

## Graduates at Institut Teknologi Kalimantan Before and After the Pandemic Covid-19

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**Abstrak** – Setiap tahun, program yang disebut "tracer study" dijalankan untuk mengumpulkan dan menganalisis data dari lulusan (setahun setelah lulus). Berusaha untuk menjamin bahwa lulusan memiliki pekerjaan yang baik dan mengirimkannya tepat waktu sesuai dengan kriteria universitas atau institut setelah lulus. Dalam 1-2 bulan setelah mengisinya, seorang analis data memproses data dan memvalidasi keakuratannya. Data untuk 10 prodi dikumpulkan, dan dilakukan perbandingan antara tahun kelulusan 2019 dan 2020. Tahun 2020, pandemi Covid-19 dimulai. Institut Teknologi Kalimantan (ITK) terkena dampak signifikan dari Covid-19 yang menyebabkan semua pekerjaan dilakukan secara daring di kampus. Kriteria penilaian untuk ITK meliputi lamanya waktu yang dibutuhkan lulusan untuk mendapatkan pekerjaan, IPK mereka, sifat pekerjaan alumni mereka, dan alasan mereka tidak mendapatkan pekerjaan satu tahun setelah lulus. Untuk dapat mencetak alumni yang lebih berkualitas, pendekatan rate ranking akan membantu menelaah keberhasilan program studi dan memberikan evaluasi terhadap program studi tersebut. Dua disiplin ilmu peringkat terendah makalah ini adalah teknik elektro, teknik material, dan metalurgi.

**Kata Kunci:** Tracer Study, Covid-19, Institut Teknologi Kalimantan

**Abstract** – Every year, a program called a "tracer study" is run to collect and analyze data from graduates (a year after graduation). Seeks to guarantee that graduates have good work and submit it on time following university or institute criteria after graduation. Within 1-2 months of filling it out, a data analyst processes the data and validates its accuracy. Data for 10 study programs were collected, and comparisons were made between the graduation years of 2019 and 2020. In 2020, the Covid-19 pandemic started. The Institut Teknologi Kalimantan (ITK) was significantly impacted by Covid-19, which led to all work being done online on campus. Evaluation criteria for ITK include the length of time it takes graduates to find employment, their GPA, the nature of their alumni employment, and their reasons for not finding employment one year after graduation. In order to be able to create more qualified alumni, the rate ranking approach will help examine the success of the study program and provide an evaluation of the study program. This paper's two lowest-ranking disciplines are electrical engineering, materials engineering, and metallurgy..

**Keywords:** Tracer Study, Covid-19, Institut Teknologi Kalimantan

### 1. INTRODUCTION

Developing universities need alumni feedback to improve the quality and further the education system. Not only that, but this input can also be helpful for the business world and industry, bridging the gap between the competitiveness of university alumni and the world of work. Tracer Study is one of the strategies used by many universities (Rasyid *et al.*, 2021)(Kalaw, 2019), especially in Indonesia, to get evaluations from alumni after one year has passed since graduation. The purpose of Tracer Research is to determine educational attainment in the form of a transition from higher education to the world of business and industry, educational output in the form of self-assessment of mastery and acquisition of competence, and the educational process in the form of self-assessment of mastery and acquisition of competence (Indrawati, 2020).

The educational process that alumni have carried out after one year will be contained in the evaluation of the teaching process and the contribution of the university to the acquisition of competence, as well as academic input in the form of additional investigations—more details about graduate school. For alumni data, The website <https://tracer.itk.ac.id> is used by the "Institut Teknologi Kalimantan" to obtain alumni data. Procedure stages that have been carried out in prior research (Haliq, 2021).

