Employment Status and Academic Competencies among the Information Technology Graduates: A Tracer Study

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ABSTRACT

Information technology graduates of colleges and universities have increased rapidly while continuously facing stiff employment competition. The study traced the employability of the Bachelor of Science in Information Technology (BSIT) graduates of a university. It also described the profile of the BSIT graduates; assessed graduates' employment conditions; and determined the academic competencies utilized by the BSIT graduates in their current jobs. Using descriptive research design, the study employed standardized tool from Commission on Higher Education (CHED), and a sample of 87 BSIT graduates as respondents. The findings revealed that majority of the respondents were dominantly male, single, and from the Visayas region. Majority of them were regular or permanent in their current job and were locally employed and worked as an IT professionals in their present occupation. The graduates found their first job through advertisement. They utilized advanced information technology

competencies in their jobs. Hence, their work matched to their tertiary degrees. The study provided information that the BSIT graduates of the University of Cebu – Banilad Campus are highly employable. After months of linkages for possible employers and career mapping of graduates, the school will be able to increase graduates assistance on job placements. After two hours of seminar on career mapping, the college will be able to assess the skills of the graduates to suggest possible areas of work to engage. The colleges will also be able to establish linkages with possible employers. The conduct of an IT industry forum can be of vital help for the educational institution to be updated with the changing job requirements and standards

INTRODUCTION

The estimated unemployment rate in the Philippines in April 2014 was 7.0 percent. It was also estimated 7.60 percent for April 2013, based on the April 2013 Labor Force Survey data which excludes Leyte. Including Leyte, the April 2013 unemployment rate will be 7.5 percent. Among the regions in the country, National Capital Region (10.4%), Ilocos Region (9.2%), Central Luzon (8.6%) and CALABARZON (9.0%) had an unemployment rate higher than the national figure. Among the unemployed persons in April 2014, 61.7 % were males. Of the total unemployed, the age group of 15 to 24 years comprised 49.8 percent; while the age group 25 to 34, 30.5 percent. By educational attainment, one-fifth (22.4%) of the unemployed were college graduates; 14.5 percent were college undergraduates; and 32.7 percent were high school graduates (Labor Force Survey, Philippine Statistics Authority, 2014). The graduates' employability problem in the advanced western economies is the priority of the policymakers in the Higher Education (HE). It gives focus in the current climate of wider labor market. The importance of employability skills was emphasized by the legislators to prepare the graduates in meeting the challenges of an increasingly flexible labor market (Department for Business Innovation and Skills, 2008).

Globalization and fast-evolving technologies caused the stiff competition in the labor market. This phenomenon requires higher education institutions to train their students with the needed skills in the industry. However, in the global market, there is a rising figure of unemployment rate and job mismatch. This

situation is also prevalent in Malaysia, particularly, the increasing unemployment rate among graduates, incongruity between the skills of the graduates and the required skills of the employers, and the lessening of employment in the government sector. There are lots of schemes that have been proposed to solve this dilemma (Muk-Ngiik Wong & Hamali, 2006).

The capability of every higher education institution (HEI) to train graduates who possess the needed skills in the 21st century becomes imperative since the government is exerting some efforts to respond to the local, national and global demands for quality education. Furthermore, as the impact of globalization expands, the pressure to improve the educational system has become lucid (Eggins, 2003).

In Ghana, Mr. Gabriel Kploanyi, the Volta Regional Director of Education, asked the government to afford an environment that would ensure the graduates to gain employment. He further stressed that they trained their students with the skills to enable them to be employable when they graduate so as to address the problem of rising unemployment (GNA, 2011).

The primary paradigm of HEIs is to train the students on the academics, letting them learn and conduct research. In this set up, the ascendancy of the academic manner was taken for granted. There was a presumption that academics consists the core creation entities and their capability to make required substantial freedom. The school's intended desired status is to acquire autonomy and exercise academic freedom which would enable them to work and perform their service with ease. But the only drawback for this is that the academe might develop the propensity to be less efficient in the performance of their role (Kogan & Teichler, 2007).

Universities are conferred with unique responsibility in filling the disparity of the spheres of education and employment. The European Commission (EC) tasked the universities at the center of Europe's so-called knowledge triangle of research, education and innovation, which are known as the primary stimulant of a knowledge-based economy (Humburg, van der Velden & Verhagen, 2013).

