| RESEARCH ARTICLE

A Tracer Study of Bachelor of Science in Information Technology (BSIT): A Case Study of Graduates of the University of Cebu, Philippines

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| ABSTRACT

Tracer study is seen as the never-ending undertaking that the learning institutions must do to gather useful data and insights from the graduates for the purposes of validating the curricular offerings and planning for the next action items. This study aimed to determine the employability of BSIT graduates from 5 different academic years 2016 – 2017, 2017 – 2018, 2019 – 2020, and 2020 – mid 2021. The study gathered data from 226 alumni respondents using a descriptive survey method. Descriptive statistical measures such as frequency, percentage and weighted mean were used to analyze the data quantitatively. The Analysis of Variance (ANOVA) was used in analyzing the significant degree of variance among the Curricular Structures, Skills and Competencies. The results revealed that the majority of the alumni respondents are employed full-time as software developers and engineers. Major courses such as Programming, Databases, Web Development, and Systems Analysis and Design were perceived as helpful to the present or previous job of the alumni graduate. It is also revealed that the BSIT program offering was perceived as very relevant, particularly in the skills and competencies acquired. UC-CCS provided a good overall academic experience to the graduates, specifically in the areas of Laboratories, Curriculum, and Faculty & Instruction, with a net promoter score of +63.72%. Lastly, the respondents perceived that there is a significant degree of variance among the Curricular Structures, Skills and Competencies on the relevance of the BSIT program to their employability. The major findings of the study served as the bases for recommending curricular improvements to the BSIT program and the enhancement of alumni engagement.

1. Introduction

Universities being involved in human resources development through diverse program offerings should keep track of the outcomes and performance of their graduates to determine if they have truly designed impactful programs. Tracer study is seen as the never-ending undertaking that the learning institutions must do to gather useful data and insights from the graduates for the purposes of validating the curricular offerings and planning for the next action items. The graduate surveys help schools build a rich database on the whereabouts of the alumni, which will help broaden perspectives among administrators, faculty, non-teaching staff, and students. Additionally, tracer studies help maintain and sustain curriculum relevance and provide targeted benefits to graduates to enhance the marketability of educational programs.

Adequate knowledge of employment outcomes of training graduates could assist in formulating policy towards combating some social problems such as unemployment. Students, particularly graduates of any course, are required to earn a sense of competence in their chosen field and develop the confidence to explore new possibilities and new employment, especially when there is increasing competition among rivals at work (Matthed, 2008). As graduates of higher education institutions, they must show the

world that searching for jobs is not a problem. At present, competition in the business or corporate world is so stiff because of the increasing demand of the market. Only a few are employed, which proves that these fortunate applicants are the best among others. Relatively, one, particularly a graduate of Information Technology, must possess competency among the three domains like knowledge, skills and attitudes required by the specific job. The survey made on the graduates of the graduate course in Urban and Regional Planning (Probes, 2008) determined the employability and relevance of their graduate training to their jobs and to the field.

The University of Cebu – Main Campus College of Computer Studies remains true to its mission of producing globally competitive Bachelor of Science in Information Technology (BSIT) graduates, hence this study. This graduate tracer study determined the employability of BSIT graduates from five (5) different academic years 2016 – 2017, 2017 – 2018, 2018 – 2019, 2019 – 2020, and 2020 – mid 2021. Specifically, it sought to unveil the employment data of the respondents as to demographic profile, level of competency in terms of knowledge, skills and attitudes, overall academic experience and their likelihood to recommend the UC-CCS to others, a significant relationship of the level of competency and the level of difficulties encountered along knowledge, skills, and attitudes and the measures to enhance the competitiveness of the graduates.

Moreover, this tracer study sought information on the nature of tasks and functions performed by the graduates in their respective jobs and requested some feedback on how useful and relevant their degrees were to the work they were engaged in. Related to this, the graduates were requested to offer some suggestions on how graduate programs could be more relevant so as to make their contribution to national development efforts more substantial and meaningful.

1.1 Objectives of the Study
This study aimed to determine the employability of the BSIT graduates of the University of Cebu (Main Campus) College of Computer Studies from the school year 2016 until mid-2021 as bases for curricular improvements and the enhancement of alumni engagement.

Specifically, this study aspired to achieve the following objectives:

1. To establish the demographic profile among alumni respondents in terms of:
   1.1. alumni data,
   1.2. educational background, and
   1.3. employment information;
2. To determine which of the current BSIT course offerings are helpful to the present/previous job of the alumni respondents;
3. To ascertain the relevance of the BSIT program to the employability among the alumni respondents in terms of:
   3.1. curricular structure,
   3.2. skills, and
   3.3. competencies;
4. To assess the overall academic impression of the alumni respondents and their likelihood to recommend UC-CCS to others;
5. To analyze if there is a significant degree of variance on the three (3) dimensions of the relevance of the BSIT program to employability as perceived by the alumni respondents;
6. To propose recommendations for curriculum development and alumni engagement.

1.2 Framework of the Study
The Input-Process-Output (IPO) system approach is adopted in this study. Figure one (1) presents the conceptual paradigm of the study. It consists of three (3) parts, namely: input, process, and output.

Input: The researcher considered the following: demographic profile of Bachelor of Science in Information Technology graduates from SY 2016 to 2021 in terms of a) alumni data, b) educational background; and c) employment history; overall academic impression; and the relevance of the program to employability in terms of curricular structure, skills, and competencies.

Process: The study considered the analysis of the profile of respondents' distribution of online survey forms as the process.

Output: It is focused on the general and specific whereabouts of the BSIT graduates, including the proposed curricular improvements and recommendations to enhance alumni engagement.
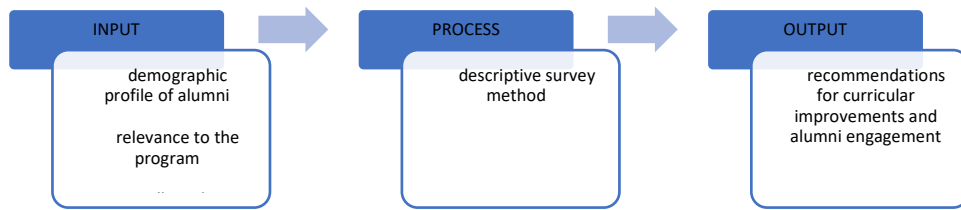
Figure 1. The Conceptual Framework of the Study

1.3 Definition of Terms
The following are the terms used in the study as operationally defined:

Alumni Data. This refers to the alumni respondent's age, sex, marital status, and school year graduated.
BSIT Graduates. This refers to the alumni or graduates of the Bachelor of Science in Information Technology (BSIT) program for the academic years 2016 – 2017, 2017 – 2018, 2018 – 2019, and 2020 – mid 2021.

