
EMPLOYMENT OUTCOMES, SKILLS DEVELOPMENT, AND SENTIMENT ANALYSIS OF BSIT GRADUATES (2015–2023)

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Abstract

This study investigates the employment outcomes, skill development, and experiences of Bachelor of Science in Information Technology (BSIT) graduates from a private college in Southern Negros, Philippines, spanning the years 2015 to 2023. Utilizing a mixed-method approach, the research integrates survey data and advanced computational sentiment analysis to assess program effectiveness and graduate trajectories. The findings reveal strong employment outcomes, with 86% of graduates employed primarily in local IT sectors, including government services and technical support roles. Graduates demonstrated strengths in adaptability, teamwork, and foundational computer skills; however, gaps were identified in entrepreneurial thinking and formal communication. Sentiment analysis using the Text2Data analytics tool revealed highly favorable perceptions, with a sentiment score of +0.98 and an emotional engagement score of 7.78, reflecting the intensity of graduates' feedback. While graduates expressed gratitude for their academic experiences, they also identified areas for improvement, such as aligning the curriculum with evolving industry standards, enhancing instructor engagement, and providing clearer career pathways. Key recommendations include integrating advanced topics like artificial intelligence and cybersecurity to meet industry demands, fostering community-centered capstone projects, and establishing strategic industry partnerships to enhance experiential learning. By addressing skill gaps and incorporating actionable feedback, this study offers a comprehensive evaluation of the BSIT program. It provides strategies to align its educational offerings with global industry requirements while supporting graduates' long-term career success.

Keywords: Curriculum enhancement, Graduate employability, Information technology education, Sentiment analysis, Skill development.

INTRODUCTION

The rapid transformation of global technological landscapes has fundamentally reshaped the educational paradigms for information technology programs. Tracer studies of graduates provide valuable insights into employment outcomes, career trajectories, and the overall impact of academic programs (Balingbing, 2014; Daminar *et al.*, 2022). These comprehensive assessments offer nuanced insights into graduate trajectories, skill development, and labor market alignment, enabling educational institutions to implement strategic improvements (Al-Haimi *et al.*, 2024; Basabe *et al.*, 2023).

In the Philippine context, information technology education has undergone significant evolution, driven by the country's emerging role in the global digital economy (Funmilayo Aribidesi Ajayi & Chioma Ann Udeh, 2024). This study focuses on BSIT graduates from Fellowship Baptist College, spanning 2015 to 2023. It is the first such study conducted in the institution to comprehensively evaluate employment trajectories and skill development within this complex technological landscape (Bucăța & Tileagă, 2024).

Recognizing the intricate relationship between academic preparation and professional success, this research aims to offer a holistic assessment of BSIT graduate outcomes. By integrating quantitative employment data with computational sentiment analysis, the study seeks to generate actionable insights for curriculum enhancement and strategic educational planning (Basabe *et al.*, 2023).

The primary objectives of this study are:

1. Assess the employment outcomes of BSIT graduates.
2. Evaluate the self-perceived development of technical and soft skills among graduates.
3. Conduct sentiment analysis and thematic analysis on graduates' feedback.
4. Provide data-driven recommendations for enhancing the curriculum to align with industry needs and global technological advancements.

LITERATURE REVIEW

In response to the global digital economy, information technology education in the Philippines has changed, highlighting the necessity of flexible academic curricula to accommodate new industrial demands and technological disruptions (Aithal & Kumar Maiya, 2023). Bridging skill gaps between academic preparation and professional expectations has been made possible in large part by Bachelor of Science in Information Technology (BSIT) programs (Bucăța & Tileagă, 2024).

For educational institutions, the technological ecology poses a variety of complex issues. Continuous curriculum improvement is necessary because to the rapid improvements in artificial intelligence, cybersecurity, cloud computing, and data analytics (Datuk & Ismail, 2024). Furthermore, the acceleration of digital change brought about by the COVID-19 epidemic emphasizes the significance of adaptable and industry-aligned educational approaches (Al-Haimi *et al.*, 2024; Funmilayo Aribidesi Ajayi & Chioma Ann Udeh, 2024).

