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CHARACTERISTICS COMPARISON ON FMIPA'S AND FKIP'S ALUMNI OF UNIVERSITY OF SRIWIJAYA BASED ON RELATIONSHIP BETWEEN GPA, FIELD OF WORK, AND LENGTH OF TIME TO GET FIRST JOB

ALI AMRAN, IRMEILYANA, ANITA DESIANI, RIDO ZULFAHMI

Abstract. The results of tracer studies on alumni are useful for obtaining important information for the development of university. One of the uses of this information is to analyze the relevance between the world of education and the world of work. FMIPA and FKIP are two faculties in Sriwijaya University that have different vision, mission, curriculum, and also produce graduates with different competency specifications. In this paper, we study the relationship between GPA, length of study, length of time to get the first job, closeness of field of study with employment, and suitability of level of education with work on alumni. The data used is based on the results of a tracer study conducted by the CDC Sriwijaya University on FMIPA and FKIP graduates from 2013 to 2016. There were 215 respondents from FKIP and 156 respondents from FMIPA who were alumni of each of the 4 departments in the two faculties. FMIPA alumni have a higher average length of study and a lower GPA than FKIP alumni. The correlation between GPA and length of study of FMIPA and FKIP alumni were respectively -0.6 and -0.4. Based on the results of simple correspondence analysis, the alumni of both faculties have relationship between closeness of the field of study and suitability of level of education with work. On the FMIPA alumni, there is no relationship between GPA and the length of time to get the first job and also no relationship between GPA and suitability of level of education with work. In contrast, on FKIP alumni, there are relationships between these two factors.

Keywords and Phrases: FMIPA Unsri alumni, FKIP Unsri alumni, GPA, Length time of study, Length of time to get first job, The suitability of the level of education

1. INTRODUCTION

Tracer study is a method for obtaining feedback from alumni that is useful for improving education systems and management, which involves the means and infrastructure of teaching and learning processes, evaluating educational outcomes, curriculum improvement and learning systems.

Tracer studies can present in-depth information about work suitability both horizontally (between various fields of science) and vertically (between various levels of education). Tracer studies are also able to map the business world and industry so that the gap between the competencies obtained by alumni in college and the demands of the workforce can be minimized.

Alumni' data from tracer studies results are useful to obtain important information for the development of college, to evaluate the relevance of college (hard skills, soft skills, internal and external factors, contributions, compatibility, etc.), to contribute to the process accreditation, and to provide information to students, parents, lecturers, and administrative staff (Divisi Riset ITB Career Center, 2017) [1].

Career Development Center of Sriwijaya University (is abbreviated as CDC Unsri) provides a tracer study service to study alumni early careers, as well as obtain alumni feedback for improving the learning system at Unsri, conducting evaluation and development curriculum that meets stakeholder expectations and market needs. In addition to tracer study, CDC also provides other services, including: Unsri Career Expo, soft skills training, assessment online, career training, and career counseling (http://www.cdc.unsri.ac.id) [2].

Reference to learn various things related to career center and its services, also to study the solution to the problems of graduates (HR) and employment faced such as problems of alignment of the world of education with the world of work can be seen in Proceedings of the Indonesia Career Center Network (ICCN) Summit 2 (in Bogor, 12th -14 September 2017) (ICCN, 2017) [3] and Proceedings of the ICCN Summit 3 (in Surabaya, 21-23 September, 2018) (ICCN, 2018) [4].

The Faculty of Mathematics and Natural Sciences (is abbreviated as FMIPA) and the Faculty of Teacher Training and Education (is abbreviated as FKIP) are 2 faculties, each of which has departments or study programs in the fields of science, namely Mathematics, Physics, Chemistry, and Biology. But the vision and mission for the two graduates is different. It also concerns the curriculum in lectures and graduate competencies. The science study programs in FKIP are Mathematics Education, Physics Education, Chemistry Education, and Biology Education. In the world of work, FKIP graduates are often found not working in the field of education. While a small number of FMIPA graduates also work as teachers. These may occur, because graduates take advantage of existing opportunities, feel comfortable according to their interests, compatible with their competencies, as additional work, transportation to the workplace is easily accessible, career prospects, economic prospects, or other reasons.

Interpretation of questionnaire data in the form of descriptive statistics, whether in the form of numbers (percentages), tables, or graphs is very helpful in providing information for further analysis. The results of the analysis are very useful for the successful implementation of tracer studies. Tracer study data can be big data that consists of many objects and many variables, so to explore as much information as possible from that data, it requires the use of other analytical techniques, including multivariate analysis. The advantages of using multivariate (compared to univariate) include the reduction of objects and variables, so relationships between variables simultaneously can be analyzed.

Correspondence analysis is a graphical multivariate technique used to explore data from a contingency table. Correspondence analysis can be used for various two-way contingency tables, although the cell frequency is relatively small (Johnson and Wichern, 2007) [5]. The graph of correspondence analysis results represents rows and columns of a contingency table in the form of dots in a low-dimensional Euclid space but it is able to summarize as much information as possible from Euclid's larger dimension.

