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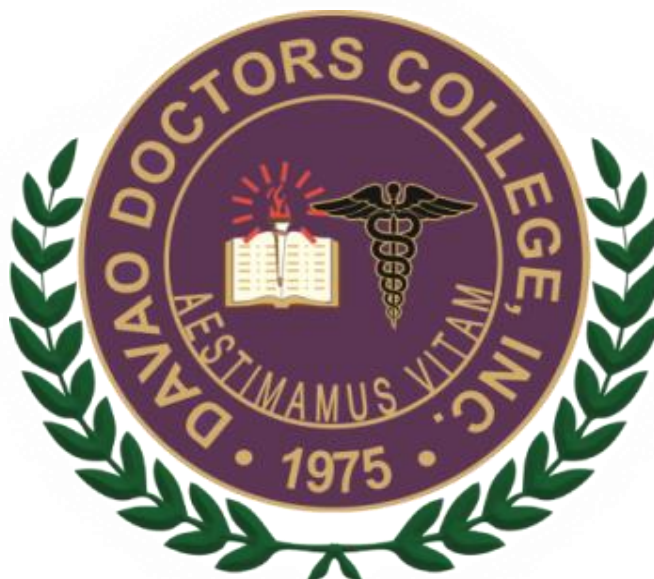
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ANALYSIS OF THE LIBRARY COLLECTION OF A HIGHER EDUCATION INSTITUTION IN SOUTHERN MINDANAO

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Abstract

Collection analysis is essential to any library to identify if the printed collection meets the community's needs. This study aimed to analyze the library collection of the Higher Education Institution (HEI) in Southern Mindanao. Specifically, it aimed to evaluate the extent of compliance of the library resources of the programs that have not yet undergone an accreditation and assessed the core collections' depth using the conspectus method. Results revealed that the Medical Laboratory Science, Pharmacy, and Tourism Management programs are compliant with CHED Memorandum Orders and PACUCOA standards for Library Holdings. On the other hand, the Entrepreneurship and Education programs are not compliant in terms of journal subscription and collection holdings. In terms of the collection's comprehensiveness, print collections analysis shows each subject disciplines have a minimal and basic collection. The researchers recommended that librarians regularly update their collection development plan with a collection's copyright analysis based on the program's acquisition plan. Moreover, they should also periodically collaborate with the concerned programs- the Education and Entrepreneurship program, to update their library holdings.

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Introduction

Academic libraries exist to work with their institutional communities to support and achieve their educational mission (Association of Colleges and Research Libraries, 2003). Their mission is to envision a future where academics and libraries will be essential in thriving a global community of learners and scholars. However, several weaknesses in most libraries have been perceived such as old copyright, unbalanced, and inadequate collection. This leads to the importance of analysis of the library collection. It is essential to have a collection analysis or assessment to know if the collections are still suited to the user's needs (Brantmeier et al., 2013). If the library does not analyze its collection to determine how well it supports the university's mission, then the purpose of the library's existence is questionable (Henry, Longstaff, & Kampen, 2014). In building library collections, academic libraries have to provide materials to serve the students' and faculty's immediate needs and store these materials for future generations of scholars.

Consequently, the study of Genoni and Wright (2010), revealed that some of the collections were overlapping, and there were duplications of monographs copies in their library that were not necessary. Moreover, some of the collections do not suit the information needs of the community. In addition, the study also identified ongoing problems in the accuracy of their holdings data in the WorldCat database. Therefore, the researchers recommended that these libraries revisit their collection development policy to improve their collection management.

Furthermore, collections in most academic libraries are increasing, and the majority of the scholarly records exist in non-traditional forms wherein journals and monographs are changed into electronic databases, digitized resources, and other electronic resources. Most contents are also disseminated in other scholarly communication platforms, i.e., peer-reviewed journals, institutional repositories, and other networks.

Consequently, the study findings on the collection analysis directly show the characteristics, strengths, and weaknesses of the library's print and non-print resources for quality and excellent collection development. Lui (2015) discovered that as he compiled relevant statistics and bibliographic records, there were superseded edition titles and multiple copies that positively enabled the institution's weeding exercise. Knowlton (2016) also revealed more monograph collections than serials due to the significant impact of the price increases globally on flat budgets. They evaluated the print and e-book collections. The librarians had difficulty comparing the two formats and hardly consolidating the online usage statistics and print circulation figures.

In the Philippines, Torres (2017) found out that some libraries still have deficient and obsolete collections, and the library budget was one of the elements in having a poor collection. He evaluated the printed collection using Doodys' essential purchase list for basic sciences and clinical medicine. He then compared the match and nonmatch titles among libraries to determine each library's strong and weak disciplines.

The institution understudy is an accredited institution by the Philippine Association of Colleges and Universities Commission on Accreditation (PACUCOA). Its library holds 23,343 books per title and 39,432 per volume to support the institutions' curriculum by providing relevant books to the clients. The library resources adhere basically to the standards set by the Commission on Higher Education. There are accredited programs that have undergone thorough evaluations already. Hence the focus of this study is those new programs that will apply for accreditation soon. Since no study analyzes these new library collections, the researchers conducted this study to know if the entire collection is relevant to the community's needs. This study also looked into the comprehensiveness of the library collections. It will rule out the assumptions that the collection development is focused only on the collections for professional courses rather than developing a balanced collection. Results would be the basis in the preparation of the library collection development plan.

This study is anchored on the viewpoint made by Oseghale (2008), stating that collection evaluation is an essential aspect of library services that developed a balanced and usable collection. Higher Education library printed resources are built to address all programs' research, information, and scholarship needs. All library collections are built based on the curriculum. This covers all academic programs to meet the community, research, and teaching-learning needs. Collection analysis, therefore, is vital to warrant quality collections. This was further supported by Duncan and O'Gara (2015). They stated that the collection management, specifically collection assessment, should be anchored from the institution's and library's mission. The library's collection practices, therefore, should be parallel with the institution's mission.

It is also anchored on the Research Libraries Group (RLG)' Conspectus Method. It is a recognized and widely used collection assessment tool (Online Computer Library Center Research, 2018). It was created through surveys using worksheets based on the Dewey Decimal Classification Scheme. The collection level indicators ranging from 0 (out of scope) to 5 (comprehensive) determine if collection goals are met or deficient. This study provides an overview of the academic library's collection profile and its effort to comply with regulatory and accreditation requirements. It provides an insight for the librarians into the value of conducting collection analysis to determine resource allocation and to produce a balanced and adequate collection. The conceptual framework of the study is using Input-Process-Output design. The input consists of the print library collection, such as core and professional collection. In the process, they analyzed the library collections through the standards of CHED Memorandum Orders (CMO), Philippine Association of Colleges and Universities Commission on Accreditation (PACUCOA), and Conspectus Approach.

This study aimed to analyze the library collection of a Higher Education Institution's (HEI) Library in Southern Mindanao. Specifically, this study sought to:

1. Determine the profile of the print library collection in terms of core and professional collection;
2. Evaluate the extent of compliance of library collection based on the standards of CHED and PACUCOA; and
3. Assess the extent of collection depth based on the conspectus approach.

Methods

The study used a descriptive research method to determine the profile and extent of the library collection compliance to CHED and PACUCOA standards. Further, it aimed to assess the extent of collection depth based on the conspectus approach.

The researchers asked the Chief Librarian permission to use the printed library collection holdings from the Technical Section. The library collections were then analyzed through the standards of CHED Memorandum Orders (CMO), Philippine Association of Colleges and Universities Commission on Accreditation (PACUCOA), and Conspectus Approach. The researchers prepared the matrix showing the standards and the library's extent of compliance. Since this study was only using secondary data, other ethical measures were not necessary, so this study only underwent grammar and plagiarism checking. Also, since the study is about profiling library holdings per program and determining its extent of compliance, the researchers used Frequency as its statistical tool.

Results and Discussion

1. Profile of Print Library Collection

Table 1.1 below showed the profile of the print library collection of the HEI'S Library in terms of the core collections. The library's overall core collections are 9,666 book titles with 15,420 volumes. There are 467 book titles with 552 volumes from 2016 up to the present regarding the collection's recency as to copyright.

Table 1.1 *Core Collections*

No.	Discipline	Titles	Volumes	Copyright Analysis 2016-present	
				Titles	Volumes
1	Circulation	5154	6646	231	233
2	Filipiniana	1879	2943	68	72
3	Reference	950	2216	46	48
4	General Education	1683	3615	122	199
	Total	**9666**	**15420**	**467**	**552**

The library's core collection was compliant with the Commission on Higher Education (CHED) standards, stated that at least 5,000 titles are necessary to effectively support the school's educational programs.

Also, standards dictate that at least 20% of the core collection must have been published within the last ten (10) years (Commission on Higher Education, 2017).

Table 1.2 below displays the profile of the print library collection in terms of professional collection. The library had an overall professional collection of 13,677 book titles with 24,012 per volume. In terms of the collection's recency, 1,826 book titles with 2,224 volumes indicate a copyright analysis from 2016 up to the present.

Table 1.2 Professional Collections

No.	Program	Titles	Volumes	Copyright Analysis 2016-present	
				Titles	Volumes
1	Biology	1065	2149	96	124
2	Bio. Medical Horticulture	955	1849	34	45
3	Doctor of Optometry	724	1051	95	127
4	Education	868	1698	46	55
5	Entrepreneurship	695	963	173	201
6	Hospitality Management	1491	2708	125	159
7	Master of Science in Radiologic Technology	303	322	60	68
8	Master of Arts in Nursing	461	700	137	140
9	Medical Laboratory Science	313	541	66	92
10	Nursing	1407	3758	244	274
11	Occupational Therapy	1136	1599	88	101
12	Pharmacy	383	547	100	135
13	Physical Therapy	1225	1890	149	181
14	Psychology	837	1320	150	161
15	Radiologic Technology	1320	2161	134	190
16	Tourism Management	494	756	129	171
TOTAL		**13677**	**24012**	**1826**	**2224**

Among the school's 16 programs, the Medical Laboratory Science, Pharmacy, Entrepreneurship, Tourism Management & Education are the programs that have not yet undergone accreditation. Specifically, as reflected in table 1.2 above, the Medical Laboratory Science program had 313 book titles with 541 volumes. As to the collection's currency, 66 book titles with 92 volumes indicate a copyright analysis from 2016 up to the present. Pharmacy programs had total collections of 383 book titles with 547 volumes. One hundred book titles with 135 volumes belong to copyright 2016 up to the present. Entrepreneurship programs had 695 titles with 963 volumes. One hundred seventy-three titles with 201 volumes are published within the last five (5) years. Tourism Management had 494 book titles with 756 volumes. One hundred twenty-nine book titles with 171 volumes were published within the last five (5) years. Lastly, the Education program had 868 book titles with 1698 volumes. Forty-six titles with 55 volumes are published within the last five (5) years.