The main impetus of many students to enter the university is to advance their entree to the job market and attain success in their future career (McCune, Hounsell, Cree & Tett, 2010). Universities, therefore, have to balance their broader purpose of producing well-rounded citizens to meet the demands of the labor market (Archer & Chetty, 2015).

The different higher educational institutions of the country have been guided by the provisions and objectives set forth by the Commission on Higher Education

(CHED). These are to provide a general educational program that will develop the potential of students, to train them with the skills required for national development, and to instill and foster the appropriate and relevant knowledge, skills and attitudes to enable them in becoming useful, productive and gainfully employed members of the society (Institute of Development Studies, 2016).

In other countries specifically in Malaysia, the unemployed people last 2009 of second quarter was 415,700 equivalent to three point six percent (3.6%) from a total labor force of 11.45 million with a projection of domestic unemployment rate rise to 4.5 % in 2010 (Department of Statistics Malaysia, 2009). The graduates of higher education institutions (HEIs) in Malaysia were approximately 60,000 per year. Among the highest rates of unemployed graduates in 2006 was computer science 19.5%, business administration/management 18.5 % and engineering of 15.3% (Norshima, 2008). The high rate of unemployed percentages was alarming that needs to be reviewed to determine the reasons for unemployment.

There were previous studies that have been conducted on unemployment and employability to determine the skills required by most employers (Archer and Davison, 2008; Petrova and Medlin, 2009) or seeking ways to enhance the competitiveness of graduates (Matousek and Rysavy, 2007). There is a significant challenge for higher institutions throughout the country including Malaysia and that is graduate employability. There are factors influencing the demands of graduates in the market that includes; economic situation, technological advancement and political pressures.

The focus somehow is the demand and supply of the graduates with the need of the employers or recalling or describing the term "graduateness" rather than employability (Walker, 1998; Glover, Law & Youngman, 2002; Shukran & Morshidi, 2009).

The researcher's concern was focused on determining the competencies that the IT graduates of a university utilized which are essentials in acquiring a job. This is in consideration to the fact that the competition in the job market is very stiff and the graduates should acquire advanced skills to be responsive to the demands relevant to the workplace. This gap provides highlights why the study was conducted.

FRAMEWORK

The study is anchored on Frank Parson's Trait-Factor theory which assessed an individual's trait through objective measures and matching an individual's

characteristic through objective measures. Also, it matches these traits to those typically required for successful performance in a given career area. Parson suggested three steps for enhancing the individual's career decision-making. First, there must be a clear and objective understanding of one's self including abilities, interests, and attitudes. Second, knowledge of the requirements and characteristics of specific careers must be present. Lastly, there should be recognition and application of the relationships between the first and the second for successful career decision making (Gibson, 2008).

Parson emphasized the importance of human capital development to maximize an individuals' performance. Human capital refers to the productive potential of an individual. The employees who possess the right knowledge, skills, and motivation represent human capital that gives an organization's potential competitive advantage (Kreitner and Kinicki, 2004).

On the other hand, occupations can be considered by the "amounts" of the required individual traits. The degree of fit between the person and the occupation can be seen, when the individual's profile matches with the job qualification. The study of job descriptions and job requirements from the measurement of traits that are job-related has a great influence in predicting future job success (Patton, 2006).

In support of Parson's theory, Career Choice Theory of John Holland (1973) stressed that career choice is an expression of or an extension of personality into the world of work. Individuals exercise their skills and abilities, express their attitudes and values, and take on agreeable problems and roles by searching for work environment that reflects their personality (Zunker, 2002).

Zunker (2002) further said that "the choice of a vocation is an expression of personality" and that the six-factor typology that was articulated could be used to describe both persons and work environments. The interpretative structure for some different vocational interest surveys, including the two measures he developed are: 1) The Vocational Preference Inventory and 2) The Self-Directed Search in which this typology provides. The Department of Labor adopts his model for categorizing job interests. Understanding Holland's Theory will help make good choices – decisions about which occupations, careers, majors, or training programs best fit an individual.