Competencies. This refers to the set program intended learning outcomes (PILOs) of UC-Main CCS' BSIT program, which consists of knowledge, skills and attitudes expected of a typical BSIT graduate.

Curricular Structure. This refers to the overall aspect of the BSIT curriculum in terms of delivery of courses, teaching strategies, teaching and learning activities, instructional resources, facilities, and organization and administration.

Detractors. Detractors are graduates who evaluate the school's educational service and give a score between 0-6. These people are notably unhappy and could even be angry or heated. They are not likely to recommend their alma mater to others. If left alone, these customers can damage your reputation or brand through their active negativity.

Educational Background. This refers to the alumni respondents' educational attainments after completing the BSIT program. It includes advanced studies, certifications and training.

Employment Information. This refers to the alumni respondents' employment status and past and present employment information.

Skills. This refers to the set of graduate attributes or skills that are expected of UC-Main CCS BSIT alumni.

Net Promoter Score. This is a graduate loyalty and satisfaction measurement taken by asking the graduates how likely they are to recommend the UC-CCS to others on a scale of 0 – 10.

Passives. Passives are graduates who rate the school's educational service a score of 7 or 8. While these customers appear neutral, it would be dangerous to assume they require little attention from the school. These customers are unenthusiastic and even unimpressed. Because of this, they are open to other brands and offers and may be easily persuaded to make a switch.

Promoters. Promoters are the graduates who give the school's educational service a score of 9 or a 10 in a survey. They are defined as enthusiastic and loyal customers who are likely to refer their alma mater to others. These customers can be a powerful asset to schools and, more specifically, organic growth.

Tracer Study. This refers to the evaluation of employability among the BSIT graduates of the University of Cebu (Main Campus) College of Computer Studies.

2. Literature Review
Tracer studies are essential for understanding the outcomes, employability, and career trajectories of graduates, enabling academic institutions to enhance their curriculum, career development programs, and industry-academia collaborations. Tracer studies of graduates serve as a valuable resource to evaluate graduates' employability and offer valuable feedback to educational institutions.

In relation to IT graduates, tracer studies can yield insights regarding the following: the job prospects and positions attained by IT graduates upon completing their studies, the sought-after skills and competencies desired by employers, the level of satisfaction expressed by IT graduates in their current employment and the obstacles and difficulties encountered by IT graduates in the professional sphere.

A study conducted by the College of Information and Communications Technology of Nueva Ecija University of Science and Technology found that the "majority of the graduates, or 45.00% had to wait 7 to 11 months before they finally got hired. Graduates took a long time before they landed on their first job" (Mina, Reyes and Salas, 2020, p. 1341).

Another study, conducted by Caraga University Cabadbaran City, found that "communication skills are considered by the majority of the respondents (mean is 3,99) as the foremost competency they learned in college that they find very useful in their job" (Monzon, Tandog, Madlos, Daminar and Griño, 2022, p. 3).

Another study that seeks to know the different competencies and skills learned and acquired by the graduates that are useful in their first/current jobs found that:

> The majority identified hardware troubleshooting, followed by programming, computing, and networking, as the competencies and skills acquired during their attendance in the program. What appeared to be least useful in their first job were other skills like graphic design, personal relations, managerial and supervisory, and expertise in multimedia. (Plata, 2020, p. 4341)

One study found that "upgrading facilities (67.50%) is the topmost choice of the graduates. This means that in the IT industry, having been trained and developed in an advanced and well equipped facility is an advantage" (Garnda and Chatto, p. 116).

3. Methodology

In the conduct of this study, the descriptive method of research was considered appropriate. The researchers carried out this research by observing several accepted procedures. First, permission to conduct the research was immediately solicited by the researchers after the presentation and approval of the research proposal by the Research Committee through the University of Cebu Research Office (UCRO). Second, the researchers prepared the questionnaires. The questionnaires, in Google Forms, were sent to the graduates through email, Facebook Messenger, and other social media channels. A notice was indicated in the online survey questionnaire to inform the respondents about the study and assure them of the confidentiality of the data.

Third, the researchers retrieved the answered questionnaires. Fourth, a numerical analysis of the gathered data was performed. Fifth, consolidations of the significant findings in answer to the questions were considered. Lastly, recommendations were formulated based on the major findings of the study. All data gathered were presented quantitatively. The statistical tools used were: frequency, simple percentage and weighted mean.

The Analysis of Variance (ANOVA) was used to determine the significance of variance on the three dimensions of the relevance of the program to employability as perceived by the alumni respondents. At a significance level of 0.05, the following hypotheses were tested:

Null Hypothesis (Ho): There is no significant degree of variance among the Curricular Structures, Skills and Competencies of the BSIT program to the employability of the alumni respondents.

Alternative Hypothesis (Ha): There is a significant degree of variance among the Curricular Structures, Skills and Competencies of the BSIT program to the employability of the alumni respondents.

4. Results and Discussion

This section discusses the results and findings of the study, which were made as the basis for the formulation of conclusions and recommendations, including the proposed enhancement program.

4.1. Profile of the Alumni Respondents

4.1.1 Demographic Profile

Table 1 shows that the majority of the respondents (n = 226) were male and single. Batch October 2016 has the oldest average age (30 years old) of the respondents, while May 2019 was the youngest batch with an average age of 23 years old. Furthermore, the majority of the respondents graduated in October 2019.

Table 1. Demographic Profile of the Respondents

	Female			Male			Average Age	Number of Respondents
	Married	Single	Total	Married	Single	Total		
Batch								
March 2016		3	3	2	11	13	27.50	16
May 2016 (Summer)				2	1	3	28.67	3
October 2016		2	2		7	7	30.22	9
March 2017		8	8	1	4	5	26.69	13
October 2017		2	2	2	4	6	27.13	8
March 2018	1	8	9		14	14	26.00	23
October 2018		3	3	3	9	12	27.67	15
March 2019		7	7		29	29	23.50	36
May 2019 (Summer)		4	4		2	2	23.83	6
October 2019		11	11		35	35	24.09	46
March 2020		7	7	1	14	15	25.55	22
July 2020 (Summer)		3	3		1	1	25.00	4
December 2020		2	2		4	4	25.00	6
May 2021	1	4	5		11	11	25.75	16
July 2021 (Summer)					3	3	27.00	3
Grand Total	**2**	**64**	**66**	**11**	**149**	**160**		**226**

