# NU CCIT Alumni Tracer Study: An Exploration of Graduate Employability and Evaluation of the Program Outcomes

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**Abstract:** This study aimed to evaluate the employability of National University graduates from the College of Computing and Information Technologies. The achievement of program outcomes and educational objectives was assessed. The study used a descriptive method and an online survey to collect data from 73 graduates who completed their studies between 2011 and 2019. Almost equal numbers of male and female respondents participated, with 89.04% of the graduates employed. Among them, 95.38% found jobs aligned with their courses. Notably, 67.69% of the respondents, mainly recent graduates, were in their first job. The findings highlight a high employment rate and a significant proportion of graduates securing jobs relevant to their fields, offering valuable insights for educators, policymakers, and career advisors to enhance future graduates' employability prospects. Most respondents obtained employment within six months, with a few taking longer than seven months. The graduates felt well-prepared in professional ethics, information systems, and lifelong learning. Interacting with diverse audiences was a perceived area for improvement. Resilience was identified as crucial in their profession. Encouraging more graduate participation and exploring various means of connecting with alumni is suggested. It is recommended that this study be carried out with as many graduates as possible to provide significant data and information as input to curriculum improvement for program enhancement and to address identified curriculum-related and graduate employability issues.

**Keywords:** NU CCIT; program outcomes; alumni; tracer study and graduate employability

## 1. INTRODUCTION

### *1.1 Background of the study*

In a fast-paced and technology-driven world, the mark of a successful academic program lies in its theoretical prowess and the real-world impact it bestows upon its graduates. As the landscape of the computer and data sciences continues to evolve, the National University's College of Computing and Information Technologies (CCIT) stands tall as a beacon of excellence, shaping future professionals equipped to meet the demands of the ever-changing industry. Step into the captivating realm of NU CCIT alumni tracer study, this compelling exploration unveils the essence of our graduates' triumphs and the profound influence of our cutting-edge program. With every alumnus, we embark on a journey to assess their employability, diving deep into their achievements and contributions to the global workforce.

Graduates are seen as the best evidence of the effectiveness of a program in terms of employability. Alumni are also vital to evaluating the program's relevance and existing curriculum in the current industry (Orejana & Resurreccion,

2010). Graduates are valuable evidence of how well an educational program prepares its students for the job market and contributes to economic growth. Different universities conduct annual tracer studies to produce quality graduates who contribute to economic growth. Also, to keep track of the graduate's employability and determine accountability (Malahay & Saing, 2018). A tracer study enables the institution of higher education to get information on possible deficits in a given educational program, which can serve as a basis for curricular improvement. It widens the perspective of the institution administrators, faculty, and students (Hazaymeh & Dela Peña, 2017). It emphasizes the significance of alumni as key individuals who can provide insights into the relevance of the program's curriculum in the context of the current industry. Their response and experiences serve as valuable feedback for improving the educational program. By gathering information on graduates' employability and identifying possible deficits in the program, higher education institutions can make data-driven decisions for enhancing their curricula and meeting the demands of the job market more effectively.

Computer science and information technology have experienced significant growth and evolution over the years, and the National University has been at the forefront of adapting to these changes. The journey began in 1990 when the university introduced the Bachelor of Science in Computer Science program under the College of Engineering. Since then, this program has continuously expanded and adapted to meet the rapidly changing demands of the computer-related industry. As the role of information technology has become more prevalent, the additional academic offering has resulted in the university offering the Bachelor of Information Technology Science (BSIT) degree in 2009. The university formed a new academic unit to handle better the two degree programs related to computer and data sciences; the College of Computer Studies was established in 2009. Continuously, the university develops professionals who will accommodate local and international industry demands. Evolving needs, emerging trends, and innovations led to the development of a new specialization program in 2012, a Bachelor of Science in Computer Science with a Specialization in Digital Forensics. In addition, the college began offering a Master of Science in Computer Science, a graduate degree program, in May 2015. This graduate degree program aimed to produce highly skilled and knowledgeable individuals who could contribute substantially to the ever-changing world of computing and information technologies. In 2018, the college was rebranded as the College of Computing and Information Technologies (CCIT). This renaming emphasized the college's commitment to staying at the cutting edge of technological advancements and information management.