The second concept is differentiation which explains that those who fit a pure personality type express little resemblance to other types. On the contrary, those individual having several personality types have a poorly defined personality styles and are considered indistinguishable or poorly defined.

Identity, being the third concept describes those individuals who have vibrant and stable pictures of their goals, interests, and talents. In the case of environments, identity refers to the degree to which a workplace has clarity, stability, and integration of goals, tasks, and rewards. For example, those individuals who have many occupational goals, as opposed to those who only have a few, have low identity.

The fourth concept is congruence which occurs when an individual's personality type matches the work environment. Social personality types, for example, prefer environments that provide social interaction, concerns with social problems, and interest in education activities.

The critical career judgments are primarily based on individual's occupational information. The importance of identification with an occupational environment underscores the significance of occupational knowledge in the process of appropriate career choice. Knowledge of both occupational environment and corresponding personal orientation is critical to appropriate career decision making (Holland, 1973). When making a decision for a particular career, Holland's premise in the level of career attainment is determined by the individual self-evaluations. Wherein it focuses more on personality and interest rather than intelligence (Zunker, 2002).

OBJECTIVE OF THE STUDY

The study focused on determining whether the Bachelor of Science in Information Technology (BSIT) graduates in a higher education institution in Cebu City, Philippines were employable or not. The specific objectives of the study were to describe the profile of the BSIT graduates, assess the graduates' employment conditions, and determine the academic competencies utilized by the BSIT graduates in their current jobs.

METHODOLOGY

Research Design
The study utilized the descriptive research design with the use of a standardized tool by the Commission on Higher Education (CHED). Due to the complexity in reaching and communicating with the BSIT graduates, non-probability random sampling technique was applied. Therefore, descriptive design was more appropriate to this investigation.

Research Site

This study is conducted in a private, non-profit, non-sectarian educational institution in Cebu City. At present, the university has 240 faculty members, with 7,128 students enrolled. The College of Computer Studies offers Bachelor of Science in Information Technology, Bachelor of Science of Information System and Associate in Computer Technology major in Animation. The educational institution is located in a commercial area in a highly urbanized city where IT hub and economic zone are strategically located. The location of the school prompted the offering of the BSIT course since job opportunities that relate to information technology are present.

Participants

The respondents were the 87 graduates of Bachelor of Science in Information Technology and were working and/or residing in Cebu, and other parts of the country and abroad.

Table 1. Distribution of respondents by year they graduated

Year Graduated	No. of Graduates	Counts Traced	Percentage Traced (%)
2010	74	23	22.20
2011	87	27	26.10
2012	75	23	22.50
2013	45	14	13.50
Total	281	87	100

Instrumentation

The instrument utilized in the study was the Graduate Tracer Survey (GTS), a standardized tool from the Commission on Higher Education (CHED). It has four parts with 34 items. The first part contains the general information which includes the permanent address, contact number, civil status, gender, birth date, region of origin, province and location of residence. The second part of the questionnaire refers to the educational background of the respondents. The third part includes trainings or advance studies attended after college. The last part relates to the employment data of the respondents.

The instrument was created in a form of a website where it has undergone web development phases that start with planning, analysis, design and development, testing, implementation and maintenance. The Graduate Tracer

Survey standardized tool from CHED was then created as a web form which was added as a webpage in a website. The website was created and designed using the Hypertext Markup Language (HTML) for the web structure, Cascading Style Sheet (CSS) for its design, PHP: Hypertext Preprocessor (PHP) and Standard Query Language or known as MySQL for processing and storing data inputted in the website. The website was planned to focus on student and alumni whom will be the end users of the webpage and is continuously maintained by the Dean and the assigned instructor. The website was also designed for students and alumni as a job portal where they can upload job offerings for other alumni to view and apply. The website can only be accessed when a user registers. Accounts were created and were given to some students and alumni to test the functionality of the website. After it was fully tested, the instrument was then uploaded to the college website: ccs-banilad.uc.edu.ph.

Research Ethics Protocol

Permission to conduct the study was secured from the Dean and the Campus Director. Before the actual collection of data, ethical consideration was looked into to avoid violation of the rights of the participants. It was further assured that all of the respondents were at the legal age at the time of the study.

