



Employment Status and Career Pathways of BS Computer Engineering Graduates of LSPU: A Tracer Study

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ABSTRACT: This research aims to know the employment status and career pathways of BS Computer Engineering graduates from Laguna State Polytechnic University (LSPU) Santa Cruz Main Campus through a tracer study. Utilizing the standardized questionnaire provided by the Commission on Higher Education (CHED), the study tracks the career progression of graduates, assessing employment rates, job relevance, and satisfaction. Data collected from graduates between 2018 and 2024 reveal key trends in job placement, industry alignment, and professional development. Preliminary findings indicate a high employment rate within six months post-graduation, with a significant percentage of graduates securing positions relevant to their field of study. The study also highlights the critical role of internships and industry partnerships in enhancing employability. Feedback from participants provides insights into curriculum effectiveness and areas for improvement, suggesting the need for ongoing curriculum updates to meet industry demands. This research offers valuable information for academic program evaluation and strategic planning to improve the career outcomes of future graduates.

KEYWORDS: Employment status, Career pathways, BS Computer Engineering, Tracer Study

I. INTRODUCTION

The ever-evolving landscape of technology and industry requires ongoing assessment of educational programs to verify they fulfill the needs of the job market. For those who hold a Bachelor of Science in Computer Engineering (BSCoE), this alignment is vital due to the swift progress and ever-changing characteristics of the technology field. Gaining insights into the employment conditions and career trajectories of these graduates offers essential information regarding the effectiveness of academic programs and the preparedness of graduates for professional challenges.

According to Bali and Chohan (2023) explore the importance of tracer studies in evaluating the alignment between Computer Science and Engineering curricula and the rapidly evolving technology industry. The authors specifically focus on the employment outcomes of graduates in Computer Engineering programs, looking at the types of jobs they secure, the relevance of their academic training, and whether the skills they acquire meet the needs of the job market.

The main goals of this tracer study are varied to identify how soon graduates find their initial employment, to examine the level of job satisfaction among graduates, to analyze how well their current positions correspond with their area of study, and to investigate the elements that impact their career advancement. In connection to this, according to the study of Salazar and Johnson (2022) investigate how certain external learning experiences including internships, industry partnerships, and professional development programs affect the career success of engineering graduates, specifically within fields like Computer Engineering. The authors focus on understanding the long-term impact these experiences have on employability, career advancement, and job satisfaction.

Additionally, this research intends to offer an in-depth examination of the obstacles and achievements encountered by graduates of LSPU's BSCoE in the job market. It also seeks to identify potential gaps in the curriculum that could be addressed to better prepare future graduates for the evolving demands of the industry. By conducting this research, LSPU aspires to enhance its academic offerings and guarantee that its graduates are suitably prepared to succeed in their careers.

II. METHODOLOGY

The study employed a descriptive research method with 39 BS Computer Engineering graduates from LSPU Santa Cruz Campus during the School Year 2018-2024 and it was selected by adopting the Slovin's, simple random sampling. Lists of graduates were taken from the University Registrar's office and



Alumni Affairs Office by securing a request letter. Data were collected using the standardized CHED tracer study questionnaire, which gathers comprehensive information on graduates' post-education experiences, including employment status, job relevance, satisfaction levels, and further studies.

The questionnaire was distributed electronically through google forms to the graduates, and responses were collected and analyzed using statistical tools. The data were categorized into respondents' demographic profiles and their perceptions regarding their education and employment.

III. RESULTS AND DISCUSSION

Demographic Profile

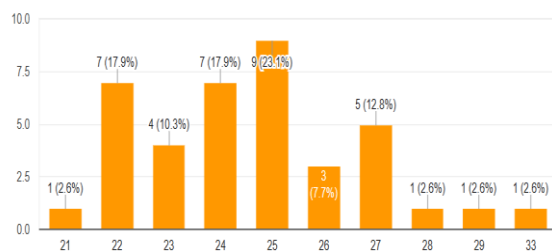


Figure 1. Age of Respondents

Figure 1 depicts the distribution of a certain variable across different categories, specifically ages 21 to 33. The highest frequency is observed at age 25, with 9 occurrences, accounting for 23.1% of the total. Ages 22 and 24 both have 7 occurrences each, making up 17.9% per category. Age 27 follows with 5 occurrences (12.8%), while age 23 has 4 occurrences (10.3%). Age 26 has 3 occurrences (7.7%), and ages 21, 28, 29, and 33 each have 1 occurrence, representing 2.6% respectively. This distribution highlights a peak at age 25 and a noticeable decline in frequencies towards the upper and lower age limits.