Tracer studies in computing and information technology are underpinned by a wealth of existing research and publications at the global, continental, national, and local levels. Tracer studies have become a prominent research tool to investigate graduates' career outcomes and employability from computing and IT programs. Globally, such studies offer valuable insights into the trends and patterns of IT professionals' mobility, the impact of globalization on the IT job market, and

the alignment of educational institutions with the needs of the ever-evolving technology industry (Albina, 2020). Tracer studies allow for local evaluations of the IT workforce on a continental scale, including the demand for specific IT skills and the impact of cultural and geographical factors on career choices. At the local level, tracer studies play a crucial role in understanding how computing and IT programs align with the specific needs of local industries and businesses. A taxonomy of research gaps was put forth based on the two earlier models. There are seven main research gaps: the evidence gap, the knowledge gap, the practical-knowledge conflict gap, the methodological gap, the empirical gap, the theoretical gap, and the population gap (Miles, 2017).

This study aims to assess the employability of CCIT alumni as the basis for curricular enhancement and measure the attainment and impact of the graduates. To determine the employability of CCIT alumni for curricular enhancement and to evaluate their career achievements and outcomes. By gathering data from batch 2011–2019 graduates, the study aims to identify areas of improvement, measure program relevance, and ensure that the college continues to produce highly skilled professionals aligned with industry needs. The data furnished by the alumni participants are safeguarded and handled with the utmost confidentiality by the provisions of the Data Privacy Act of 2012 (RA 10173), as adhered to by NU-CCIT. This study represents a continuation of the tracer study conducted among the graduates from 2011 to 2018. It seeks to identify potential areas of improvement, assess the relevance of existing programs, and propose recommendations to ensure that the college continues to produce highly skilled professionals who can address the ongoing and future needs of the industry. This study is situated within the context of CCIT's continual development and mission to advance computing and information technologies.

### *1.2 General Objective of the Study*

The general objective of this study was to collect relevant information to assess the employability of College of Computing and Information Technologies graduates from 2011 to 2019.

### *1.3 Specific Objectives*

Specifically, this tracer study aims to:

1. Describe the respondents in terms of age, sex, civil status, city of residence, program taken, and year graduated.
2. Determine the extent of preparedness of graduates in the workplace and the extent of program outcomes attainment as perceived by the respondents.
3. Identify which Nationalian core value they find most significant in their profession.

*1.4 Scope and Limitation of the Study*

The respondents of this study are only limited to graduates of batch 2011–2019 of the College of Computing and Information Technologies. This includes the programs Bachelor of Science in Computer Science, Bachelor of Science in Computer Science with Specialization in Digital Forensics, and Bachelor of Science in Information Technology. A limitation of this tracer study is that the sole tool used for gathering relevant information was an online survey created using Microsoft Forms, distributed through social networking and media sites, and personal networks, and the data collection period also spanned two months, specifically from October to November 2019. The main focus of the study is to assess the employability of National University's College of Computing and Information Technologies (CCIT) graduates. It aims to identify potential areas of improvement, measure the relevance of existing programs, and propose recommendations to enhance the curricula. The ultimate goal is to ensure that CCIT continues to produce highly skilled professionals who can meet the demands of the ever-changing technology industry.

*1.5 Significance of the Study*

As National University continues to expand and provide graduates who can positively contribute to the growth and development of society, conducting a tracer study is relevant for the college to determine factors that significantly impact graduates' employability and determine the program's relevance to the demands of the local and international industry. This study is significant to provide valuable inputs to develop and improve the curriculum and programs offered by the college.

The significance of conducting a tracer study at the National University lies in its potential to yield specific findings that benefit various stakeholders. The study can identify which programs have the highest employability rates for students, helping them make informed decisions about their career paths. Teachers and administrators can use the findings to enhance teaching methodologies and refine curricula to align better with industry demands, resulting in a more relevant and effective education. Industry partners can gain insights into the strengths and weaknesses of graduates, enabling them to collaborate with the university to tailor education to meet workforce needs. Curriculum developers can incorporate data-driven changes based on the study's results, ensuring the college's offerings stay current and competitive. Overall, the study's outcomes would foster a more symbiotic relationship between the university and the workforce, leading to better-equipped graduates who can positively contribute to society's growth and development.