Diamante and Sanchez (2017) stress that the Philippines Commission on Higher Education (CHED) requires Higher Education Institutions (HEIs) to conduct graduate tracer studies. These studies are essential for assessing graduate employability and aligning university programs with industry needs. International and local research highlights the critical need for programs that respond to technological advancements and labor market requirements, ensuring graduates are prepared for evolving professional environments.

RESEARCH METHOD

The research adopted a mixed-methods approach, strategically integrating quantitative and qualitative data collection techniques with computational analysis. The mixed-methods design allows for a more nuanced exploration of complex educational phenomena, addressing the limitations inherent in single-method research approaches. By combining statistical analysis with sentiment-based insights, the study provides a robust and multi-dimensional perspective on graduate trajectories.

Quantitative Component

The quantitative data collection involved an online survey questionnaire developed and administered to BSIT graduates from AY 2015 to AY 2023 using Google Forms (Nardi, 2018). The survey instrument was a modified CHED Tracer study instrument, and other portions related to soft

and technical skills were adapted from previous BSIT tracer studies (e.g., Zabala *et al.*, 2020; Natividad *et al.*, 2021). The survey included questions to address the cited research objectives. The quantitative data collected from the survey was analyzed using descriptive statistics such as frequencies, percentages, and measures of central tendency (Creswell & Creswell, 2018). This allowed for the summation of graduate demographics, self-perceived soft skill growth, and self-reported IT ability.

Qualitative Component

Boyatzis' Thematic Code Development approach and computational sentiment analysis were combined to assess the narrative input from graduates. Sentiment analysis using the Text2Data analytics platform allowed for systematic classification of qualitative replies and accurate measurement of emotional intensity (Text2Data, 2023). In order to provide a systematic approach to identifying important topics, thematic codes were developed and improved concurrently using Boyatzis' (1998) method. By combining these approaches, processing qualitative data was guaranteed to be impartial and dependable, reducing the possibility of interpretative biases and facilitating systematic and scalable analysis.

RESULTS AND DISCUSSION

Employment Outcomes

The pie chart in Figure 1 depicted the employment status of BSIT graduates, showing that 86% of the respondents are currently employed, while 14% are not employed. The employment rate among BSIT graduates is notably high, with 89% of the respondents reporting that they are currently employed.

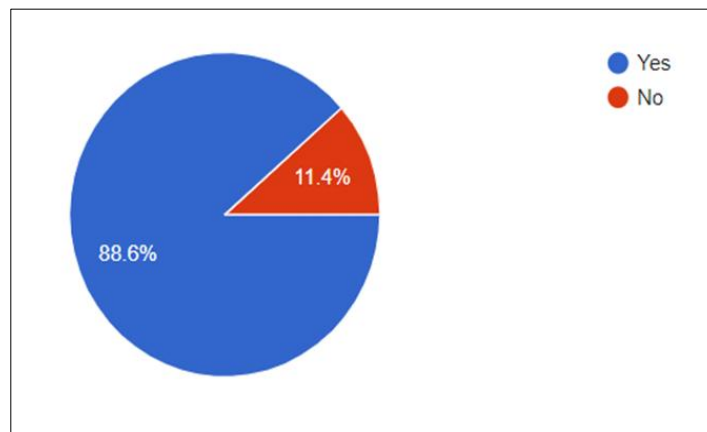


Figure 1. Current employment status of graduates

This suggests that the majority of graduates have successfully transitioned into the workforce, which reflects positively on the effectiveness of the BSIT program in preparing students for employment. The 11% of graduates who are not employed may include those who are pursuing further studies, taking a break, or facing challenges in finding employment.

The chart in Figure 2 shows that the majority of BSIT graduates (76.5%) are employed locally, a significant minority of 11.8% of graduates are employed in a foreign country. A smaller portion, representing 8.8%, are self-employed and lastly, 5.9% of the graduates are currently unemployed.