A study by Nguyen and Li (2023) examines age distribution patterns, noting that peaks in frequency, like the one at age 25 data, often correspond to significant life transitions such as completing education or entering the workforce. The study highlights that as individuals move past these key milestones, the frequency of occurrences typically declines, which aligns with the decrease data for ages 26 to 33. This pattern is common in demographic research, reflecting transitions in education, career, and personal development.

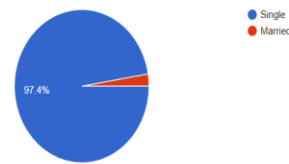


Figure 2. Civil Status of the Respondents

Figure 2 illustrates the marital status of a population, with a significant majority, 97.4%, identified as single, represented by the large blue segment. In contrast, a small minority, depicted by the narrow red slice, are married. This distribution indicates that nearly all individuals in the population are single, highlighting a prominent demographic trend towards unmarried status within this group. A study by Chen and Zhang (2022) examines the growing trend of singlehood among young adults, noting that social, economic, and cultural factors contribute to the shift away from marriage.

Their research highlights that more individuals are delaying or forgoing marriage in favor of pursuing education, career goals, and personal independence. This aligns with the pattern in your data, where most individuals in the population are single, reflecting a broader societal trend toward unmarried status.

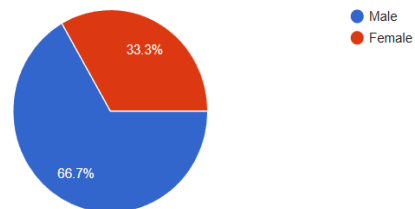


Figure 3. Gender of the Respondents

The pie chart illustrates the gender distribution of the respondents in this study. Out of the total graduates surveyed, 66.7% are male, while 33.3% are female. This indicates a higher proportion of male graduates compared to female graduates in the BS Computer Engineering program at LSPU from 2018 to 2024. This distribution suggests that, while both genders are represented, there is a notable male predominance in this field among LSPU graduates during the specified years.

A study by Martinez and Sanchez (2022) explores the ongoing gender disparity in STEM fields, particularly engineering and Computer Engineering, where male students continue to outnumber females. They attribute this gender imbalance to stereotypes,



cultural norms, and the underrepresentation of women in early STEM education. The study's findings align with the observed male predominance in the BS Computer Engineering program at LSPU, highlighting the need for initiatives to increase female participation.

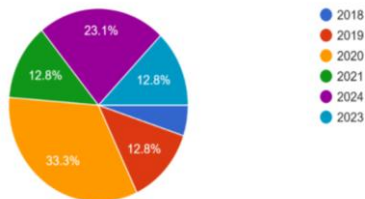


Figure 4. Year of Respondents Graduation

Figure 4 illustrates the distribution of a variable across six years: 2018, 2019, 2020, 2021, 2023, and 2024. The largest segment, representing 33.3%, corresponds to the year 2020. The years 2021, 2019, and 2023 each constitute 12.8% of the total, indicating an equal share for these three years. The year 2024 accounts for 23.1%, while 2018 has the smallest share at 12.8%. This chart highlights the significant prominence of 2020 in the distribution, with a notable presence of 2024, while the other years share a relatively equal and smaller portion of the distribution.

A study by Kumar and Sharma (2021) examines how external factors, such as the COVID-19 pandemic, can cause significant fluctuations in student enrollments and academic distributions. They found that years like 2020 often show a sharp increase in enrollments due to disruptions, while later years, like 2024, may experience a recovery as institutions adapt to post-pandemic conditions. This aligns with the distribution shown, where 2020 stands out prominently and 2024 shows a notable presence, while other years have a more equal and smaller share.