4.1.2 Educational Background

Figure 2 reveals the different TESDA National Certifications that the alumni respondents were trained in. Out of 226 respondents, 9 of them took and passed the exams. Four (4) respondents passed the NCII exam, one (1) on butchering and meat cutting and pipe fitting, and three (3) passed the electrical installation and maintenance.
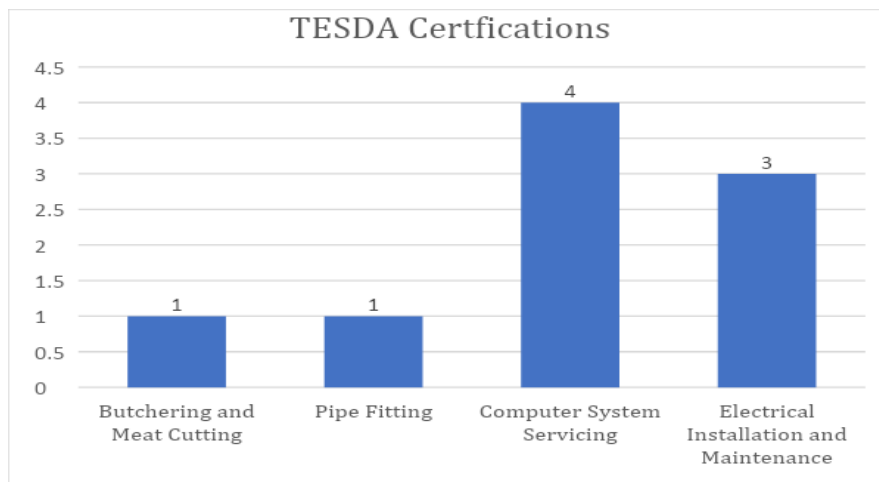

Figure 2. TESDA Certifications Earned

Six (6) of the 226 respondents pursued other programs of study, as revealed in Figure 3. Other degrees pursued and graduated by the respondents are Diploma in Professional Education, a bachelor's in Education major in Math, Accountancy, and Flight Services, an associate degree in Aircraft Maintenance Technology, and a master's in Information Technology.
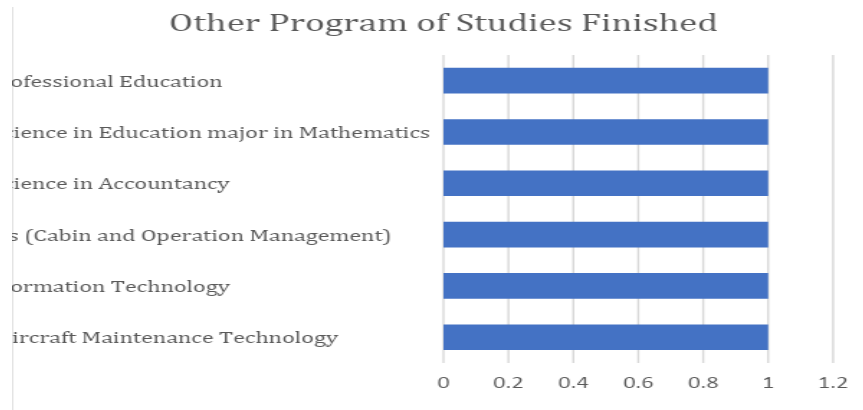
Figure 3. Other Degrees Graduated by the Respondents

Professional development (64%) is regarded as the main motivation for the respondents to pursue advanced studies, followed by personal reasons and promotion. As illustrated in Figure 4, experience and company requirements are regarded as the least reason for pursuing advanced degrees or studies.
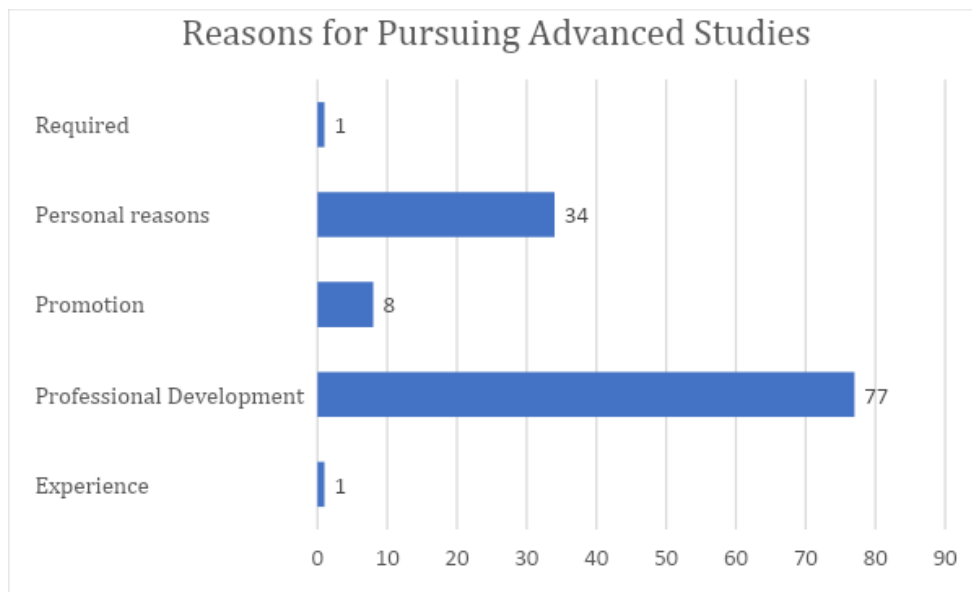
Figure 4. Reasons for Pursuing Other Programs of Studies

On the other hand, when asked about the different professional or work-related training, the alumni respondents have experienced a diverse set of training, as presented in Figure 5. The majority of them were trained in Angular technologies and Japanese Language Proficiency. Some of them were trained in SAP Business One, QuickBooks, and C#.