Due to government policies imposed in response to the COVID-19 pandemic, there are restrictions on school activities. Previously, all teaching and learning activities were conducted face-to-face; However, applying the online learning model, all teaching and learning activities are now remotely. The ongoing 2019 Corona Virus Disease (Covid-19) pandemic in Indonesia is part of the global Covid-19 epidemic. On March 2, 2020 (El-Boghdadi, Noor and Mahmoud, 2021), it was found that two people had contracted the disease after being exposed to it by a Japanese citizen. As of April 9 2020, the outbreak had spread to 34 provinces, including the Institut Teknologi Kalimantan in Balikpapan. The campus implemented the Moodle system to conduct a distance learning system, knowing the impact would be significant. The Moodle program was created to overcome this ( <https://kuliiah.itk.ac.id> ). The Moodle system is carried out to continue educational programs on campus while maintaining a safe distance between communities to prevent the transmission of the Covid-19 virus.

## 2. RESEARCH METHOD

Alumni who graduated in 2019 (before the Covid-19 epidemic) and 2020 (after the outbreak) were still ongoing and were tracked using the descriptive research approach.

A questionnaire about learning outcomes was employed in this study, along with technical data analysis. The participants of this research included 422/476 students from the 2020 graduation year and 177/195 students from the 2019 graduation year who completed the survey on the website <https://tracer.itk.ac.id> (Diana Nurlaily, Ridhwan Haliq, 2020). Mathematics, Electrical Engineering, Civil Engineering, Marine Engineering, Materials and Metallurgical Engineering, Information Systems, Physics, Mechanical Engineering, Chemical Engineering, and Urban and Regional Planning are among the ten study programs designated for analysis.

## 3. RESULT AND DISCUSSION

The frequency count, percentage, mean, and rank are this study's most commonly used data analysis methods. Means interpretation using the following scale:

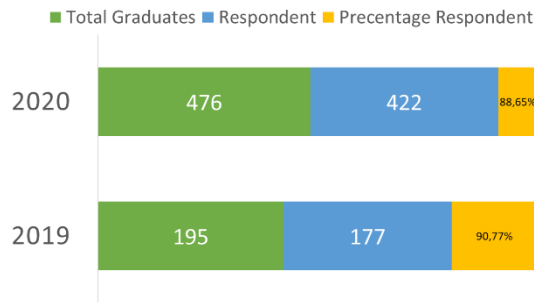
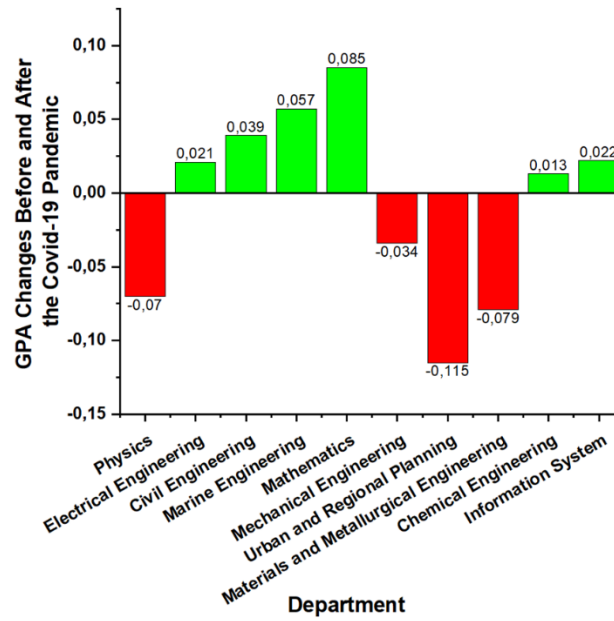