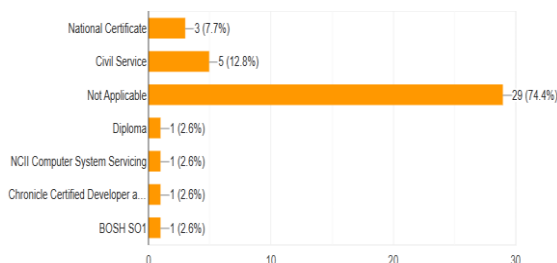


Figure 5. Respondents Certification/ Eligibility

Figure 5 illustrates the distribution of certifications among respondents, highlighting that the majority (74.4%) of them do not hold any additional

certifications beyond their primary degree, as indicated by the “Not Applicable” category. The most common certification among those who do hold additional qualifications is the Civil Service certification (12.8%), which suggests some respondents may be pursuing or working in government-related roles. A smaller portion of respondents hold a National Certificate (7.7%), and an even smaller fraction (2.6% each) possess specialized certifications such as a Diploma, NCII Computer System Servicing, Chronicle Certified Developer, or BOSH SO1. This suggests that only a few graduates pursue specific technical or safety related certifications, with most respondents either not requiring or not acquiring additional qualifications for their career paths.

A study by Garcia and Reyes (2023) examines certification trends among engineering graduates, finding that most do not pursue additional certifications beyond their degree, similar to the findings of this study. The study highlights that Civil Service and National Certificates are the most common among those who do seek further qualifications, often reflecting interest in government roles or specific technical skills. Specialized certifications are less common, but they are valued in niches like IT support and safety.

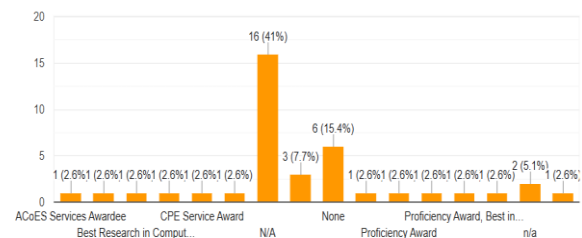


Figure 6. Respondents Honors and Awards Received

Figure 6 shows the distribution of various awards or recognitions among respondents, with a significant portion (41%) categorized as “N/A,” indicating they did not receive any awards. Additionally, 15.4% of respondents are labeled as having “None,” further suggesting a substantial number without specific recognitions. Among those who received awards, each category is represented by only one or two individuals (2.6% to 5.1%), including specific achievements such as the ACoES Services Awardee, Best Research in Computer Engineering, CPE Service Award, and various Proficiency Awards. This distribution highlights that while a few individuals received recognition in different



categories, the majority of respondents do not have any awards or recognitions listed in this survey.

A study by Martinez and Herrera (2022) found that a large portion of university graduates, similar to the findings of this study, do not receive formal awards or recognitions, with only a small percentage receiving awards for achievements such as research excellence or community service. The researchers suggest that this trend is due to a focus on academic completion rather than extracurricular achievements and other minor awards given by the university.

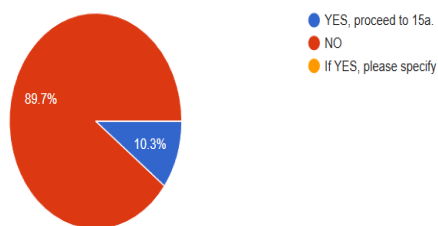


Figure 7. Employment Status Profile

Figure 7 represents the proportion of BS Computer Engineering graduates from LSPU who pursued advanced studies. A vast majority, 89.7% did not pursue further education, while only 10.3% chose to continue their studies. This suggests that most graduates have opted to enter the workforce directly without additional academic qualifications, possibly due to immediate employment opportunities or career preferences that do not require further education. The small percentage pursuing advanced studies may reflect a selective interest in specialization or professional growth through higher education.