Professional / Work-related Trainings

Figure 5. Professional Training Participated

In terms of professional examinations, the alumni respondents are certified in Career Civil Service, Japanese Language Proficiency, and with different programming languages and technology stacks, as shown in Figure 6.
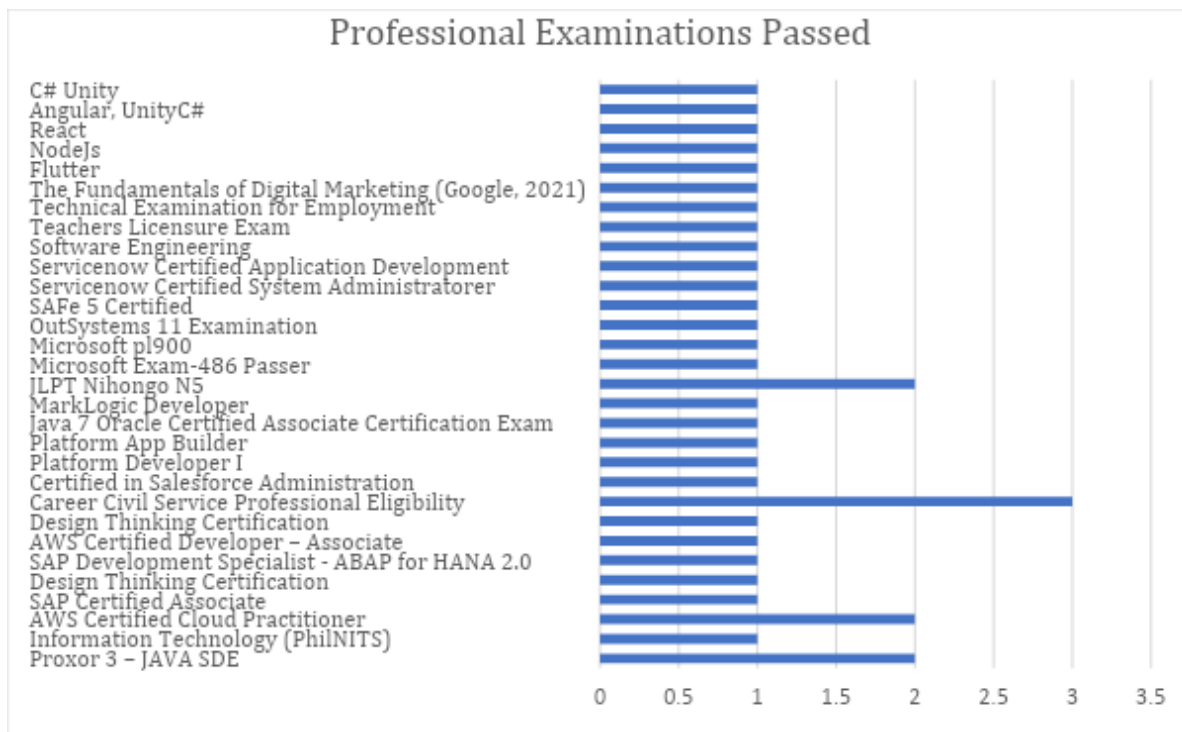
Professional Examinations Passed

Figure 6. Professional Examinations Passed

4.1.3 Employment History

The majority of the respondents were employed (207), 18 were non-employed and 1 who has never been employed since graduation, as illustrated in Table 2.

Table 2. Employment of the Respondents

Employed	*f*	%
Yes	207	91.59
No	18	7.96
Never employed	1	0.44
Grand Total	**226**	**100**

When asked further about their employment status (Table 3), 179 are employed regularly or permanently, 5 have full-time and sideline jobs at the same time, 14 are temporarily employed, and 3 are self-employed.

Table 3. Employment Status and Type of the Respondents

Employment Status	Employment Type				Total
	Working Full-time	Working Full-time but with part-time jobs	Working Part-time	Working Part-time but seeking full-time work	
Casual	3				3
Regular or Permanent	179	5	1	1	186
Self-employed	3				3
Temporary	14		1		15
Total	**199**	**5**	**2**	**1**	**207**

Furthermore, the majority of these alumni respondents are working in the private sector (200) either locally (180) or abroad (20). Others are working in government (6) and NGO sector (1), as shown in the table below.

Table 4. Place of Work and Type of Organization where the Graduates are Employed

Place of Work Batch	Type of Organization				Total
	Government	NGO/Non-profit	Private		
	Local	Local	Abroad	Local	
March 2016			3	12	15
May 2016 (Summer)	1			2	3
October 2016			2	6	8
March 2017			2	10	12
October 2017			4	4	8
March 2018		1	4	15	20
October 2018	2		1	11	14
March 2019	3			32	35
May 2019 (Summer)				6	6
October 2019			1	40	41
March 2020			2	19	21
July 2020 (Summer)				3	3
December 2020				4	4
May 2021			1	14	15
July 2021 (Summer)				2	2
Total	**6**	**1**	**20**	**180**	**207**
%	**2.90**	**0.48**	**9.66**	**86.96**	

It is also revealed that the majority of the respondents were hired as Software Developers and Engineers (29), followed by Web Developers (17) and Admin / IT Support (12), as presented in Table 5.

Table 5. Current Designation / Position of the Respondents

Designation / Position	f	%
Account Specialist	1	0.48
Admin / IT Support	12	5.80
Advanced App Engineering Sr. Analyst	1	0.48
Android Developer	2	0.97
Application Software Engineer / ASE	11	5.31
Associate Research and Development Engineer	1	0.48
Associate Software Dev Engineer II	2	0.97
Business and Integration Analyst	1	0.48
Business Development Officer	1	0.48
Category Management Analyst	1	0.48
Cloud Support Engineer	1	0.48
Comic Artist	1	0.48
Computer Maintenance Technologist II	1	0.48
Consultant	2	0.97
Content Moderator	1	0.48
Creative Director	1	0.48
Customer Service Representative	8	3.86
Data Analyst	4	1.93
Data Entry Specialist	1	0.48
Data Processor	2	0.97
Designer and Quality Analyst	1	0.48
Digital Specialist	1	0.48
Dining Room Server	1	0.48
E-sport Analyst	1	0.48
Finance Officer	1	0.48
Fraud Specialist / Analyst	2	0.97
Frontend Web Engineer	1	0.48
Full Stack Developer	5	2.42
Graphics Designer	3	1.45
Implementation Specialist II	1	0.48
Information Security Analyst	1	0.48
IOS Developer	1	0.48
IT Instructor	1	0.48
IT Specialist	1	0.48
IT Team Lead	5	2.42
Junior Admin	1	0.48
Laboratory Inspector I	1	0.48
Laboratory Supervisor	1	0.48
Library Technical Staff	1	0.48
Machine Operator	1	0.48
Marketing Creative Specialist	1	0.48
MEAN Stack Developer	1	0.48
Mid Ruby on Rails Developer	1	0.48
Mobile Sales Promoter	1	0.48
Network and Server Infra Senior Associate	1	0.48