## 2. METHODOLOGY

This is a descriptive study utilizing the survey method to gather data. The research methodology in this tracer study is shown in Figure 1.


**Figure 1. Tracer Study Research Methodology**

*2.1 Developing Research Instrument*

The survey questionnaire was built upon various existing tracer studies questionnaires. Researchers only selected information relevant to the objectives of the study. Items that described the respondent more than necessary, such as complete birth date and address, were excluded from the survey. The study utilized a convenience sampling method to gather data from CCIT alumni. Convenience sampling involves selecting participants based on their easy accessibility or availability to the researchers. Additionally, questions measuring graduates' attainment of the program outcomes and program educational objectives were included in the survey. The online survey form was created using Microsoft Forms. The online survey form takes 6–7 minutes of the respondent's time and can be found at this link: https://bit.ly/CCITAlumni.

The survey questionnaire underwent content validation by experts in the field to ensure its validity. Experts reviewed the questions, provided feedback, and made necessary revisions until the instrument was considered suitable for data collection. This process enhanced the credibility and reliability of the survey, strengthening the validity of the research findings.

*2.2 Data Gathering*

Faculty members of CCIT distribute the online survey form by posting on various social media and networking sites such as Facebook, Twitter, and Instagram. The faculty members' personal network (word of mouth) also shares the survey link. The data-gathering phase is conducted for two months, from October to November 2019. There were 73 respondents in this study. Table 1 shows the distribution of respondents according to the year they graduated (see Results and Discussions). The appointed alumni coordinator is authorized to process data; no names are mentioned in the study.

*2.3 Data Analysis*

The alumni coordinator analyzed the data based on the frequency and percentage of different aspects of the survey. Relevant information was analyzed to meet the objectives of the study.

## 3. RESULTS AND DISCUSSION

This study assesses graduates' employability and program outcomes attainment from the College of Computer and Information Technology (CCIT) at the National University. The research instrument, a survey questionnaire, was developed based on existing tracer studies questionnaires, with relevant items selected to address the study's objectives. The survey excluded personal information beyond the necessary and focused on measuring graduates' attainment of program outcomes and educational objectives. The online survey was distributed using various social media platforms, such as Facebook, Twitter, and Instagram, by CCIT faculty members and through personal networks. Data gathering occurred over two months, from October to November 2019, with 73 respondents participating in the study. This section presents the results and discussions of the survey data, analyzing factors such as employment status, industry trends, income levels, preparedness for the workplace, and the significance of core values in their professional careers. The findings shed light on the current state of CCIT graduates in the job market and provide valuable insights for curriculum development and enhancement, making tracer studies an essential tool for continuous improvement within the college.

Table 1 shows that most of the respondents to the survey were fresh graduates. Most respondents graduated recently and have at most two years of experience working in the industry.

Table 1. Distribution of Respondents

| Year Graduated | Frequency | Percentage |
|---|---|---|
| 2011 | 1 | 1.37 |
| 2013 | 2 | 2.74 |
| 2014 | 1 | 1.37 |
| 2015 | 3 | 4.11 |
| 2016 | 3 | 4.11 |
| 2017 | 15 | 20.55 |
| 2018 | 15 | 20.55 |
| 2019 | 33 | 45.20 |
| **Total** | **73** | **100** |

Table 2. Sex of Respondents

| Sex | Frequency | Percentage |
|---|---|---|
| Male | 36 | 49.32 |
| Female | 37 | 50.68 |
| **Total** | **73** | **100** |

As shown in Table 2, there is an almost equal number of respondents in terms of sex, with 36 males and 37 females. This indicates that in this era of technology becoming a big part of society, both males and females are inclined to take computer-related courses.