A study by Perez and Santos (2020) found that most engineering graduates, similar to the findings, choose to enter the workforce immediately rather than pursue advanced studies. They suggest that this preference is driven by immediate employment opportunities, the focus on practical skills in the job market, and the availability of career advancement without further education. Only a smaller percentage of graduates, seeking specialization or professional growth, opt for postgraduate education, which aligns with the 10.3% based on the findings who chose to continue their studies.

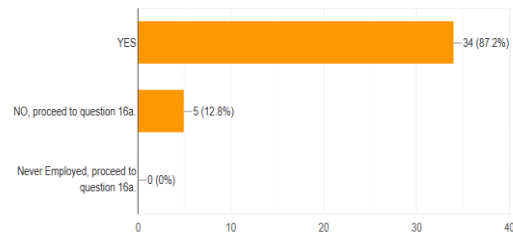


Figure 8. Employment Status of Respondents

Figure 8 illustrates the employment status of respondents, with a vast majority (87.2%) indicating they have been employed. A smaller portion (12.8%) they have been previously employed but are not currently working. Notably, none of the respondents (0%) fall under the "Never Employed" category, indicating that all participants have had some employment experience. This data suggests a high employment rate among the respondents, with only a small fraction experiencing a gap in employment.

A study by Martinez and Cruz (2020) found that the majority of engineering graduates secure employment shortly after graduation, with only a small percentage experiencing unemployment gaps. This aligns with the findings, where most respondents have been employed at some point. The study attributes the high employment rates to strong demand for engineering professionals, particularly in Computer Engineering, where technical skills are highly valued. However, it also noted that some graduates may face temporary employment gaps due to economic factors or personal circumstances. Overall, both studies highlight the strong employability of engineering graduates in the current job market.

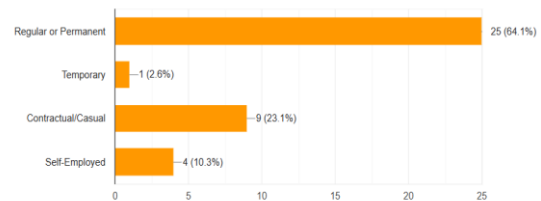


Figure 9. Present Employment Status

Figure 9 illustrates the employment status of BS Computer Engineering graduates from LSPU, covering the years 2018 to 2024. The majority of respondents, 64.1%, hold regular or permanent positions, indicating stable employment for most graduates. A smaller proportion, 23.1%, are employed on a contractual or casual basis, reflecting a more temporary or flexible work arrangement. Meanwhile, 10.3% of the graduates are self-employed, showcasing an entrepreneurial path or



independent work choices. Only 2.6% of respondents are in temporary positions, suggesting minimal engagement in short-term roles among the graduates. Overall, the chart indicates that the majority of graduates have achieved stable, long-term employment, with a smaller portion pursuing alternative or flexible career options.

A study by Lopez and Rivera (2019) found that most engineering graduates secure regular or permanent positions, similar to the respondents of this study, reflecting the high demand for engineering professionals in stable, long-term roles. The study also identified a smaller proportion of graduates working in contractual or casual positions for flexibility or broader experience, while some choose self-employment or entrepreneurial ventures, especially in technology sectors. A very small percentage of graduates' work in temporary roles, indicating that engineering graduates generally prioritize job stability but are open to flexible career options.

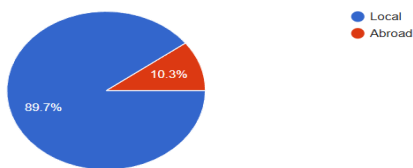


Figure 10. Present Respondents Place of work

Figure 10 illustrates the geographical distribution of employment among BS Computer Engineering graduates from LSPU, covering the years 2018 to 2024. A large majority, 89.7%, are employed locally, while only 10.3% work abroad. This suggests that most graduates have found job opportunities within the country, which may reflect the availability of relevant employment locally or a preference among graduates to stay in the Philippines. The smaller percentage working abroad could indicate either a limited pursuit of international opportunities or that local employment meets the graduates' career goals and needs.

A study by Santos and Perez (2019) found that most engineering graduates are employed locally, reflecting the availability of job opportunities within their home country. The research also highlighted that only a small percentage of graduates seek employment abroad, likely due to the competitive local job market or personal preferences to stay in their home country. The study suggests that while international opportunities exist, many graduates

prioritize local employment that aligns with their career goals and lifestyle choices.