Orders Management Specialist	1	0.48
Paraplanner	1	0.48
Payments and Fraud Analyst	1	0.48
Photo Editor/VA	1	0.48
Product Designer	1	0.48
Production Operator	1	0.48
Project Development Officer I	1	0.48
Project Manager	3	1.45
QA Specialist	1	0.48
Sales Associate	1	0.48
Salesforce Developer	1	0.48
SAP ABAP Consultant	3	1.45
Sea Logistics Specialist	1	0.48
Senior Android Engineer	1	0.48
Senior Application Development Analyst	1	0.48
Senior Consultant / Java Dev	1	0.48
Senior Lead Software Engineer	1	0.48
Senior Scala Developer	1	0.48
Senior Software Developer	1	0.48
Senior Software Engineer	3	1.45
SEO Analyst / Specialist	4	1.93
Software Design Engineer	2	0.97
Software Developer	19	9.18
Software Engineer	10	4.83
Software Quality Assurance Engineer	4	1.93
Sr. Associate	1	0.48
Supervisor	3	1.45
Survey Programmer	4	1.93
Swing Manager	1	0.48
System Analyst	1	0.48
System Network Administrator	1	0.48
System Support Assistant	1	0.48
Systems Analyst	1	0.48
Technical Programmer	1	0.48
Technical Specialist	2	0.97
Technical Support	1	0.48
Test Automation Engineer	1	0.48
TL Software Implementation Engineer	1	0.48
UI/UX Developer / Designer	4	1.93
User Experience Engineering Senior Analyst	1	0.48
VA Photo Editor	1	0.48
Virtual Assistant	2	0.97
Web / Graphic Designer	3	1.45
Web Developer	17	8.21
Web Hosting Specialist	1	0.48
Web Modification Specialist	1	0.48
WordPress Developer	2	0.97
Total	**207**	**100.00**

The major line of business of the companies where they are employed are IT (22), followed by BPO / KPO (40), and SML Enterprises (40), as shown in Table 6.

Table 6. Major Line of Business of the Company being Employed

Industry Type	f	%
Academe	7	3.38
BPO / KPO	40	19.32
Financial Services	3	1.45
Government	1	0.48
Healthcare	3	1.45
Insurance	1	0.48
IT	122	58.94
Logistics	3	1.45
Manufacturing	1	0.48
Marketing Service	2	0.97
Real Estate	3	1.45
Research	1	0.48
Retail	1	0.48
Security	1	0.48
SMLEs	16	7.73
Telcos	2	0.97
Total	**207**	**100**

Of the 207 employed respondents, 74 said that they are still working for their first company or job since graduation.

Table 7. Distribution of the Respondents Working on their First Job Since College

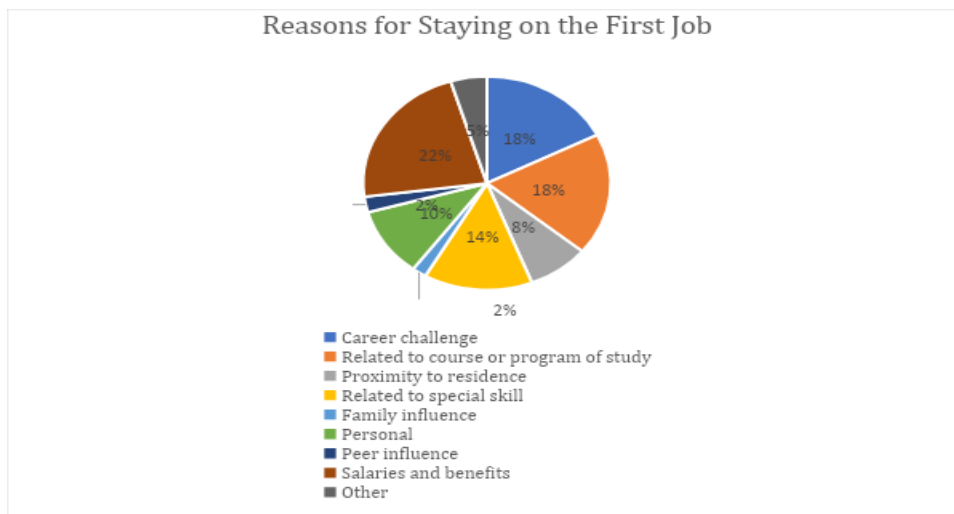| First Job After College	f	%
No	133	64.25
Yes	74	35.75
Total	**207**	**100**

Figure 7. Reasons for Staying on the First Job

Reasons for staying on their first job are salaries and benefits (22%), followed by relevance to the program of study they graduated from (19%), and career challenge (18%). Additionally, peer and family influences have the least contribution to staying on their first

job. Furthermore, the majority (29.47%) of the respondents have stayed on their first job within 2 years, and only 0.97% have stayed for less than a month.

Table 8. Length of Service of the Respondents' First Job

Length of Service in the First Job	f	%
1 to 6 months	46	22.22
1 year to less than 2 years	61	29.47
2 years to less than 3 years	35	16.91
3 years to less than 4 years	23	11.11
4 years or more	6	2.90
7 to 11 months	18	8.70
Less than a month	2	0.97
Other	16	7.73
Total	**207**	**100**

Recommendations from someone they know are the top source (39.61%) of hiring information about their first job. Some of the respondents (21.74%) learned about the hiring when they decided to apply as walk-in applicants. From among the online source of job information, Facebook (13.53%) is the go-to page of the respondents when looking for potential job hiring.

Table 9. Source of Hiring Information

Source of Job Information	f	%
Facebook	28	13.53
Family Business	1	0.48
Internet Search	1	0.48
Job Sites	15	7.25
LinkedIn	4	1.93
OJT / Internship	18	8.70
Public Job Fair Program	5	2.42
Recommendation from someone I know	82	39.61
School's Job Fair Program	6	2.90
Scouted by the Company	2	0.97
Walk-in Applicant	45	21.74
Total	**207**	**100**

Moreover, the majority of the respondents (51.21%) were hired less than a month after graduation. Some (33.33%) were hired within 6 months after graduation, while others between 7 and 11 months (5.31%). The longest employment gap of the respondents is 4 years.

Table 10. Employment Gap of the Respondents

Employment Gap	f	%
1 to 6 months	69	33.33
1 year to less than 2 years	9	4.35
2 years to less than 3 years	7	3.38
3 years to less than 4 years	1	0.48
4 years or more	1	0.48
7 to 11 months	11	5.31
Less than a month	106	51.21
Other	3	1.45
Total	**207**	**100**

In terms of their initial monthly gross in their first job, most of the respondents' salary is between ten thousand and fifteen thousand pesos (35.27%), followed by 15,000 to 20, 000 (28.%), and 20,000 to 25,000 (18.84%). There are 17 respondents whose starting salary is below ten thousand pesos, and four have initial pay of 50,000 and above.

