

Analysis of Differences of Mathematics Tadris Curriculum, Mathematics Education in PTKIN and PTUN Based on IndoMS Minimum Recommendations

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ABSTRACT

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Knowledge of amount of credits in certain curriculum groups is considered important to know compliance with a mutually agreed upon curriculum from IndoMS. Two aims of this research results article to investigate the differences in course materials of curriculum of Mathematics Tadris in PTKIN, Mathematics Education in PTKIN and PTUN and illustrate how they differences statistically which can be used by prospective students to determine college choices. One Way Variance Analysis to analyze whether there are differences at overall and each course materials of mathematics in the recommended curriculum by IndoMS. Sample were all PTKIN and PTUN in Java and Special Region of Yogyakarta registered on the internet a number of 18 was taken from those who uploaded their curriculum. Descriptive statistics to describe amount of minimum, maximum, and average of adopted credits, and whether or not there are those who adopt the same. The result showed that in general, there is no difference in the Mathematics Education Curriculum in PTUN and PTKIN as well as the Mathematics Tadris at PTKIN in adopting credits for study materials. While for each there are no differences in some certain study materials and there are differences in some others. The Mathematics Education Curriculum in PTUN and PTKIN as well as Mathematics Tadris mostly adopt minimum credits less than those recommended by IndoMS. Maximum credits of Mathematics Education in PTUN and Mathematics Tadris curriculum adopts more than and Mathematics Education curriculum in PTKIN adopts the same. Above 50% of Mathematics Education curriculum in PTUN adopts more than, while Mathematics Education and Tadris at PTKIN adopt less than. the Mathematics Education Curriculum in PTUN and PTKIN as well as Tadris, a few of them have adopted the same.

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A. INTRODUCTION

The unit providing higher education in Indonesia is usually called a university. According to law no. 12 of 2012, no. 49 of 2014, and no. 3 of 2020 that higher education is a strata after secondary education which is called a bachelor's program and is organized by universities based on the culture of the Indonesian nation. Each tertiary institution carries out educational and learning activities that have a specific curriculum and teaching and learning methods in one type of academic, professional or vocational education which is then known as a study program. The definition of curriculum based on the law and the two Minister of Education and Culture Regulations is a planning device and rules regarding objectives, content and teaching materials as well as methods used as a guide for implementing learning activities in order to realize the goals of higher education. Another definition is a tool for planning and regulating graduate learning achievement, study materials, processes and evaluations used to guide the implementation of the study program.

The reality is that universities in Indonesia are governed by the Ministry of Education and Culture of the Republic of Indonesia which are often called General Universities (PTU) and the Ministry of Religion of the Republic of Indonesia, especially Islamic religions, often called Islamic Religious Universities (PTKI) and each has a State General University. (PTUN) and State Islamic Religious College (PTKIN). The implication of the existence of universities in the two ministries is that general science study programs are under the rules of PTUN and PTKIN. Whereas PTKIN itself still has study programs in the general scientific field but does

not abandon Islamic characteristics, for example there is a Mathematics Education Study Program which is under PTUN and PTKIN but there is also a study program in the general scientific field and has Islamic characteristics, namely the Mathematics Tadris Study Program. These differences in phenomena allow the public as users of higher education study programs to question their existence. In addition, the reality is that the use of Mathematics Tadris Study Program graduates in the workforce is not wider than that of Mathematics Education in certain areas. This phenomenon is possible for Mathematics Education graduates under the rules of PTKIN in certain areas to experience the same thing. Based on the reasons, it is important to compare PTKIN and PTUN.