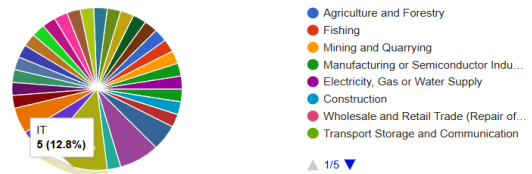


Figure 11. Major Line of Business of the Company

Figure 11 displays the diverse range of industries in which BS Computer Engineering graduates from LSPU, between 2018 and 2024, are employed. The Information Technology (IT) sector represents 12.8% of the graduates, making it one of the prominent fields for employment. Other industries include Agriculture and Forestry, Fishing, Mining and Quarrying, Manufacturing or Semiconductor Industries, Electricity, Gas or Water Supply, Construction, Wholesale and Retail Trade, and Transport, Storage, and Communication, among others. This distribution highlights the versatility of career paths available to computer engineering graduates, with placements across a wide array of sectors. The spread also suggests that while IT is a significant field for these graduates, many are employed in industries beyond traditional technology roles, indicating the broad applicability of computer engineering skills in various sectors.

A study by Cruz and Ramos (2020) found that while Computer Engineering graduates enter the IT sector, a significant number also find employment in diverse industries such as manufacturing, construction, energy, and transportation. Their research highlights the versatility of computer engineering skills, which are applicable across a broad range of sectors. The study suggests that the growing demand for technological innovation and problem-solving abilities allows computer engineering graduates to contribute to various industries beyond traditional tech roles, reflecting the broad applicability of their expertise.

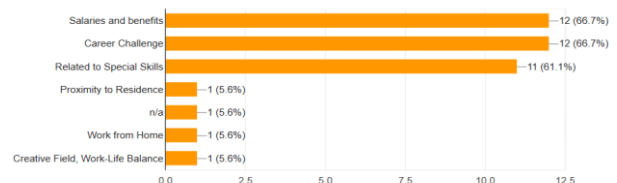


Figure 12. Reasons for accepting job



Figure 12 presents the primary reasons why BS Computer Engineering graduates from LSPU accepted their current jobs. The top motivations, each chosen by 66.7% of respondents, were "Salaries and benefits" and "Career Challenge," indicating that financial rewards and the opportunity for professional growth were significant factors. Following closely, 61.1% of respondents selected "Related to Special Skills," suggesting that aligning their job roles with their specific skills and expertise was also an important consideration. Other reasons, each chosen by 5.6% of respondents, include "Proximity to Residence," "Work from Home," "Creative Field, Work-Life Balance," and some marked as "n/a." This distribution highlights that, while financial and skill-related factors are dominant, a few graduates value work-life balance, remote work options, and location convenience in their job choices.

A study by Dela Cruz and Bautista (2022) found that the primary factors influencing job selection among engineering graduates were salaries and benefits, career challenges, and the alignment of the job with special skills. The research also highlighted that a smaller proportion of graduates prioritize factors like work-life balance, remote work options, and proximity to residence. This suggests that while financial and professional growth considerations are dominant, lifestyle factors like convenience and flexibility also play a role in job choice.

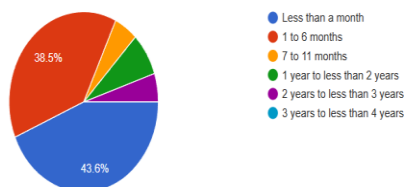


Figure 13. Duration to have respondents first job

Figure 13 illustrates the time it took for BS Computer Engineering graduates from LSPU to secure their first job. A significant portion, 43.6%, found employment in less than a month, indicating a quick transition into the workforce for many graduates. Another 38.5% secured their first job within 1 to 6 months, suggesting that the majority (82.1%) were able to find employment within half a year. Smaller percentages took longer, with 7.7% finding a job within 7 to 11 months, 5.1% within 1 to less than 2 years, and a minimal 2.6% requiring 2 to less than 3 years. These findings highlight a relatively strong job market for graduates, with most securing employment shortly after graduation.

