

Tracking Analysis of Informatics Engineering Study Program, State University of Surabaya

^[1] Martini Dwi Endah Susanti, ^[2] Bambang Sujatmiko, ^[3] Ramadhan Cakra Wibawa*

^[1] ^[2] ^[3] Departement of Informatics Engineering, Universitas Negeri Surabaya, Surabaya, Indonesia
Corresponding Author Email: ^[1] martinisusanti@unesa.ac.id, ^[2] bambangsujatmiko@unesa.ac.id,
^[3] ramadhanwibawa@unesa.ac.id

Abstract— Tracer study is a graduate tracing study that is able to provide useful information for higher education evaluation purposes and can then be used for improvement and quality assurance of higher education institutions. Tracer studies are also useful in providing important information regarding the relationship between higher education and the world of professional work, assessing the relevance of higher education, information for stakeholders, and the completeness of the requirements for higher education accreditation. This study aims to find out the results of a Tracer study of Informatics Engineering undergraduate alumni which can later be used to support learning and curriculum in the Informatics Engineering undergraduate study program, State University of Surabaya. This research method is quantitative research with a participatory approach. Data reduction, data presentation, and conclusion are used in this data analysis technique. The search results for Informatics Engineering study program alumni were 92.68% tracked. Of the 41 alumni targets, 38 alumni data were successfully collected.

Index Terms—Tracer Study, State University of Surabaya, Alumni, Informatics Engineering.

I. INTRODUCTION

Along with the development of the era and technology, all matters relating to the lives of many people have also experienced changes. Likewise in the field of education, the orientation of education which was originally based on knowledge for self-development has changed to science for the benefit of the lives of many people.

The number of university graduates in Indonesia every year, starting from diploma graduates, to bachelor, master, and doctoral degrees, is very large. However, so far in Indonesia there are not many universities that have a track record of alumni graduates. This condition results in almost no feedback from graduates to improve the quality of education for the tertiary institution itself. Feedback provided by alumni can generally be useful in assisting tertiary institutions to improve education systems and management. One method that can be used to assist tertiary institutions in improving education systems and management is to carry out tracer studies. A tracer study is a graduate tracing study that is able to provide useful information for higher education evaluation purposes and can then be used for improvement and quality assurance of higher education institutions [3].

Tracer studies are also useful in providing important information regarding the relationship between higher education and the world of professional work, assessing the relevance of higher education, information for stakeholders, and the completeness of the requirements for higher education accreditation. In practice, tracer studies should be carried out by institutions that bridge universities and the world of business and industry. Tracer studies need to be carried out in an institutionalized, structured manner and with the right methodology and analysis to obtain measurable, accurate, and comparable results [5].

The results of a Tracer study can find out how much graduates can be absorbed by the world of work, as well as describe the quality of higher education institutions, especially in the Informatics Engineering Study Program, Unesa. The tracer study also illustrates the relevance between competencies and the needs of the world of work. The existence of high absorption means that the curriculum that has been made has succeeded in getting students to step into the world of work with definite steps. Then the results of the Tracer study provide a lot of input in developing curricula and various entities in advancing higher education, such as teaching, research, and community service[6].

Tracer studies are also carried out to meet standard 3 of study program accreditation which requires each study program to carry out a tracer study related to alumni. However, tracer study activities are carried out not only because of accreditation requirements but are routine activities carried out by study programs to obtain input on the learning process and build collaboration with alumni users.

For the Tracer study at Surabaya State University, a special team was formed as PIC for each study program and was assigned to handle all matters related to the Tracer study in the study program. The implementation of the Tracer study which is also part of the study program accreditation activities illustrates that the study program is very serious about carrying out the learning process and at the same time as accountable to the community for their trust in participating in studies at the Unesa Informatics Engineering Study Program. Thus the Tracer study activity simultaneously builds public trust in the learning process in the Unesa Informatics Engineering Study Program. Based on this background, the researcher intends to conduct a study entitled "Tracking Analysis Of Informatics Engineering Study Program, State University Of Surabaya". This study

aims to look at the distribution of alumni in the world of work and the responses of graduate users to alumni of the Informatics Engineering Study Program, State University of Surabaya. The benefits of this research can be used as material for evaluation and recommendations for improving the curriculum of the Informatics Engineering study program. In addition, it can be used as a basis for improving the quality of education services and contributing to the study program accreditation process.

