Tracer Study on Bachelor of Science in Electrical Engineering Graduates of Eastern Visayas State University in Ormoc City

Jereco Jims J. Agapito., John Albert A. Laboga., Jomar G. Navarro., Ruderico M. Endriano Jr., Antonio E. Naboya Jr., Rechel C. Grana., Phoebe S. Lanzaderas

Eastern Visayas State University, Ormoc City

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ABSTRACT

Tracking the whereabouts of graduates after completing their degree is essential because it provides concrete evidence of how effectively academic programs prepare students for the demands of the labor market. In the Philippines, the Commission on Higher Education (CHED) mandates the conduct of tracer studies to generate reliable data on graduate employability, program relevance, and institutional performance. Such studies serve as vital feedback mechanisms for higher education institutions, enabling continuous improvement and alignment with industry standards. In this context, the present study examined the employment outcomes of Bachelor of Science in Electrical Engineering (BSEE) graduates of Eastern Visayas State University–Ormoc City Campus from 2018 to 2020. A total of 223 respondents, purposively selected for having undertaken the same curriculum, participated in the study. Data were collected through a structured survey to assess employment status, licensure examination performance, job positions, and the perceived relevance of program outcomes to professional development. Both descriptive statistics and qualitative feedback were analyzed. Findings revealed that a considerable number of graduates had successfully passed the licensure examination and were highly employable across diverse industries. They occupied positions ranging from supervisors, designers, academicians, and staff engineers to technicians. Metro Manila emerged as the primary hub of employment, although a notable proportion were deployed overseas. Respondents recognized that the program significantly contributed to their lifelong learning capacity, critical thinking, problem-solving abilities, and communication skills. The study concludes that the BSEE program has effectively prepared graduates for professional practice. Recommendations include expanding hands-on exposure to modern electrical equipment, integrating industry-standard software, and introducing courses that build supervisory and managerial competencies to further strengthen employability.

Keywords: electrical engineering graduates, tracer study.

INTRODUCTION

Education in the Philippines is widely regarded as the primary pathway for upward social and economic mobility, serving as a cornerstone of national development. Recognizing this, the Commission on Higher Education (CHED) has identified education as a central strategy for reducing poverty, investing in human capital, and building global competitiveness. To operationalize these goals, CHED institutionalized graduate tracer studies as part of quality assurance and performance accountability in higher education institutions. Specifically, CHED Memorandum Order No. 29, s. 2013 includes graduate tracer outputs as performance indicators for state universities and colleges (SUCs), underscoring the importance of systematically tracking graduate outcomes to evaluate program relevance and industry alignment.

Tracer studies provide valuable evidence on employability, licensure performance, job placements, and the correspondence between acquired competencies and workplace requirements. Filipino scholars have emphasized this relevance across disciplines. Loquias (2015) highlighted how BS Electronics Engineering graduates' employability was strongly tied to curricular outcomes relevant to ICT and electronics sectors. Abela, Cuadra, and Sapan (2015) noted that teacher education graduates generally secured employment but exhibited gaps in communication and practical skills. Similarly, Dotong et al. (2016) revealed that engineering alumni were

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employable across industries yet identified curriculum areas needing enhancement based on industry feedback. Sanchez and Diamante (2017), employing the CHED Graduate Tracer Tool (GTT) for nursing graduates, demonstrated how standardized tracer instruments enhance the comparability of results across institutions.

Within this policy and empirical context, Eastern Visayas State University–Ormoc City Campus (EVSU-OCC), a public institution tasked primarily with delivering higher technological and professional programs, recognizes tracer studies as a vital feedback mechanism. The present study focuses on Bachelor of Science in Electrical Engineering (BSEE) graduates from 2018 to 2020, aiming to determine their employment status, licensure outcomes, and job placements, and to assess the relevance of program outcomes to workplace demands. The results are expected to serve as an evidence-based foundation for curriculum review and enhancement, particularly in providing greater exposure to modern electrical equipment, industry-standard software, and the development of supervisory and managerial competencies.

Objectives of the study

The primary objective of this tracer study was to evaluate the employment outcomes of Bachelor of Science in Electrical Engineering (BSEE) graduates of Eastern Visayas State University–Ormoc City Campus from 2018 to 2020. Specifically, it sought to:

1. Profile the graduates in terms of sex, civil status, and pursuit of higher education;
2. Determine the professional licensure distribution of graduates, including Registered Electrical Engineer (REE), Registered Master Electrician (RME), and dual registration (REE & RME);
3. Assess the employment status of graduates, distinguishing between employed, self-employed, and unemployed respondents;
4. Examine the geographical distribution of employment, both domestic and overseas;
5. Identify the job tenure and employment nature (permanent or contractual) of graduates;
6. Analyze the income distribution of employed graduates according to salary brackets;
7. Classify graduates' job positions such as supervisor, designer, academician, staff engineer, or technician; and
8. Determine the relevance of program outcomes to the graduates' professional development, particularly in lifelong learning, critical thinking, problem-solving, and communication skills.