Correspondence analysis can be used to assign similar categories in one variable, so that the categories can be combined into one category. The reduction in the number of these categories causes the new contingency table, so the frequencies in the cells increase. Graphs in correspondence analysis can be used to analyze the relationship between two groups of variables.

Some studies that apply correspondence analysis include: (Bangun, *et al.*, 2011) [6] concluded that the GPA and duration of thesis are significantly related to study periods in Mathematics Department of FMIPA Unsri. Students with short study periods ($\leq$ 8 semester) had good GPA (3.00 - 3.50). Furthermore, (Bangun,

P.B.J., Irmeilyana, 2012) [7] concluded that the configuration of the results of the simple correspondence analysis was more representative than the configuration of the results of the multiple correspondence analysis. In addition, (Amran et al., 2018) [8] used correspondence analysis to analyze the relationship among timetable, length of trip and daily work time on the drivers of BRT Trans Musi Palembang.

Some studies on student achievement (the GPA) of the students in Mathematics Department of FMIPA Unsri are Irmeilyana, *et al*., (2018) [9], Irmeilyana, *et al*., (2018) [10] used cluster analysis to analyze the characteristics of the GPA of subject groups and interest groups in the Department of Mathematics.

Just like other Unsri graduates, graduates of FMIPA and FKIP should also participate in completing the tracer study questionnaire administered by CDC Unsri. Amran, et al. (2019) [11] analyzed the relationship between the length of study, academic achievement (GPA), and the competencies of the alumni of FMIPA Unsri on their level of education and the length of time they got a job. There is only a significant relationship between the GPA and the study period. While, there is no relationship between each GPA, level of education, competence in the field of science, competence outside the field of science, competence in general knowledge, English language competence, and competency in using computers to a length of time to get a job

The previous researches did not examine the effect (relationship) of GPA, the length of time of getting a job, and the level of education of alumni with the field of work. The object of the study was only the FMIPA' alumni, even only analyzed the GPA and the length of study of the Mathematics Department graduates.

This study discusses the alumni profile of FMIPA and FKIP based on the relationship between the GPA and the length of its first job, the relationship of the GPA with the suitability of the education level of the alumni in their work, and the relationship of the alumni' field of study and the suitability of the education level on employment. The next goal is to compare the profiles of each of these alumni. The results of this study can be an overview of the alumni profiles of the two faculties, including regarding the suitability of the field of science and education level with the field of work of alumni.

2. RESEARCH METHOD

This research is a case study. The data used are secondary data from the CDC Unsri, that are tracer study' questionnaire on FMIPA and FKIP alumni who graduated from 2013 to 2016. The departments of FMIPA alumni are Mathematics, Physics, Chemistry, and Biology. While the study programs of FKIP alumni are Mathematics Education, Physics Education, Chemistry Education, and Biology Education. This study also used 2 attributes taken from the Academic Subdivision of FMIPA and the Academic Subdivision of FKIP. The attributes are GPA and study period.

The steps in this research are:
1. Collecting study period and GPA data from FMIPA and FKIP alumni who graduated from 2013 to 2019.
2. Collecting tracer study data from FMIPA and FKIP alumni who graduated from 2013 to 2016.

3. Collecting study period and GPA data for respondents from Step 2 results based on Step 1 results.
4. Compile the respondent data matrix from each faculty.
5. Calculate the frequency of each questionnaire answer.
6. Interpretation of Step 5.
7. Divide GPA, length time of got to a job, level of education, the closeness of the field of study to work into the following categories:
7.1 GPA, is changed to the following data categories:
   Category 1: 2.00–2.75 ("Quite Satisfactory"); notated as CM
   Category 2: 2.76–3.00 ("Satisfactory"); notated as M
   Category 3: 3.01-3.50 ("Very Satisfactory"); notated as SM
   Category 4: 3.51-4.00 ("Cum laude"); notated as CL
7.2 Length time of got to a job has 3 categories, namely:
   Category 1: <3 months after Graduation; denoted as <3
   Category 2: 3-6 months; denoted as [3, 6]
   Category 3:> 6 months; denoted as > 6
7.3 Level of education has 4 categories, namely:
   Category 1: Higher level; denoted as T1 or SLT
   Category 2: The same level; denoted as T2 or TS
   Category 3: Lower level; denoted as T3 or SLR
   Category 4: No need for higher education; denoted as T4 or TP
7.4 The closeness of the field of study to work has 5 categories, namely:
   Category 1: Very Tight; denoted as T1 or SE
   Category 2: Closely; denoted as T2 or E
   Category 3: Close enough; denoted as T3 or CE
   Category 4: Not Tightly; denoted as T4 or KE
   Category 5: Not at all; denoted as T4 or TSS
8. Arrange a contingency table from
8.1 relationship between the GPA and the length of time to get the first job.
8.2 relationship between the GPA and the suitability of the education level.
8.3 relationship between the closeness of the field of study at work with the level of education
9. Perform simple correspondence analysis.
10. Interpretation of results.

