect level of competency and (practical) experiences. Exhibit-9 suggests that there is a positive correlation between the result of accreditation process and the graduates' achievement in obtaining their professional qualification.

It shows that the higher / better the program's accreditation status, the likeliness its graduates to obtain higher professional qualification is also higher, which can be interpreted as possessing higher competence than graduates from program with lower accreditation status.

However, such conclusion must be carefully taken due to several reasons. First, professional qualification heavily takes into account the graduate's professional experiences, which is accumulated through years of engineering practices. Meaning, graduates from the same program may have been awarded with different levels of professional qualifications due to their differences in practical and professional experiences, and vice versa. Secondly, the figure is somewhat biased toward one particular professional association (HJPI), which is accounted for 78% of all data. Finally, there remains question on whether a same conclusion is applicable for profession in other engineering areas.

6.3.4   Teacher education

Since 2015 the Law requires all teachers to be certified, and the study team has been granted access to the database on the Test of Competency for Primary School Teachers (*Uji Kompetensi Guru* or UKG). The database consists of 1,094 participants in the test, and exhibit-10 illustrates the result.
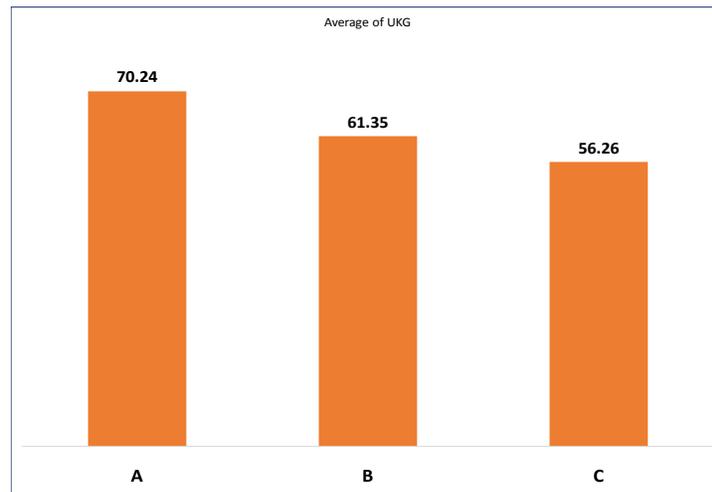

Average of UKG

	A	B	C
	70.24	61.35	56.26

Exhibit-10 Average score achieved in the certification process [UKG 2017][12]

It shows that in general the Test result has a positive correlation with the accreditation status, whereby participants from programs with accreditation status A achieve higher average score compare to programs with accreditation B and C.

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[12] Only institutions with more than 5 participants are included in the diagram

7   Final conclusion and recommendations

In this study we take information on output and outcome as indicators of education quality. Although input and process have undeniable important elements in achieving quality, the team is under the opinion that the quality is better represented by the output and outcome indicators.

Nevertheless the biggest obstacle in carrying out this study is the limited sources of information on output and outcome, whilst such parameters are needed to indicate quality. We also encounter problem of lack of focus in institutional mission statement, whereby most institutions avoid strong statement that characterizes its focus. Instead of based on self proclaimed mission, therefore we have to rely on the result of institutional clustering conducted by the MoRTHE.

In general this study concludes that the accreditation result only partially represents the quality of institutions and programs. Therefore we should say that the accreditation process is also only partially effective. The following points are the detailed conclusion drawn from this study.

a) Currently the accreditation process puts too much focus on input and process indicators, whilst output and outcome indicators receive insufficient attention. Although the accreditation form addresses some output indicators such as publication, graduate's employability, and stakeholder's satisfaction, the limited time allocation and the unavailability of reliable data does not allow the assessors to properly verify the claims. In most cases, therefore, the institutional quality does not correlate much with the accreditation result.

b) In general the accreditation result has also little correlation with the quality of a program. The correlation is found only in a few isolated cases, such as in medical sciences and accounting education (partially), as well as teacher education and civil engineering. Programs in medical sciences with accreditation status A are strongly correlated with the students' success rate in the competency test, but not true for programs with accreditation status B and C. In accounting education correlation is observed in programs with accreditation status B. Positive correlation is observed in civil engineering, though for limited representation of the sample. We found that graduates from civil engineering program with accreditation status A tend to be more successful in obtaining higher level of professional qualification. An undoubtedly strong positive correlation is found in programs for Primary School Teacher.

c) Although limited to *universitas*, we found some cases where score discrepancy between desk and site evaluation is significantly high. In order to minimized such cases, qualitative scrutiny to improve consistency before submitting the final score might be needed. Points to be considered should focus on assessors' comments on specific criterion where large discrepancy between desk and final score is observed.

d) Basically the questions and issues addressed in the accreditation process are very good in its intention. However almost all items statistically analyzed are considered as having weak in term of its capacity to differentiate quality. The inability to verify claims becomes the primary reason of loosing differentiation power, whilst the threshold to get a perfect score have been publicly known and understood.

It is not feasible to expect assessors to verify claims during site visit due to limited allocated time and the unavailability of reliable source of data. Unfortunately the PDPT is also currently not prepared yet to meet the challenge of verifying the claims.

The team recommends the following points to be followed up:

a) More qualitative measures in desk evaluation are needed by introducing qualitative indicators, and capitalize the technology advancement to automatically process the quantitative indicators.

b) Self evaluation report should become a prerequisite for accreditation, instead of part of the evaluation criteria. The report should not be limited to the mechanism and procedure taken in self evaluation, but more importantly should also present the findings from the rigorous analysis conducted, the identified root causes, and plan to rectify the weaknesses as well as capitalize the strengths.

   The report will become the primary reference for the assessors in verifying the figures claimed by the evaluated unit. The ability to conduct a proper self evaluation and present a good report is critical for developing a quality culture within he evaluated unit. A good self evaluation report cannot be written without conducting a proper self evaluation activity, even if an outside consultant is hired to provide assistance in preparing the report.

   Nevertheless, a certain level of assessor's experience is needed to be able to effectively use the self evaluation report in verifying the claims. It might require a series of training sessions to prepare the assessors to meet this new challenge.

c) A strong link between the accreditation processes with the Higher Education Database (PDPT) should be developed and properly maintained. Currently the accreditation process mainly relies on PDPT for data on input, such as student enrolment, number of staff and building. It is strongly recommended to also include in PDPT data on output, such as staff publication and collaborative activities, from the Directorate General of Strengthening Innovation MoRTHE.

   MoRTHE annually publishes institutions' clustering based on, among others data on staff publication and collaborative activities. Such information is regularly collected by the Directorate General of Strengthening Innovation, and considered as a reliable source since they have been properly verified.

   The team strongly recommends for the Internal Quality Assurance Unit (SPMI) to be responsible for guiding the evaluated unit in carrying out its self evaluation. Therefore SPMI should become the primary counterpart of BAN-PT in carrying out the accreditation process.

8   Acknowledgements

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