Table 11. Initial Offer in First Job

Initial Monthly Gross in First Job	*f*	%
Below P 10,000.00	17	8.21
P 10,000.00 to less than P 15,000.00	73	35.27
P 15,000.00 to less than P 20,000.00	58	28.02
P 20,000.00 to less than P 25,000.00	39	18.84
P 25,000.00 to less than P 50,000.00	16	7.73
P 50,000 and above	4	1.93
Total	**207**	**100**

Of the 133 respondents who chose not to stay in their first job, salaries and benefits (33%) proved to be the main factor for changing jobs. This is followed by career challenge (22%) and relevance to special skills (19%). Proximity to residence (5%) is the least contributor to changing jobs.
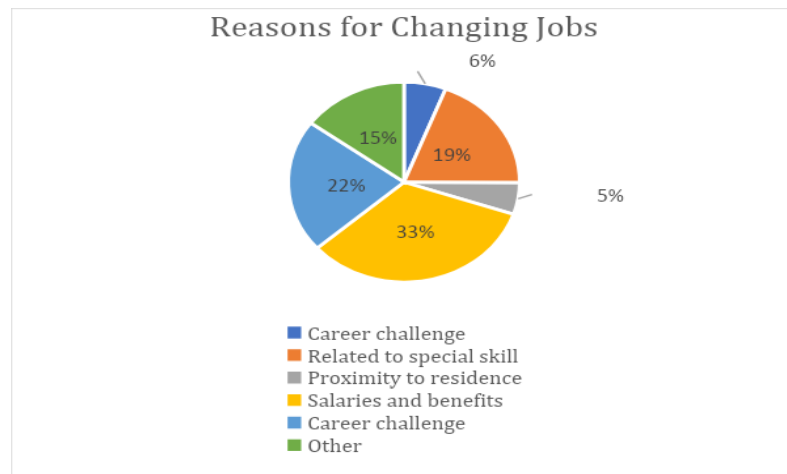

Figure 8. Reasons for Changing Jobs

For those who are not employed yet (Figure 9), five (5) respondents reported they have their own business or startup and are pursuing advanced studies, 3 respondents have health-related issues and lack of work experience, and others have various reasons for their unemployment.
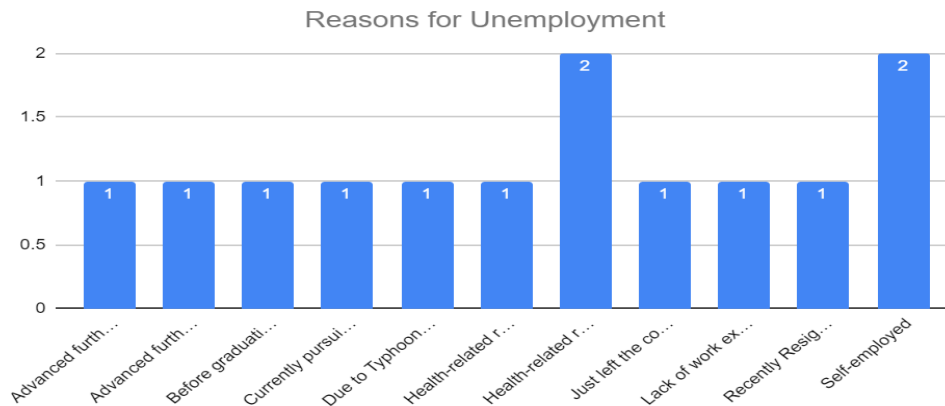

Figure 9. Reasons for Unemployment

In Figure 10, it is shown that few job vacancies (8) are the main challenge that the alumni graduates face when looking for a job, followed by inadequate experience (6) and passing the preliminary interview (5).
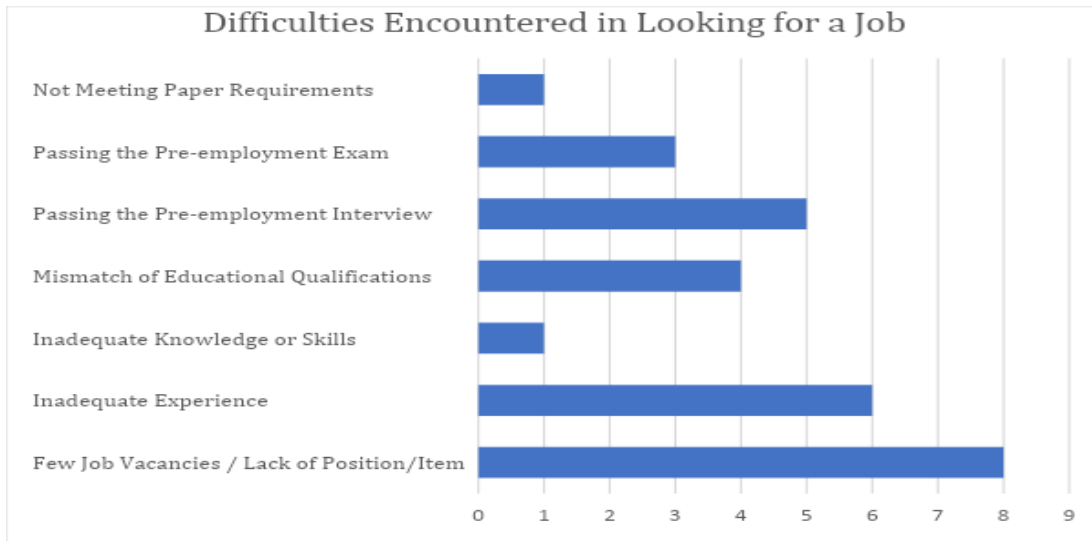

Figure 10. Challenges in Finding a Job

4.2. Current Course Offerings Relevant to Present / Previous Jobs of the Alumni Respondents

As shown in Figure 11, both Databases and Web Development (65.5%) are perceived as the most helpful subjects to present or previous jobs of the alumni respondents. The said subject is followed by Programming (61.5%), Systems Analysis and Design (56.2%), Data Structures (52.7%), and Capstone Projects (50.9%). Runner-ups are Software Engineering (49.1%), Multimedia Systems (41.2%), and Practicum (39.4%). These subjects are very relevant to the respondents since the majority of them were hired as Web Developer, Applications Engineer, Software Engineer or Programmer as presented in Table 5.
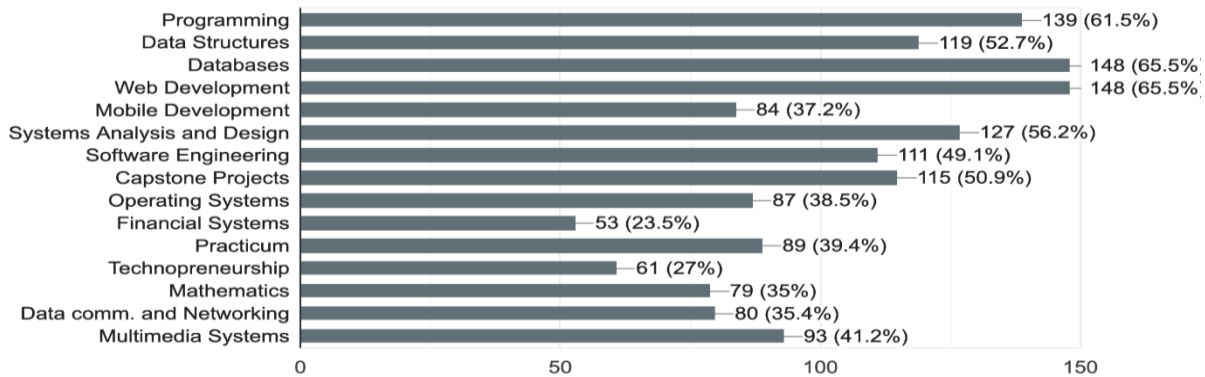