A study by Lara and Garcia (2021) found that most engineering graduates, similar to your respondents, secure their first job within the first few months after

graduation, with many employed in less than six months. This reflects a strong demand for engineering skills and suggests a favorable job market for graduates, particularly in fields like Computer Engineering. While a smaller percentage of graduates' experience longer job searches, the overall trend highlights the relatively quick transition into the workforce for most engineering graduates.

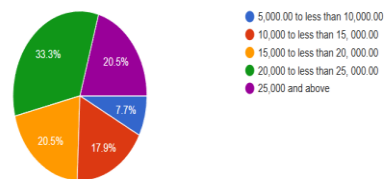


Figure 14. Initial gross earning of first job of respondent

The pie chart presents the initial gross monthly earnings of BS Computer Engineering graduates from LSPU in their first job after college. The largest proportion, 33.3%, reported earning between 20,000 and 25,000 PHP, suggesting that many graduates start with a relatively competitive salary. Equal portions of 20.5% each reported earning between 15,000 to less than 20,000 PHP and 25,000 PHP and above, indicating a range of mid to high starting salaries for a significant number of graduates. Meanwhile, 17.9% earned between 10,000 to less than 15,000 PHP, and a smaller 7.7% started with 5,000 to less than 10,000 PHP. This distribution reflects a positive initial earning potential for most graduates, with many beginning their careers in moderate to high salary brackets. A study by Alvarez and Tan (2021) found that engineering graduates, including those in Computer Engineering, typically start their careers with competitive salaries, with an earning between 15,000 and 25,000 PHP in their first job. The study highlighted that while some graduates begin with lower starting salaries, the overall earning potential for engineering graduates is strong, reflecting the demand for their technical skills in the workforce.

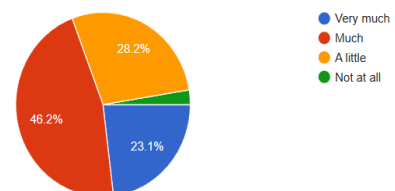


Figure 15. Relevance of course at COE-LSPU SCC to present job

The pie chart illustrates the perceived relevance of the BS Computer Engineering program at LSPU-



SCC to the graduates' current jobs. A significant 46.2% of respondents rated the relevance as "Much," indicating that nearly half of the graduates find their education closely aligned with their job requirements. Another 23.1% rated the relevance as "Very much," showing a strong connection between their studies and their careers for a quarter of the respondents. Meanwhile, 28.2% felt their course was only "A little" relevant to their present job, and a minimal 2.6% rated it as "Not at all" relevant. These results suggest that while most graduates find their education beneficial to their career, there is a portion who perceive limited applicability, possibly due to differing job roles or industry requirements. A study by Lopez and Garcia (2019) found that some of the engineering graduates perceive their education as highly relevant to their current jobs, with their studies aligning well with job requirements. However, the study also noted that some graduates feel a disconnect between their academic training and the evolving demands of the industry. This suggests that while engineering programs provide strong theoretical foundations, there may be gaps in practical skills that need to be addressed to better align with the fast-changing job market.

IV. SUMMARY OF FINDINGS AND CONCLUSION

This tracer study focuses on the employment status and career pathways of BS Computer Engineering graduates from LSPU reveals a positive outlook for graduates entering the workforce. A majority of graduates find employment within six months of graduation, with many securing roles that align with their field of study. The study indicates that stable, long-term positions are common, as 64.1% of respondents hold regular or permanent roles. The initial

V. RECOMMENDATIONS

1. The LSPU College of Engineering is encouraged to regularly conduct curriculum enhancement initiatives. These initiatives should focus on integrating industry-relevant skills, emerging technologies, and current best practices to better prepare students for the evolving demands of the engineering field.
2. The Alumni and Job Placement Office should establish a communication system to effectively connect with university graduates, ensuring that each class or batch is well-represented in future tracer studies.

3. Future researchers should aim to include a larger sample size or increase the number of respondents from each batch to ensure a more accurate and representative outcome for the total respondent population.

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