2. The extent of Compliance of Library Collection

Table 2 below presented the extent of library collection compliance based on the standards indicated in the CMO and PACUCOA. The Medical Laboratory Science (MLS) program have complied with all the CMO requirements such as (1) at least two (2) titles of the current edition of MLS books, pamphlets, monographs, and serials are used as basic reference reading materials for each MLS course; (2) subscription to a minimum of one (1) international journal and two (2) local journals as well as Health Science periodicals and; (3) must have at least one (1) copy of the textbooks for every 15 students enrolled in the class. The said program is also compliant with all the PACUCOA requirements wherein a library must have the following: (1) a basic book collection of 5,000 for a college; (2) a minimum of five (5) selected titles is provided for every student and; (3) a core periodical collection of current and relevant titles, both local and foreign is provided based on the CHED requirement per program. Hence, it is safe to assume that the MLS program is now ready for accreditation under the area Library.

The Pharmacy program has complied with all the CMO requirements that at least three (3) titles of the latest edition per professional course; five (5) titles of pharmaceutical journals are available. The said program has also complied with all the PACUCOA requirements. It has a basic book collection of 5,000 titles for a college to effectively carry out its educational program. A minimum of five (5) selected titles are provided for every student. Thus, the pharmacy program is now also prepared for accreditation under the area Library.

Meanwhile, the Entrepreneurship program has complied with the CMO requirements that at least three (3) titles per professional course in the curriculum be published within the last five (5) years. The non-print materials are available, such as CD ROMs, online databases, and local and international e-journals. However, the subscription to at least two (2) international and two (2) local professional publications related to Entrepreneurship has not complied because the library subscribed with (2) international publications and one (1) local professional publication only. On the other hand, the entrepreneurship program is compliant with all the PACUCOA requirements wherein: a basic book must have a collection of 5,000 titles for a college; a minimum of five (5) selected titles are provided for every student; and a core periodical collection of current and relevant titles, both local and foreign is provided based on the CHED requirement per course. Therefore, the library should have an additional subscription to the local professional publication in compliance with CMO/ PACUCOA requirements to be ready for accreditation.

The Tourism Management program has complied with all the CMO requirements that in terms of basic collection, the library should have the following: (1) 3,000 volumes for start-up school (50% of the holdings are distinct titles); (2) a total of not less than 5,000 volumes after two (2) years of operation (50% of the holdings are distinct titles) and; (3) a basic collection include: General References, Cultural, Filipiniana, Humanities, Social Science, Science and technology, and General Education courses have at least five (5) titles per course. The library has (5) titles per professional course and published within the last five (5) years regarding professional holdings. In terms of periodical collection, the library subscribed to at least two (2) international and two (2) local professional publications related to Tourism Management. Non-print materials such as CD ROMs, online databases, regional and international e-journals

are also available. The said program is also compliant with all the PACUCOA requirements. A basic book collection of 5,000 titles for a college, a minimum of five (5) selected titles is provided for every student. Core periodical collections of current and relevant titles, both local and foreign, are also offered based on the CHED requirement per course/ program. Consequently, the Tourism Management program is now ready to be accredited under the area Library.

Lastly, the Education program is not compliant with the CMO requirements. Not all education courses have at least three (3) titles per professional course in the curriculum published within the last five (5) years. The subscription to at least two (2) international and two (2) local professional publications related to Education is not also complied with because the library doesn't have a subscription to this program. On the contrary, the library has non-print materials such as CD ROMs, online databases, local and international e-journals, but it is limited. The said program is compliant with the PACUCOA requirements, wherein a basic book collection of 5,000 titles for a college. On the other hand, the minimum of five (5) selected titles for every student and core periodical collections of current and relevant titles, both local and foreign, has not complied. This is because some of the education courses don't have available titles, and the library doesn't have periodical collections on this program.

To sum it up, among the remaining five programs that have not yet undergone accreditation, the Medical Laboratory Science, Pharmacy and Tourism Management programs are now ready for PACUCOA accreditation under the area Library- Holdings. The Entrepreneurship Program will only need to update its subscription to print journals; however, the Education program still needs to develop its collections in books and journals.

Table 2. Compliance of the Programs on CHED and PACUCOA Standards

PROGRAMS	CMO	Extent of Compliance (complied or not complied)	PACUCOA	Extent of Compliance (complied or not complied)
Medical Laboratory Science	1. availability of at least two (2) titles of each current edition MLS books, pamphlets, monographs, and serials used as basic reference reading materials for each MLS subject	Complied	1. a basic book collection of 5, 000 or 10, 000 titles for a university to carry out its educational program effectively	Complied
	2. subscription to a minimum of one (1) international journal and two (2) local journals as well as Health Science periodicals shall be maintained	Complied	2. in addition to the basic collection, a minimum of five (5) selected titles should be provided for every student	Complied
	3. have at least one (1) copy of the textbooks for every 15 students enrolled in the class	Complied	3. a core periodical collection of current and relevant titles, both local and foreign should be provided based on the CHED requirement per course/ program	Complied
PROGRAMS	CMO	Extent of Compliance (complied or not complied)	PACUCOA	Extent of Compliance (complied or not complied)
Pharmacy	1. availability of at least three (3) titles of latest edition per professional course	Complied	1. a basic book collection of 5, 000 or 10, 000 titles for a university to carry out its educational program Effectively	Complied
			2. in addition to basic collection	
	2.availability of the pharmaceutical journal (5 titles)	Complied	a minimum of five (5) selected titles	Complied
	1. at least three (3) titles per		1. a basic book collection of 5, 000 or 10, 000 titles	

	professional course in the curriculum, published within the last five (5) years	Complied	for a university to carry out its educational program effectively	Complied
Entrepreneurship				
	2. subscription to at least two (2) international and two (2) local professional publications related to Entrepreneurship.	Not complied	2. in addition to the basic collection, a minimum of five (5) selected titles should be provided for every student	Complied
	3. availability of non-print materials such as CD ROMs, online databases, local and international e-journals, and the like	Complied	3. a core periodical collection of current and relevant titles, both local and foreign should be provided based on the CHED requirement per course/ program	Complied
		Extent of Compliance		Extent of Compliance
PROGRAMS	CMO	(complied or not complied)	PACUCOA	(complied or not complied)
Tourism	**1.** Basic Collection 1.1 3,000 volumes for start-up school (50% of the holdings should be distinct titles	Complied	1. a basic book collection of 5, 000 or 10, 000 titles for a university to carry out its educational program effectively	Complied
Management				
	1.2 a total of not less than 5,000 volumes after two (2) years of operation (50% of the holdings should be distinct titles)	Complied	2. in addition to the basic collection, a minimum of five (5) selected titles should be provided for every student	Complied

	1.3 Basic collection should include: General References, Cultural, Filipiniana, Humanities, Social Science, Science and Technology and General Education courses should have at least five (5) titles per course	Complied	3. a core periodical collection of current and relevant titles, both local and foreign should be provided based on the CHED requirement per course/ program	Complied
	2. Professional Holdings 2.1 at least (5) titles per professional course published within five (5) years	Complied		
	3. Periodical Collection 3.1 subscription to at least two (2) international and two (2) local professional publications such as journals and bibliographies related to Tourism Management	Complied		
	4. Non-Print Materials 4.1 availability of non-print materials such as CD ROMs, online databases, local and international e-journals, and the like	Complied		
Education	1. at least three (3) titles per professional course in the curriculum, published within the last five (5) years	Not complied	1. a basic book collection of 5, 000 or 10, 000 titles for a university to carry out its educational program Effectively	
	2. subscription to at least two (2) international and two (2) local professional publications related to the course	Not complied	2. in addition to the basic collection, a minimum of five (5) selected titles should be provided for every student	

	3. availability of non-print materials such as CD ROMs, online databases, local and international e-journals, and the like	Complied	3. a core periodical collection of current and relevant titles, both local and foreign should be provided based on the CHED requirement per course/ program	

3. The extent of Library Collection Depth

Table 3 reveals the depth and comprehensiveness of the print library collection of this HEI's Library based on the Conspectus Method. It determines the collection's strengths and weaknesses using the collection level indicators ranging from 0 (out of scope) to 5 (comprehensive).

The library used the Dewey Decimal Classification (DDC). It is a system for organizing a library's contents based on all knowledge division into ten groups—each group number assigned to different courses. The ten main groups are 000–099, Computer Science, Information & General Works; 100–199, Philosophy and Psychology; 200–299, Religion; 300–399, Social Sciences; 400–499, Language; 500–599, Natural Sciences and Mathematics; 600–699, Technology; 700–799, Arts & Recreation; 800–899, Literature and Rhetoric; and 900–999, History, Biography, and Geography (Editors of Encyclopedia Britannica, 2017). Results revealed that (000) or Computer Science, Information & General Works, (200) Religion, (600) Technology, (700) Arts & Recreation, (800) Literature & Rhetoric, (900) and 900–999, History, Biography, and Geography (Editors of Encyclopedia Britannica, 2017). History, Biography & Geography had a collection level 1, which means that collection on these subjects was minimal. Level 1 supports minimal inquiry about this subject and includes a minimal collection of general resources, including monographs and reference works. Groups (100) or Philosophy & Psychology, (300) Social Sciences, and (400) Language had a collection level 2, which means that collection on these subjects was for the basic information. Level 2 supports the library users' needs in the first two years of college. Only the group (500) Science had a collection level 3, which means that these collections are used for study/Instructional support. The collections are extensive because it supports general library users' needs through college and beginning graduate instruction.

Generally, even though most of the collection was minimal, the library can still suffice users' needs because the school has a subscription to e-resources using the Ebrary database.

Table 3. Collection Profile based on Conspectus Method

Dewey Decimal Classification First Summary The Ten Main Classes	Conspectus Level	Description
000 Computer Science, Information & General Works	1	Minimal
100 Philosophy & Psychology	2	Basic
200 Religion	1	Minimal
300 Social Sciences	2	Basic
400 Language	2	Basic
500 Science	3	Study/Instructional Support
600 Technology	1	Minimal
700 Arts and Recreation	1	Minimal
800 Literature and Rhetoric	1	Minimal
900 History, Biography & Geography	1	Minimal

The forgoing data findings support the initial observation that the collection development is program-content focused rather than a holistic or comprehensive collection. This study's findings also showed the Medical Laboratory Science, Pharmacy, and Tourism Management readiness for accreditation under the Area: Library Holdings. In like manner, there is only a minor deficiency for the Entrepreneurship Program, which can be quickly addressed. However, the library should prioritize the Education Program as both books and journals are not adequate. Although there are programs with deficiencies in journal print subscriptions, the library should process the subscriptions upon seeking recommendations from the concerned program's faculty as endorsed by the Head of the Program. Consequently, upon checking the comprehensiveness of the collection, there are subject disciplines with minimal collections. These findings and limitations will serve as the basis for preparing the Collection Development Plan, anchoring the library's acquisition program in coordination with the Faculty-Library Committee.