Figure 11. BSIT Course Offerings Relevant to the Present / Previous Job of the Alumni Respondents

4.3. Relevance of the BSIT Program to Employability

4.3.1 Curricular Structures

Table 12 presents the respondents' perception of the relevance of the BSIT program to their employability in terms of skills. It was found that the relevance to the profession was rated the highest with a weighted mean of 4.34 and interpreted as very relevant. The teacher's knowledge of the subject matter is rated as the next most relevant, with a weighted mean of 4.33 and an interpretation of very relevant. On the third spot is the teaching and learning environment was perceived as very relevant, with a 4.31 weighted mean.

On the other hand, library resources, though perceived as relevant to employability, have the lowest weighted mean of 3.811. Overall, the perception of the alumni respondents on the relevance of the BSIT program to employability in the context of curricular structures is relevant, with an average weighted mean of 4.12.

Table 12. Relevance of the BSIT Program to Employability as to Curricular Structures

#	Curricular Structures	Weighted Mean	Rank	Interpretation
1	Philosophy and Objectives	4.09	11	*Relevant*
2	Relevance to Profession	4.34	1	*Very Relevant*
3	Teachers' Competence and Expertise	4.30	4.5	*Very Relevant*
4	Teachers' Knowledge on Subject Matter	4.33	2	*Very Relevant*
5	Teaching & Learning Environment	4.31	3	*Very Relevant*
6	Teacher-Student Relationship	4.19	7	*Relevant*
7	Ranges of Courses Offered	4.05	12	*Relevant*
8	Quality of Instruction	4.15	8	*Relevant*
9	Interdisciplinary Learning	4.14	9	*Relevant*
10	Laboratory Resources	4.23	6	*Relevant*
11	Support Given to Research/Capstone Project	4.30	4.5	*Very Relevant*
12	Library Resources	3.81	18	*Relevant*
13	Co-Curricular Activities	3.95	15	*Relevant*
14	Extracurricular Activities	3.94	16	*Relevant*
15	Physical Plant and Facilities	3.85	17	*Relevant*
16	Class Size	4.04	13	*Relevant*
17	Social Orientation & Community Involvement	3.96	14	*Relevant*
18	Organization & Administration	4.10	10	*Relevant*
	Average Weighted Mean	**4.12**		***Relevant***

4.3.2 Skills

In terms of skills (presented in Table 13), the respondents perceived that Collaboration is very relevant to their employability, as this has the highest weighted mean of 3.56. Additionally, Problem Solving / Analytical Skills (3.53) and Critical Thinking and Reasoning (3.52) ranked second and third, respectively, as very relevant to employability. Entrepreneurial Skills and Mindset, though perceived as relevant to employability, garnered the lowest weight of 3.16. Overall, the respondents perceived that the skills they learned from college are very relevant to their employability, with an average weighted mean of 3.41.

Table 13. Relevance of the BSIT Program to Employability as to Skills

#	SKILLS	Weighted Mean	Rank	Interpretation
1	Research Skills	3.31	9	*Very Relevant*
2	Professional Ethics	3.50	5	*Very Relevant*
3	Communication Skills	3.32	8	*Very Relevant*
4	Collaboration Skills	3.56	1	*Very Relevant*
5	Leadership & Management Skills	3.35	7	*Very Relevant*
6	Entrepreneurial Skills and Mindset	3.16	10	*Relevant*
7	Technical Skills	3.50	4	*Very Relevant*
8	Problem Solving / Analytical Skills	3.53	2	*Very Relevant*
9	Creativity and Innovation	3.36	6	*Very Relevant*
10	Critical Thinking & Reasoning	3.52	3	*Very Relevant*
	Average Weighted Mean	**3.41**		***Very Relevant***

4.3.3 Competencies

The relevance of competencies acquired by the respondents after they graduate from the BSIT to their employability was also assessed, as presented in Table 14. These competencies were based on the current UC-CCS Program Intended Learning Outcomes (PILOs). The alumni respondents perceived that the competencies they acquired from the BSIT program were very relevant, with an average weighted mean of 3.41. All of the thirteen (13) PILO-based competencies are perceived as very relevant to employability.

The ability to analyze a problem and identify and define the computing requirements appropriate to its solution has the highest weighted mean of 3.52 and is interpreted as very relevant to employability. This result is consistent with the previous employment data of the alumni respondents. The majority of the respondents are working as web developers, applications engineers, and software engineers or programmers. These jobs demand graduates with sharp abilities in problem and computing requirements analysis. An ability to analyze the global impact of computing on individuals, organizations and society, though perceived as very relevant to employability, has the least weighted mean of 3.32.

Table 14. Relevance of the BSIT Program to Employability as to Competencies

#	Competencies	Weighted Mean	Rank	Interpretation
1	ability to apply knowledge of computing and mathematics appropriate to the discipline	3.40	8	*Very Relevant*
2	ability to analyze a problem and identify and define the computing requirements appropriate to its solution	3.52	1	*Very Relevant*
3	ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs	3.46	4	*Very Relevant*
4	an ability to function effectively on teams to accomplish a common goal	3.50	2	*Very Relevant*
5	an understanding of professional, ethical, legal, security and social issues and responsibilities	3.41	7	*Very Relevant*
6	an ability to communicate effectively with a range of audiences	3.32	12	*Very Relevant*
7	an ability to analyze the local and global impact of computing on individuals, organizations, and society	3.32	13	*Very Relevant*
8	recognition of the need for and an ability to engage in continuing professional development	3.33	11	*Very Relevant*
9	[an ability to use current techniques, skills, and tools necessary for computing practice	3.42	6	*Very Relevant*
10	an ability to use and apply current technical concepts and practices in the core information technologies	3.35	10	*Very Relevant*
11	an ability to identify and analyze user needs and take them into account in the selection, creation, evaluation and administration of computer-based systems	3.46	3	*Very Relevant*
12	an ability to effectively integrate IT-based solutions into the user environment	3.44	5	*Very Relevant*
13	an understanding of best practices and standards and their application	3.40	9	*Very Relevant*
	Average Weighted Mean =	**3.41**		***Very Relevant***

4.4 Overall Academic Impression and Net Promoter Score

Table 15 revealed the overall academic impression of the alumni respondents, with an average weighted mean of 3.14 and interpreted as good. Of the eighteen (18) dimensions, Laboratories are perceived as very good, with a weighted mean of 3.40. This is followed by Curriculum and Faculty & Instruction with weighted means of 3.39 and 3.38, respectively. Support services such as University Bookstore, Clinic, Library, Campus Ministry, Guidance Office and Alumni Office, though interpreted as a good impression, received lower ratings compared to other dimensions.