At first glance, the names of the two study programs attach Mathematics as a characteristic that differentiates the content of the curriculum from other education/tadris. In this case, of course, the curriculum will contain study material/Mathematics course in addition to education and/or Islam with a load that can be said to be a lot. The content of the three study materials/Mathematics courses, Education and Islam will of course be different in the Mathematics Education Study Program of PTUN and PTKIN as well as Mathematics Tadris in the curriculum. Based on the character of the three study programs, it is very possible that the number of credit units (credits) from study materials/mathematics courses in the curriculum is different. This difference is influenced by the elements that determine the amount of credits, namely (1) the level of ability that must be achieved, (2) the depth and breadth of learning material and (3) learning strategies (Tim, 2022). Therefore, the Mathematics Education Curriculum and Mathematics Tadris allow for more study materials/Mathematics courses than Education and Islam. How the content and study materials/Mathematics courses are arranged in the Mathematics Education curriculum and Mathematics Tadris can refer to the minimum competencies that must be mastered by graduates of the Mathematics Study Program recommended by an association known as the Indonesian Mathematical Society (IndoMS) or the Indonesian Mathematics Association. IndoMS is an organization whose members are experts in Mathematics and Mathematics Education, led by a president. One of the roles of IndoMS to develop the Mathematics and Mathematics Education curriculum in universities as a common national standard. This research refers to the Mathematics curriculum recommended by IndoMS with the aim of comparing study materials/Mathematics courses in Mathematics Education/Tadris Study Programs in PTUN and PTKIN under the minimal Mathematics courses recommended by IndoMS at Mathematics curriculum.

In connection with the use of graduates which is limited to certain areas, it is possible that the adoption quantity of minimum competency of study materials/Mathematics courses from IndoMS in State Islamic Religious Universities is less than in State General Universities because the quantity of courses is divided into religious material. This may also result in study materials that are not in accordance with those recommended by IndoMS as in (Faisal & Zaivar, 2021). The emergence of this problem in society is due to the public's understanding has become attached to the character of PTKIN that provides education and learning of religious knowledge, so it becomes reasonable when the society know that there is a field of knowledge other than religious. Regarding the implementation of education and learning, an important thing that cannot be ignored is the existence of the curriculum. One of the components in the curriculum is Mathematics study material which is learned in the Mathematics Tadris Study Program, Mathematics Education in PTKIN and PTUN which is the provision given for students to compete with other universities in addition to Islamic knowledge for the formation of Indonesian people who believe and piety (Penyusun, 2020). This statement is in accordance with the definition that the curriculum discusses objectives, content or materials, media, strategies, learning and learning processes (Vevi Sunarti, 2022) and is also in accordance with the paradigm shift in Indonesia regarding the curriculum development process which involves determining learning objectives, selecting appropriate learning methods and materials, and assessing the curriculum to discover individual and society needs (I.K. Amalina, 2023). It is clear that in the Mathematics Tadris Study Program, the content standard of learning is the level of depth and breadth of learning contained in the study materials and structured into the form of courses with a learning time load given to students every week or six months in units of semester credits, namely sks or credits (Indonesia, Peraturan Menteri Pendidikan dan Kebudayaan Republik Indonesia No. 3 Tahun 2020 tentang Standar Nasional Pendidikan Tinggi, 2020) is divided into Islamic and non-Islamic knowledge. For example, study materials that are structured in the form of courses with the credit units in the Merdeka Belajar Kampus Merdeka curriculum are required by the Director General of Higher Education in 2020 to be implemented now, namely students get the opportunity for 1 (one) semester (equivalent to 20 credits) to study outside the study program at the same university; and a maximum of 2 semesters or equivalent to 40 credits of studying in the same study program at different universities, studying in different study programs at different universities; and/or learning. However, the form of the course must fulfil the minimum curriculum criteria determined by the government through a particular institution or

organization. This research refer to the IndoMS minimum criteria of Mathematics Curriculum with the number of credits assigned to each study program. Considering that the mathematics curriculum in Indonesia still emphasizes the quantity of learning (Sulistya, 2022), the division of knowledge in this study program has implications for study materials and the load of credits other than Islamic studies in the Mathematics Tadris Study Program of PTKIN will definitely be less than in the Mathematics Education Study Program of PTUN. Whether this is the case in the Mathematics Education Study Program in PTKIN is definitely also becomes a question that needs to be proven clearly, so that the public as users have clear directions when deciding on the choice of study program that will be used as a place to study.