The findings of this study are intended to serve as evidence for curriculum review and enhancement, particularly in strengthening technical, managerial, and industry-aligned competencies.

Significance of the Study

This tracer study is significant for several reasons. First, it directly responds to the Commission on Higher Education's (CHED) mandate requiring higher education institutions to conduct graduate tracer studies as part of their accountability and quality assurance mechanisms. By systematically documenting the employment outcomes of Electrical Engineering graduates, this research generates evidence that supports the national government's vision of education as a central strategy for human capital development, poverty reduction, and global competitiveness.

Second, the findings provide critical feedback for Eastern Visayas State University–Ormoc City Campus (EVSU-OCC) in evaluating the relevance of its Bachelor of Science in Electrical Engineering program. Data on employment status, professional registration, job positions, salary levels, and workplace distribution reveal how well the program aligns with industry needs and labor market expectations. Such evidence is indispensable for curriculum review, particularly in strengthening practical training, industry-standard software exposure, and managerial skill development.

Third, this study benefits policymakers and regulators by supplying baseline information for educational planning and workforce development. It highlights areas where higher education may address gaps in employability and where interventions may be needed to better prepare graduates for contractualization trends, global labor mobility, and evolving industrial requirements.

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Finally, the results serve as a valuable resource for students and prospective enrollees, offering realistic expectations of employment opportunities, licensure outcomes, and career trajectories in the field of Electrical Engineering. For employers, the study provides a profile of graduates' competencies and potential contributions, fostering stronger academe-industry linkages. In sum, this research contributes to evidence-based decision-making at institutional, regional, and national levels, ensuring that engineering education remains responsive, relevant, and globally competitive.

METHODS

This study employed a descriptive survey research design anchored on the Commission on Higher Education (CHED)-mandated graduate tracer framework, which serves as a standardized tool for assessing graduate employability and higher education outcomes in the Philippines (CHED, 2014). The respondents were 223 graduates of the Bachelor of Science in Electrical Engineering (BSEE) in Easetern Visayas State University Ormoc City Campus program from academic years 2018 to 2020, purposively selected since they were exposed to the same curriculum, ensuring comparability in academic preparation. Data were gathered using a structured survey questionnaire from the standard CHED questionnaire that captured quantitative information on demographic profiles, licensure status, employment status, job placement, salary, and job relevance. Descriptive statistical methods, including frequency, percentage, and mean, were employed to analyze demographic and employment-related variables (Creswell & Creswell, 2018). In addition, graphical presentations, such as bar charts and pie charts, were used to illustrate distributions in sex, place of employment, tenure, income, and job position. This methodology provided a systematic evaluation of the graduates' employability and generated reliable evidence to assess the alignment between academic training and industry demands, consistent with earlier tracer studies conducted in Philippine higher education institutions (Albina & Sumagaysay, 2020).

RESULTS AND DISCUSSION

Personal Profile of the Respondents

The distribution of respondents according to sex is presented in Figure 1. Out of the 223 BSEE graduates surveyed, one hundred sixty-three (163) or seventy-three percent (73%) were male, while sixty (60) or twenty-seven percent (27%) were female. This significant disparity highlights the continued male dominance in the field of electrical engineering, consistent with global trends in engineering education and practice where women remain underrepresented (UNESCO, 2017; Blickenstaff, 2005). The data further show that ninety (90) respondents, or forty percent (40%), were single, while one hundred thirty-three (133) or sixty percent (60%) were married. This marital profile suggests that a majority of respondents carry family responsibilities, which implies that stable employment is not only a matter of professional development but also an essential economic necessity (Philippine Statistics Authority, 2022). The findings affirm earlier tracer studies in Philippine higher education that underscore the role of socio-demographic characteristics—such as sex and civil status—in shaping employability outcomes and career trajectories of engineering graduates (Albina & Sumagaysay, 2020).