3. RESULTS AND DISCUSSION

        This study used FMIPA and FKIP graduate data from each of the 4 departments/study programs in the period 106 (Feb 2013) to 142 (June 2019). Furthermore, only a small proportion of the graduates (alumni) participated in completing the tracer study questionnaire conducted by CDC Unsri. In this study, respondents who filled out the tracer study questionnaire were assumed to represent alumni.

3.1 Description Length of Study and GPA for Graduates from The Period 106 to 142

        FMIPA graduates for Mathematics, Physics, Chemistry and Biology

Departments in the period 106 (Feb 2013) to 142 (June 2019) totaled 1,551 people, consisting of 393 Mathematics alumni, 327 Physics alumni, 415 Chemistry alumni, and 416 alumni Biology.

While FKIP graduates in the period 106 to 142 totaled 1,755 people, consisting of 407 Mathematics Education alumni, 468 Physics Education alumni, 396 Chemistry Education alumni, and 484 Biology Education alumni.

Comparison of length of study and GPA between FMIPA's and FKIP's alumni respectively can be seen in Figure 1.
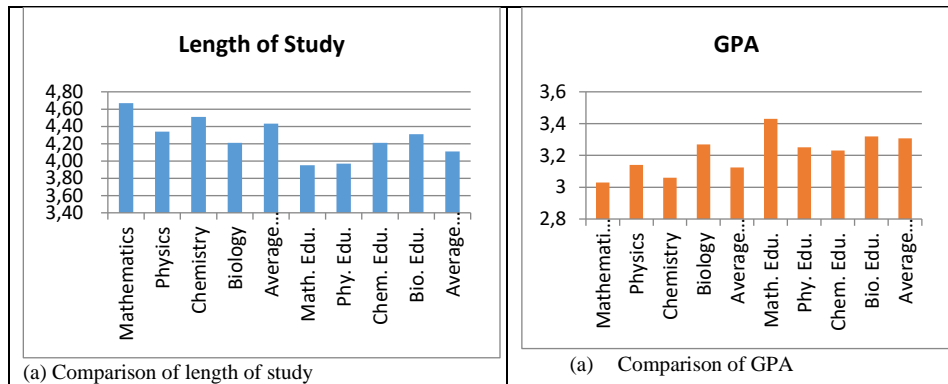

(a) Comparison of length of study   (a)   Comparison of GPA

Figure 1. Comparison of length of study and GPA on both alumni

Based on Figure 1a, in general the average length of study of alumni of each department at FMIPA is higher than the alumni of each study program at FKIP. Biology Education Study Program alumni have higher study duration than Biology Department alumni.

Based on Figure 1b, in general the average GPA of alumni of each study program at FKIP is higher than alumni of each department at FMIPA. The alumni' GPA of each study program at FKIP is higher compared to the alumni' GPA of "*the same department*" at FMIPA. For example: in Biology Education Study Program, their alumni have higher GPA than Biology Department alumni.

3.2 Description of Length of Study and GPA Data on Respondents

There were 156 FMIPA alumni from 4 departments who graduated from 2013 to 2016 who filled out the CDC questionnaire. While, there were 837 graduates from 2013 to 2016, so only 18.6% of the graduates participated in filling out the CDC questionnaire. The average length of study and GPA of FMIPA respondents were 4.43 years and 3.125, respectively.

Whereas in FKIP alumni, there were 215 alumni (from 4 study programs) who filled out the CDC questionnaire. There were 935 FKIP graduates from 2013 to 2016, so only 23% of the graduates participated in filling out the CDC questionnaire. The average length of study and GPA of respondents from FKIP was 4.11 years and 3.31, respectively.

If the average length of study and GPA of respondents from FMIPA and FKIP are compared, then FMIPA respondents have higher length of study and lower GPA. This sample (or respondents) representation is the same as the population representation (graduates from February 2013 to June 2019).

Comparison of correlations between length of study and GPA variables from overall graduates' and respondents' data of FMIPA and FKIP alumni can be

seen in Table 1.

Table 1. Comparison of correlations between length of study and GPA

		FMIPA Length of study	FKIP Length of study
Graduates	GPA	-0,64	-0,4
Respondents	GPA	-0,6	-0,4

Based on Table 1, the correlation between the variables of the respondents with graduates in each faculty is almost the same. If the correlations between the variables in the two faculties are compared, the correlation between the length of study and the GPA on FKIP alumni is weak negative, namely -0.4. Whereas for FMIPA alumni, the correlation between the length of study and GPA is quite strong, that is -0.6, so it can be interpreted that FMIPA alumni with high length of study tend to have low GPA, and vice versa.

3.3 Recapitulation of Answers Results to Some Questions on The Questionnaire

The following Table 2 is a representation of the results of respondents' answers on some of the tracer study questionnaire questions for FMIPA and FKIP. While some other questions related to the problem discussed, the data is not presented, but only interpreted.