B. RESEARCH METHODS

The type is field research through documentation studies on the Mathematics Tadris Curriculum, Mathematics Education in State Islamic Religious and Public Universities. The research locations are State Islamic Religious and General Universities in Java (including Jakarta) and the Special Region of Yogyakarta (Java-DIY) which have the Mathematics Tadris or Mathematics Education Study Program. The selection was based on the consideration that the quantity and quality of education in Java and Yogyakarta was good so that it became a destination for further study for students from outside the region, as stated in (Raissa P., 2021), (Sugiyanto, 2004) and (Raudhah, 2015). Research data collection and implementation was carried out over six semesters in the even semester of the 2023/2024 academic year. The population were all State Islamic Religious Universities and State General Universities which had Mathematics Tadris Study Programs or Mathematics Education in the Java-DIY region which were found on the internet as many as 27, including 11 PTUN and 16 PTKIN. In this case, PTKIN is divided into the Mathematics Tadris Study Program and Mathematics Education. Samples were taken from the internet as well as at PTUN and PTKIN which have Mathematics Tadris and Mathematics Education Study Programs with simple random sampling technique. The samples was selected 18 state universities. The data in this research is in the form of credits for study materials/ Mathematics courses in the curriculum recommended by the Indonesian Mathematics Society (IndoMS). Data was taken from the Mathematics Tadris Study Program and Mathematics Education from PTUN and PTKIN curriculum documents uploaded on the internet. This means that research data is secondary data. Data collection techniques used documentation with Mathematics Tadris or Education curriculum documents uploaded by PTKIN and PTUN which were used as research samples. Documents are taken from the official campus website so that they are considered accurate. Data analysis is used to answer the problem formulation or test the hypothesis that has been formulated. Data analysis in quantitative research uses readily available statistical methods. This research data was analyzed by using the technique of One Way Variance (One Way Anova) analysis (Yusuf, 2005) for each recommended study material/Mathematics course to answer the problem or hypothesis that there is a difference in credits for each study material and as a whole. Before analysis, a data normality test was carried out. The normality test uses the Kolmogorov-Smirnov test statistic to test the following hypothesis:

H₀: Data is normally distributed

H₁: Data is not normally distributed.

Next, One Way Variance Analysis was carried out based on the research design as referring to the data presentation structure in table 1 below for each study material/Mathematics course.

Table 1. Data Structure at Design of One-Way Variance Analysis
 Recommendation Study Materials/Course of
 IndoMS (in credits)

Mathematics Education PTUN	Mathematics Education PTKIN	Mathematics Tadris
x_1	x_1	x_1
x_2	x_2	x_2
x_3	x_3	x_3
x_4	x_4	x_4
x_5		x_5
x_6		x_6
x_7		x_7

Because there are 13 types of Mathematics study materials/courses recommended by IndoMS, there are also 13 types of designs as in table 1. The study materials/courses recommended by IndoMS included:

1. Basics of Mathematics (3 Credits).
2. Discrete Mathematics (3 Credits).
3. Differential and Integral Calculus (12 Credits and 3 – 4 Course Materials).
4. Statistics and Probability Theory (9 Credits and 2 – 3 Course Materials).
5. Complex Functions (3 Credits).
6. Introduction to Real Analysis (4 Credits and 1-2 Course Materials).
7. Algebra (7 Credits and 2-3 Course Materials).
8. Geometry (3 Credits).
9. Introduction to Numerical Analysis (3 Credits).
10. Algorithms and Programming (3 Credits).
11. Differential Equations (6 Credits and 2-3 Course Materials).
12. Linear Program (3 Credits).
13. Mathematical Modeling (3 Credits) (IndoMS, 2022).

There are or not differences in each study material/course in the Mathematics Tadris Curriculum, Mathematics Education of PTKIN and PTUN is carried out by testing the research hypothesis, namely:

H_0 : There is no difference in study materials between the Mathematics Tadris Study Program curriculum, Mathematics Education of PTKIN, and Mathematics Education of PTUN.