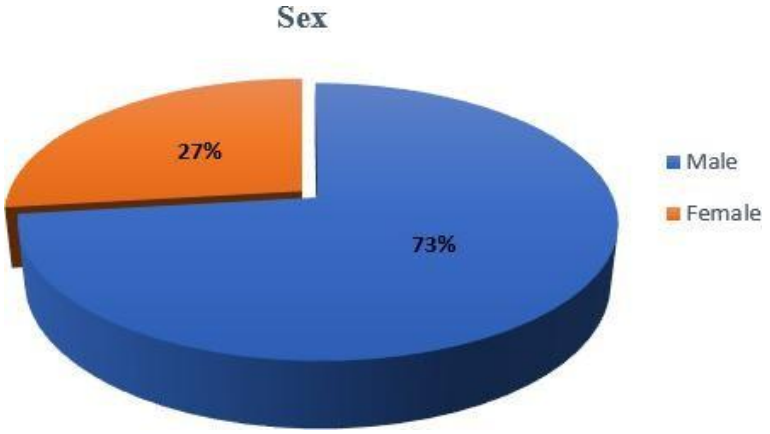

Figure 1: Sex

Professional License Distribution

Table 1 presents the distribution of the respondents' professional registration status. Out of the 223 BSEE graduates, a total of 105 (47.09%) had obtained at least one professional license, while 118 (52.91%) were not yet licensed. Among the licensed respondents, forty-five (45) or 20.18% were registered as Registered Electrical Engineers (REE), thirty-three (33) or 14.80% were Registered Master Electricians (RME), and twenty-seven (27) or 12.11% held both REE and RME credentials. These results indicate that the REE category accounted for the highest proportion of licensed graduates, followed by RME, while dual licensure (REE and RME) represented the smallest share.

The relatively higher proportion of REEs reflects the alignment of the BSEE program with the competencies and learning outcomes prescribed for the electrical engineering profession under the Philippine Electrical Code and the Professional Regulation Commission (PRC) licensure standards (PRC, 2021). Meanwhile, the presence of RMEs and dual-license holders underscores the varied professional trajectories available to graduates, where some pursue specialized technical roles requiring an RME license, while others expand their qualifications through dual certifications to enhance employability and career advancement opportunities. This trend is consistent with earlier studies highlighting professional licensure as both a quality assurance mechanism and a significant determinant of labor market competitiveness among engineering graduates (Albina & Sumagaysay, 2020; DOST-SEI & UP NISMED, 2019).

Table 1. Status of Professional License Distribution n = frequency

Licensed							**Not Licensed**	
REE		**REE & RME**		**RME**		**(%)**	**n**	**(%)**
n	**(%)**	**n**	**%**	**n**	**%**			
45	20.18	27	12.11	33	14.80	47.09	118	52.91

Employment Status

Out of the 223 respondents, 213 were employed at the time of the survey, while 10 were engaged in self-employment. The high proportion of employed graduates indicates that the Bachelor of Science in Electrical Engineering (BSEE) program effectively prepared students for labor market integration, as reflected in their alignment with the baccalaureate degree's intended outcomes. However, among the self-employed, further inquiry revealed that some chose entrepreneurial ventures unrelated to their field, highlighting the diverse career paths available to engineering graduates.

Figure 2 presents the distribution of respondents according to their current place of employment. Results show that the largest share, 100 graduates or 45%, were employed in Metro Manila, reflecting the region's concentration of industries and demand for technical professionals. This was followed by 87 graduates or 39% working within the Leyte Region, while 33 graduates or 15% were employed in other provinces outside Leyte. The smallest proportion, 26 graduates or 12%, were employed abroad. These findings underscore that employment opportunities for electrical engineers are most abundant in urbanized and industrial centers such as Metro Manila, which continue to serve as hubs for infrastructure development and technological innovation (Asian Development Bank, 2020). By contrast, employment within the Leyte Region, despite its industrial presence, remains comparatively limited, reflecting the uneven regional distribution of opportunities in the Philippine labor market (Philippine Statistics Authority, 2022).

Employment tenure, shown in Figure 3, further illustrates the respondents' work stability. A substantial share, 94 graduates or 42.15%, reported being employed for less than two years, followed by 82 graduates or 36.77% with two to five years of service. Meanwhile, 25 graduates or 11.21% had been employed for six to nine years, and 22 graduates or 9.87% had worked for ten years or more. The predominance of relatively short employment durations suggests that most graduates are either in the early stages of their careers or are frequently transitioning

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across companies to seek better opportunities. This pattern aligns with broader trends in engineering employment, where career mobility is often influenced by project-based contracts, overseas opportunities, and the dynamic demand for technical expertise (Albina & Sumagaysay, 2020; OECD, 2019).