Data Collection

The researchers wrote a letter addressed to the Campus Academic Director asking permission to conduct the study. The research instrument was uploaded to the university's website. To reach the respondents, the link of the form was sent to the individual Facebook account of the graduate for ease in answering. Data were collated, tabulated, analyzed and interpreted using appropriate statistical treatment.

The Dean also made invitations to the respondents to visit the college website through a Facebook group named CCS graduates. There were also respondents who visited the website and answered the research instrument. Data were collated, tabulated, analyzed and interpreted using appropriate statistical treatment.

Statistical Techniques

For the purpose of analyzing and interpreting the collected data, counts were tallied to determine the frequency of the answers of the respondents in each item in the questionnaire. The percentage was computed to analyze the profile of the participants and ranks were computed and used to interpret the data on

the items that requires multiple responses such as employment data, reasons for unemployment, and top utilized academic competencies learned in college.

RESULTS AND DISCUSSION

Profile of the BSIT Graduates

Out of 87 respondents, 73 (84%) were employed, while there were 14 (16 %) were unemployed. Male and female employees are entitled to equal access to promotion and training opportunities. Discrimination against female employee shall be deemed unlawful. Equal Pay Act of 1963 prohibits gender-based pay discrimination between two jobs substantially similar in skills, effort, responsibility and working conditions (Bateman & Snell, 2008).

By the time the college students graduated, they are faced with the dilemma of how to earn a living independently, either by seeking employment or engaging in various profit-making activities. Majority of the college graduates are usually engaged in the process of seeking employment as a means of earning income. The graduate's drive to seek employment within the field of chosen profession may have an underlying motivational factor (Chamberlin, 2001).

Employability does not only depend on whether one can fulfill the requirements of specific job, but also on how one excel amongst job seekers. However, a focus on obtaining skills, knowledge and attitude to gain good employment has led to an oversupply of graduates and a large number of contenders chasing the same job (Brown & Hesketh, 2004).

Table 2. Profile of the BSIT graduates (n = 87)

	Profile	Counts	Percentage
Sex :	Male	66	76.00
	Female	21	24.00
Civil Status :	Single	80	92.00
	Married	7	8.00
Region of Origin:	Luzon	8	9.00
	Visayas	73	84.00
	Mindanao	6	6.00

Graduates' Employment Conditions

Present Employment Status. Fifty-three or 72.60 percent of the employed graduate had regular or permanent employment status during the conduct of

the study. Only two or 2.74 percent had casual employment status. There were only three graduates who did not have work or job. Foremost of the reasons for their unemployment, was that they did not look for a job. While, the remaining six belonged to visible underemployment because they were freelance IT professional. This supports Parson's Trait Factor Theory that explained that underemployment exists when a job requires less than a person's full potential as determined by his or her formal education, training, or skills. It is associated with higher arrest rates and the likelihood of becoming an unmarried parent for young adults. It is also negatively correlated with job satisfaction, work commitment, job involvement, internal work motivation, life satisfaction, and psychological well-being (Kreitner & Kinicki, 2004).

Present Occupation. The results also revealed that forty or 54.79 percent worked as professionals and 1 or 1.37 percent worked as clerks. Sixty-seven or 91.78 percent were employed locally. Only six or 8.22 percent were employed abroad. Further, 16 or 21.92 % had fifteen thousand to less than twenty thousand gross monthly earning on their first job. Competencies can be considered along a spectrum; from the basic competencies needed to survive in the workforce, to a range of advanced competencies needed to sustain employability and advanced competencies needed to sustain employability and advance in one career (Marquis & Huston, 2009). Based on the Commission on Higher Education (CHED) Graduate Tracer Survey (GTS), these competencies learned in college include communication, human relations, entrepreneurship, and information technology, problem-solving and critical thinking skills.

Everyone requires different skills, sets different standards, and requires a different preparation yet they all have employeeship in common. Employeeship is more important to success than the special professional knowledge or skill. More people fail because they do not adequately possess the skills of their trade; the higher you climb the ladder, the more you get into the administrative or executive work, the greater the emphasis on ability to work within the organization rather than on technical competence or professional knowledge (Drucker, 2005). People also need the opportunities to do things differently, to access relevant training and, most crucially, employment (Brown & Hesketh, 2004).