H_1 : There is no difference in study materials between the Mathematics Tadris Study Program curriculum, Mathematics Education of PTKIN, and Mathematics Education of PTUN.
or statistical hypothesis, stated:

$H_0 : \mu_{MC_i_{PTUN}} = \mu_{MC_i_{PTKIN}} = \mu_{MC_i_{TM}}$ (Average credits load of each Mathematics Course (study material) in Mathematics Education curriculum of PTUN is not different with Mathematics Education of PTKIN or Mathematics Tadris)

$H_1 : \mu_{MC_i_{PTUN}} \neq \mu_{MC_i_{PTKIN}} \neq \mu_{MC_i_{TM}}$ (Average credits load of each Mathematics Course (study material) in Mathematics Education curriculum of PTUN is different with Mathematics Education of PTKIN or Mathematics Tadris)

MC stand for Mathematics Course

Quantitative descriptive statistics are used to analyze the different of Mathematics study materials/courses recommended by IndoMS in the Mathematics Study Program Curriculum, which are only applicable to the sample. The quantitative descriptive statistics discussed are the number, minimum, maximum and average credits adopted from the curriculum recommended by IndoMS. Apart from that, there are also the number and names of study materials/courses adopted.

C. RESULT AND DISCUSSION

This section presents and discusses the research results to answer the problem of whether there are or no differences in study materials/Mathematics courses based on the overall and individual credits adopted by all universities that were used as research respondents. The research results are also used to answer the differences in each study material/Mathematics courses. The first problem uses one-way analysis of variance to obtain the answer. The second problem is through analysis of several descriptive statistics, namely the number of credits, minimum and maximum values, the number of study materials/Mathematics courses, and the number of credits for each. Table 1 presents the number of credits for all study materials/Mathematics courses adopted from the IndoMS minimum curriculum.

Table 1. Number of adoption of course materials in total credits
The Study Materials/Mathematics Courses
Recommended by IndoMS (in Credits)

Mathematics Education PTUN	Mathematics Education PTKIN	Mathematics Tadris
83	66	50
83	72	71
79	67	55
74	58	76

85	69
69	58
42	56

The results of the One Way Variance analysis on the load of credits for Mathematics study material showed a significance of 0.209, which means the null hypothesis was accepted, namely that there was no difference in the load of adopted credits for the Mathematics Tadris Curriculum, Mathematics Education in PTKIN and PTUN. Study materials/Mathematics courses are based on the IndoMS minimum recommendation of 62 credits. Table 1 showed that not all curriculum used as objects of this research follow the recommendations. The average of adopted credits for the Mathematics Education Curriculum in PTUN was 73.57, Mathematics Education in PTKIN was 65.75, and Mathematics Tadris was 62.14. Meanwhile, the entire curriculum adopts an average of 67.39 credits, so overall the study materials/Mathematics courses follow IndoMS recommendations.

The results of research on the number of credit unit loads and testing of differences for each study material or course use One Way Variance analysis as in the example in Basics of Mathematics in table 2 and analogously for 12 other courses.

Table 2. Number of Adoption Credits of Study Material/
Mathematics Course of Basics of Mathematics

The Study Material/Mathematics Course Recommended by IndoMS (in credits)		
Mathematics Education PTUN	Mathematics Education PTKIN	Mathematics Tadris
2	3	2
3	2	2
3	3	2
3	2	4
5		3
6		4
3		3

The results of the One Way Variance analysis on the credit units load of Basics of Mathematics showed a significance of 0.268, which means the null hypothesis was accepted, namely that there was no difference in the adopted credits load for the curriculum of Mathematics Tadris, Mathematics Education of PTKIN and PTUN. The same results are also for study materials or courses in Discrete Mathematics, Statistics and Probability Theory, Complex Functions, Introduction to Real Analysis, Introduction to Numerical Analysis, Algorithms and Programming, Differential Equations, Linear Programs, and Mathematical Modeling, while the analysis results showed that there were differences in courses of Differential and Integral Calculus, Algebra, and Geometry.