Table 2. The answers result of some questions on tracer study questionnaire

No	P*		FMIPA Amount	%age	FKIP Amount	%age
1		Number of male respondents	43	27.6	33	15.3
		Number of female respondents	113	72.4	182	84.7
2	F5	The length of time (before / after graduation) to get first job (in person)				
		Before graduating	54	29	58	27
		After graduate	125	68	151	70
		Not looking for work	6	3	6	3
		Length of time (in **months**)				
		Before graduating	1.9		2.45	
		After graduate	7.3		3.92	
3	f8	Number of alumni who worked at the time of filling out the questionnaire				
		Yes	108	78	168	78
		Not	31	22	47	22
4	f9	Alumni who did not work when filling out the questionnaire:				
		Studying in college	10	33	20	43
		Have a family	2	7	6	13
		Currently looking for work	18	60	18	38
		Others			3	6
8	F11	The field of work of alumni				
		Government / BUMN agencies	24	22	83	43
		Non-profit organization / NGO	5	5	19	10
		Private companies	66	61	62	32
		Self-employed / own company	10	9	21	11
		Others	3	3	6	3
10	f14	The closeness of the relationship between the field of study with work				
		1 = very tight	37	30	73	59,8
		2 = tight	38	31	17	13,9
		3 = close enough	22	18	13	10,7
		4 = not tight	19	15	12	9,8
		5 = not at all	8	6	7	5,7
		amount	124		122	
11	f15	Suitability of Education Level with work				

		1 = A level higher	22	17,7	11	9
		2 = same level	89	71,8	100	82
		3 = Lower level	12	9,7	8	6,6
		4 = Don't need higher education	1	0,8	3	2,5
		amount	124		122	
12	F16	The alumni reason continues to take up work even though it is not compatible with their education				
	1	Invalid question; alumni felt it was in accordance with education	76	59	124	62
	2	Have not found another suitable job	11	9	19	10
	3	Get good career prospects	7	5	13	7
	4	Prefer	6	5	7	4
	5	Promoted	1	1	0	-
	6	Higher income	2	2	0	
	7	Safer / more secure	2	2	6	3
	8	More interesting	4	3	1	1
	9	Allows taking additional work	3	2	4	2
	10	The location is closer to the residence	3	2	9	5
	11	More guarantee the family's needs	5	4	7	4
	12	At the beginning of his career	1	1	4	2
	13	Others	8	6	6	3

Note: P *: Questionnaire or conclusion that can be drawn from the question.

The following is an explanation from Table 2.

1. The majority of respondents on both FMIPA's and FKIP's alumni are women.

2. FMIPA Alumni began looking for work after graduation (54%) more than before graduating, on average 3 months after graduation. In contrast, FKIP alumni began looking for work more before graduating (54%). Time to get a job after graduating on FKIP alumni is faster than FMIPA alumni. The fact, this can be possible because FKIP alumni are more focused on becoming teachers, so they can work right away.

3. For FMIPA alumni, the majority of ways to find work go to exchanges / job fairs, internet / online advertising / mailing lists, and through newspaper / magazine advertisements.

    Whereas for FKIP alumni, the majority applied without knowing available vacancies, internet / online advertising / mailing lists, going to exchanges / job fairs, and through relationships.

4. The majority of the alumni of both faculties get their first job after graduation; namely 68% of FMIPA alumni and 70% of FKIP alumni. FMIPA alumni have an average length of time (7.3 months) which is higher than FKIP alumni (3.92 months).

5. Correlation of the number of companies (or agencies or institutions) that are applied for (by mail or email) with many companies that respond and who invite interviews to the both alumni are almost the same.

    If the number of applications is high, the number of companies (or institutions) that respond and who invite interviews is also increasing.

6. The majority of respondents who filled the questionnaire were alumni who had worked, each 78%.

7. Among FMIPA alumni who have not worked, 60% of them are currently looking for work and 33% are continuing their studies.

While on FKIP alumni who have not worked, 38% of them are currently looking for work and 43% are continuing their studies.

So FKIP alumni who continue their studies are higher than FMIPA alumni.

8. Majority of FMIPA alumni work in private companies (61%) and in government and BUMN institutions (22%). While the majority of FKIP alumni work in government agencies (43%) and also private companies (32%). The majority of the FKIP alumni work professions as teachers, both civil servants and foundations or the private school.

9. The average income of FMIPA alumni is higher than FKIP alumni.

10. The close relationship between the field of study and work is explained in Section 3.6.

11. Conformity between the Level of Education with work for both alumni are at the same level; on FMIPA alumni, the number of respondents answered at *the same level* was 71.8% and on FKIP alumni as much as 82%. FMIPA alumni who stated that their education level was *one level higher* than employment were 17.7%.

12. The majority of alumni from both faculties feel that the current work is in accordance with Education (for FMIPA alumni as many as 59% and FKIP alumni as much as 62%).

3.4 Relationship between GPA and Length of Time to Get First Job

The correlation between the GPA and the length of time to get first job was -0.16 for 124 FMIPA alumni. This can be interpreted as a very weak linear relationship between the GPA and the length of time to get first job.

Whereas in 151 FKIP alumni, the correlation between the GPA and the length of time to get first job was 0.08, meaning that there was no linear relationship between the GPA and the length of time to get first job.