II. LITERATURE REVIEW

Tracer Study is a movement to track the retention of college graduates within the world of work. The following information will be solid since it collects information and data from graduates. It is this collected information that can be utilized as improvement fabric to decrease the crevice between graduates and the work needs of graduates [2].

Tracer Study, also called graduate tracing, is a study analyzing graduates of higher education institutions. The results of this study can be used for the purposes of evaluating higher education and improving the quality of the tertiary institution concerned. Colleges got to carry out Tracer Study since they require criticism from graduated classes in their endeavors to move forward instruction frameworks and administration. The execution of a tracer consider ought to in a perfect world be carried out for college graduates class in 1-3 a long time after graduation. This condition is considered perfect since 1-3 a long time after graduation graduating class is considered to have involvement and competence in work and information of the world of work (uncovered to the world of work) [1].

Tracer Study (TS) is a viable medium utilized to track the retention of graduated classes of a tertiary institution within the world of work. In expansion, TS can be utilized to follow the whereabouts and conditions of the graduated class 1 year and 2 a long time after graduation. TS too has an imperative part to gather different data as fabric for the assessment and improvement of higher instruction. Hence, the comes about of TS can be a picture of the presence of a college. TS information is utilized as a premise for educational module enhancement, making strides in the quality of instructors, as well as altering and progressing the learning framework. This TS must be carried out periodically as an effort to overcome the gap between graduates and the needs of graduate users to support the achievement of the vision of Surabaya State University, namely "Excellence in Education, Strong in Science" [4].

III. RESEARCH METHODS

This study uses a descriptive method, to obtain an overview of the alumni profiles of Universitas Negeri Surabaya Informatics Engineering Study Program graduates. The research sample was all graduates of the Universitas Negeri Surabaya Informatics Engineering Study Program in the past 1-year cohort (discussion of graduates/alumni targets

to be surveyed), namely graduates of 2021. Data collection was carried out by distributing tracer study questionnaires to alumni of the Informatics Engineering study program who graduated in 2021. The questionnaire was prepared based on the Ministry of Education and Culture's Tracer Study guidelines and was determined by the Directorate General of Belmawa. The tracer study questionnaire can be accessed on the tracerstudy.unesa.ac.id page. The username and password used are sent via non-unesa email to each alumni.

The data analysis techniques needed in this study are as follows:

1. Data reduction,

This process is carried out by sorting data from written records in the field,

2. Presentation of data (Display Data),

Reduced data, presented in systematic reports, easy to read and understand, both as a whole and in parts. Data obtained from graduate respondents will be analyzed descriptively. The presentation of data is complemented by visualization in the form of tables and graphs.

3. Conclusion (Verification)

The data that has been processed is then drawn conclusions using the inductive method, namely the process of inferring from things that are specific to things that are general in nature in order to obtain objective conclusions.

IV. RESULT

The total number of S1 Informatics Engineering graduates who became tracer study respondents was 41 alumni. Alumni who have completed the tracer study to date are 38 respondents consisting of 18 male respondents and 20 female alumni. The details of the tracer results can be described in detail as follows.

1) Alumni Status

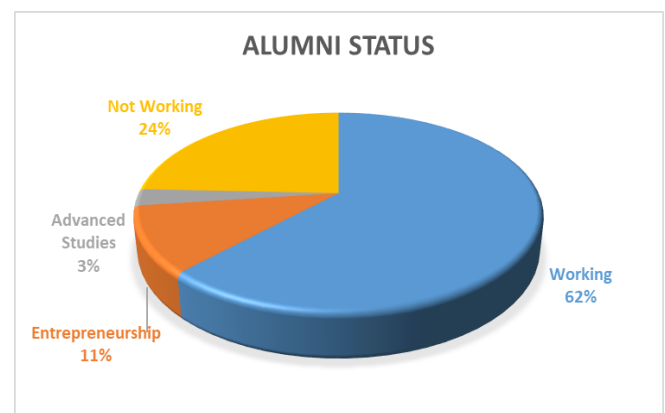


Fig 1. Percentage of alumni status

Based on the graph, there are 23 alumni who work, 4 alumni who are self-employed, 1 alumni who further studies, 9 alumni who do not work and 1 person who is not yet able to work.