Table 3 shows the employability status of the graduates. Based on the responses, 89.04% of the graduates are currently employed, 1.37% is self-employed and work as a freelance graphic designer, and the remaining 9.59% still need to be employed. Two respondents did not look for a job. One respondent is still in training, one is just waiting for a job offer, one is taking advanced studies, one has a family concern, and one lacks work experience. Twenty or 27.69% of the graduates are employed in known IT companies such as Accenture, Inc., TrendMicro, SM Prime Holdings, and Tata Consultancy Services.

Table 3. Employment Status of Graduates

| Year Graduated | Employed | | Self-Employed | | Not Yet Employed | | Total |
|---|---|---|---|---|---|---|---|
| | Frequency | % | Frequency | % | Frequency | % | |
| 2011 | 1 | 100 | 0 | 0 | 0 | 0 | 1 |
| 2013 | 2 | 100 | 0 | 0 | 0 | 0 | 2 |
| 2014 | 1 | 100 | 0 | 0 | 0 | 0 | 1 |
| 2015 | 3 | 100 | 0 | 0 | 0 | 0 | 3 |
| 2016 | 3 | 100 | 0 | 0 | 0 | 0 | 3 |
| 2017 | 15 | 100 | 0 | 0 | 0 | 0 | 15 |
| 2018 | 14 | 93.33 | 0 | 0 | 1 | 6.67 | 15 |
| 2019 | 26 | 78.79 | 1 | 3.03 | 6 | 18.18 | 33 |
| Total | 65 | 89.04 | 1 | 1.37 | 7 | 9.59 | 73 |

As shown in Table 4, 95.38% of the employed graduates have jobs related to their courses. Course-related career includes Team Lead, Associate Software Engineer, Cyber Security Analyst, Quality Assurance, IT Support, and Mobile and Full Stack Developers. Non-related jobs include Education Counselor, Admissions Associate, and Recruitment Onboarding Assistant Manager.

Table 4. Frequency of Graduates with Course-Related and Non-Course-Related Jobs

| | Frequency | Percentage |
|---|---|---|
| **Course-related job** | 62 | 95.38 |
| **Non-course related job** | 3 | 4.62 |

In Figure 2, it can be seen that most respondents are currently employed in the BPO industry, followed by other industry types like outsourcing companies, then Software/IT companies, including start-up companies. Figure 3 shows the gross monthly income of the respondents. The chart shows that 51% of the respondents have a gross monthly income of Php15,001 – Php25,000, and 28% have Php25,001 – Php35,000 as their monthly gross income. Only 4% of the respondents have monthly salaries higher than Php50,000.

A total of 67.69% of the respondents answered that their current job is their first job because most of the respondents are fresh graduates. Regarding the time the graduates waited to land a job, 38.46% took less than a month, 50.77% took 1–6 months, and 10.77% took seven months and beyond to land a job.