Table 3 presents a contingency table between the GPA and the length of time to get first job at FMIPA's and FKIP's alumni.

Table 3. Contingency table of GPA and the length of time to get first job

FMIPA		GPA				
		CM	M	SM	DP	
Length of time to get a first job (in months)	< 3	0	7	26	5	38
	[3, 6]	0	8	21	5	34
	> 6	3	11	37	1	52
		3	26	84	11	124

| FKIP		GPA				
		CM	M	SM	DP	
Length of time to get a first job (in months)	< 3	1	4	71	13	89
	[3, 6]	0	6	17	5	28
	> 6	1	23	15	0	39
		2	33	103	18	156

Correspondence analysis for the length of time to get first job with GPA on FMIPA alumni resulted in $\chi^2_c = 0.0772 \times 124 = 9.5728 < \chi^2_{tab\,(0.05;\,6)}$, so there is no relationship between the length of getting the first job and the GPA.

Whereas the correspondence analysis for the length of time to get first job with GPA on FKIP alumni resulted in $\chi^2_c = 0.3351 \times 156 = 52.2756 > \chi^2_{tab\,(0.05;\,6)}$, so there is a relationship between the time of getting the first job and the GPA.

The 2-dimensional plots in Figure 2 of the relationship between the two variables on the both alumni can represent 100% of variance of data.

Based on Figure 2a, the points of the variable categories do not show a clear trend. In the symmetry plot, Euclid's distance between the positions of the points "SM" and "M", also between "< 3" and "[3, 6]" is closer. Based on Euclid's distance in the asymmetric plot, alumni who have GPA "SM" and "M" tends to get job more than 6 months. Alumni with their GPA are "DP" tend to get work less than 6 months.
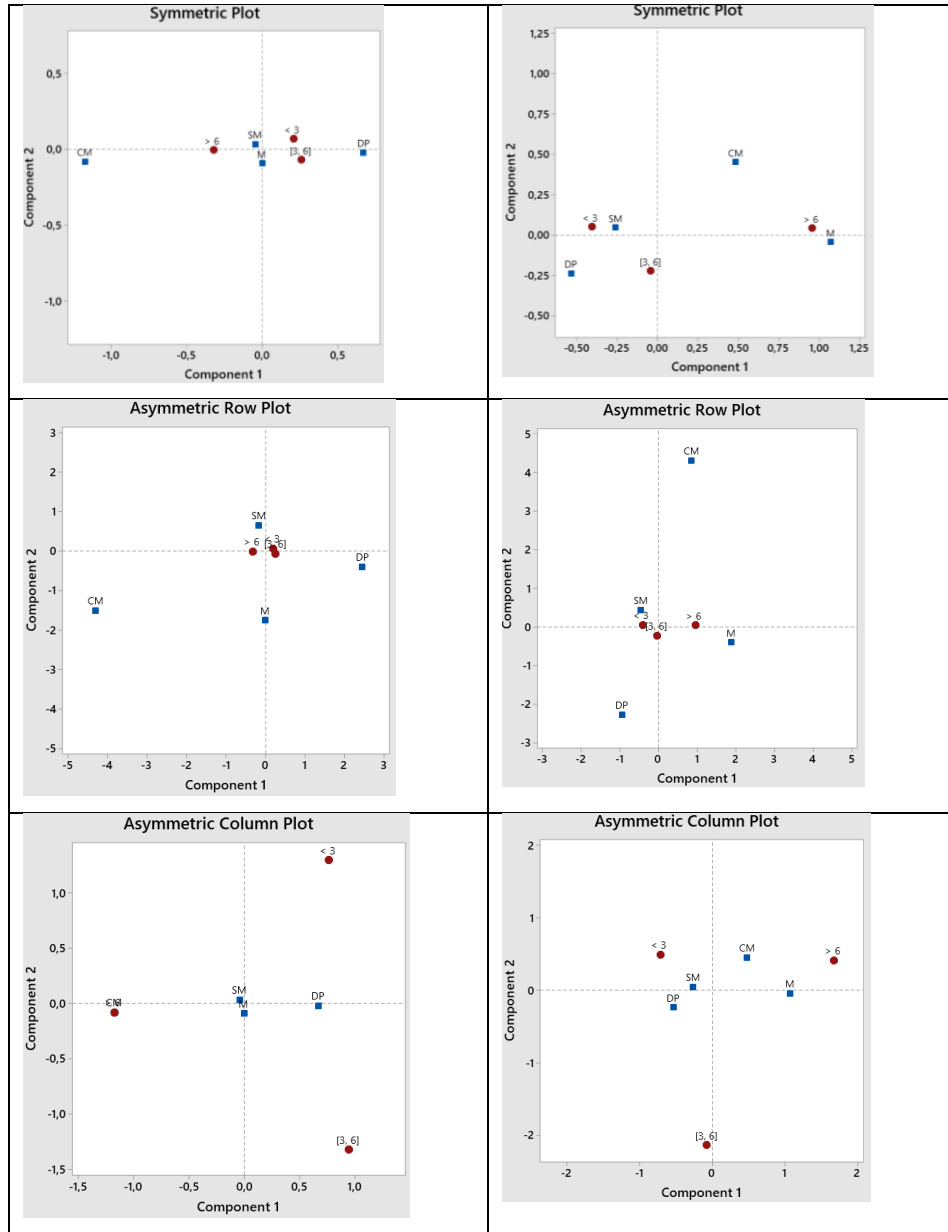
(a) Plots on FMIPA alumni   (b) Plots on FKIP alumni