Figure 1. Respondent Questionnaire From 2019 & 2020

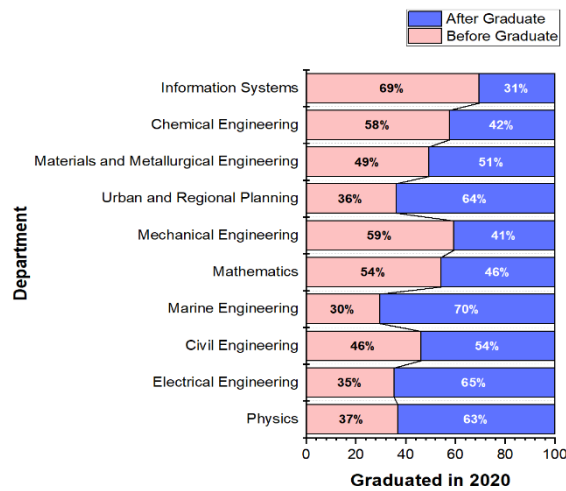
Figure 1 shows a considerable increase of 40.96 percent in graduates between 2019 and 2020. As the number of graduates rises, so will the number of responses received and the process of reaching alumni via social media and direct contact. Between 2019 and 2020, there was a 245 increase in responders, followed by a 245 increase in graduates. In 2020, the percentage of responders fell by 2,12 percent compared to 2019. 2,12 percent is reasonable as long as the respondent's goal of 85 percent is met. From the results of data processing regarding respondents' answers to the questionnaires distributed, the point is used as a reference to determine the comparison of graduation before the Covid-19 pandemic and after the Covid-19 pandemic. one of them with Salary (Garcia, Breier and Cosser, 2003), Accuracy in getting a job after graduation or before graduation for the graduate. GPA is not a requirement for employment currently, but it is for acceptance into a large company, big five start-ups, ministries, and state-owned businesses. The point is when the graduate gets a job based on the IKU (Indikator Kinerja Utama) standard from Ministry of Education, Culture, Research, and Technology Directorate General of Higher Education.

Tracking the graduate's aptitude when he gets a job is also based on the Cumulative Achievement Index. Following the Covid-19 outbreak, some study programs saw a fall, while others tended to grow. The cumulative achievement index increased in six out of ten study programs, whereas others did not. According to Figure 2, the mathematics study program climbed by 8.5 percent, while the urban and regional planning study program decreased by 11.5 percent.



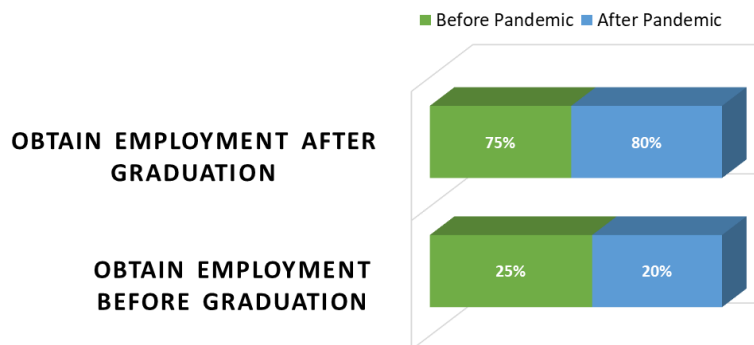
**Figure 2.** Before And After The Pandemic, Changes In Each Major's Average Grade Point Average (GPA).

The grade point average (GPA) provides an overview of the academic standing attained by ITK graduates in the class of 2019. ITK has 195 alumni that graduated in 2019. Figure 2.4 demonstrates that the IP of ITK graduates in the 2019 graduation year is distributed normally. 195 ITK graduates had an average IP of 3.34 in 2019 (Diana Nurlaily, Ridhwan Haliq, 2020). The most excellent IP and lowest IP among ITK graduates in 2019 are 3.85 and 2.76, respectively. ITK graduates in the class of 2019 have median values that are identical to the average, or 3.34. Before and after graduation (Nuriansyah, 2020), graduates admitted become an excellent indicator of the caliber of a university or institute. Since there is a gap between the final assignment session and graduation, landing a job before graduation might be seen as a graduate achievement. A company has already hired the graduate. Data on graduates who find employment after graduation is aggregate information and is not categorized according to the critical university factors. Figure 3 depicts the period before and after graduation during which COVID-19 pandemic alumni could find employment. Compared to the other 10 study programs, the study information system program has a greater acceptance rate of alumni in the business. The statistics from Figure 2 confirm that the physics study program has the lowest score.