The results of statistical analysis using one-way analysis of variance can also be described through descriptive statistics. The descriptive statistics are explained in the three tables below.

Table 3. Amount of credits of Course Material of Mathematics Education Curriculum in PTUN

Num ber	Study Material/ Course	Minimum of Credits	Maximum of Credits	Ave- rage	Amount of PTUN	Amount of Credits in Each of Course
1	Basics of Mathematics	2	6	3,57	a. 4 b. 1 c. 1 d. 1	a. 3 b. 2 c. 5 d. 6
2	Discrete Mathematics	2	6	4,00	a. 3 b. 2 c. 1	a. 3 b. 6 c. 2

					d. 1	d. 5
3	Differential and Integral Calculus	9	12	10,00	a. 4 b. 2 c. 1	a. 9 b. 12 c. 10
4	Statistics and Probability Theory	6	17	10,71	a. 1 b. 1 c. 1 d. 2 e. 2	a. 17 b. 12 c. 16 d. 9 e. 6
5	Complex Functions	0	3	2,00	a. 4 b. 1 c. 2	a. 3 b. 2 c. 0
6	Introduction to Real Analysis	0	6	3,86	a. 3 b. 3 c. 1	a. 6 b. 3 c. 0
7	Algebra	6	12	9,86	a. 1 b. 2 c. 1 d. 2 e. 1	a. 6 b. 10 c. 11 d. 12 e. 8
8	Geometry	8	12	10,57	a. 1 b. 1 c. 1 d. 3 e. 1	a. 10 b. 9 c. 11 d. 12 e. 8
9	Introduction to Numerical Analysis	2	5	2,86	a. 3 b. 3 c. 1	a. 3 b. 2 c. 5
10	Algorithms and Programming	3	6	4,00	a. 2 b. 4 c. 1	a. 6 b. 3 c. 4
11	Differential Equations	3	6	3,86	a. 2 b. 5	a. 6 b. 3
12	Linear Program	0	3	1,86	a. 3 b. 2 c. 2	a. 3 b. 2 c. 0
13	Mathematical Modeling	0	4	2,29	a. 4 b. 2 c. 1	a. 3 b. 0 c. 4
14	Total	42	85	73,57	a. 2 b. 1 c. 1 d. 1 e. 1	a. 83 b. 79 c. 74 d. 85 e. 69

Overall, Table 3 showed the results that the Mathematics Education Curriculum in PTUN adopted for each and the total study materials. Some have adopted in less than, equal to, and more than the recommended credits for each study material/course. Meanwhile, the total is adopted in less and more than the recommended 62 credits.

Based on table 3, it also described that at universities that are used for research, the adopted minimum credits are all less than those recommended by IndoMS except the study or course of Geometry is adopted more and Algorithms and Programming is adopted in the same. Meanwhile, the maximum credits are all more than and the same in the courses of Differential and Integral Calculus, Complex Functions, Differential Equations, and Linear Programming. The adoption average of overall is more than the recommendation except for the courses of Differential and Integral Calculus, Complex Functions, Introduction to Real Analysis, Introduction to Numerical Analysis, Differential Equations, and Linear Programming that is 53.85% of universities used as research adopted more than recommended, others less than. All of Mathematics Education curriculum in PTUN adopt the same as those recommended by IndoMS except the course of Introduction to Real Analysis, Algebra and Geometry courses which are not all the same.

Table 4. Amount of Course Material credits of Mathematics Education Curriculum in PTKIN