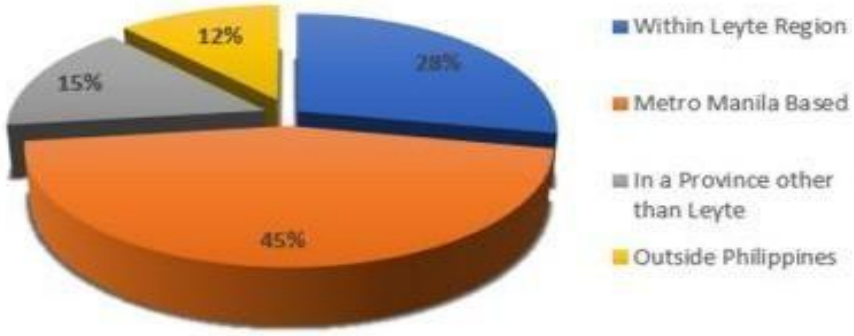

Figure 2: Place of Employment

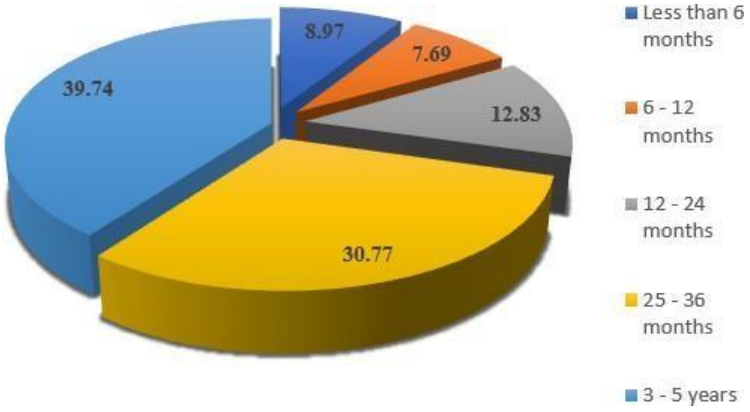

Figure 3: Number of Work Years

Salary

Figure 4 presents the monthly basic salary distribution of the respondents. Results show that the largest proportion, 34.62%, earned between ₱20,001–₱30,000, followed by 33.33% who received ₱30,001–₱40,000. Meanwhile, 20.82% reported salaries in the range of ₱40,001–₱50,000, 8.97% earned ₱50,001 and above, and only 2.56% were within the lowest income bracket of ₱10,001–₱20,000. These results demonstrate that most electrical engineering graduates achieved salaries above the national minimum wage level, reflecting the relatively high demand for engineering skills in the labor market (DOLE, 2022).

Analysis of employment status further revealed that among the 213 respondents employed at the time of the survey, 89 (41.78%) held permanent positions, while 124 (58.21%) were under contractual or temporary arrangements. This finding highlights the persistence of contractualization in the Philippine labor market, even among degree holders in technical fields such as engineering. Despite government efforts to regulate and limit contractual labor practices, studies continue to document the prevalence of non-regular employment across industries, often driven by firms' cost-efficiency strategies and flexible labor policies (Ofreneo, 2019; Philippine Statistics Authority, 2022).

The predominance of contractual employment among BSEE graduates underscores a significant labor market challenge: while graduates are employable and able to command competitive salaries, the lack of job security

poses implications for long-term career development and workforce stability. These findings reinforce the importance of aligning higher education not only with industry skill requirements but also with policies that safeguard employment security and ensure equitable labor practices (ILO, 2021).

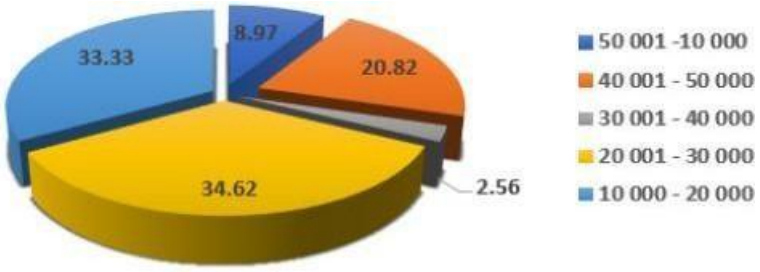

Figure 4: Monthly Basic Salary

Present Job Position

Figure 5 presents the distribution of respondents' present job positions. Results reveal that the overwhelming majority, 188 graduates or 88.46%, are employed as staff engineers, followed by 11 graduates (5.13%) as supervisors, 8 graduates (3.85%) as design engineers, and 5 graduates (2.56%) working as academicians. The dominance of staff engineering positions suggests that this role represents the most accessible and stable entry point for electrical engineering graduates, providing opportunities to apply technical expertise in the design, operation, and maintenance of electrical systems and components (ABET, 2020; IEA, 2021).