Table 15. Overall Academic Impression of the Alumni Respondents

#	Areas	Weighted Mean	Rank	Descriptive Value
1	Curriculum	3.39	2	*Very Good*
2	Faculty & Instruction	3.38	3	*Very Good*
3	Laboratories	3.40	1	*Very Good*
4	Library	3.05	15	*Good*
5	Clinic	2.92	17	*Good*
6	Guidance Office	3.06	12.5	*Good*
7	Students Affairs Office	3.06	12.5	*Good*
8	Registrar's Office	3.08	11	*Good*
9	EDP / Data Center	3.18	6	*Good*
10	Campus Ministry	3.01	16	*Good*
11	Civil Security Unit	3.13	9	*Good*
12	University Bookstore	2.83	18	*Good*
13	Students Accounting Section / Cashier	3.15	8	*Good*
14	Research Office	3.09	10	*Good*
15	Scholarships Office	3.18	5	*Good*
16	Alumni Office	3.05	14	*Good*
17	PSITS and other student organizations	3.32	4	*Very Good*
18	Co-curricular and Extracurricular activities	3.17	7	*Good*
	Average Weighted Mean =	**3.14**		***Good***

The Net Promoter Score (NPS) result is +63.72%, as shown in Table 16 below. This result means that the alumni respondents are satisfied with the UC-CCS and have a high likelihood of recommending the college to a friend or colleague, family members and relatives.

Table 16. Net Promoter Score of the Respondents

Types	*f*	%
Detractors	2	0.885
Neutrals	78	34.513
Promoters	146	64.602
Total	**226**	
Net Promoter Score	**63.72%**	

Furthermore, the respondents were asked about the types of support they are willing to extend to the college. As shown in Table 17, the respondents are willing to conduct seminars, workshops or training (24.08%). This support is followed by their willingness to engage in project-based learning (18.45%) and research projects with students and faculty members of the college (17.67%).

Table 17. Types of Alumni Support

#	Support	*f*	%	Rank
1	Seminars / Training / Workshops for students and faculty	124	24.08	*1*
2	Guest Lectures / Speaking Engagements	82	15.92	*4*
3	External Consultants for Curriculum Development	63	12.23	*5*
4	Donations for fund-raising activities	60	11.65	*6*
5	Project-based learning through after-school activities/causes	95	18.45	*2*
6	Research projects/endeavors with the faculty and students	91	17.67	*3*
	Total	**515**	**100**	

4.5 Analysis of the Degree of Variance between Curricular Structures, Skills and Competencies on their Relevance to Employability

Table 18 shows the results summary of the Analysis of Variance on the level of relevance of the curricular structures, skills and competencies of the BSIT program to the employability of the alumni respondents. At a significance level of 0.05, the result (p-value < 0.05) leads to the rejection of the null hypothesis. Hence, there is a significant degree of variance among the three dimensions (curricular structure, skills and competencies) in the context of its relevance to the employability of the alumni respondents.

Table 18. Analysis of Variance of the Three Dimensions' Relevance to the Employability

SUMMARY				
Groups	*Count*	*Sum*	*Average*	*Variance*
Skills	10	34.92063492	3.492063492	0.01942834747
Curricular Structure	18	73.55	4.086111111	0.04174281046
Competencies	13	44.16666667	3.397435897	0.004917921585

ANOVA						
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	4.284505941	2	2.14225297	86.28064498	7.4421123E-15	3.244818361
Within Groups	0.943497964	38	0.02482889379			
Total	5.228003905	40				

Ho: There is no significant difference in the three dimensions of the relevance of the BSIT program to employability as perceived by the alumni respondents.

Ha: There is a significant difference in the three dimensions of the relevance of the BSIT program to employability as perceived by the alumni respondents.

Significance level: 0.05
Decision: Reject Ho

5. Conclusion

Based on the findings of the study, it is concluded that the majority of the BSIT graduates are employed (91.59%) full-time and permanent (89.86%). Software developers and engineers are the top designations of the respondents. These designations proved that course offerings such as Programming, Databases, Web Development, and Systems Analysis and Design are perceived as relevant by the graduates. On the relevance of the BSIT program to their employability, it is concluded that the graduates perceived it as very relevant, specifically in the skill set and competencies they acquired. On the dimension of the curricular structures, library resources received the lowest rating from the respondents. The respondents have a good impression towards the overall academic experience at the university, particularly in the top 3 areas such as; Laboratories, Curriculum, and Faculty & Instruction. The result of the study also revealed that the likelihood that the alumni respondents will recommend UC-CCS to their friends or colleagues, family members and relatives is high, with a net promoter score of +63.72%. Moreover, the respondents perceived that there is a significant degree of variance among the Curricular Structures, Skills and Competencies on the relevance of the program of study to the employability of the graduates.

6. Recommendations
With the major findings of the study, the following action items are recommended that the university and the college must do:

1. Curriculum enhancement on the specialization elective and free elective tracks to cater for the demands of the industry;
2. Design different learning pathways that are tailored to fit the possible career paths of a BSIT graduate;
3. Integrate new technology stack in the major courses;
4. Improve the support services of the universities, particularly the library resources;
5. Review the curricular offering and its structure based on the indicators that garner the least results in order to arrest the problems as perceived by the alumni; and
6. Involve the alumni beyond industry forums, consultative meetings, and gatherings.

7. Limitations and future research
One limitation of this study is that the response rate is a little bit low. Looking at the data in Table 1, the number of respondents could be improved, especially for the number of respondents from March graduates, since the usual number of BSIT graduates for March is over 100. Another limitation is the exclusion of a comparison group which is a group of graduates from a different program or from a different time period.

For future research, the response rate could be increased by constant follow-up or by giving small rewards to the respondents. The response rate should be increased because if the response rate is low, it can lead to inaccurate results, as the findings may not be representative of the entire population of BSIT graduates. With regards to the lack of a comparison group, the future study should include a comparison group of graduates from other programs to see how BSIT graduates compare to graduates from other programs in terms of employment status, skills, satisfaction, etc.

Conflicts of Interest: The authors declare no conflict of interest.
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