Figure 2. Plot of relationship between GPA and length of time to get the first job

Based on Figure 2b, FKIP alumni with GPA "SM" tend to get first job less than 3 months and alumni with GPA "Satisfactory" tend to get first job more than 6 months. While alumni with GPA "cum laude" tend to get their first job 3 to 6 months.

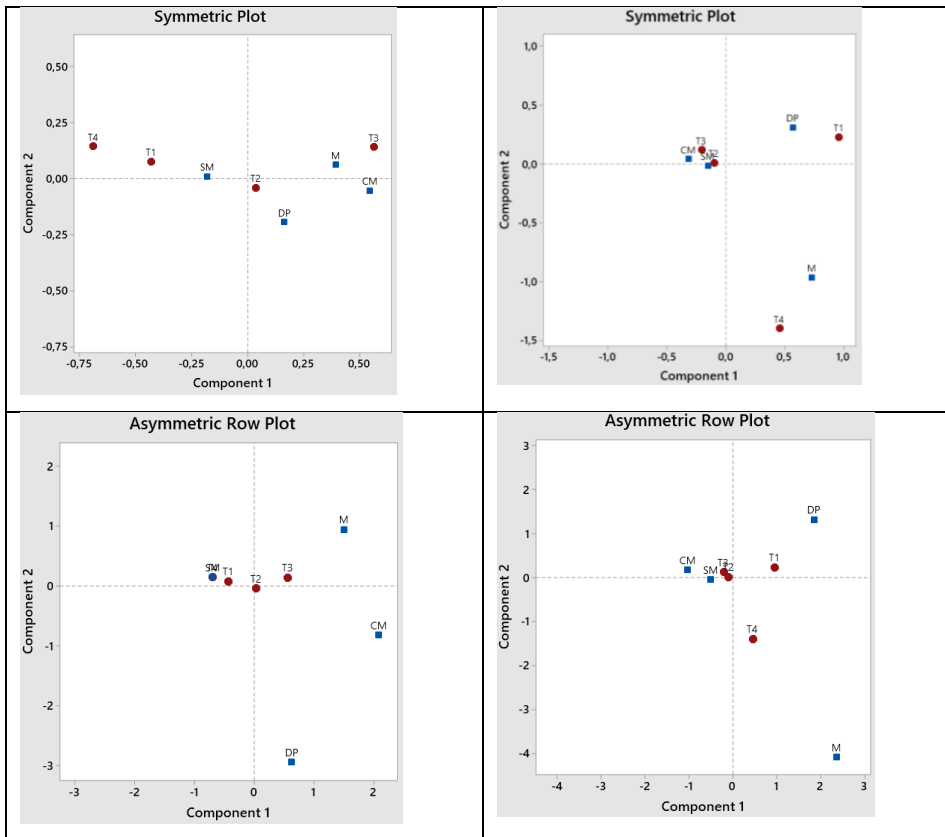**3.5 Relationship between GPA and the Suitability of Education Level**

Table 4 presents a contingency table between the GPA and the suitability of the education level at work.

Table 3. Contingency table of GPA and suitability of education level at work

FMIPA		GPA					FKIP		GPA				
		CM	M	SM	DP				CM	M	SM	DP	
	T1	0	2	19	1	22		T1	0	1	4	5	10
Appropriate level of education	T2	4	19	57	9	89	Appropriate level of education	T2	1	3	79	13	96
	T3	1	5	5	1	12		T3	0	0	7	1	8
	T4	0	0	1	0	1		T4	0	1	2	0	3
		5	26	82	11	124			1	5	92	19	117