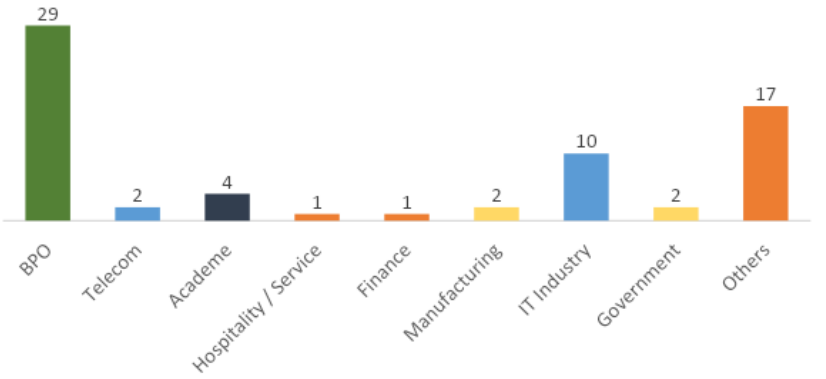


**Figure 2. Industry Type of Current Employer**

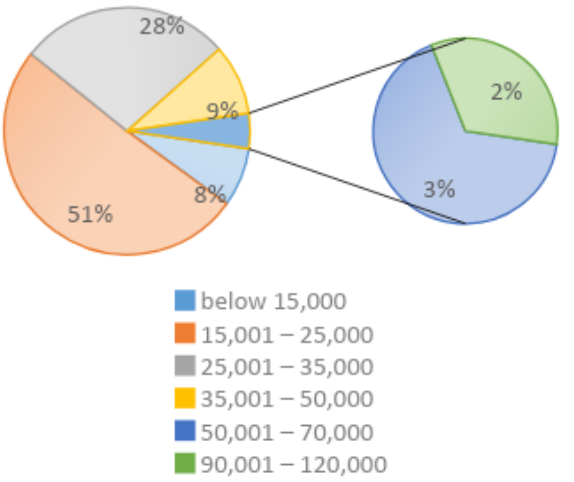


**Figure 3. Gross Monthly Income of Graduates**

Regarding program outcomes, graduates were asked to rate the extent to which the National University has prepared them for the workplace in different areas and to what extent they achieved the program's educational objectives. Figure 4 shows the ratings of the graduates in their level of preparedness in other areas. 58.9% of the respondents said they are moderately prepared to apply knowledge in solving computing problems, 21.9% said they are highly prepared, 16.4% said they are slightly prepared, and 2.7% said they are poorly prepared. In defining computing requirements appropriate to solve complex computing problems, 57.5% said they are moderately prepared, 17.8% said they are highly prepared, 21.9% said they are slightly prepared, and 2.7% said they are poorly prepared. In designing, developing, and evaluating information systems to meet desired needs, goals, and constraints, 56.2% said they are moderately prepared, 28.8% highly prepared, 13.7% slightly prepared, and 1.4% poorly prepared. Regarding practical tools and techniques necessary for the profession, 58.9% of the respondents said they are moderately prepared, 20.5% slightly prepared, 19.2% highly prepared, and 1.4% poorly prepared. In functioning effectively with a range of audiences, 61.6% said they are moderately prepared, 17.8% highly prepared, 16.4% slightly prepared, and 4.1% poorly prepared. In applying the appropriate professional, ethical, and legal practices in one's profession, 41.1% said they are highly prepared, 45.2% said they are moderately prepared, and 13.7% said they are slightly prepared. In engaging in independent and life-long learning as part of professional development, 31.5% were highly prepared, 52.1% were moderately prepared, and 16.4% were slightly prepared.

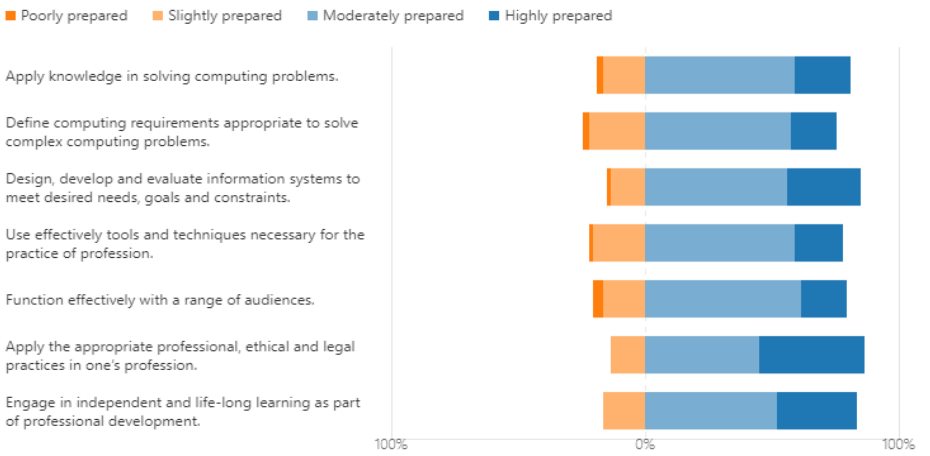


**Figure 4. Ratings of Graduates on the Level of Preparedness in the Different Areas in the Workplace**

A total of 47.9% of the respondents said they moderately achieved applying computing and information technology principles in analyzing and solving computing problems, 26% said it was highly achieved, and 26% said it was slightly achieved. 57.5% of the respondents moderately achieved exhibiting a high

degree of professionalism and ethical standards in the practice of the profession, 28.8% said it was highly achieved, and 12.3% said it was slightly achieved. 57.5% of the respondents moderately engaged in independent and life-long learning in computing and information technology, 28.8% said it was highly achieved, and 12.3% said it was slightly achieved. These data are visualized in Figure 5.