The presence of graduates in supervisory and design roles, although smaller in proportion, indicates pathways for professional growth and specialization. Meanwhile, a limited share entering academe reflects broader trends in engineering, where fewer graduates initially pursue teaching and research careers compared to industry employment (UNESCO, 2017). The distribution underscores how employability outcomes are shaped not only by curriculum preparation but also by industry demand, organizational structures, and the graduates' career stage. While most begin as staff engineers, career trajectories may later extend to project management, consulting, entrepreneurship, or research and development, consistent with global patterns of engineering workforce mobility (OECD, 2019).

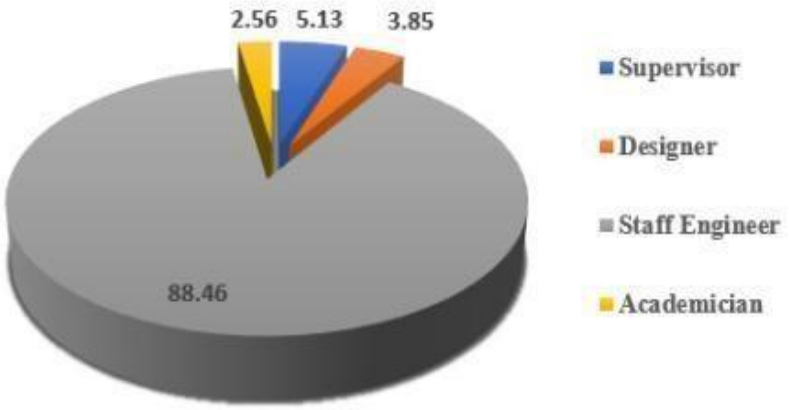

Figure 5: Present Job Position

CONCLUSION

The tracer study of BSEE graduates from 2018 to 2020 shows that they are generally highly employable, with more than 95% in the workforce and competitive monthly earnings ranging from ₱20,001 to ₱40,000 for the

majority. Nearly half have acquired professional licensure, with REEs comprising the largest group, reflecting the program's alignment with licensure outcomes.

Employment is concentrated in Metro Manila and the Leyte Region, highlighting the strong demand for engineers in industrial and urban hubs but also the limited absorptive capacity of regional economies. However, the high incidence of contractualization (58.21%) raises concerns about job security despite graduates' qualifications.

Most graduates begin their careers as staff engineers (88.46%), confirming this as the standard entry point in the profession, though smaller shares occupy supervisory, design, and academic roles. Overall, the findings affirm the program's relevance in producing employable graduates but underscore challenges in gender balance, employment stability, and regional opportunities, requiring stronger academe–industry linkages and policy support to ensure sustainable career pathways.

RECOMMENDATION

1. **Strengthen Academe–Industry Linkages.** Universities should intensify collaboration with industry partners through structured internship programs, industry immersion, and curriculum updates aligned with global standards. Such partnerships ensure graduates meet licensure requirements while gaining workplace-relevant skills (Albina & Sumagaysay, 2020; IEA, 2021).

2. **Address Employment Contractualization.** Policymakers and employers must revisit labor practices in the engineering sector. Although employability is high, the prevalence of contractual arrangements undermines long-term career stability. Adopting policies that promote **regularization and decent work standards** will help safeguard graduates' rights, in line with International Labour Organization (ILO) frameworks (ILO, 2021; Ofreneo, 2019).

3. **Promote Regional Employment Opportunities.** The concentration of engineering jobs in Metro Manila suggests a need for balanced regional development. Regional governments and industries should promote infrastructure and energy-related investments to create local opportunities and reduce talent migration. Incentivizing firms to expand outside urban centers can strengthen regional absorptive capacity (Asian Development Bank, 2020; PSA, 2022).

4. **Encourage Lifelong Learning and Professional Development.** Graduates should be supported in pursuing advanced certifications, postgraduate studies, and continuous training to remain competitive in a rapidly evolving labor market. Higher education institutions may establish **career development and alumni support centers** to facilitate lifelong learning (CHED, 2014; OECD, 2019).

5. **Foster Gender Inclusivity in Engineering.** With women still underrepresented in electrical engineering, targeted policies such as scholarships, mentorship initiatives, and advocacy campaigns should be implemented to increase female participation and retention in STEM fields. International frameworks emphasize gender inclusivity as essential for sustainable workforce development (UNESCO, 2017; Blickenstaff, 2005).

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