Conclusion and Recommendation

Collection analysis ensures that the library's collection meets the community's current needs by providing reliable, up-to-date, relevant materials and other information sources. Results reveal that the three programs, Medical Laboratory Science, Pharmacy, and Tourism Management, are compliant with CHED Memorandum Orders and PACUCOA standards for Library Holdings. As the Entrepreneurship program has only a minor deficiency, to make a journal subscription. However, the Education program's collection still needs to be developed or updated.

Consequently, in terms of collections' comprehensiveness, print collections analysis shows that there are those subject disciplines with a minimal and basic collection. Hence, it is

recommended that Librarians shall submit a collection development plan with a collection and copyright analysis as a basis for the acquisitions program in coordination with the Faculty-Library Committee. Also, it is recommended that the collection analysis will not limit only to the print collection but also to available e-resources and open access sources. The Reader's Services Librarian and the Technical Librarian will continue to collaborate with Program Chairs and instructors to ensure that books acquired are maximally utilized. User statistics per program should be regularly posted and communicated to the program concerned.

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Appendix A

Conspectus Guide Interpretation:

Conspectus Level	Description	Definition
5	Comprehensive	A collection in a specifically defined field of knowledge that strives to be exhaustive, as far as is reasonably possible (i.e., a "special collection"), in all applicable languages.
4	Research	A collection that contains the major published source materials required for doctoral study and independent research
3	Study/Instructional Support	Collections that provide information about a subject systematically, but at a level of less than research intensity, and support the needs of general library users through college and beginning graduate instruction
2	Basic	Collections that serve to introduce and define a subject, to indicate the varieties of information available elsewhere, and to support the needs of general library users through the first two years of college instruction
1	Minimal	Collections that support minimal inquiries about this subject
0	Out of Scope	The library does not intentionally collect materials in any format for this subject

ANALYSIS ON BIBLIOGRAPHIC REFERENCE CITATIONS OF UNPUBLISHED MATERIALS FROM A.Y. 2015-2017 IN A HIGHER EDUCATION INSTITUTION

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Abstract

A proper bibliographic reference citation of information sources is essential to avoid plagiarism. This study aimed to analyze the bibliographic reference citations of the entire 150 unpublished materials in a Higher Education Institution, using a content analysis method. Findings revealed that most students use Internet sources (Google) than other resources like books, journals, and library databases. The majority of them failed to cite some of the sources they used in their research. Also, they were unable to cite sources correctly using APA 6th edition guidelines. The researchers recommend a comprehensive library instruction program, with a referencing module on citation references.

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Introduction

In writing academic research, it is essential to cite and acknowledge the sources that a researcher used to avoid plagiarism. A bibliographic reference citation is a process of acknowledging the resources used in the study. Sources may include journals, books, newspapers, magazines, lecture notes, websites, and lecture notes. When researchers fail to cite references correctly or, worse, no citations lead to plagiarism accusations. Plagiarism is a grave offense in the academic and learning community. This violation may result in disciplinary action (Bowden & DiBenedetto, 2001; Neville, 2007).

Plagiarism is a serious concern among higher education institutions. Although plagiarism has been traditionally seen as cheating, it is increasingly thought to result from poor referencing. Generally, students have difficulties in citation and referencing. In this regard, some academic institutions offered writing activities among students, and instructors underwent referencing training to improve students' competency in referencing and citation (Greenwood, Walkem, Smith, Shearer, & Stirling, 2014).

Moreover, in the study of Lamptey and Atta-Obeng (2012), they found out that most of the students had problems mastering reference style formats. To ensure that their citations are accurate, they rely on books, lecturers, and librarians. Students could not identify the citation format they used and cannot cite references for books and journal articles with confidence. Moreover, as presented in the paper of Park, Mardis, and Ury (2011), the rapid changing of resource formats and evolving style format systems resulted in students struggling in citing sources. In effect, the citations of bibliographic references in their research paper

are written in the wrong format.

Furthermore, the research conducted by Waytowich, Onwuegbuzi, and Jiao (2006) about the characteristics of doctoral students who commit citation errors in their doctoral dissertation proposals revealed that graduate students with relatively high levels of self-oriented perfectionism tended to determine the most citation errors. They tend to construct reference lists that departed the furthest from the citation style stipulations. Most of the students are also inconsistent and missed citing some of the resources they used in their papers. Many students experience difficulties citing and referencing bibliographic sources in writing their academic research (Kargbo, 2010; Kendall, 2005). Many students experience difficulties citing and referencing bibliographic sources in writing their academic research (Kargbo, 2010; Kendall, 2005).

According to Tran (2012), the students' original writing style in their culture, motivation, learning, and the different approaches to referencing adopted by different teachers all appear to be the key factors that significantly affect students' citing and referencing in their work. These reasons make the students prone to plagiarism, breaking the institution's academic integrity rules.

With these studies above, it is evident that students are more likely to have difficulty citing bibliographic references in their research. As such, the researchers are challenged to conduct a study on the analysis of bibliographic reference citations of unpublished materials in a Higher Education Institution Library, from A.Y. 2015-2017. Hence, this research needs to be undertaken.

This study is anchored on the American Psychological Association (2003), which posited that bibliographic references enable the readers to access and cite the information sources used in any research. The reference list contains all sources used by the researchers in their study. It provides all the necessary information that enables a reader to locate and retrieve relevant sources being cited (Masic, 2013). It is a basic rule in writing a research paper to give an accurate, complete, and consistent citation to avoid plagiarism.

The conceptual framework of the study follows the Input-Process-Output model. The input is composed of the unpublished material's profile, including the year, program, and the number of information sources cited by the students in their studies. The process variable is the analysis of undergraduate and graduate research in terms of citation in text matching the citations under the reference list and the students' reference error using APA format. Finally, this study's output will be a proposed intervention program based on the analysis results.

The study examines the bibliographic reference citations of unpublished materials in the Library of Higher Education Institution from A.Y. 2015-2017. Specifically, this study seeks to answer the following objectives:

1. To determine the profile of unpublished materials in terms of:
    1.1 Year;
    1.2 Degree Program; and
    1.3 Number of information sources cited.

2. To analyze the bibliographic reference citation analysis in terms of:
    2.1 Citations in-text matching the reference list, and;
    2.2 Reference errors using APA format.

3. To prepare an intervention program based on the result of the study.

Methods

Content analysis was used to provide the right presentation of the primary sources that the researchers need in the study. This method is an objective, systematic, and quantitative description research technique that provides the quantitative analysis of information in text and the types of content measured and sampling considerations. It deals with data collection used in data analysis (Ward, 2012; Alicay, 2014). The study was conducted in the library of a Higher Education Institution in Southern Mindanao. Since there are only 150 unpublished materials from AY 2015-2017, the researchers examined all of them through content analysis.

In gathering the data, the researchers asked the Chief Librarian to use the HEI's undergraduate theses to examine the students' common mistakes in citing bibliographic references. The researchers used a data matrix in a spreadsheet with the following information: a period of the study, course program and number of the information sources cited in their research, number of citations in-text matching the references listed, and reference citation errors using APA format. Frequency and percentage were used to analyze the collected data.

Results and Discussion

Profile of the Respondent Categorized by Course Program and the Number of Information Sources Cited

Table 1 showed the profile of the 150 unpublished theses submitted in the library for the year 2015-2017. It was categorized in terms of the year, degree program, and information sources cited by the students. Results showed that in 2017,47, unpublished theses constituted 31%; in 2016, there are 52 (35%), and in 2015, 51 unpublished theses represented 34%.

Furthermore, in terms of degree programs: Master in Nursing has the highest number of unpublished Thesis from the year 2015-2017, constituting (36) with the percentage of (24%); BS-Radiologic Technology with 24, 16%; BS-Psychology, 18 (12%); BS-Biology, 14 (9%); both BS-Nursing & BS-Physical Therapy 13 (9%); BS-Hospitality Management, 11 (7%); BS-Occupational Therapy (10) with the percentage of 7%; Doctor of Optometry, (9)with the percentage of 6% and lastly; B.S.- MLS Therapy (2) unpublished theses with the percentage of 1%. To sum up, we analyzed 150 unpublished theses in the study.

The number of information sources cited by the students in their research was also illustrated in this table, with a total number of 2499 cited information sources. We discerned that the students' highest number of information sources in their research are Internet sources, with the frequency of 1177, constituting 47.3%. Journals follow this with 630 (25.3%); the third one is Books with a frequency of 328 (13.2%); the next one is online journals (ProQuest) with 276 citations comprising 11.1 %. Moreover, the Thesis indicates 37 citations comprising 1.5%; Ebrary (Electronic book) has the frequency of 23 number of cited references and rate of 0.9 %, followed by Magazines with 10 (0.4 %). Lastly, the lowest quantity of information mentioned was the Newspaper with nine cited references and 0.4%. This means that most students are using Internet sources (Google) then printed resources like books, journals, and databases available in the library like ProQuest (online journal) and Ebrary (electronic books).

Table 1. Profile of the Respondent Categorized by Year, Course Program, and No. of Information Sources Cited.

Year	Frequency	Percentage
2017	47	31
2016	52	35
2015	51	34
Total	150	100

Course Program	Frequency	Percentage
Master of Nursing	36	24
BS-Radiologic Technology	24	16
BS-Psychology	18	12
BS-Biology	14	9
BS-Nursing	13	9
BS-Physical Therapy	13	9
BS-Hospitality Management	11	7
BS-Occupational Therapy	10	7
Doctor of Optometry	9	6
BS- MLS	2	1
Total	150	100

Types of Information Sources Cited.	Frequency	Percentage
Internet Sources	1177	47.3
Journal	630	25.3
Book	328	13.2
Proquest (Online journal)	276	11.1
Thesis	37	1.5
Ebrary(Electronic book)	23	0.9
Magazines	10	0.4
Newspaper	9	0.4
Total	2499	100

Bibliographic Reference Citation Analysis

Table 2 displayed the information about bibliographic reference citation issues and problems of the students in citing sources. It is composed of citations in-text matching the list of references and the reference errors in using APA Format.

The content analysis reveals that all 150 unpublished materials understudy has errors in the citation, whether in-text or in its reference list. Also, findings show that 54% indicating 1609 information sources used in-text in the supporting literature are not reflected in the reference list. On the contrary, 1380 information sources constituting 46% are listed in the reference but not mentioned or used in the text. It was evident that some students were not crediting the sources they used in their research that will lead them to plagiarize others' work. It is related to Park's (2003) findings that when the students didn't acknowledge the sources they used in their research, they are called literary theft or plagiarized others' work.