**Figure 3.** Comparison Of Majors And The Time It Takes For Work To Be Accepted (Before Graduation And After Graduation)

Figure 4 is a derivative of Figure 3, and only 5% of the difference between them before and after Covid-19's impact can be seen. The debriefing that each study program has offered may be why the difference of 5 percent is not very significant; graduates may be better equipped to deal with the effects of COVID-19.



**Figure 4.** ITK Accepted graduates before and after the pandemic Covid-19.

Before and after the epidemic, the Institut Teknologi Kalimantan graduates noticed substantial changes in the graduate employment market. The primary vocations of the respondents are broken down into five categories based on the tracer study: not working, completing their education, starting a business, working and working, and being self-employed. Based on the alumni data, those who did not work or had worked but had quit while completing the questionnaire, alumni who had never found employment, and alumni who were not working when completing the questionnaire because they were getting ready to continue their education. Numerous graduates continue to run their businesses after the epidemic, which may occur if there are few job openings or if the parents of the graduates are ready to support them. Also included in Figure 5 are jobless graduates.

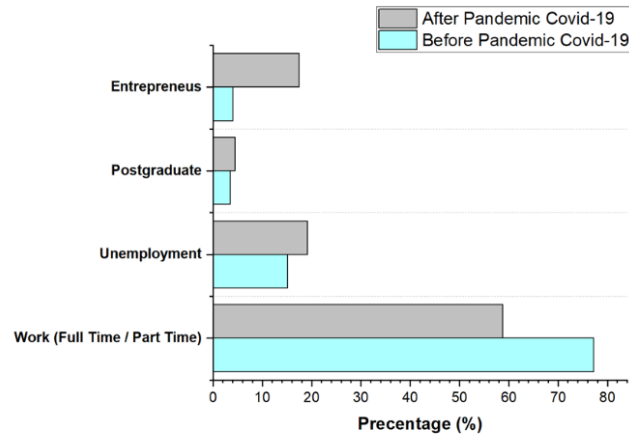


Figure 5. ITK Accepted Graduates Before And After The Pandemic Covid-19.

After the pandemic, there was a rise of 13.2 percent in graduates choosing the subject of entrepreneurship. Through entrepreneurship training and national-level competitions overseen by mentors from the Institut Teknologi Kalimantan academics or with resource people from workshops, it has been possible to equip alumni from each study program. Few students who completed their studies in the 2019–2020 transitional period of the COVID-19 epidemic were not interested in continuing to be post-graduate (Rouvrais *et al.*, 2021). The value of unemployment changed by 4 percent, which is a negligible amount by the norms of public higher education. Due to the COVID-19 epidemic, there has been a decline of 18.48% in graduates hired by Company.

