



Employability of the Bachelor of Science in Computer Science Graduates of Negros Oriental State University-Guihulngan City Campus, Philippines

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Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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ABSTRACT

The purpose of this research is to identify the employability status of the Bachelor of Science in Computer Science (BSCS) Graduates of Negros Oriental State University-Guihulngan City Campus, Philippines from 2019 to 2021 with the entire population as respondents. It also sought to determine the respondents' sex, nature of employment, and relatedness of their academic degree and job roles. The descriptive method was utilized. There were 111 respondents in this study. Findings show that the majority of the respondents are female, and a large majority of the respondents (78.38%) are employed. The results further disclose that most of the employed

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respondents work in private agencies as office staff and a small percentage (20%) in Business Process Outsourcing. However, most of the respondents' job roles are not related to their college degrees. Hence, the findings suggest the high employability of BSCS graduates. However, there is still room for more enhancement by evaluating the current curriculum of the Bachelor of Science in Computer Science aimed to fulfill the current and future needs of societies undergoing social and economic change.

Keywords: Employability; computer science; tracer study.

1. INTRODUCTION

"Every academic year, colleges and universities produce new graduates who are prepared to explore the real world and added to the existing workforce of the world" (Almejas et al., 2017). "However, the uncertainties due to the complex technological changes globally have offered opportunities and challenges affecting the academe and employment" (Mastura et al., 2013, as cited in Casanova et al., 2002). "Moreover, there is a surge in the need for highly proficient professionals due to global technologies and innovation which indicates the significance of college education and the growth of the mandates of universities and colleges. Hence, Higher Education Institutions (HEI) have to enhance their capabilities including the mechanism of implementing, sustaining, and actualizing new initiatives focused on sustainable development" (Sulkowski et al., 2020).

Consequently, Higher Education Institutions (HEI) are strengthening their efforts to enhance their overall performance, including their alumni's academic profiles. The employability of graduates in industries has been considered one of the parameters of graduates' profile quality. HEIs were challenged to develop graduates who are prepared enough to join the national and international workforce and possessed the necessary expertise to perform graduate-level jobs (Paterson, 2019, as cited in Casanova et al., 2022). This can be done by enhancing higher education programs that develop skills and qualities and assure a competent comprehension of the subject matter (Sannadan et al., 2016, as cited in Casanova et al., 2022). Graduate employability is a fundamental factor of the higher education industry. It assesses the performance and capacity of the academic institutions in producing competent graduates and has been utilized as a performance determinant for higher education institutions. Employability can be defined as graduates manifesting the qualifications to get jobs (Sannadan et al., 2016, as cited in Casanova et al., 2022).

"These academic institutions have the obligation to keep an eye on the employability of their alumni to find out any accountability and whether or not their degree courses have impacted the graduates, the higher education institution, or the country" (Hazaymeh et al., 2016). "The employment opportunities and the kind of employment attained by these graduates after commencement exercises can clearly prove their employability" (Hazaymeh et al., 2016).

"Moreover, the alumni best validate a program's performance in terms of employability and positions held. They are the best proof of the program's relevance in the present labor market" (Orejana et al., 2005). "In addition, the success of the college programs can be determined based on the success or failure of the graduates. The effectiveness of an educational program offered by HEIs can be evaluated through the competencies, knowledge, and skills the graduates gained and can be used in the work environment. Furthermore, the knowledge and skills that the alumni possess can be identified by employers' feedback on the graduates' work performance" (Plantilla, 2017). "The alumni can utilize their developed expertise and relevant training for economic growth" (Hazaymeh et al., 2016).

"This is the anchor for the Philippines Commission on Higher Education's (CHED) mandate on Higher Educational Institutions to initiate tracer research of their graduates" (Malahayet al., 2018) According to CHED Graduate Tracer Study Manual (Sun Star Pampanga, 2018, *Higher Education Studies*, 2022) that "a tracer study is usually done to maintain quality and competitive graduates in colleges and universities". Verona (2004) also defined "a tracer study as a mechanism that is fundamentally aimed to trace graduates of an educational institution, in order to get a feedback database for the graduates and their alma mater". "This establishes the relationship between the quality of graduates of universities and colleges developed by their curricular standards and

instruction imposed by the Commission on Higher Education (CHED) on them” (Rojas et al., 2016).

“Moreover, an employability study is greatly useful in national development. It is initiated to determine the alumni’s potential in helping the nation in the labor force aspect” (Sun Star Pampanga, 2018). “It also constitutes one form of an empirical study that provides useful data for assessing the outcome of the education and training of a particular higher learning institution” (Hazaymeh et al., 2016). “This information can be used for further improvement of the institution in the context of quality assurance” (Schomburg, 2003; Health Assured team, 2021). “Further, an employability study is a strong foundation to develop new policies and guidelines on admission and accreditation of higher education institutions” (Sun Star Pampanga, 2018).

It is in this view that this employability study was conducted to assess the employability of the Bachelor of Science in Computer Science Graduates of Negros Oriental State University – Guihulngan City Campus from 2019-2021 as the basis for curricular development and enhancement of the job training program, and further elevate the performance standards of the institution. This study also aimed to determine the respondents’ sex, employability, nature of employment, and relatedness of their academic degree and job roles.

1.1 Theoretical Framework

“The research was grounded on Human capital theory which explains that education and training represent an investment in future productivity and not just the consumption of resources. It is about the concept of people improving their productivity and efficiency through a larger focus on education and training” (Health Assured team, 2021). “In this perspective, firms and workers depend on investments in human capital to improve competitiveness, gains, and pay” (Frese et al., 2001). “It means that graduates with greater educational skills training, knowledge, and expertise deliver higher productivity, and hence can avail of bigger employment probability

and wages” (Aliuet et al., 2019; Holden et al., 2017) (Hung & Ramsden, 2021).