It was also displayed in Table 2 of the reference errors in using APA format. Based on APA format 6th edition standard, results reveal 5818 citation errors committed by the students. Generally, students commit mistakes in italicizing the Title of journal, book, and internet sources with 1323 errors and a percentage of 22.7%. This is followed by the inappropriate capitalization of the book's title, Internet source, and journal having 284 errors (22.1%).

Other errors committed are as follows: period not presented at the end of reference1228 errors, 22.1%; not using proper indention of bibliographic reference entry or not using the hanging indention, with 427 errors (7.3 %).

Consequently, the volume number of journals (periodicals) not italicized with 385 errors (6.6%); 258 errors on the use of ampersand with 4.4%; incorrect placement of date published from information sources with 180 errors (3.1%); space and comma are not presented between initials of each author, 149 errors constituting (2.6%); the first name of authors is inappropriately spelled-out with 44 errors (1.2%); 113 errors (19%) on initials of authors not presented; misuse of et al. with 103 inaccuracies (1.8%); 89 errors on place and name of the publisher is not provided (1.5%); 87 errors (1.5%) on the use of (retrieved from) in citing internet sources not presented; website inappropriately underlined with 34 errors (0.6 %); names of authors are not inverted with 21 errors constituting 0.4%, and the first letter on subtitles is not capitalized with 14 errors (0.2%).

The results show that students are not skilled in referencing techniques, as evident in the errors committed.

This study's findings support Onwuegbuzie and Hwang's (2013) conclusion that most of the researchers' committed reference errors in terms of format, correctly not proper capitalization of the Title of reference use, italicization, and indention.

Table 2. Bibliographic reference citation analysis

Research Outputs with Citation Errors	Frequency	Percentage
Graduate	36	100
Undergraduate	114	100

Citations in-text matching the list of references list	Frequency	Percentage
Cited in the text but not listed in the references	1609	54
Listed in the references but not cited in the text	1380	46
Total	**2989**	**100**

Reference errors based on using APA Format	Frequency	Percentage
Title of book, Internet source, and journal are inappropriately capitalized	1323	22.7
Title of journal, book and internet sources are not italicized	1284	22.1
Period not presented at the end of the reference	1228	21.1
Not using proper indention of bibliographic reference entry or not using the hanging indention	427	7.3
The volume number of journals (periodicals) is not italicized	385	6.6
Ampersand is not presented for more than 1 author	258	4.4
Incorrect placement of data published from information sources (e.g. Books, journals, internet sources &, etc.)	180	3.1
Space and comma are not presented between the initials of each author	149	2.6
The first letter of the second part of the title/ Subtitle is not capitalized	123	2.1
First Names of authors are inappropriately spell-out	123	2.1

Initials of authors not presented	113	1.9
Misuse of et al.	103	1.8
Place and Name of Publisher are not provided	89	1.5
Use of (Retrieved from) in citing internet sources not presented	87	1.5
Website inappropriately underlined	34	0.6
The name of the author is not inverted	21	0.4
The first letter of the second part of the title/ Subtitle	14	0.2
Total	**5818**	**100**

From the preceding, the researchers deemed that this study's findings tend to support the initial observation that students need to be appropriately oriented on citing references. Even though the topic citing sources is part of the research course, the findings suggest that students are inadequately skilled and knowledgeable. Librarians may play an important role; hence they should collaborate with research instructors in teaching student researchers on proper citation of information sources. The instructors may invite the librarians in their research to do the actual lecture on referencing guidelines. This implies that the existing library instruction plan should be enhanced; librarians may provide a virtual instruction guideline on APA referencing and will display an infographic inside the role of its referencing guidelines. They will also offer a referencing/citation guide that the students may borrow inside the reference section, where the theses and research papers are placed. These findings may also have implications on the lack of consideration of the technical panel's protocol in the aspect of bibliographic entries.

Conclusion and Recommendations

With a good number of errors observed in referencing, students tend to commit plagiarism, not generally because they copied others' ideas, but because they fail to cite sources correctly. Hence, it is recommended that the research instructors teach the students proper citation of sources used in students' assignments, projects, and research. The faculty can also reach out to the librarian to teach the students how to cite correctly using APA 6th edition format. The librarians should also develop an extensive bibliographic instruction program for the students concerning the proper use of

information sources and appropriate citation of information they use in their research, not only to freshmen students but also to all students if possible. A comprehensive library instruction program should be implemented, equipped with a referencing module on citation references. Librarians may also create a virtual instruction program as this attracts students.   Also, the

Technical Panel should verify all aspects of bibliographic entries before approving the paper. Finally, through its Research Office, the institution may invest in plagiarism software, so all student researchers shall undergo plagiarism checking before the approval of their final manuscripts.

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Antimicrobial Activity of Leaf and Stem Extract of *Tridax procumbens* Against *Pseudomonas aeruginosa* and *Staphylococcus aureus*

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Abstract

With the upsetting rate in the increase of antimicrobial pathogenic organisms' antimicrobial resistance, it has given rise to the need for surveying the susceptibility pattern. Thus, it enthused the researchers' attention towards the identification of different medicinal plants for antimicrobial properties. The purpose of this study is to test the anti-microbial activity of *Tridaz procumbens* leaf extract against *Pseudomonas aeruginosa* and *Staphylococcus aureus.* After after-only design or post-test only design using positive and negative control was used in the study. Based on the study results after 24 hours of incubation, results showed that there were varying differences in their mean zones of inhibition. Exhibiting the greatest inhibition zone of 10 mm was the *Pseudomonas aeruginosa* treated with 100% *Tridax procumbens* leaf extract and 10mm inhibition of Staphylococcus aureus also treated with 100% *Tridax procumbens* leaf extract. These concluded that *P. aeruginosa* was inactively susceptible to *T. procumbens* based on Guevera's Antimicrobial Activity Level wherein inhibition of fewer than ten millimeters (>10mm) is inactive. The statistical test showed a significant difference between the mean zones of inhibition of the different *Tridax procumbens* leaf extract concentrations and the control group. The researchers recommend using other parts of the plant, such as its stem, flower, and roots, to further evaluate its antimicrobial properties.

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Keywords: Antimicrobial activity, *Tridax procumbens, Pseudomonas aeruginosa, Staphylococcus aureus,* Southern Mindanao

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Introduction

Nowadays, infections caused by the microorganisms *Pseudomona saeruginosa* and *Staphylococcus aureus* became a serious threat to society, beginning from minor to major health problems. Antibiotics, which once became the foundation of modern medicine, are now at their maximum cost and may not be effective on infections in the present situation, for example, improper utilization, resulting in the microorganism being resistant to drugs. Before the emergence of antibacterial resistant strains of microorganisms, many people believed that virtually all bacterial infections were treatable given the vast array of effective antimicrobial agents. However, their optimism was shaken by the rise of resistance to multiple antibiotics among pathogens such as *Staphylococcus aureus, Streptococcus pneumonia, Pseudomonas aeruginosa,* and *Mycobacterium tuberculosis.*

Pseudomonas aeruginosa is a major cause of nosocomial and chronic infection; it is considered a paradigm of antimicrobial resistance development. *Pseudomonas aeruginosa* has intrinsic multidrug resistance, and several strains have acquired resistance to a wide variety of antimicrobials, including 3rd and 4th generation cephalosporins and carbapenems (Am Jed, 2006).

Multidrug-resistant *Pseudomonas aeruginosa* (MDRPA) is a significant and growing source of nosocomial infections that have few treatment options and are especially problematic for immunocompromised and intensive care unit (ICU) patients. The bacteria can be found in numerous reservoirs within the hospital (e.g., disinfectants, respiratory equipment, food, sinks, taps, and mops). The overall prevalence of *P. aeruginosa* in hospitals in the United States is approximately 4 out of 1000 (0.4%) discharged patients (Centers for Disease Control and Prevention, 2009). *Pseudomonas aeruginosa* is the frequent cause of nosocomial infections such as pneumonia, urinary tract infections (UTI), and bacteremia (EHA Consulting Group, 2015).

Staphylococcus aureus is a formidable and resilient human pathogen, as evidenced by its inexorable rise over recent years. Multiple mechanisms of virulence, together with the evolution of strategies to resist antibiotics, have contributed to its disquieting success. Staphylococcal infections are a common and significant clinical problem in medical practice. Most Staphylococcus aureus strains are resistant to penicillin, and methicillin-resistant strains of S. aureus (MRSA) are common in healthcare institutions.

The plant to be tested as an antimicrobial agent is the *Tridax procumbens,* commonly known as "coat buttons" or tridax daisy. It is a species of flowering plant in the daisy family. It is known as a weed and pest plant. This plant is an antiviral, antioxidant, antibiotic, wound healing, insecticidal, and has excellent anti-inflammatory activity in *in vitro* studies. Trying new substances such as the extract of this plant will be a big step in discovering ways to combat morbidity rates and the increasing rate of multi-drug resistance of human pathogens such as *Pseudomonas aeruginosa Staphylococcus aureus.*

Methods

This study utilized a true experimental research design, specifically the after-only design or post-test only design. We introduced the treatments while we recorded data on the dependent variable were recorded six times for the researchers and once from the expert. Pure culture of *Pseudomonas aeruginosa* and *Staphylococcus aureus* was used as the subject in the study. We excluded the contaminated cultures and growth of bacterial colonies in the agar.

The antimicrobial susceptibility of *Tridax procumbens* leaf was used against *Pseudomonas aeruginosa* and *Staphylococcus aureus*. We obtained the *Tridax procumbens* plant from Ulas, Davao City. The culture of *Pseudomonas aeruginosa* (ATCC27853) and *Staphylococcus aureus* (ATCC25923) was obtained at the Department of Science and Technology, Bajada, Davao City. The experiment was conducted at the Medical Laboratory Science Department of Davao Doctors College at General Malvar St. Davao City. The institution was committed to utilizing a competency-based and community-oriented curriculum in line with the Philippine Health Care System. The laboratory is well equipped with the necessary materials needed in the study, such as agar plates, Erlenmeyer flask, alcohol lamps, ruler, sterile swabs, inoculating loop, biosafety cabinet, incubator, and autoclave.

The *Tridax procumbens* used in this study are free of bruises or free from any discoloration in any part of the plant. The kind which has white petals rather than yellow petals was specifically picked. The white kind is easier to find and is more widespread. No contaminated part of the plant is included in the experiment to avoid discrepancies in the study.

The *Pseudomonas aeruginosa* (ATCC27853) and *Staphylococcus aureus* (ATCC25923) used are the standard strain that was requested from the Department's laboratory department of Science and Technology at Bajada, Davao City.

The method used is the Disk Diffusion method. This method is simple and practical and has been well-standardized. The test is performed by applying a bacterial inoculum of approximately $1-2 \times 10^8$ CFU/mL to the surface of a large (150 mm diameter) Mueller-Hinton Agar plate and Nutrient Agar. Up to 12 commercially prepared plates, fixed concentration, paper antibiotics disks are incubated for 24 hours at 37℃ before determining results. The zones of growth of inhibition around each of the antibiotic disks were measured to the nearest millimeter. The diameter of the zone is related to the susceptibility of the agar medium. The results were qualitative in that category of susceptibility.