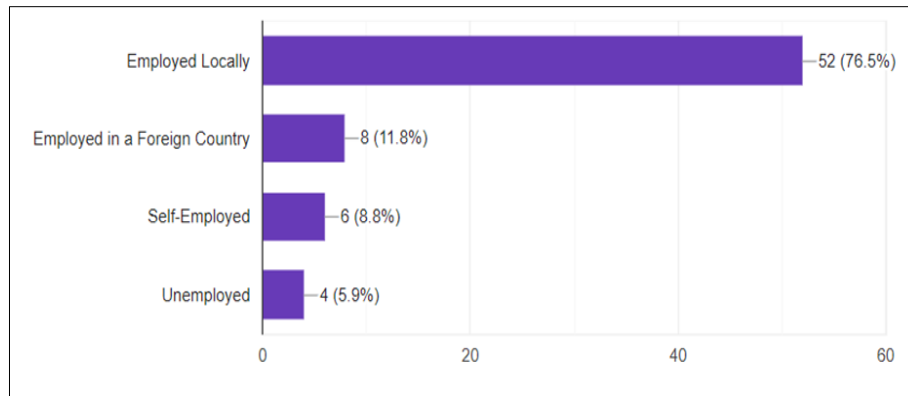


Figure 2. Local, foreign, self and unemployment status of graduates

The findings of the BSIT Tracer Study from 2015 to 2023, as shown in the employment distribution, align with trends observed in similar studies conducted within the Philippines. Consistent with findings from previous studies, a substantial portion of graduates secured local employment. For instance, Resurrection and Adanza (2015) reported a similarly high percentage of Information Technology (IT) graduates finding employment in fields directly related to their degree. This supports the idea that IT-related courses, such as BSIT, have a strong alignment with the current job market in the Philippines, offering ample employment opportunities for graduates.

The data presented in Figure 3 reveals that the majority of BSIT graduates fall within the lower salary brackets, with 38.8% earning below ₱15,000 per month, followed by 26.9% earning between ₱15,000 and ₱24,999. This reflects the reality that entry-level salaries for BSIT graduates often begin on the lower end of the pay scale in the Philippines, as similarly identified in tracer studies across various academic institutions.

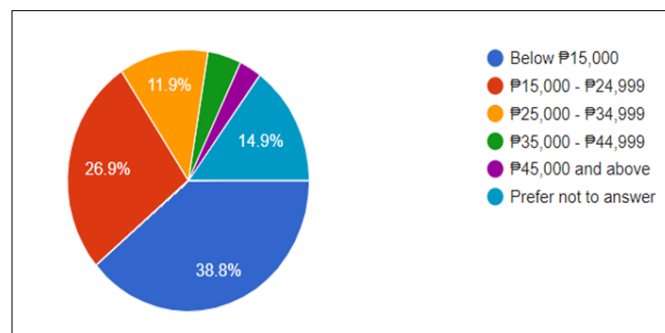


Figure 3. Graduate income brackets

This trend is consistent with findings by Teves and Templo (2017), who noted that many fresh graduates, especially those from IT-related programs, start with lower monthly earnings in their first years of employment. They highlight that salary growth is often gradual, depending on factors like experience, skills, and the specific industry.

The pie chart in Figure 4 illustrates the current industries employing BSIT graduates from 2015 to 2023. The top sectors include Government Services (12.3%): The largest portion of graduates is employed in this sector. IT - Computer Software and IT - Computer Hardware (10.8% each): The second largest sectors, showing a strong representation of graduates in the core IT industry. BPO

(Business Process Outsourcing) (10.8%): Similarly significant, reflecting the growing demand for IT graduates in outsourcing services. Banking/Financial Services, Education, and Advertising/Public Relations also appear prominently, though in smaller proportions compared to the top sectors.