2) Times Takes To Get a Job



Fig 2. Distribution of data about time to get a job

From the graph, 13 alumni have found work before six months and 10 alumni took more than six months to find work.

3) Suitability of Studies With Work

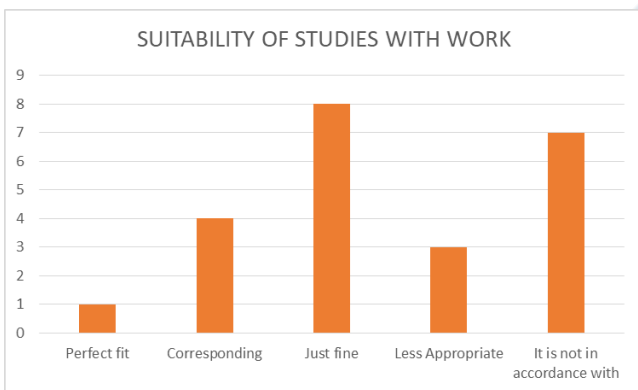


Fig 3. Distribution of data about suitability of studies

Based on the picture above, 1 alumnus has a very high closeness value with his work. As many as 4 alumni have high affinity. 8 alumni have a sufficient attachment to their work. Furthermore, 3 alumni stated that their job suitability was less close. Finally, 7 alumni stated that they were not close at all to their current job.

4) Workplace Region

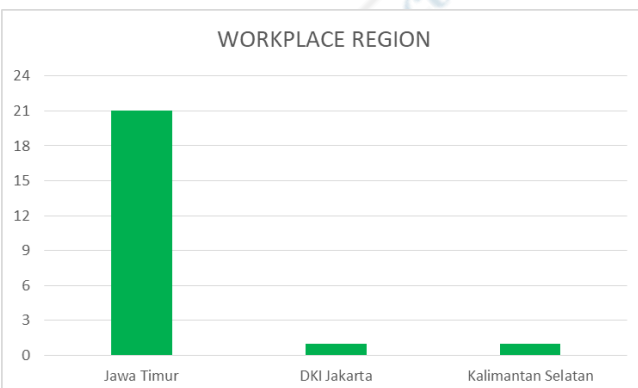


Fig 4. Distribution of data about workplace region

Based on the graph above, there are 21 alumni working in cities in the Province of East Java (Surabaya, Mojokerto, Sidoarjo, Magetan, Gresik, and so on). There is an alumnus working in DKI Jakarta (Central Jakarta) and there is also an alumnus working in South Kalimantan (Barito Kuala).

5) Income Every Month

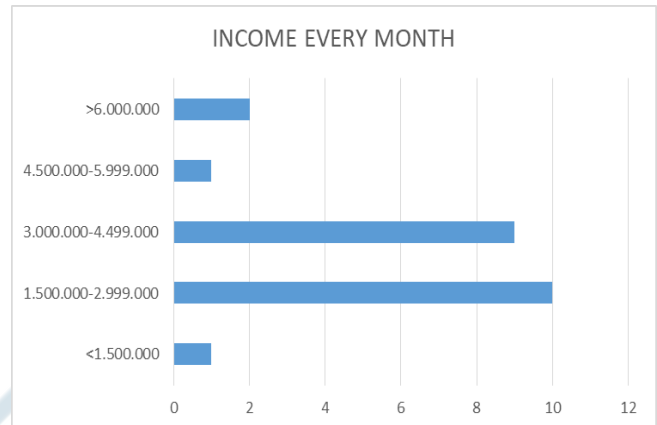


Fig 5. Distribution of data about income

From the graph above, the highest average salary is in the range of 1,500,000 – 3,000,000, namely 10 alumni. Furthermore, in the range of 3,000,000 – 4,500,000, there are 9 alumni. Then in the range of 4,500,000 – 6,000,000, there is an alumnus. Finally, two alumni who earn salaries above 6,000,000.