The Rotary Evaporator was used to separate the extract of the *Tridax procumbens* plant from the solvent. 100%, 75%, 50%, and 25% Ethanol was used as a solvent for extraction. A graduated cylinder was used to measure the volume of the obtained extract. Beaker was used as the container for the storage of the obtained extract. Scissors were used to cut the leaves of *Tridax procumbens*. Agar plates were used as a container in culturing *Pseudomonas aeruginosa and Staphylococcus aureus*. A Sterile swab was used to transfer *Pseudomonas aeruginosa* and *Staphylococcus aureus* to the growth medium. Alcohol Lamp was used for sterilization. Incubator was used to grow and maintain microbiological cultures. The ruler was used to measure the growth of *Pseudomonas aeruginosa* and *Staphylococcus aureus*. A hot plate was used for preparing the agar media. The autoclave was used for sterilizing the laboratory equipment that was utilized throughout the study. Whatman no.1 Filter paper was used as a paper disk for the susceptibility test of the microorganism. Microbial Susceptibility Monitoring sheets are monitoring sheets made by the researchers to monitor the Zone of Inhibition of *Pseudomonas aeruginosa* and *Staphylococcus aureus.* The results that were obtained from the concentrations of *Tridax procumbens* leaf extract were recorded in millimeters.

Ethical Consideration

Researchers ensured that the procedures are followed correctly with the proper guide, care, and use of experimental organisms. The following are some practical considerations on harvesting: The crop should not be harvested when wet or in conditions of high humidity. If mechanical cutters were used, then all parts in contact with the crops should be kept clean and free from accumulated material. Harvested material should be collected in sacks or baskets and composting and mechanical damage to the harvested material should be avoided (Guidelines on the Conservation of Medicinal Plants, 2006).

The bacteria were treated as potential pathogens. During the experiment's initiation, the researchers established the proper procedure for the handling and disposal of the microorganism to prevent contamination and infection. With the rules set upon in Standard Operating Procedures, as stated in the Bacteriology manual (Berenio, 2010), the way of

disposing of the microorganisms is through autoclaving for 15 minutes at 121°C. And for the plants, as stated in the Federal Ethics Committee on Non-Human Biotechnology (2008) only healthy plants were selected in the experiment. Flowers were picked gently to prevent unnecessary stress for the plant. During the initiation of the experiment, the researchers established the proper procedure for the handling, storage, and disposal of plant materials.

The researchers asked for approval to conduct the study in the Medical Technology Laboratory to utilize their working area and materials. A letter of inquiry was given for purchasing a control strain of *Pseudomonas aeruginosa* and *Staphylococcus aureus* at the Department of Science and Technology, Bajada, Davao City. We use the Rotary Evaporator operated by the Pharmacy Department of Davao Doctors College for the extraction plants.

Sterilization

The filter paper was folded twice. Using a puncher, holes were made on the disc paper. The Whatman no. 1 filter paper discs serve as a test disc. The punched filter paper was wrapped in an aluminum foil and set aside for sterilization using an autoclave. The punched filter paper and the agar used as a medium were sterilized. Glass wares such as Petri plates with cover, beaker, funnel, and stirring rod, as well as the swab and the forceps were separately wrapped with foil paper. All of the equipment that has been used was subjected to sterilization in an autoclave at 121°C for 15 minutes. To avoid contamination, the disinfection of the area was strictly done before and after using 1:10 hypochlorite as a disinfectant.

Preparation of *Tridax procumbens* leaf extract

The *Tridax procumbens* plant's selections were collected from Ulas, Davao City because this place is rich with these kinds of plants and has no houses built in it and where grasses grow. The certification of authentication of the specimen was certified by Dr. Majella D. Bautista, a botanist from the University of Southeastern Philippines, Natural Science Department.

Maceration

100 grams of *Tridax Procumbens* leaves and were washed properly and air-dried, Then were macerated then were each soaked in 100 milliliters of ethanol in different concentrations 100%, 75%, 50%, and 25% respectively in a beaker for 24-48 (1-2 days) to get the extract from the leaves. (Guevarra 2004)

Extraction

After 48 hours, the leaves were taken out of the beakers. Using a muslin cloth, the macerated plant was separated from the extract mixed with ethanol. It was then placed on the Rotary Evaporator for the separation of the pure extract from the ethanol. The beaker was rotated by using speed control with a variable speed of 0 – 220 rpm to have a high constant torque. The beaker was lowered and touched the water bath without exceeding the boiling point. After evaporation, the pure extract was obtained.

Media Preparation

5.7 grams of Nutrient Agar and 9.5 grams of Muller-Hinton Agar were used and placed on a 500ml Erlenmeyer flask. 250ml Distilled water was poured on each Erlenmeyer flask and was heated on the hot plate until both agar mixtures were clear. The Erlenmeyer flasks containing the cooked agar were then covered with cotton and then aluminum foil and were then placed in the autoclave for 45mins to 1hour at 121°C.

After autoclaving the agar, it was poured directly onto the sterile Petri dishes filling the dishes in about 1/3. The Petri dishes were left semi-open but avoided air contamination to allow the agar to solidify.

Bacterial Culture Preparation

This step was performed in a biosafety cabinet to avoid contamination and the risk of infection. Materials were gathered, the agar plates, alcohol lamp, sterile swab for inoculating, and the tubes that are safely sealed containing the microorganisms. The test tube containing the bacterial broth was carefully opened to avoid spillage and was flame sterilized using the alcohol lamp. The sterile swab was dipped into the bacterial broth then removed. The test tube was gently flame sterilized again before recapping. The swab was spread evenly onto the agar plates in a rotating manner. Rotating the plates twice upon swabbing is ideal to come up with a uniform layer of bacteria. This was done on all the test plates for both the Nutrient Agar and the Mueller-Hinton Agar. After using the swab, it was flamed and disposed of in a biohazard container.

Disc diffusion assay on agar plates was used to determine the antimicrobial susceptibility of *Pseudomonas aeruginosa* and *Staphylococcus aureus* in *Tridax procumbens* plant extract. The antibiotic Vancomycin served as the positive control for *Staphylococcus aureus* and *Pseudomonas aeruginosa*. The distilled water served as the negative control for both microorganisms. The test disc was soaked in the petri dish containing the different concentrations of extracts for 15 minutes The distilled water served as the negative control for both microorganisms. The test disc was soaked in the petri dish containing the concentrations of the different extracts for 15 minutes and then placed in the agar plates labeled. After this, the treated bacteria were incubated for 24 hours at 37ºC.

Mean was used to determine the post-test Zone of Inhibition of the treatment group and its replication in the *Pseudomonas aeruginosa* and *Staphylococcus aureus* culture.

Results and Discussion

Microbiological Assay Screening Test

The results were obtained and presented in the laboratory experimentations for the actual testing of the antimicrobial activity of *Tridax procumbens* leaf extract with these as presented in the following tables. The summary of the Microbiological screening test and the level of antimicrobial activity of the grand mean Zone of Inhibition of *Tridax procumbens* leaf extract against *Pseudomonas aeruginosa* and *Staphylococcus aureus* after 24 hours of incubation were shown in Table 1.

The agar colorations after incubation were noted as well through pictures that were shown in the study. The *Pseudomonas aeruginosa* appeared as yellow-green colonies on Mueller-Hinton Agar. The Pseudomonas spp. characteristically produced water-soluble pigments that were diffused through the medium. The best-known pigments are pyocyanin (blue-green), pyoverdine (yellow-green, fluorescent), and pyorubin (red-brown, produced by a small proportion of strains). (https://www.microbiologyinpictures.com/pseudomonas-aeruginosa.html, 2016). The *Staphylococcus aureus* appeared as yellowish to golden colonies due to its pigment staphyloxanthin.

Table 1. The Grand Mean Zone of Inhibition of *Tridax procumbens* leaf extract against *Pseudomonas aeruginosa* and *Staphylococcus aureus* after 24 hours of Incubation.

Test Microorganisms	Tridax procumbens leaf extract	Positive Control	Negative control	Inhibition Zone level
Pseudomonas aeruginosa	4 mm	18 mm	2 mm	INACTIVE
Staphylococcus aureus	4.5 mm	20 mm	16 mm	INACTIVE

Legend: Equivalent Antibacterial Activity Level (Guevara, 2004)

Inhibition Zone (mm)	Level
<10 mm	Inactive
10-13 mm	Partially Active
14-19 mm	Active
>19 mm	Very Active

The Grand Mean Zone of Inhibition of *Pseudomonas aeruginosa* and *Staphylococcus aureus* were presented in Table 1. As stated, the mean inhibition of 4 mm in Leaf extract of *Tridax procumbens* was shown for the test microorganism *Pseudomonas aeruginosa* after 24 hours of incubation. 4.5 millimeters mean inhibition of the leaf extract of *Tridax procumbens* was shown for the test microorganism *Staphylococcus aureus.* The positive control Vancomycin showed 18 millimeters mean Zone of Inhibition for *Pseudomonas aeruginosa*, 20 millimeters mean Zone of Inhibition for *Staphylococcus aureus*. The negative control for *Pseudomonas aeruginosa* showed a mean zone inhibition of 2 millimeters, 8 millimeters for the negative control for *Staphylococcus aureus.*

Based on the equivalent antibacterial activity level, the *Tridax procumbens* leaf extract against *Staphylococcus aureus* and *Pseudomonas aeruginosa* both yielded "inactive" having less than ten mm (<10 mm) Zone of Inhibition. Results also showed that the negative control for *Staphylococcus aureus* resulted as active. Thus, the *Tridax procumbens* leaf extract is not effective against *Staphylococcus aureus* and *Pseudomonas aeruginosa* after 24 hours of incubation.

Table 2. The Zone of Inhibition of *Tridax procumbens* leaf extract against *Pseudomonas aeruginosa aureus* after 24 hours of Incubation.

Test Microorganisms	*Tridax procumbens* leaf extract				Positive Control	Negative Control
	100%	**75%**	**50%**	**25%**	18 mm	2 mm
Pseudomonas aeruginosa	10 mm	0 mm	2 mm	4 mm		
Inhibition Zone Level	Partially Active	Inactive	Inactive	Inactive	Active	Inactive

Legend: Equivalent Antibacterial Activity Level (Guevara, 2004)

Inhibition Zone (mm)	Level
<10 mm	Inactive
10-13 mm	Partially Active
14-19 mm	Active
>19 mm	Very Active

The Zone of Inhibition of *Pseudomonas aeruginosa* was presented in Table 2 and as stated, an inhibition of 10 mm in 100% Leaf extract of *Tridax procumbens* was shown after 24 hours of incubation. 0 millimeters inhibition of the 75% leaf extract of *Tridax procumbens* after 24 hours of incubation. 2 millimeters inhibition of the 50% leaf extract of *Tridax procumbens* was shown after 24 hours of incubation. Inhibition of 4 millimeters after 24 hours of incubation was shown for 25% leaf extract of *Tridax procumbens*. The positive control Vancomycin showed 18 millimeters of inhibition after 24 hours of incubation. 2 millimeters Zone of Inhibition for negative control was shown after 24 hours of incubation.