“Another theory used is the Investment Theory which shows higher education as a public and private investment decision for governments and people. Education leads to economic growth through increased productivity, social stability, and healthier lifestyles as a public investment. On the other hand, as a personal investment choice, investing in education increases lifetime earnings for those with more years of schooling, better-paying jobs, reduced time spent in the unemployment market, and speedier transitions to enhanced career prospects” (Maringe, 2015).

2. METHODOLOGY

This is descriptive research utilizing the secondary data of the NORSU-Guihulngan Alumni Office. The respondents were the entire population of Bachelor of Science in Computer Science graduates from 2019 to 2021 in Negros Oriental State University-Guihulngan Campus, Philippines. There were 111 respondents of this study. Frequency count and percentage were employed as statistical tools.

3. RESULTS AND DISCUSSION

As reflected in Table 1, the data show from 2019 until 2021 that there were 111 graduates of the Bachelor of Science in Computer Science with 53 graduates in 2019, 35 graduates in 2020, and 23 graduates in 2021.

As disclosed in Table 2, the majority of the respondents are Female (52.25%) while 47.74 percent of the graduates are male. This indicates that more females than males are more inclined to Computer Science in this part of the Philippines. This is contradictory to the tracer study of Sardovia (2022), that the majority of the BSCS graduates are male in Surigao del Sur State University. This is also contradicted by the study of Hazaymeh and Dela Peña (2016) that among La Salle University College of Engineering graduates the majority are male.

Table 1. Distribution of graduates according to year graduated

Year Graduated	Frequency	Percentage
2019	53	47.75
2020	35	31.53
2021	23	20.72
Total	111	100%

Table 2. Sex of the graduates

Sex of the Graduates	Frequency	Percentage
Male	53	47.75
Female	58	52.25
Total	111	100

Table 3. Employability status of the graduates

Year Graduates	Employed		Unemployed		Total (N)
	Frequency	Percentage	Frequency	Percentage	
2019	43	38.74	10	9.01	53
2020	33	29.73	2	1.80	35
2021	18	16.22	5	4.51	23
Total (N)	94	84.68	17	15.32	111

Table 4. Nature of work of the respondents

Nature of Work	2019	2020	2021	Frequency	Percentage
Customer Service Representative (BPO)	15	4	1	20	21.28
Office Staff in Private Agency	17	14	6	37	39.36
Self-Employed	0	6	7	13	13.83
Office Staff in Government Agency	11	9	4	24	25.53
Total	43	33	18	94	100

Table 5. Relatedness of the respondents' academic degree and job roles

Nature of Employment	Frequency	Percentage
Course-Related	20	21.28
Non-Course Related	74	78.72
Total	94	100

Table 3 reveals that a large majority of the respondents from 2019 to 2021(84.68%) are employed while only 15.32 percent are unemployed. This is an indication of the high employability of the Bachelor of Science in Computer Science graduates. The result of this study is strengthened by the findings of Orejana and Resurrection (2010)] which show that a large majority of the graduates of Bachelor of Science in Business Management are employed. However, the tracer study of Rocaberte (Rojas et al., 2016) in the University of Pangasinan contradicting this study reveals that new graduates are challenged by insufficient work opportunities, which reasonably takes them a long time to wait because of lack of experience. This is also supported by the study of Sardovia (2022 in Surigao del Sur State University where the majority of the BSCS graduates are employed.

As presented in Table 4, most of the respondents (39.36%) are working as office staff in private agencies. It is followed by office staff in

government agencies (25.53%), customer service representatives in Business Process Outsourcing (BPO) companies (21.28%), and self-employed (13.83%). This indicates that there are more job opportunities in the private sector for BSCS graduates. This is contrary to the findings of Almejas et al. (2017) that the majority of the respondents are working in government agencies.

Further, the result of this study is supported by the study of Sardovia (2022) in Surigao del Sur State University where a little percentage (0.02%) of the BSCS graduates were self-employed.

Furthermore, it can be noticed that some of the respondents are employed as customer service representatives in Business Process Outsourcing (BPO) companies (21.28%) with highest employability rate in 2019 which is aligned to their Bachelor of Science in Computer Science degree. However, in the following years from 2020 to 2021, a significant decline can be seen due to the COVID-19 Pandemic.

As depicted in Table 5, the findings show that only 21.28 percent of the respondents employed in Business Process Outsourcing are aligned with their academic degrees. Although many are employed as office staff or office encoders this is not related to the job roles of the BSCS degree holders as stipulated in the Philippine Commission on Higher Education Memorandum Order No. 25 series of 2015. This is contrary to the findings of the University of Trinidad and Tobago (2015) that 71% of their employed graduates' jobs are related to college degree. Further, this suggests the respondents' college degrees and job roles are unrelated.

4. CONCLUSION

This study reveals that female graduates dominated the Bachelor of Science in Computer Science program. The findings further suggest the high employability of BSCS graduates. The private sector employed more Computer Science graduates compared to government agencies. However, the respondents' college degrees and job roles are not related.

5. RECOMMENDATIONS

State colleges and universities should continue evaluating their curriculum regularly to comply with the latest trends, developments, and the needs of the times so that their graduates will become competitive and be employed in jobs related to their field of expertise.

COMPETING INTERESTS

Author has declared that no competing interests exist.

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