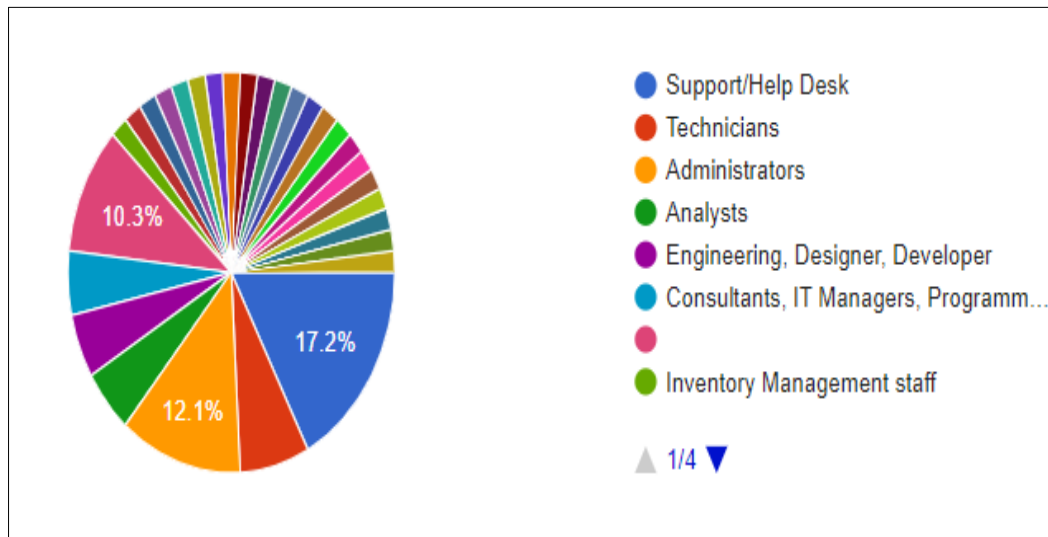


Figure 4. Current industry of BSIT employers

The high percentage of graduates in government services aligns with the findings from Teves and Templo (2017), who reported that IT professionals are increasingly recruited to enhance digital infrastructure and e-governance efforts in various government agencies. This reflects the Philippine government's ongoing push for digital transformation and modernization of services, which opens opportunities for IT graduates in public service roles.

The pie chart (Figure 5) illustrates the current job roles of BSIT graduates from 2015 to 2023. The prominent job roles are as follows: Support/Help Desk (17.2%): The largest segment of graduates work in this field, emphasizing the importance of technical support in organizations and industries requiring immediate troubleshooting and customer assistance. Technicians (12.1%): A significant proportion of graduates are employed as technicians, reflecting the demand for hands-on expertise in maintaining and managing IT systems, hardware, and software. Other Roles not specified (10.3%).

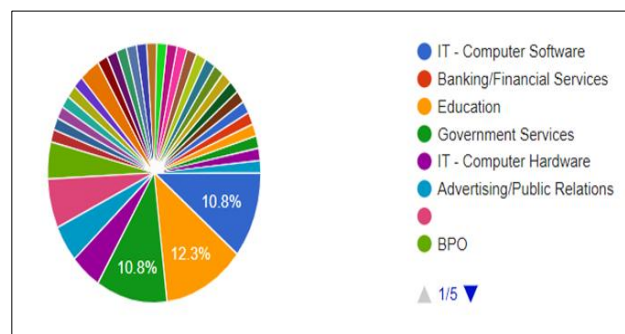


Figure 5. Current job role

The distribution shows that most graduates are employed in service-oriented and technical support roles, similar to trends observed by Gomez and Reyes (2018), who noted that IT graduates

are crucial in maintaining IT infrastructure across industries. The prominence of support roles reflects the increasing reliance on IT services for day-to-day operations, particularly as organizations adopt digital systems for efficiency.