6) Entrepreneurial Position

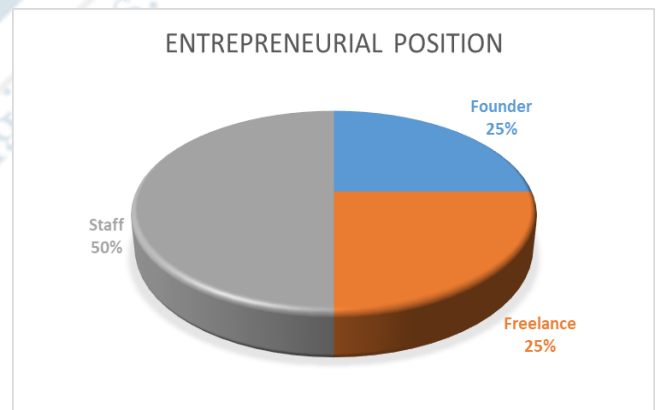


Fig 6. Percentage of entrepreneurial position

From the graph, there are two alumni who are positioned as freelancers in a business. Others have an alumni position as Founder and one other position as staff.

7) Business Entity Coverage

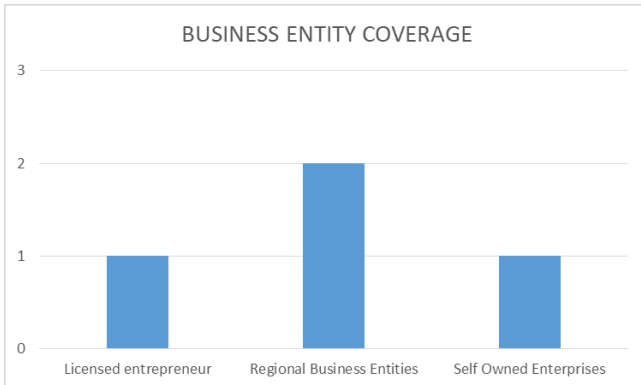


Fig 7. Distribution of data about business entity

From the graph, the scope of business entities run by alumni, as many as two alumni are entrepreneurs with coverage at the regional or local level. One alumnus is a licensed entrepreneur and the other is an unlicensed entrepreneur.

8) Net Profit Every Month

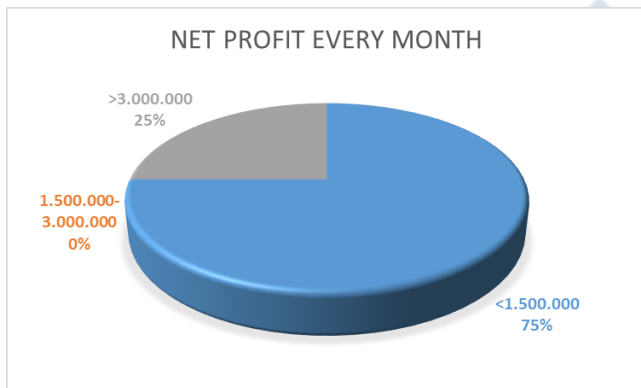


Fig 8. Percentage of net profit

Based on the graph, three alumni earn a monthly profit of under 1,500,000, and one alumni earns above 3,000,000 per month.

9) Continue Study

There is 1 alumnus who carries out advanced studies. Further studies were carried out at the Informatics Engineering Masters Program at Institut Teknologi Sepuluh Nopember. This alumnus began to continue their studies in the odd 2021 academic year.

10) Influence of Learning Methods For Alumni

Based on the picture above, in the Lecture, 5 alumni said they had a very big impact, 8 alumni said they had a big impact, and 14 alumni said they had a pretty big impact. For the Demonstration, 4 alumni said they had a very big impact, 9 alumni said they had a big impact, and 14 alumni said they had a pretty big impact. For Participation in research projects, 3 alumni stated that they had a very large impact, 8 alumni stated that they had a large impact, and 14 alumni stated that

they had a quite large impact. For Internships, 8 alumni said they had a very big impact, 4 alumni said they had a big impact, and 14 alumni said they had a pretty big impact. For Practice, 4 alumni said they had a very big impact, 8 alumni said they had a big impact, and 13 alumni said they had a pretty big impact. Furthermore, the Fieldwork of 5 alumni stated that they had a very large impact, 8 alumni stated that they had a large impact, and 13 alumni stated that they had a quite large impact. Finally, in the Discussion, 6 alumni said they had a very big impact, 7 alumni said they had a big impact, and 13 alumni said they had a big impact.