Based on the equivalent antibacterial activity level, the *Tridax procumbens* 100% leaf extract against *Pseudomonas aeruginosa* yielded "partially active" having a ten mm (10 mm) Zone of Inhibition. Thus, the 100% *Tridax procumbens* leaf extract is more effective against Pseudomonas aeruginosa than the 75%, 50%, and 25% leaf extract.

Table 3. The Zone of Inhibition of *Tridax procumbens* leaf extract against *Staphylococcus aureus* after 24 hours of Incubation

Test Microorganisms	*Tridax procumbens* leaf extract				Positive Control	Negative Control
	100%	75%	50%	25%		
Staphylococcus aureus	10 mm	0 mm	0 mm	8 mm	20 mm	16 mm
Inhibition Zone Level	Partially Active	Inactive	Inactive	Inactive	Very Active	Active

Legend: Equivalent Antibacterial Activity Level (Guevara, 2004)

Inhibition Zone (mm)	Level
<10 mm	Inactive
10-13 mm	Partially Active
14-19 mm	Active
>19 mm	Very Active

The Zone of Inhibition of *Staphylococcus aureus* was presented in Table 3, and as stated, an inhibition of 10 mm in 100% Leaf extract of *Tridax procumbens* was shown after 24 hours of incubation. 0 millimeters inhibition of the 75% leaf extract of *Tridax procumbens* after 24 hours of incubation. 0 millimeters inhibition of the 50% leaf extract of *Tridax procumbens* was shown after 24 hours of incubation. Inhibition of 8 millimeters after 24 hours of incubation was shown for 25% leaf extract of *Tridax procumbens*. The positive control Vancomycin showed 20 millimeters of inhibition after 24 hours of incubation. 16

Conclusion and Recommendations

The whole course of the experimentation used the Zone of Inhibition Methods to document the antimicrobial activity of *Tridax procumbens* leaf extract on different concentrations.

Utilizing the Kirby Bauer Method performed, the results were obtained from the Zone of Inhibition of *Tridax procumbens* leaf extract against *Pseudomonas aeruginosa* and *Staphylococcus aureus*. The 100% *Tridax procumbens* leaf extract inactively inhibited the *Pseudomonas aeruginosa* and *Staphylococcus aureus* after twenty-four hours (24 hours) of incubation. Inactively inhibited because both the inhibition activity level against *Pseudomonas aeruginosa* and *Staphylococcus aureus* is below 10 millimeters.

Through the performed experimentation, results were obtained. The researchers were able to conclude the problems being stated where a mean inhibition of 4 mm in Leaf extract of *Tridax procumbens* was shown for the test microorganism *Pseudomonas aeruginosa* after 24 hours of incubation. 4.5 millimeters mean inhibition of the leaf extract of *Tridax procumbens* was shown for the test microorganism *Staphylococcus aureus*. The positive control Vancomycin showed 18

millimeters Zone of Inhibition for negative control was shown after 24 hours of incubation.

The *Tridax procumbens* 100% leaf extract against *Staphylococcus aureus* yielded "partially active," having a ten mm (10 mm) Zone of Inhibition based on the equivalent antibacterial activity level. Thus, the 100% *Tridax procumbens* leaf extract is more effective against *Staphylococcus aureus* than the 75%, 50%, and 25% leaf extract that yielded an inhibition of 8 millimeters only after 24 hours of incubation.

millimeters mean Zone of Inhibition for *Pseudomonas aeruginosa*, 20 millimeters mean Zone of Inhibition for *Staphylococcus aureus*. The negative control for *Pseudomonas aeruginosa* showed a mean Zone Inhibition of 2 millimeters, 8 millimeters for the negative control for *Staphylococcus aureus*. Second, there is a significant difference in the mean Zone of Inhibition of *Pseudomonas aeruginosa* and *Staphylococcus aureus* compared to the result of the positive control and the negative control. Lastly, based on the equivalent antibacterial activity level, the *Tridax procumbens* 100% leaf extract against *Pseudomonas aeruginosa* yielded "partially active" having a ten mm (10 mm) Zone of Inhibition. Thus, the 100% *Tridax procumbens* leaf extract is more effective against Pseudomonas aeruginosa than the 75%, 50%, and 25% leaf extract. While the *Tridax procumbens* 100% leaf extract against *Staphylococcus aureus* yielded "partially active" having ten mm (10 mm) Zone of Inhibition thus, the 100% *Tridax procumbens* leaf extract is more effective against *Staphylococcus aureus* than the 75%, 50%, and 25% leaf extract that yielded an inhibition of 8 millimeters only after 24 hours of incubation.

Based on the results and findings gathered from the study, the researchers recommended conducting further studies on

method development to increase the antimicrobial activity of *Tridax procumbens* leaf extract against *Pseudomonas aeruginosa* and *Staphylococcus aureus*, performing the same method on *the Tridax procumbens* plant. However, other vegetative parts such as its stem, flower, and roots further evaluate the antimicrobial properties of the plant. Further, also perform Chromatography to separate mixtures of substances of the *Tridax procumbens* plant extract to screen the antimicrobial activity of the plant's components lastly will be able to conduct studies on applying the research on different microorganisms to test for its antifungal or anti-inflammatory benefits rather than its anti-bacterial properties

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A TRACER STUDY ON THE RADIOLOGIC TECHNOLOGY GRADUATES BATCH 2007-2018 OF A HIGHER EDUCATION INSTITUTION IN SOUTHERN MINDANAO

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Abstract

Academic institutions involved in developing human resources through long and short-term programs have to keep track of their graduates' performance to determine accountability and whether or not their programs have impacted the individual, the institution, or the country. This paper aimed to determine the Radiologic Technology graduates' profile of a Higher Education institution in Southern Mindanao Batch 2007-2018. A descriptive study using a survey questionnaire was employed on 169 respondents chosen through quota sampling and Slovin's formula. The standard Graduate Tracer Study (GTS) instrument by the Commission on Higher Education (CHED) was used to elicit data on educational attainment, reasons for pursuing the course, training and advanced studies attended, employment status, and relevant curriculum the present job. Results showed that the majority of the respondents attended training and advanced studies after graduation. Most of them are employed and presently working in the country. In terms of first job employment, most of the respondents got their first job in less than a month and through recommendation. In terms of the curriculum's relevance, most of them stated that the curriculum they had in college is relevant to their first job and attributed communication skills as the most important competency learned while at school.

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Introduction

The transition from an educational institution to real-life employment is an important concern to fresh graduates because the career decision is a lifelong process. A career is a continually dynamic activity influenced by different factors. Concerns about graduate unemployment are increasing each day and at an accelerated rate in the Philippines, yet the number of enrollees and graduate outputs of the higher education institutions is thriving quickly.

Healthcare institutions reveal that the educational background is an indicator of the graduate's quality as an individual. The kind of institution the graduate represents, the training and education they acquire has a bearing on the graduates' quality. Graduates must possess the character and values that would lead the healthcare institution to a higher degree of accomplishment. The healthcare institution's success depends on the technical skills next to the employees' work attitude that needs to be nourished by the higher educational institutions.

The institution system prepares students for future employment and furnishes them with the required knowledge, skills, and attitudes for the profession. The school's responsibility is to help students develop employability skills (Bennet, Dunne, & Carre, 2004). As mentioned by Celis, Festijo, and Cueto (2013), the quality of the graduates can be determined through their employability skills and professional development which were acquired before and after exiting the institution.

Iloeje (1996) mentioned that surveys of graduates from higher education institutions are considered an important tool of institutional development, particularly as the world of work changes rapidly. Through this method, higher education institutions can get a structured response from their former students in the form of a tracer study. Tracer studies are one form of observational study which provides valuable information on the quality of education and training of a specific institution of higher education (Wanya 2016). This information may be used for further development of the institution in the context of quality assurance (Schomburg, 2003). These surveys provide rich experience about the whereabouts of graduates, which might help broaden the perspectives among administrators, faculty, and students.

Currently, there is a scarcity of research on radiologic technology graduates' recent employment and their post-tertiary education activities. Thus, there is a need to conduct a tracer study of the radiologic technology program graduates to assess the relevance of the curricula, knowledge, and skills acquired by the graduates for their employment; and identify the professional characteristics and job placement of the graduates. This study will look after the institution's mission to provide the students with equal and appropriate knowledge and skills applicable to the graduates' future employment. Similarly, the study's findings will serve as the basis for the researchers to improve, update, or enhance the radiologic technology curricula to make them more responsive to the needs of the industries.

Methods

A descriptive survey method was used in this study, which is appropriate in the study as it describes and interprets the status of Radiologic Technology graduates from 2007 to 2018. The research respondents of the survey were selected from the year 2007 to 2018 graduates. The Radiologic Technology program has a total number of 522 graduates from 2007 to 2018. The graduates' identification was primarily taken on the roster of Radiologic Technology graduates from the Higher Education Institution's Registrar's Office, making available the names, addresses, emails, and telephone numbers of the graduates. The researchers created a follow-up on all the graduates' email addresses to update their address details due to the possible change of address and contacts.

Based on the tracing methods described above, the researchers utilized the quota sampling method in which they considered the percentage of retrieval of the questionnaires and representations of the identified number of graduates in the program. From the graduates' total population, the researchers aimed to gather at least 284 responses as per the recommended sample size using Slovin's formula; however, only 169 responses were collected, which made up 60% of the recommended sample size. The respondents were informed of the study's purpose and told that all their answers would be kept confidential. Written informed consent was then obtained from the respondents.

Table 1. Sample Size

Year Graduated	Population	Sample Size
2007	27	12
2008	22	10
2009	40	17
2010	45	19
2011	54	23
2012	55	24
2013	52	23
2014	79	34
2015	91	39
2016	57	25
2017	64	22
2018	99	36
TOTAL	**685**	**284**

The researchers have adapted the graduate tracer study (GTS) instrument prepared by the Commission on Higher Education (CHED, 2012). This is to ensure that the tool used in the study is well validated by an expert. The questionnaire comprised four areas: General Information, Educational Background, Training, and Employment Data. The gathered data were tabulated and analyzed. The percentage and rank were used to analyze the profile of the respondents concerning the selected variables. Because some of the items in the questionnaire were not answered by the respondents, frequency distribution was underestimated and not included in the tabular and descriptive presentation of data. This is one of the limitations of the study.