Skills Development

Self-Perceived Soft Skills

Figure 6 below shows the heatmap of soft-skill ratings of graduates. The study revealed that graduates perceive adaptability (3.63), basic computer skills (3.52), and integrity (3.51) as their strongest competencies, reflecting the program's emphasis on foundational skill-building. However, entrepreneurial skills (3.04) and formal communication (3.07) received the lowest ratings, suggesting potential gaps. These align with Romulo and Tan (2019), who emphasized that IT programs often underprioritize entrepreneurial and communication skills [4].

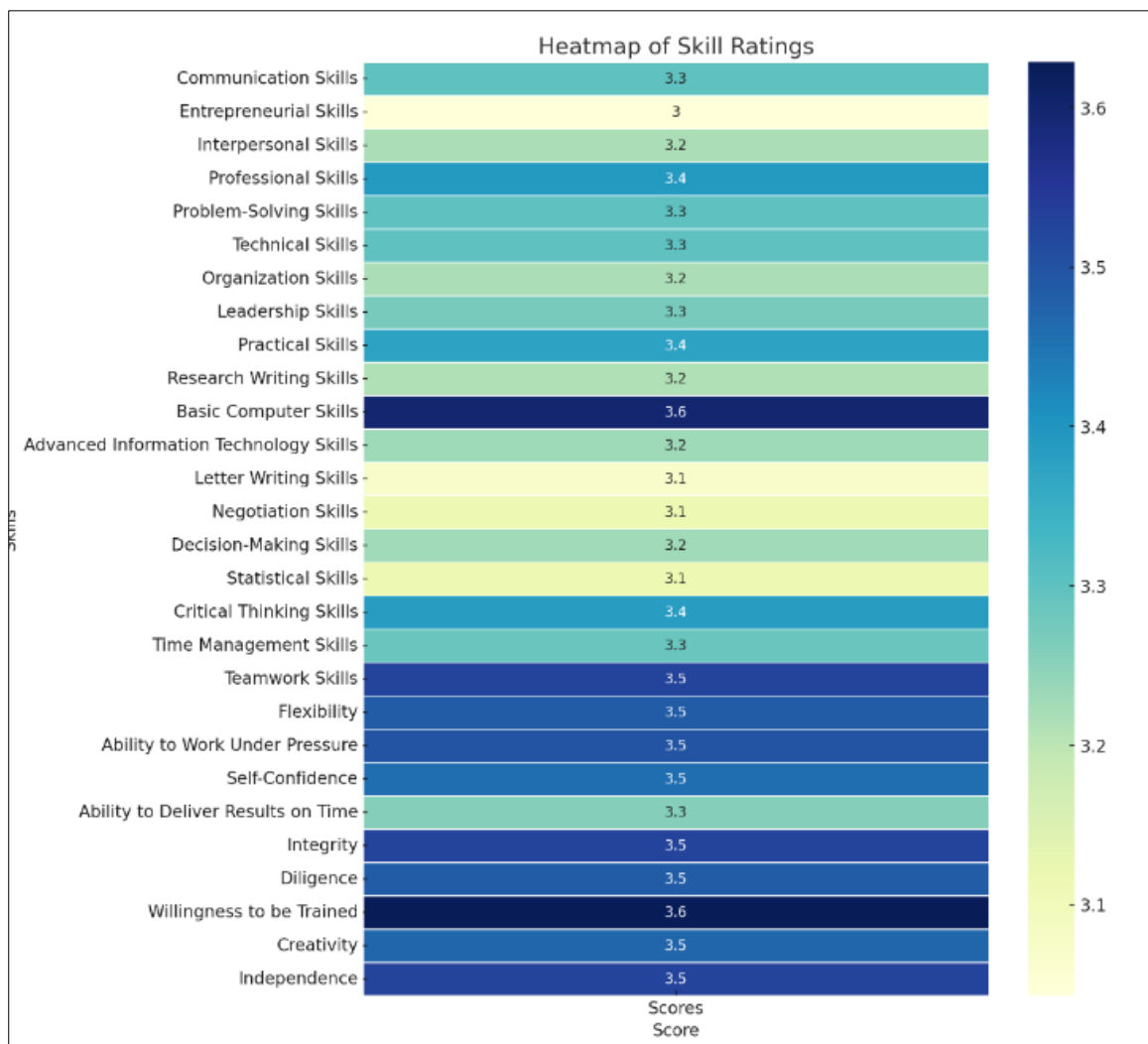


Figure 6. Self-Perceived soft skills

Perceived Technical Skill Competency

The heat map in Figure 7 illustrates the competency scores for various IT-related skills, ranging from Agile Methodology to UI/UX Design. The color gradient represents the intensity of the scores, where darker shades indicate higher competency levels.

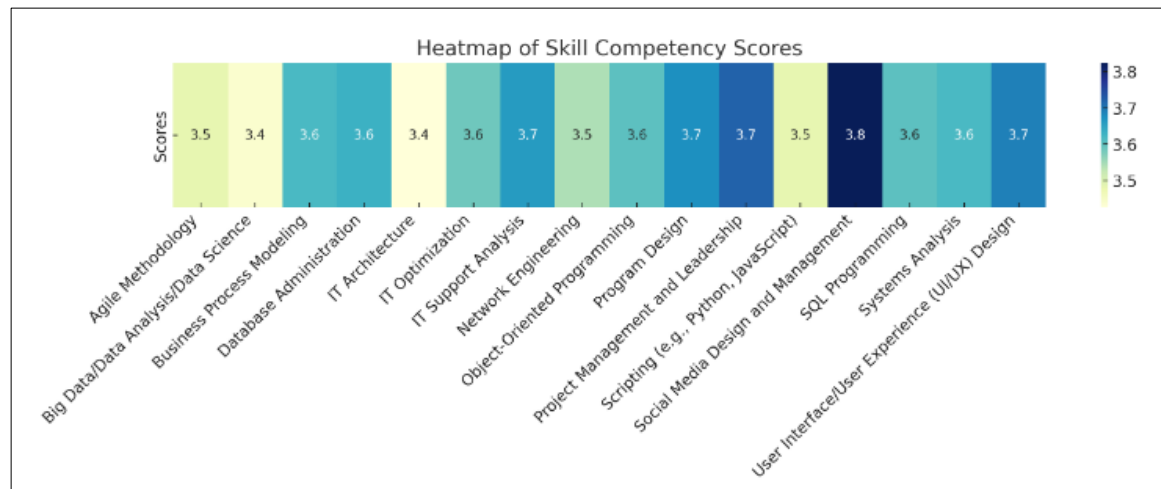


Figure 7. Self-Perceived technical skills

The analysis reveals that Social Media Design and Management has the highest competency score at 3.824, indicating a strong proficiency in this area. This is followed closely by Project Management and Leadership and Program Design with scores of 3.721 and 3.676, respectively. These high scores suggest that individuals or teams excel in strategic planning and implementation. Conversely, IT Architecture and Big Data/Data Analysis/Data Science have the lowest scores, at 3.426 and 3.441, respectively. This suggests potential areas for development or additional training to enhance skills in these critical areas.

Overall, while the team shows strong competencies in several key areas, focusing on improving skills in IT Architecture and Data Science could further enhance overall performance and effectiveness.

Thematic Analysis

Themes Emerging from Participant Suggestions in Improving BSIT Curriculum

Curriculum Development, Student Skills Development, Infrastructure and Resources, Teacher Improvement, Career Guidance, and Student Feedback are the six main areas for improvement in the IT program, according to the thematic analysis of participant responses.

1. Curriculum Development

Participants highlighted the need to update the curriculum to include modern topics such as cybersecurity and artificial intelligence (AI). Additionally, there was a suggestion to make capstone projects community-based, focusing on solving real-world problems. These recommendations reflect a need to align the curriculum with current industry trends.

2. Student Skills Development

Suggestions emphasized the importance of activities that enhance technical and intellectual skills. Participants proposed incorporating regular workshops and work immersion opportunities to better prepare students for the IT industry.