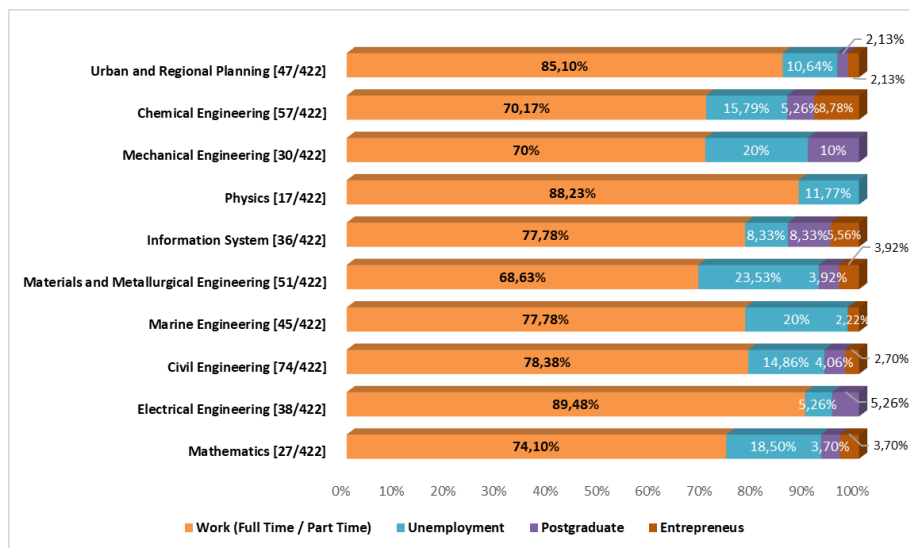
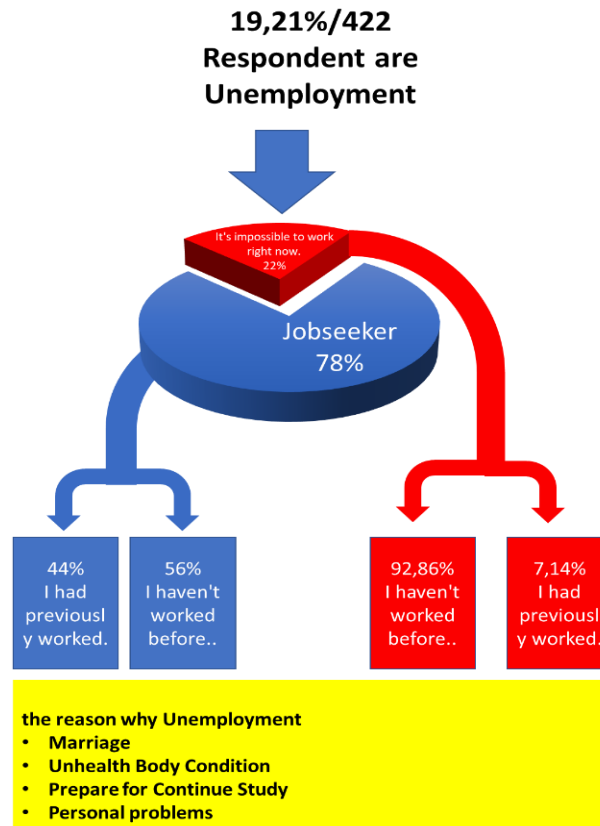


Figure 6. Current Job Types In 2020 For Each Major.

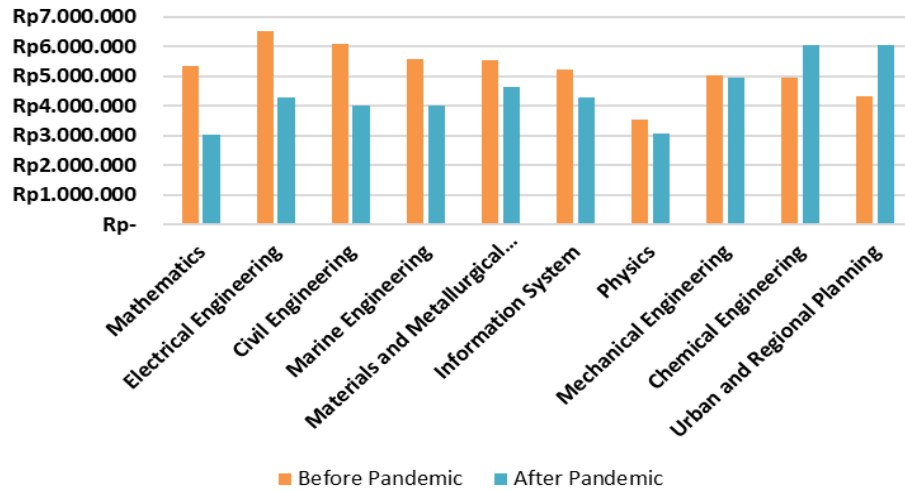
Based on Figure 6. Regional and urban planning study programs, physics, and electrical engineering are study programs with graduates working in companies at an average of 80%. Only material and metallurgical engineering study programs have graduates who work directly in companies below 70%, with the highest number worldwide. 2020 is the graduation year.