Correspondence analysis on the relationship of the GPA with the suitability of the level of education on FMIPA alumni resulted in $\chi^2_c = 0.0731 \times 124 = 9.0644 < \chi^2_{tab\,(0.05;\,9)}$; so that there is no relationship between the suitability of the education level with the GPA. The 2-dimensional plot of this relationship can represent 99.8% of variance, which it can be seen in Figure 3a.
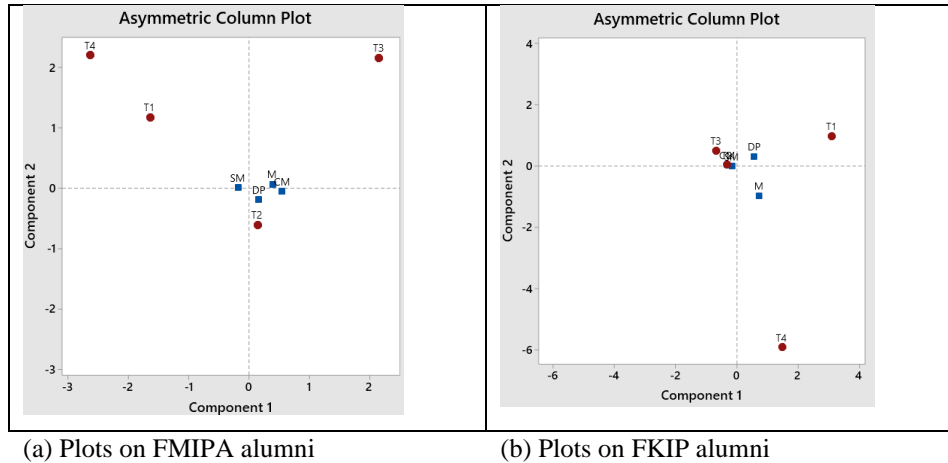
| (a) Plots on FMIPA alumni | (b) Plots on FKIP alumni |

Figure 3. Plot of relationship between GPA and the suitability of the education level

Note: Points T1 = SLT, T2 = TS, T3 = SLR, and T4 = TP

Based on Figure 3a, FMIPA alumni with GPA "SM" tend to have a *higher Education Level* (T1) and *No Need for Education* (T4) at work. Whereas alumni with GPA "M" tend to have Education Level that is *lower level* (T3) at work. Alumni with GPA "cum laude" (DP) tend to have Education Level T2 at work. In this case, the relationship between the GPA and the suitability of the education level at work is more diverse.

Correspondence analysis on the relationship of the GPA with the suitability of the education level on FKIP data resulted in $\chi^2_c = 0.1517 \times 117 = 17.7489 > \chi^2_{tab\,(0.05;\,9)}$; so that there is a relationship between the suitability of the education level with the GPA. The 2-dimensional plot of this relationship can represent 99.33% of variance, which it can be seen in Figure 3b.

Based on Figure 3b, FKIP alumni with GPA "SM" tend to have the education level *Same Level* (T2) and *lower level* (T3) at work. Whereas alumni with GPA "M" tend to have education level *Do Not Need Education* (T4) at work. Alumni with GPA "cum laude" (DP) tend to have *higher level* (T1) at work.

In general, on the FKIP alumni, alumni with GPA "cum laude" have a matching level of education at work with GPA.

3.6 Relationship between the Closeness of Field of Study at Work with Education Level

Based on the answers to questions f16 on the tracer study questionnaire, there were 76 FMIPA alumni or around 58.9% who had reasons that their work "now" is suitable with their education level. Whereas in FKIP alumni, there were 124 alumni or around 62%. Based on the answers to questions f15, a contingency table can be arranged in Table 4.

Table 4. Contingency table of the closeness of the field of study at work with educational level

FMIPA		Closeness of the field of study					
		SE	E	CE	KE	TSS	
Appropriate level of education	SLT	9	11	1	1	0	22
	TS	28	26	19	10	6	89
	SLR	0	1	2	8	1	12
	TP	0	0	0	0	1	1
		37	38	22	19	8	124

FKIP		Closeness of the field of study					
		SE	E	CE	KE	TSS	
Appropriate level of education	SLT	11	0	0	0	0	11
	TS	58	15	9	12	6	100
	SLR	4	1	2	0	1	8
	TP	0	1	2	0	0	3
		73	17	13	12	7	122