3. Infrastructure and Resources

The lack of adequate tools and equipment in computer laboratories was another concern. A participant suggested upgrading facilities to provide students with a more effective learning environment.

4. Teacher Improvement

Respondents stressed the importance of hiring passionate and qualified instructors. They also suggested regular training for teachers to stay updated on the latest IT trends, ensuring they can deliver quality education.

5. Career Guidance

Many participants expressed uncertainty about career options after graduation. They recommended including career-oriented topics in the curriculum to help students understand job opportunities and prepare for the workforce.

6. Student Feedback

While some participants expressed gratitude for the institution's contributions to their learning, others provided critical feedback, including suggestions for improving faculty and administrative practices. This indicates the importance of addressing both academic and non-academic concerns to improve the overall student experience. The table 1 below summarizes the occurrences of each theme:

Table 1. Summary table of themes and frequencies

Theme	Frequency	Example Data
Curriculum Development	3	"Subjects/trainings like cybersecurity and AI," "Community outcome-based capstone project."
Student Skills Development	2	"Activities to enhance technical skills," "Workshops for practical experience."
Infrastructure and Resources	1	"Upgrade and add tools and equipment in computer labs."
Teacher Improvement	2	"Offer training for teachers," "Teachers in heart and with passion."
Career Guidance	1	"Information about where to work after graduation."
Student Feedback	2	"Thank you for the learnings," "Don't bring back Sir ????, stressful for students."

Sentiment Analysis

The sentiment analysis yielded an overall positive score of +0.98, reflecting graduates' constructive feedback. Positive themes include satisfaction with faculty support and practical learning opportunities, while critical concerns focused on outdated curricula, limited exposure to AI and cybersecurity, and stress-related challenges. Neutral suggestions emphasize the importance of mentorship programs and enhancing business-oriented skills.

Graduates' feedback stressed that technical programs must continuously adapt to industry needs to sustain graduate employability (Mesquita *et al.*, 2020; Freudenberg *et al.*, 2011). The high sentiment magnitude (7.78) underscores the emotional investment of graduates in program improvement efforts.

Limitations of the Study

Despite offering insightful information, this study recognizes a number of significant limitations:

The study uses information that graduates self-report, which could lead to biases in reporting. To support graduates' statements, future studies might include objective metrics like employer evaluations. Since the study was only done at one college, its conclusions might not be very generalizable. A more thorough grasp of the results of IT education would be provided by comparative studies conducted at several different institutions. Although the study offers a brief overview of graduating results, it is devoid of a long-term outlook. Because IT employment and skill development are dynamic, longitudinal research would better capture this aspect. Despite its framework, the thematic analysis is nevertheless susceptible to possible interpretive biases. To improve analytical reliability, future studies could use mixed-method approaches or multiple coders.

CONCLUSION

From 2015 to 2023, this study provides important insights into the skill development and career outcomes of Fellowship Baptist College BSIT graduates. The program's overall effectiveness in preparing graduates for the workforce is confirmed by the outcomes, which display a high employment rate and representation from a variety of sectors. To better meet industry demands, the research also identifies areas where the program might be improved. Graduates identified both their areas of strength and growth using sentiment analysis and thematic classification. While complaints included inadequacies in soft skills training, obsolete curriculum content, and limited exposure to cutting-edge technologies like AI and cybersecurity, positive feedback focused on core skills and faculty assistance. Thematic analysis revealed important areas that require attention, including faculty development, infrastructure, career counseling, and curriculum development.

The report suggests expanding faculty development programs, upgrading infrastructure to give students better tools and equipment, and revising the curriculum to incorporate cutting-edge technologies like artificial intelligence and data science in order to close these disparities. Stronger industry collaboration through community-based capstone projects and internships will also better prepare graduates for issues they may face in the real world. By putting these suggestions into practice, the BSIT program may become much more successful and relevant, guaranteeing that graduates are better prepared for the ever-changing IT environment.

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