Number	Study Material/ Course	Minimum of Credits	Maximum of Credits	Average	Amount of PTKIN (Mathematics Education)	Amount of Credits in Each of Course
1	Basics of Mathematics	2	3	2,50	a. 2 b. 2	a. 3 b. 2
2	Discrete Mathematics	2	3	2,50	a. 2 b. 2	a. 3 b. 2
3	Differential and Integral Calculus	6	12	9,00	a. 2 b. 1 c. 1	a. 9 b. 12 c. 6
4	Statistics and Probability Theory	9	16	11,50	a. 2 b. 1 c. 1	a. 9 b. 16 c. 12
5	Complex Functions	0	3	1,75	a. 1 b. 2 c. 1	a. 3 b. 2 c. 0
6	Introduction to Real Analysis	3	6	3,75	a. 3 b. 1	a. 3 b. 6
7	Algebra	3	6	3,75	a. 3 b. 1	a. 3 b. 6
8	Geometry	7	10	8,75	a. 2 b. 1 c. 1	a. 9 b. 7 c. 10
9	Introduction to Numerical Analysis	2	3	2,75	a. 3 b. 1	a. 3 b. 2
10	Algorithms and Programming	4	11	7,00	a. 1 b. 1 c. 1	a. 6 b. 7 c. 11

					d. 1	d. 4
11	Differential Equations	2	3	2,75	a. 3 b. 1	a. 3 b. 2
12	Linear Program	2	3	2,25	a. 1 b. 3	a. 3 b. 2
13	Mathematical Modeling	0	3	0,75	a. 3 b. 1	a. 0 b. 3
14	Total	58	72	65,75	a. 1 b. 1 c. 1 d. 1	a. 66 b. 72 c. 67 d. 58

It can be seen from Table 4 that it described each study material and its total of the Mathematics Education Curriculum in PTKIN adopting credits unit. It can also be seen for each study material/course, some adopted credits in less than, equal to, and more than recommended. For the total have adopted less and more than the recommended credit units of 62.

Table 4 also showed that at universities that are used for research, the adopted minimum credits are all less than those recommended by IndoMS except the course of Statistics and Probability Theory is adopted the same and Geometry, Algorithms and Programming is adopted more. Most of the maximum credits is adopted the same but the courses of Statistics and Probability Theory, Introduction to Real Analysis, Geometry, Algorithms and Programming is adopted more, Algebra and Differential Equations is adopted less. The adoption average of all is less than the recommendation except for the courses in Statistics and Probability Theory, Geometry, Algorithms and Programming which is adopted more. They were 76.92% of universities used as research adopted less than recommended, others more than. All Mathematics Education curriculum at PTKIN adopt the same as those recommended by IndoMS except for the course of Introduction to Real Analysis, Algebra, Geometry, Algorithms and Programming which are not all the same.

Table 5. Amount of Course Material credits of Mathematics Tadrís Curriculum in PTKIN

Number	Study Material/ Course	Minimum of Credits	Maximum of Credits	Rata- Rata	Amount of PTKIN (Mathematics Tadrís)	Amount of Credits in Each of Course
1	Basics of Mathematics	2	4	2,86	a. 3 b. 2 c. 2	a. 2 b. 3 c. 4
2	Discrete Mathematics	2	4	2,86	a. 3 b. 2 c. 2	a. 2 b. 3 c. 4
3	Differential and Integral Calculus	5	9	7,43	a. 3 b. 2 c. 1 d. 1	a. 9 b. 6 c. 8 d. 5
4	Statistics and Probability Theory	6	15	10,71	a. 1 b. 1 c. 2 d. 1 e. 2	a. 14 b. 7 c. 6 d. 12 e. 15
5	Complex Functions	0	4	1,00	a. 5	a. 0

					b. 1	b. 3
					c. 1	c. 4
6	Introduction to Real Analysis	2	4	3,00	a. 2	a. 2
					b. 3	b. 3
					c. 2	c. 4
7	Algebra	6	16	7,57	a. 5	a. 6
					b. 1	b. 7
					c. 1	c. 16
8	Geometry	5	10	6,86	a. 4	a. 6
					b. 1	b. 9
					c. 1	c. 5
					d. 1	d. 10
9	Introduction to Numerical Analysis	2	4	2,71	a. 3	a. 2
					b. 3	b. 3
					c. 1	c. 4
10	Algorithms and Programming	2	6	4,43	a. 1	a. 3
					b. 2	b. 5
					c. 1	c. 4
					d. 1	d. 2
					e. 2	e. 6
11	Differential Equations	2	3	2,57	a. 3	a. 2
					b. 4	b. 3
12	Linear Program	2	3	2,43	a. 4	a. 2
					b. 3	b. 3
13	Mathematical Modeling	0	3	1,00	a. 2	a. 2
					b. 1	b. 3
					c. 4	c. 0
14	Total	50	76	62,14	a. 1	a. 50
					b. 1	b. 71
					c. 1	c. 55
					d. 1	d. 76
					e. 1	e. 69
					f. 1	f. 58
					g. 1	g. 56