Correspondence analysis on the close relationship of the field of study at work with the level of education at FMIPA alumni resulted in $\chi^2_c = 0.4142 \times 124 = 51.3608 > \chi^2_{tab\,(0,05;\,12)}$; so that there is a relationship between the closeness of the field of study and the suitability of the Education Level with work. The 2-dimensional plot of this relationship can represent 92.42% of variance, which it can be seen in Figure 4a.
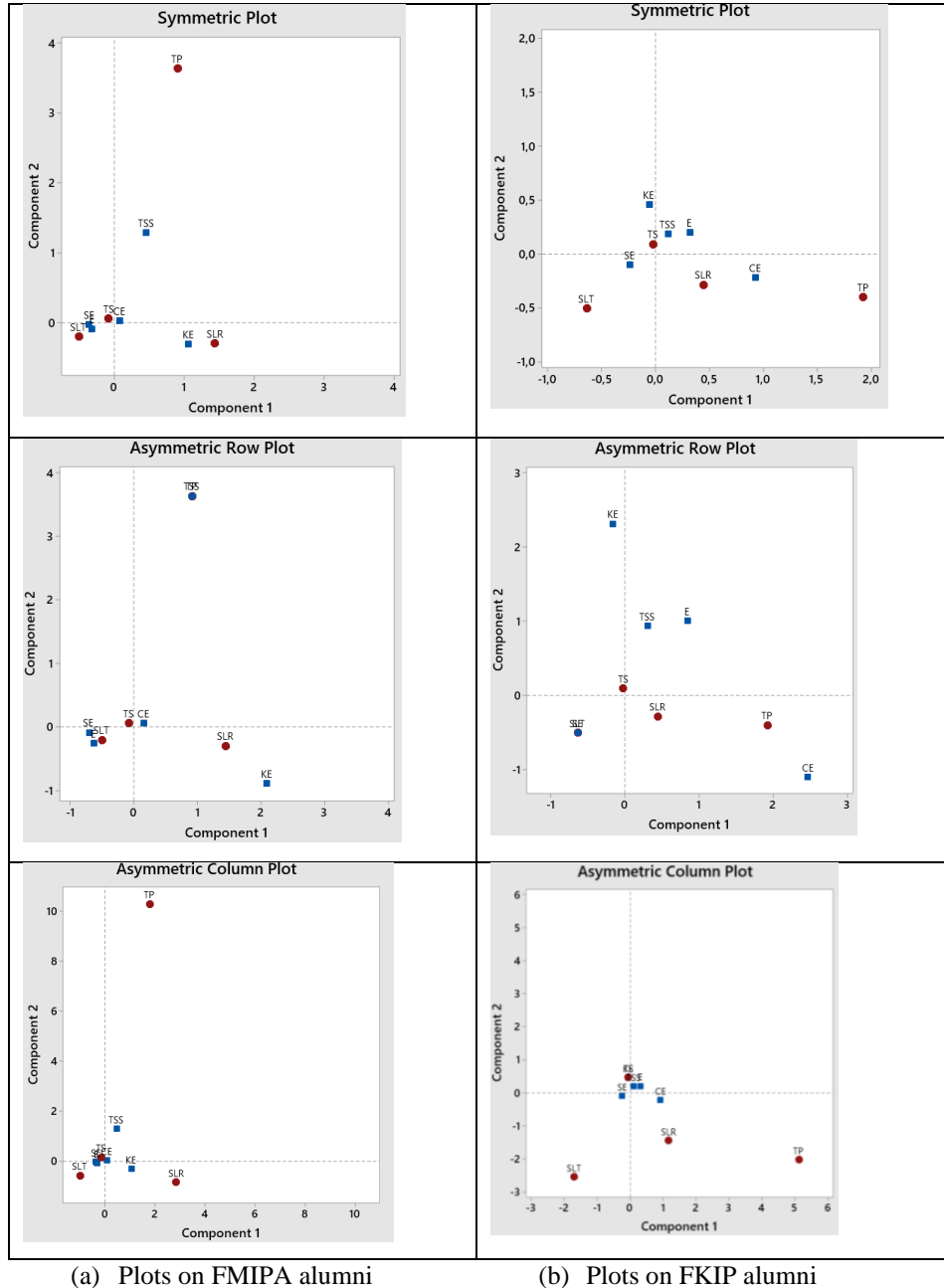

    (a) Plots on FMIPA alumni   (b) Plots on FKIP alumni

Figure 4. Plot of the relationship between the closeness of the field of study and the suitability of Education Level with work

Based on Figure 4a, on FMIPA alumni, the field of study that is *very close*, *close*, and *quite closely* (SE, E, CE) with work related to the *same level* of Education (TS) and can also be a *higher level* (SLT). Whereas the field of study

that is *less closely* (KE) is associated with a *lower level* of Education (SLR). While the field of study that is *not need education* (TP) tends to relate to the education level *not at all* (TSS). In symmetric plots, the "SE" and "E" categories are similar, so these categories can be combined.

In general, the closeness of the field of study with work on FMIPA alumni requires a level of Education that is at least the same as the job.

Correspondence analysis on the closeness relationship of the field of study with the level of education at FKIP alumni resulted in $\chi^2_c = 0.1908 \times 122 = 23.2776 > \chi^2_{tab\ (0,05;\ 12)}$; so that there is a relationship between the closeness of the field of study and the suitability of the Education Level with work. The 2-dimensional plot of this relationship can represent 94.58% of variance that can be seen in Figure 4b.

Based on Figure 4b, at FKIP alumni, the field of study that is *very closely* related to the work is associated with a *higher level* of education (SLT). While the field of study that is *quite closely* (CE) with work is related to *lower level* of education (SLR) and *does not need* education (TP). In symmetric plots, TSS and E categories are similar.

3. CONCLUSION

Based on the results and discussion, if the average length of study and the GPA of respondents from FMIPA and FKIP alumni were compared, then the FMIPA alumni had higher length of study and lower GPA.

The majority of FMIPA alumni work in private companies and in government or BUMN institutions. While the majority of FKIP alumni work in government agencies and also private companies. The work professions of the FKIP alumni are majority as teachers, both civil servants and foundations/private.

On the FMIPA alumni, there is no relationship between GPA and the length of time to get the first job and also the relationship between GPA and the suitability of the education level at work. Whereas on FKIP alumni, both the relations exist.

For both alumni, there is a closeness relationship between the field of study and the suitability of the Education Level with work. The closeness of the field of study with work on FMIPA alumni requires a level of Education that is at least the same as the job. Whereas for FKIP alumni, the field of work is related to the level of education which tends to be lower.

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