**Figure 7.** Flowchart Study Of Non-Working Respondents And Their Reasons In 2020.

Respondents did not have a job in 2020. In figure 7, 19.21% of 422 graduates who graduated in 2020 will be unemployed, separated into two categories: those who are seeking a job and those who will be unable to do so in 2020 (Haliq, 2021). Seventy-eight percent of people were looking for employment during the COVID-19 epidemic, and it's known that up to 44 percent of graduates looking for jobs have previously worked and have never done so (58 percent). It was discovered that 7.14 percent of alumni who don't work because they can't find employment did so before deciding to depart. It was discovered that 7.14 percent of alumni who do not work because they cannot find a job had previously worked and that 92.86 percent had not looked for employment the year after graduation. There are numerous reasons, such as 19.21% of alumni who do not look for a job/Jobless reasons like, "I'm married, my health is horrible, I'm preparing for post-graduate studies, and I have personal concerns."

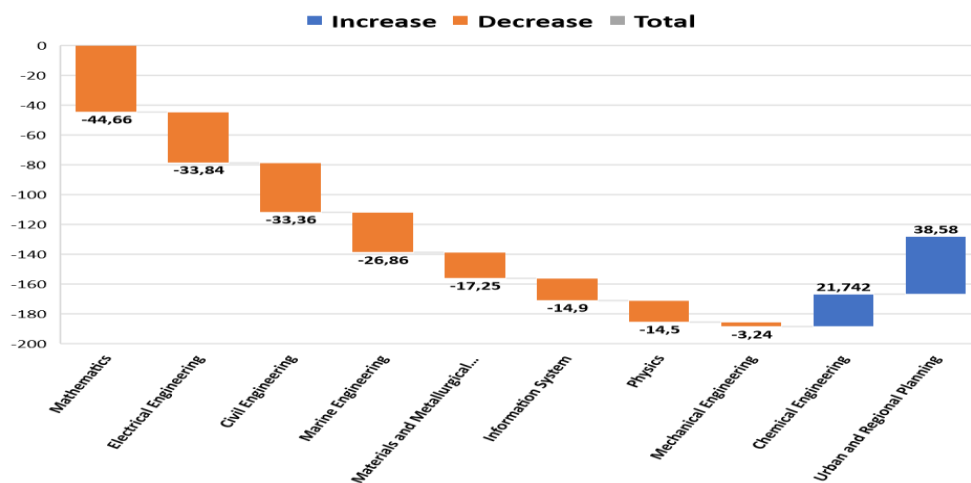
It's interesting to look into earnings and bonuses. One factor that could influence someone to accept or reject a job offer is income. One of the factors luring potential students to select study programs in higher education is the average pay of graduates from a school. Prospective students are more interested in a study program the higher the wage one may expect. ITK graduates who graduated in 2019 earned an average monthly wage of IDR 4,569,246.84 and a median of IDR 4,100,000. This information comes from the tracer study. While the average monthly bonus received by alumni is Rp. 6,522,296.14, and the median is Rp. 3,900,000. The average and median wages of ITK alumni do not differ significantly, according to the data. The income collected by graduates for each program's study before and before the pandemic will subsequently be compared, as indicated in figure 8.



**Figure 8.** Before and After The Epidemic Covid-19, The Average Pay Of Each Major Was Compared.

Due to the Covid-19 epidemic, some graduates from each study program saw a reduction, but only two study programs, such as Chemical Engineering and Urban and Regional Planning, saw increases. Forty of the entire batch of students who graduated from the urban and regional planning study program in 2020 had completed the internship program at the company for one semester, according to confirmation from the department director. Graduates who have completed internships at businesses can succeed in job interviews more readily than those who haven't (Rouvrais *et al.*, 2021). This company provides a 1-semester internship program separate from the Institut Teknologi Kalimantan's internal internship program. Each student in this internship program receives a monthly wage and has a workload equal to that of 50 percent of employees overall (Rouvrais *et al.*, 2021).