The same results as the Mathematics Education Curriculum in PTUN and PTKIN can also be seen from Table 5. The Mathematics Tadris Curriculum adopted each study material/course is in less than, equal to, and more than the recommended credits. The total is adopted in less and more than from the 62 credits recommended.

Besides that, Table 5 explains that the universities adopted the minimum credits are all less than those recommended by IndoMS except at Geometry is adopted more. The maximum credits are adopted all more and Introduction to Real Analysis, Linear Programs, also Mathematical Modeling are adopted the same, while Differential Equation is less. The adoption average is all less than the recommendation except in the courses of Statistics and Probability Theory, Algebra, Geometry, Algorithms and Programming are adopted more. There are 69.23% of universities used as research adopted less than recommended, others more than. The entire Mathematics Education curriculum of PTKIN adopt the same as that recommended by IndoMS except for the

courses in Integral and Differential Calculus, Statistics and Probability Theory, Geometry, and Differential Equation which are not all the same.

Based on the research results in the three tables, get the same results that the three study program curriculum adopted less, equal to, and more than the credits recommended by IndoMS for each study material or course. Therefore, the total were adopted less and more than the 62 credits recommended. This results can be accepted by reason because the study program has a policy to regulate the abilities that must be achieved their students connected to determining the amount of credit unit. Apart from that, the study program also has a policy to determine the depth and breadth of learning materials that must be mastered by students, as appropriate in (Tim, 2022). The differences in adopting credit units for study materials/courses in the three curriculum can occur as a result of policies that allow study programs to give the amount by considering students ability factors, but still refer to the minimum standard rules which was governed together in IndoMS. The implication of this research can also be used by educational institutions when accepting a teaching staff in the field of mathematics studies without distinguishing between study program origins. Likewise, policy makers do not discriminate in determining the requirements for recruiting a teaching staff as in (Mutia & Arbaini Wahyuningsih, 2019).

D. CONCLUSION AND SUGGESTIONS

Based on the results of the research and discussion, it is concluded as follow.

1. In general, there is no difference in the Mathematics Education Curriculum at PTUN and PTKIN as well as the Mathematics Tadris at PTKIN in adopting credits for study materials/courses, which is useful for educational institutions or policy makers not to discriminate in the recruitment of teaching staff or mathematics subject teachers. For each study materials/courses give the results that is there are no differences in Discrete Mathematics, Statistics and Probability Theory, Complex Functions, Introduction to Real Analysis, Introduction to Numerical Analysis, Algorithms and Programming, Differential Equations, Linear Programs, and Mathematical Modeling, but there are differences in Differential and Integral Calculus, Algebra, and Geometry. These results will be useful for study programs as a reference for mapping study materials/courses that will be given less or more credit load according to the student's abilities.
2. The Mathematics Education Curriculum in PTUN and PTKIN as well as Mathematics Tadris mostly adopt minimum credits less than those recommended by IndoMS. Maximum credits of Mathematics Education in PTUN and Mathematics Tadris curriculum adopts more than and Mathematics Education curriculum of PTKIN adopts the same. Above 50% of the Mathematics Education curriculum of PTUN adopts more than recommended, while Mathematics Education in PTKIN and Mathematics Tadris adopt less than. In the Mathematics Education Curriculum in PTUN and PTKIN as well as Mathematics Tadris in PTKIN, a few of them have adopted the same recommendations. These results can be used by prospective students to determine their choice of mathematics education or tadris study program at PTUN or PTKIN. If prospective students want more study material/mathematics courses, the choice of place to study is the mathematics education study program at PTUN.

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