People leaving in a developing economy perceived that a degree is an important means to increase a person's productivity and his employability. These perceived benefits of higher education have attracted many to enter tertiary education. This perception also leads to an increase in the number of institutions of higher

learning in many countries in the world to provide education to students and pursue tertiary education. The emergence of globalization and advancement of technology, however, has led to becoming the job market competitive in nature. The subsequent outcome on mismatching and unemployment brought about by the inadequacy of competency have been enormous that brought impact to the employment system of many countries. In effect, a gap is evolved between the educational system and the standard of higher education which requires greater budget in education; this has become the interest of many researchers. The focus now is more on the matching skills of the graduates and the demand for higher education for its compliance for employment system (Muk-Ngiik Wong, and Hamali, 2006).

Graduates' Strategies to Find First Job. The results revealed that 26 respondents (29.89 %) found their first job through responding to an advertisement; as a walk-in applicant (22.99 %); through recommendation by someone (20.69%), information from friends (12.64 %), arranged by school's job placement officer (3.45 %), through job fair on public employment service (1.15%). For other strategies, there were 8 who responded (9.20%). Information Technology graduates seeking employment have encountered challenging process in selecting prospective employers especially in on-line job hiring. Newly job seekers must be successful in the first phase of hiring for them to be accepted in the industry that they want to work with. They must exhibit competency skills reflective to selection criteria satisfaction required by the employers which up to date has a limited fashion (L. Liu, X. Liu, Lu & Koong, 2003).

Job-Relatedness of the Degree Obtained in College

Sixty-five (75%) of the employed graduates claimed that their job relates to the degree they obtained in college. Twenty-two or 25 percent of the respondents claimed that their present job is not related to their obtained degree.

The results supported the Trait-Factor Theory wherein the graduate must have a clear and objective understanding of himself including the abilities, interests, and attitudes. The recognition and application of these traits will make a successful career decision (Kreitner & Kinicki, 2004).

Employability refers to the capability of gaining employment, being capable of getting and keeping fulfilling work. It depends on the knowledge, skills and attitude an individual possess and how they use those assets and present them to employers and the context within which they sought for work. It is not just about

vocational and academic skills, individuals need relevant job market information to help them make informed decisions about the labor market options available to them (Hillage, 2005).

Since out of eighty-seven (87) participants, there were only 73 respondents who were employed, 97.66 percent of those who were employed at the time of the survey said that they made use of the information technology skills in their current job (Rank 1). This finding relates to the study of Guasa (2008) that can be inferred that keeping track of the graduates' records and profile is necessary because their performance in the employment scene is one good indicator whether the university, as a development arm, is responsive to the needs of the community as a reservoir of human resource, capable of sustaining the manpower requirements of the industries. This serves to aid the institution's strategies in curricular development, program design, the quality of teaching and learning process, the facilities necessary to develop the competency of the students, the faculty development plan, the process of employment system and other relevant functions of the institution necessary to the total development of a graduate.

CONCLUSIONS

The IT graduates of a higher education institution (HEI) are considered as highly employable both in the domestic and foreign job market. The work conditions of the IT graduates suggest a higher level of employment because they are categorized as professionals and that they deserve to receive a high salary level which commensurates to their skills and competencies as well the complexity of the work functions. HEIs role in producing graduates that possess the necessary skills that respond to the needs of the employers has become apparent. Thus, it is imperative that HEIs should be updated on the industry requirements and standards regularly, to be able to carry out the main goal of producing job-ready graduates. This requirement is true to the IT program considering that the type of work of an IT professional rapidly change overtime. Using advanced competencies of information technology acquired in college is every graduate's tool to attain career advancement. The results affirm the Trait-Factor Theory wherein the graduates must have a clear and objective understanding to oneself including abilities, interests and attitudes. The recognition and application of these traits make a successful career decision.

TRANSLATIONAL RESEARCH

After months of linkages for possible employers and career mapping of graduates, the school enabled to increase graduates assistance on job placements. After 2 hours of seminar on career mapping, the college was able to assess the skills of the graduates to suggest possible areas of work to engage. The colleges have established linkages with possible employers. There was also a regular industry forum for the IT industry so that the school or the university will be able to gather information on what are the current job requirements in the IT profession; the additional knowledge and skills to be developed by the students and other job standards.

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