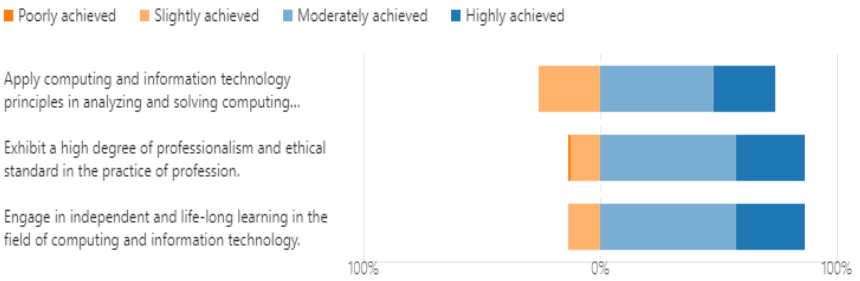


**Figure 5. Program Outcomes Attainment**

Five Nationalian core values exist when these respondents are still students: Compassion, Industrious, Respect, Resilience, and Trustworthy. Among these core values, 36% of the respondents said Resilience is the most significant core value in their profession, followed by Respect with 23%, Compassion with 16%, and Industrious and Trustworthy with 12% and 12%, respectively, as shown in Figure 6.

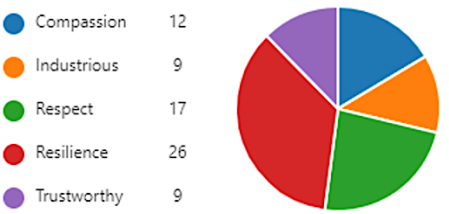


**Figure 6. What Graduates Found Most Significant in their Profession**

## 4. CONCLUSIONS AND RECOMMENDATIONS

In this tracer study, there are 73 respondents. Data analysis shows that a high percentage of the graduates were employed with course-related jobs. Based on the study, it is evident that most of the graduates took at least six months or more to land a job, which aligns with the fact that many of the respondents are fresh graduates. Despite this, the graduates have a fine salary range and work in well-known IT companies. These findings highlight the strong demand for the programs offered by the institution in the industry. It should also be noted that most graduates feel they are highly prepared by the university with professional ethics in the workplace. The majority felt the university moderately prepared them for

other key areas in the workplace. For most graduates, resilience is their profession's most significant core value.

Based on the study's findings, most respondents were recent graduates, with most having at most two years of work experience in the industry. Both male and female graduates were inclined towards computer-related courses, reflecting the growing interest in technology-related fields among both genders. The study also revealed a high employability rate among the graduates, with 89.04% currently employed in various industries, predominantly in the BPO sector. Most of the employed graduates had jobs related to their courses, such as software engineering, cybersecurity, and IT support. The graduates rated their preparedness level in different workplace areas moderately, with notable strengths in applying knowledge to solve computing problems and defining computing requirements. However, there is room for improvement in other areas, such as independent and lifelong learning. The core value of resilience emerged as the most significant in their profession, highlighting its importance in their careers.

The strong employability rate and the correlation between the graduates' jobs and their courses indicate that the institution successfully educated its graduates for the job market. To ensure the graduates' long-term success in the quickly developing field of technology, ongoing efforts are required to improve their abilities in specific areas and encourage lifelong learning. The university could enhance the curriculum to develop further subjects where graduates needed more preparation. Additionally, fostering a culture of lifelong learning and professional growth might be promoted to provide graduates with the ability to adjust to the industry's always-shifting requirements.

## 5. ACKNOWLEDGMENTS

The authors would like to express their profound gratitude to those who were instrumental in this research endeavor. First and foremost, the researchers extend their utmost appreciation to the almighty God for bestowing them blessings and knowledge during this study and giving them the strength to bring it to a close. This project would not have been possible without the help of friends, families, and colleagues. With their fantastic guidance, support, and insights, the authors achieved completion in this study. Lastly, the authors thank their institution, National University, Philippines, for its utmost support and allowing them to experience such a research endeavor.

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