Figure 9 displays fluctuations in each study program's average salary growth and decline. Some things that cause the study program's decline in average salary earned include graduates choosing employers that pay less than the continued rate in the region, the nature of the active business being repulsive to the general public, and the continued status of contract workers or non-permanent workers. Department heads mechanical department said that numerous businesses in the industrial sector filed for bankruptcy.



**Figure 9.** Fluctuations In The Average Salary Of Each Department Before And After The Pandemic.

The simplest method is ranking (BBTE Tracer Study *et al.*, 2014), which works well for exclusive small groups like ITK alums. This procedure sets each character's value from lowest to highest. The different properties found are arranged in ascending order of value and complexity. This system categorises jobs according to the total number of points each study program has earned. The point technique takes a more analytical tack and examines how components or work elements relate. According to a mutual agreement, the categories used by each Institute or university will vary. Table 1 shows the result of the ranking method.

**Table 1.** Ranking To Determine Which Graduates From Majors Have The Best Conditions.

Department	Fluctuations in the average salary of each department before and after the pandemic	Comparison of majors and the time it takes for work to be accepted (before graduation and after graduation)	Before and after the pandemic, changes in each major's average Grade Point Average (GPA).	TOTAL
Mathematics	1	7	10	18
Electrical Engineering	2	2	6	10
Civil Engineering	3	5	8	16
Marine Engineering	4	1	9	14
Materials and Metallurgical Engineering	5	6	2	13
Information System	6	10	7	23
Physics	7	4	3	14
Mechanical Engineering	8	9	4	21
Chemical Engineering	9	8	5	22
Urban and Regional Planning	10	3	1	14

By the end of March 2020, a large-scale social restriction (PSBB) policy will be in place to stop and slow the spread of COVID-19 (Suryatni, 2021). With existing applications and each educator having a plan, online lectures are a solution both educators and students require during the COVID-19 epidemic. The Information Systems Program's study plan is unaffected by the online lecture method; in fact, the caliber of instruction is improving. Due to the strong demand for informatics positions relative to industrial sector occupations, the waiting period for graduates of information systems study programs has the highest value. Due to the pandemic, businesses will require a lot of information technology personnel and information systems. Meetings can be held online through various applications and systems like the Moodle system, an online-based education system. The Covid-19 outbreak forced engineers in the field of information systems and informatics to make all work online-based, thereby reducing the spread of Covid-19 and all humans being able to keep working during the pandemic.

In this rate rating procedure, study programs in mechanical engineering and chemical engineering are in second and third place, respectively. The training programs offered to graduates in 2020 include management, career readiness, and soft skill training. Even with the rising number of COVID-19 cases in 2020, many students are taking part in internships at businesses. Students' interest grows due to the availability of free online soft skills courses for them to participate in free workshops or free training online (Kalaw, 2019). Free training with online methods raises the number of points they need to graduate. HDI values of more than 2000 points are already present in study programs with significant average points. For 2020 graduates, completion of the Student Achievement Index (SAI/IPM (Indeks Prestasi Mahasiswa) ) is required for graduation. SAI/IPM encourages 2020 graduates to actively participate in ITK-sponsored pieces of training as well as training outside of ITK.



## 4. CONCLUSION

Career and employability services must support the finest college graduates, which may necessitate employing extra practitioners and specialists or investing in further professional development. The right amount of authority must be given to career and employment services to provide targeted assistance to graduates most impacted by the challenging job market during this epidemic season (AGCAS, 2021). The Institut Teknologi Kalimantan must assess the study program with the lowest rank three scores to raise its graduates' caliber. Alumni preparedness activities prior to graduation do not ensure a good ceremony. To gain experience before entering the corporate world, however, participants are encouraged to participate in various activities offered at almost every university and institute in Indonesia, especially at the Kalimantan Institute of Technology. One of the benefits for students during this pandemic is the availability of the Independent Learning Program, which enables them to develop their skills and passion for learning.

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