Results and Discussion

Respondent's demographic profile is presented in Tables 2-5.

Table 2
Civil Status of the Respondents

The respondents' profile in terms of civil status, as shown in Table 2, indicates that of the total number of respondents, more single respondents were at 86.6%, while married and single-parent respondents only comprised 11% and 2.4%, respectively. This trend is primarily attributed to the inclusive years of graduation from which the respondents were taken. The study only considered the years from 2007 to 2018; hence, many of the respondents are still young and are not yet married.

Civil Status	Percentage (%)
1. Single	86.6%
2. Married	11%
3. Single parent	2.4%
4. Separated / Divorced	0%
5. Married but living with a spouse	0%
6. Widow or Widower	0%

Table 3
Sex of the Respondents

Sex	Percentage
1. Female	56.5%
2. Male	43.5%

Table 3 shows the sex distribution of the respondents. As shown in the table, females dominated the respondents' group with 56.5%, while males comprised only 43.5% of the respondents. This distribution may be attributed to the female-dominant contacts of two of the data gatherers. This may also be indicative of the more responsive nature of females to social networks. Furthermore, this distribution reinforced the strong relationship between gender and course established in the study, indicating that more females are attracted to medical courses.

Table 4
Location of Residence

Location	Percentage
1. City	79.1%
2. Municipality	20.9%

Table 4 presents the location of residence of the respondents. As shown in the table, most of the respondents (79.1%) reside in the city, while the remaining 20.9% reside in the municipality. This distribution may be attributed to an increasing number of hospitals in the city, which affects the demand for work labor.

Table 5
Year of Graduation of the respondents

Year Graduated	Percentage
2016	28.9%
2017	25.8%
2012	20.6%
2010	4.1%
2011	4.1%
2015	4.1%
2013	3.1%
2014	3.1%
2009	2.1%
2007	1.1%
2008	1.1%

The respondents' profile in terms of year of graduation, as presented in Table 5, indicates that most of the respondents (28.9%) graduated in 2016. Respondents who graduated in 2017 and 2012 represented 25.8% and 20.6% of the distribution, respectively. This distribution may be attributed to the more receptive nature of the fresh graduates to social media. This may also be attributed to the convenience of the researchers to gather data from the new graduates.

Table 6
Reason for taking the course

Reason for taking the course	Percentage
Influence of parents or relatives	57.5%
Prospect for immediate employment	33.5%
The opportunity of employment abroad	24.5%
Availability of course offering in the chosen institution	19.2%
Prospect of attractive compensation	16.8%
No particular choice or no better idea	16.6%
Status or prestige of the profession	15%
Strong passion for the profession	10.8%
Peer influence	8.4%
Inspired by a role model	7.8%
Affordable for the family	7.2%
High grades in the course or subject area	3.6%

Table 6 shows the reason for the respondents taking the course. As shown in the table, parents' or relatives' influence was the major reason for taking the course at 57.5%. This could indicate that the course has received mounting attention from the public. Another

finding shows that prospects for immediate employment and opportunities abroad and third reasons of the respondents for taking the course at 33.5% and 24.5%. This distribution may be indicative of the high demand for registered radiologic technologists abroad. The study also shows that the availability of course offerings in the chosen institution was the fourth reason for taking the course at 19.2%. The prospect of attractive compensation was the fifth reason at 16.8%. This may be attributed to the increasing pay offers of the employers in public hospitals and the hospitals abroad. Respondents who had no particular choice or no better idea were the sixth reason representing 16.6% of the distribution. Another result shows that the profession's status or prestige and a strong passion for the profession were the seventh and eighth reasons respondents took the course at 15% and 10.8%, respectively. Peer influence and inspiration from a role model were the ninth and tenth reasons at 8.4% and 7.8%, respectively. The study also shows that affordability is an important reason for taking the course at 7.2%. Having high grades in the course or subject area was the last reason for the respondents for taking the course at 3.6%. This distribution may be attributed to the importance of achievement tests administered during high school to determine which discipline fits students' capabilities. This finding concurs with Tillman's (2015) study, which found that parents significantly influence students' choices in taking a college course.

Table 7
Training Attended and advance Studies

Attended Training	
Yes	
No	

Table 8
What made you pursue advanced studies?

Response	Percentage
Professional Development	93.6%
Promotion	17.9%
CPD units	5.1%

Presented in Tables 7-8 are respondents' responses to training and advanced studies attended after college and reasons for pursuing advanced studies. The study results revealed that the majority of the respondents (73.8%) attended training and advanced studies, while the remaining 26.2% did not pursue training and advanced studies. The top reason for pursuing advanced studies was professional development at 93.6%. This may be because graduates want to move up in their career ladder and increase their expert field expertise. The professional development opportunities conducted in group settings provide an added benefit of building the graduates' network. This confirmed the study of Arceño (2018), which also found out that professional development serves as one of the inciting causes of advanced education studies.

Table 9
Employment Status

Employment Status	Percentage
Yes (Employed)	92.2%
No (Not employed)	7.8%

Table 10
If No, please state the reason (s) why you are not yet employed.

Response	Percentage
Advance or further study	69.2%
Family concerned and decided not to find a job	7.7%
Health - related reason (s)	7.7%
Lack of work experience	7.7%
No job opportunity	7.7%
Did not look for a job	7.7%

(overlapping text from Table 7 data: Percentage — 73.8%, 26.2%)

Shown in Tables 9-10 is the employment status of the respondents. The results of the study revealed that most of the respondents are employed at 92.2%. This may

be indicative of better chances of employment when graduates have been exposed to actual fieldwork. The study also found out that 7.8% of the respondents are unemployed. This shows that graduates are not exempt from the harsh realities of the highly competitive labor market. Of the 13 unemployed respondents, the majority (69.2%) pursued advanced or further studies. Respondents who did not look for a job, have no job opportunities, lack work experience, and did not employ due to family and health-related concerns represented an equal 7.7% of the distribution. This confirmed the study of Hossain, Yagamaran, Tanzila, Limon, and Karim (2018), which also found that pursuing advanced or further study was one of the factors influencing the unemployment of fresh graduates.

Table 11
Present Employment Status

Employment Status	Percentage
Regular or Permanent	77.5%
Contractual	13.9%
Temporary	4.6%
Casual	3.3%
Self – employed	1.3%

Table 11 shows the present employment status of the respondents. The study results indicate that many respondents, or 77.5%, are regular or permanent employees. This distribution may indicate better long-term career development opportunities as organizations are more likely to promote permanent employees from within. Contractual employees represented 13.9% of the distribution and may be attributed to the greater work flexibility in scheduling decisions. Temporary and casual employees represented 4.6% and 3.3% of the distribution, respectively. The least number of respondents (1.3%) are self-employed. This may be because the respondents earn a living by running their own business after completing their undergraduate degrees. The distribution of employment status concurs to the study of Daquis et al. (2016), which found that the majority or 71.05 percent of the Radiologic

Technology graduates are already enjoying regular or permanent status while 15.79% have contractual job status and the least group or 13.16% are having temporary jobs at present.

Table 12
Place of work

Place of work	Percentage
Local	77.9%
Abroad	22.7%

The respondents' place of work, as shown in Table 12, indicates that of the total number of respondents, more employees prefer working in the country at 77.9%, while employees who work abroad only comprised 22.7%. This distribution may be attributed to the qualifications such as the number of years of experience set by the overseas employers that must be met first by the graduates. This distribution agrees with Daquis et al.'s (2016) findings, which found that 94.74% of the Radiologic Technology graduates are locally employed while the other 5.26% are working in the USA and Saudi Arabia.

Table 13
How did you find your first job?

Response	Percentage
Recommended by someone	43.1%
As walk-in applicant	29.4%
Information from friends	16.2%
Arranged by the school's job placement officer	4.4%
Family business	4.4%
Response to an advertisement	3.8%
Job fair or Public Employment Service Office (PESO)	1.2%

Presented in Table 13 are the ways the respondents found their first job. As shown in the table, the majority of the respondents, or 43.1%, found their first job through a

recommendation by someone, while 29.4% of the respondents landed their first job during application. This distribution may indicate that referral from persons related to the profession has a high impact on finding the graduates' first job. Information taken from friends was the means of finding the first job of 16.2% of the respondents. The school's job placement unit helped 4.4% of the respondents find their first job, while another 4.4% of the respondents found their first job in response to an advertisement. This may suggest that the school plays an important role in endorsing its graduates to the employer. The least of the respondents, or 1.2%, found their first job through a job fair or Public Employment Service Office (PESO).

Table 14
How long did it take to land your first job?

Response	Percentage
Less than a month	56.4%
1 to 6 months	35%
7 to 11 months	3.7%
1 year to less than 2 years	3.7%
2 years to less than 3 years	0.6%
3 years to less than 4 years	0.6%

Table 14 shows the time it takes for the respondents to get their first job. As shown in the table, the majority of the respondents (56.4%) got their first job in less than a month, while 35% took their first job in 1 to 6 months. Respondents who got their first job in 7 to 11 months and 1 to less than 2 years represented an equal 3.7% distribution. This high first job employment rate may be attributed to the high demand for radiologic technologists. The study also shows that 0.6% of the respondents took their first job in either 2 years to less than 3 years or 3 years to less than 4 years. This may be attributed to the aforementioned graduates who pursued advanced studies after college.

Table 15

What were your reasons (s) for accepting the first job?

Reason	Percentage
Salaries and benefits	55.7%
Career challenge	42.5%
Related to special skills	41.5%
Proximity to residence	27.4%

The respondents' reasons for accepting their first job, as shown in Table 15, indicate that salaries and benefits at 55.7% are the major reason for the respondents for accepting the first job while career challenge at 42.5% is the second reason. The relevance of the first job to the respondents' skills is the third reason at 41.5%, while the fourth and last reason of the respondents is related to the proximity of the residence to the workplace at 27.4%. The distribution is different from the study of Daquis et al. (2016), which showed that most Radiologic Technology graduates accept the first job because of the career challenge.

Table 16
Is this your first job after college?

Response	Percentage
No	56.7%
Yes	43.3%

Table 17
What are the reasons (s) for staying on the job?

Reasons	Percentage
Salaries and benefits	62.3%
Related to the course of the program of study	45.9%
Career challenge	42.6%
Related to special skill	32.8%
Proximity to residence	26.2%
Family influence	9.8%

Peer influence	2.5%

Presented in Tables 16-17 are the reasons for staying and changing the respondents' first job. As shown in Table 16, most of the respondents, or 56.7%, are not presently working with their first job, while 43.3% comprised the respondents who stay with their first job. Of the 43.3%, as shown in Table 17, salary and benefits at 62.3% are the first reason for the respondents for staying with their first job while the relevance of the course or program of study at 45.9% is the second reason of the respondents. Career challenges related to special skills and proximity to the residence at 42.6%, 32.8%, and 26.2% are the third, fourth, and fifth reasons for staying. The influence of family and peers also played the role of staying the first job at 9.8% and 2.5%. This finding agrees with Dotong et al. (2016) who found that salaries and benefits were the top reasons for staying a job during their employment.