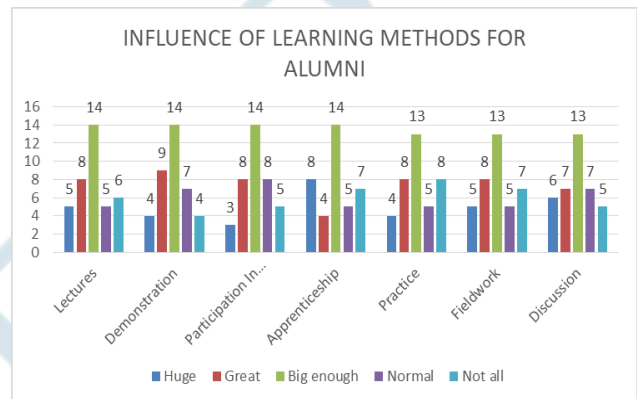


Fig 9. Distribution of data on the influence of learning methods

11) University Role

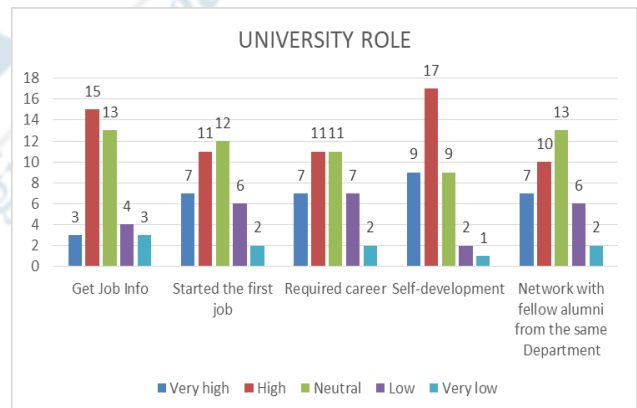


Fig 10. Distribution of data about the role of universities

Based on the picture above to get job info, 3 alumni stated that they gave a very high role, 15 alumni stated that they gave a high enough war, and 13 alumni stated that they were neutral. To provide first job experience, as many as 7 alumni stated that they gave very high roles, 11 alumni stated that they gave high enough war, and 12 alumni stated that they were neutral. In terms of career needs, as many as 7 alumni stated that they gave a very high role, 11 alumni stated that they gave a high enough war, and 11 alumni stated that they were neutral. In terms of Self-Development, as many as 9 alumni stated that they gave a very high role, 17 alumni stated that they gave a high enough war, and 9 alumni stated that they were neutral. Finally, for the Network with fellow

alumni, 7 alumni stated that they gave a very high role, 10 alumni stated that they gave a high enough war, and 13 alumni stated that they were neutral. This means that Unesa as a whole has a fairly high role for alumni.

V. CONCLUSION

Based on the results of the research and analysis that has been carried out, several conclusions can be drawn as follows:

1. The search results for alumni of the Informatics Engineering study program were 92.68% traced. Of the 41 alumni targets, 38 alumni data were successfully collected.
2. The results of the tracer study analysis of the Informatics Engineering study program, referring to the 9 criteria form, can be stated that 13 alumni (57%) got a job in less than 6 months. As many as 13 alumni (57%) stated that currently the field of work with a close, quite close, to very close educational background. Most of the PTI study program alumni work in East Java Province as many as 21 people, the rest are scattered in the provinces of DKI Jakarta and South Kalimantan.
3. The results of the UNESA questionnaire helped alumni in many ways including getting job information, starting their first job, needed careers, self-development, and communicating with fellow alumni.

This research only focuses on alumni tracking results through tracer studies and analysis of alumni tracking results. It is recommended further research is to measure user acceptance of the web tracer study. So that it can be input for the development of an online tracer study system, this includes providing facilities or space for alumni to provide input for study programs.

The next suggestion is regarding the tracer study questionnaire, you can add questions related to what competency certification graduates of the Informatics Engineering study program have. It can be budgeted for competency certification so that the Informatics Engineering study program students can take part for free. Current competency certification can support alumni competencies in the world of work in addition to diplomas and transcripts.

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