Table 18
How long did you stay in your first job?

Response	Percentage
1 to 6 months	20%
2 years to less than 3 years	18.7%
1 year to less than 2 years	18.1%
3 years to less than 4 years	15.5%
7 to 11 months	12.3%
Less than a month	0.6%

When asked about the length of time rendered in their first job, as shown in Table 18, most of the respondents, or 20%, stayed for 1 to 6 months while 18.7% stayed for 2 years to less than 3 years. The lengths of stay of 18.1%, 15.5%, and 12.3% of the respondents were 1 year to less than 2 years, 3 years to less than 4 years, and 7 to 11 months. The least number of respondents, or 0.6%, stayed with their first job for less than a month. The distribution may suggest that the respondents seek another job for a shorter period after acquiring enough experience.

Table 19
What were your reasons (s) for changing jobs?

Reasons	Percentage
Salaries and benefits	72%
Career challenge	52%
Related to special skills	36.6%
Proximity to residence	15.9%

Of the 56.7% who are not presently working with their first job, as shown in Table 19, salaries and benefits at 72% are the respondents' first reason for not staying with their first job. This may be indicative of the meager income received by the respondents from their first job. Challenges related to career and special skills at 52% and 36.6% were the second and third reasons for changing the first job. The respondents' last reason for not staying in the proximity of the workplace to the residence at 15.9%. Salary may be considered one of the indicators for career success but caring and helping co-employees in the organization may also de-emphasize the significance of money (Frieze, Olson, Murrell, & Selvan, 2006).

Table 20
What is your initial gross monthly earning in your first job after college?

Earning	Percentage
P 10,000.00 to less than P 15,000.00	38.3%
P 5,000.00 to less than P 10,000.00	26.9%
P 15,000.00 to less than P 20,000.00	16.2%
P 25,000.00 and above	9%

below 5,000.00	6.6%
P 20,000.00 to less than P 25,000.00	3%

Shown in Table 20 is the initial gross monthly earning in the first job of the respondents. As shown in the table, most of the respondents, or 38.3%, earned a gross monthly income of P10,000.00 to less than P15,000.00 while 26.9% earned P5,000.00 to less than P10,000.00. The presented income range per month may be why most of the respondents did not stay with their first job. The gross monthly earning of 16.2% was P15,000.00 to less than P20,000.00, while the highest income of P25,000.00 and above was earned by 9% of the respondents. This distribution may suggest that radiologic technologists' monthly income varies depending on the type of institution the professional is affiliated with. A surprising 6.6% of the respondents earned below 5,000.00 while the least number of respondents, or 3%, earned P20,000.00 to less than P25,000.00 per month. The majority of the graduates are earning initial gross for an entry-level position, and through their experience and expertise as Radiologic Technologists in their respective fields, their income will gradually be considered a competitive salary for Radiologic Technologists. Well-performed skills are the selling values/attributes that employers looking for in Radiologic Technology entry-level jobs (Yusoff et al., 2012).

Table 21
Was the curriculum you had in college relevant to your first job?

Response	Percentage
Yes	92.8%
No	7.6%

A dichotomous question about the relevance of the college curriculum to the first job of the respondents, as shown in Table 21, indicates that the majority of the respondents or 92.8%, state that the curriculum they had in college is relevant to their first job while 7.6% state that the curriculum is not relevant. The distribution may indicate the importance of the competencies acquired in the classroom instruction and clinical area.

Table 22
If Yes, what competencies learned in college did you find very useful in your first job?

Competency	Percentage
Communication skills	82.6%
Critical thinking skills	73.3%
Human Relations skills	67.7%
Problem-solving skills	51.6%
Entrepreneurial skills	16.1%

Presented in Table 22 are the competencies learned by the respondents in college. As shown in the table, communication skill is the most important competency learned by most respondents at 82.6%. Critical thinking, human relations, and problem-solving skills were the next important competencies at 73.3%, 67.7%, and 51.6%, respectively. The least important competency learned by the respondents is an entrepreneurial skill, which has a corresponding percentage of 16.1%. This confirmed the study of Dotong et al. (2016), which also found that college communication skills are the most useful in looking for jobs, followed by critical thinking skills and problem-solving skills.

Conclusion

The study was able to obtain observations addressing the objectives. Single respondents accounted for 86.6% compared to married and single-parent respondents. There are more female respondents, with 56.5% than males. The majority of the respondents, at 79.1%, reside in the city, while the remaining 20.9% reside in the municipality. The majority

of the respondents, at 28.9%, graduated in 2016. The respondents' major reason for taking the course was the influence of parents or relatives at 57.5%, while prospects for immediate employment and opportunity of employment abroad were the second and third reasons at 33.5% and 24.5%, respectively.

The study also sought feedback from the respondents in terms of training and advanced studies pursued after college. The majority of the respondents (73.8%) attended training and advanced studies, while the remaining 26.2% did not pursue training and advanced studies. The top reason for pursuing advanced studies was professional development at 93.6%.

Furthermore, the employment data of the respondents were obtained. Most of the respondents are employed at 92.2%, while the remaining 7.8% are unemployed. Of the 13 unemployed respondents, the majority (69.2%) pursued advanced or further studies. Respondents who did not look for a job, have no job opportunities, lack work experience, and did not employ due to family and health-related concerns represented an equal 7.7% of the distribution. Many respondents, or 77.5%, are regular or permanent employees, while 13.9%, 4.6%, and 3.3% are contractual, temporary, and casual employees, respectively. The remaining 1.3% are self-employed. More employees are presently working in the country at 77.9%, while employees who work abroad only comprised 22.7%.

In terms of first job employment, most of the respondents, or 43.1%, found their first job through recommendation by someone, while 29.4% of the respondents landed their first job during application. Moreover, most of the respondents, or 56.4%, got their first job in less than a month, while 35% took their first job in 1 to 6 months. Salaries and benefits at 55.7% are the major reason for the respondents accepting the first job, while career challenge at 42.5% is the second reason. The majority of the respondents, or 56.7%, are not presently

working with their first job, while 43.3% comprised the respondents who stay with their first job. Of the 56.7% who are not presently working with their first job, salaries and benefits at 72% are the first reasons for not staying with their first job. Of the 43.3%, salary and benefits at 62.3% are the first reason the respondents stayed with their first job, while the course's relevance or program at 45.9% is the second reason of the respondents.

When asked about the length of time rendered in their first job, most of the respondents, or 20%, stayed for 1 to 6 months while 18.7% stayed for 2 years to less than 3 years. When asked about the initial gross monthly earning in the first job after college, most of the respondents, or 38.3%, earned a gross monthly income of P10,000.00 to less than P15,000.00 while 26.9% earned P5,000.00 to less than P10,000.00.

In terms of the college curriculum's relevance to the first job, most of the respondents, or 92.8%, state that the curriculum they had in college is relevant to their first job, while 7.6% state that the curriculum is not relevant. Communication skill is the most important competency learned by most respondents at 82.6%, followed by critical thinking, human relations, and problem-solving skills at 73.3%, 67.7%, and 51.6%, respectively.

Recommendations

Given the results of the study, the researchers have the following recommendations:

1. Career orientation programs should be geared towards the parents, not just the students.
2. Hospital administrators should revisit Radiologic Technology professionals' salary

structure to attract more applicants and increase the retention of current workers.

3. Communication skills must be further intensified, especially for Radiologic Technology students whose field of specialization is not directly associated with writing and public speaking. This can be achieved by giving them enough classroom exercises and activities designed to enhance students' confidence in both writing and oral communications.

4. Further study should be done to include all graduates of the program.

5. The means of gathering the data should not be limited to online distribution and by administering the questionnaire personally to the respondents.

6. There is a need for regular graduate surveys to monitor time, especially about graduates' transition into the labor market and their labor market outcomes. The school administrators must informally monitor the graduates' employment status several months after graduation to have an updated annual employment rating and should not wait for three to four years before conducting another tracer study. The college must strengthen its job placement program by sending a letter of recommendation to industry linkages to assist the graduates for their potential employers.

7. The sample of the study should include graduates from years before 2007.

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USAGE AND LITERACY OF SOCIAL MEDIA AND THE ACADEMIC PERFORMANCE OF STUDENTS IN A HIGHER EDUCATION INSTITUTION IN SOUTHERN MINDANAO

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Abstract

Social networking services more commonly known as Social Media have contributed so much to people in their day-to-day life. As a tool, it has shifted from mere entertainment and extended to learning and communication. This study's main gist is to determine the level of social media usage and literacy on 194 college students and its effect on their academic performance using a non-experimental quantitative descriptive research design. Responses to the researchers-made questionnaire were interpreted using mean, Pearson R, and regression analysis. Results reveal that the student's level of social media usage is high and their social media literacy. Also, their academic performance appeared to be average. A significant inverse relationship was found between students' social media usage and academic performance, indicating that the more students spend time using their social media platforms, the lower their academic performance becomes. On the other hand, no significant relationship between social media literacy and students' academic performance exists, implying that student literacy levels about social media have no association with their academic performance level.

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Keywords: Social media use, Social media literacy, Academic performance, Descriptive
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Introduction

Criticized by its considerable effect on students—both academically and socially—social media indeed changed people's way specifically to students in retaining the information. Most parents perceived social media as unfavorable for its distracting properties on the education of their children. On the other hand, what parents miss in social media is the herd of scholarship and communication opportunities. Moreover, social media is beneficial for students even inside the classroom which paves a new evolution in education and learning. Through these new tools, students can explore the world in a whole unique separate experience from books and adopt a new form of communication where graduates enter the workplace with much to offer due to their networks and connections (Sardesai, 2013).

Nowadays, students are so engaged in social media to be online for almost 24 hours every day. It has been observed that while lectures are going on even inside the classrooms and other learners' places, some students are too busy browsing the web and checking their social media accounts. Times focused on learning, scholarship works, and innovation has been deviated by the passion for meeting and

checking new friends online and busy discussing trivial issues.

Consequently, social media negatively impact most students' academics (Rahman, 2015). Jabr (2011), in his study, found that Social Networking Services (SNSs) have infiltrated people's everyday life, and are making change inevitable. It had shifted from its original platform of entertainment and communication and extended as a means for academic exploration. This phenomenon had pervaded and become the latest avenue for social exchanges and scholarly discussions online among students.

On the other hand, as Pfaff-Rüdiger and Riesmeyer (2016) stated, media literacy has become essential in society. Under media technology, social practices intertwine with media in people's daily lives; being media literate becomes a priority. This statement is supported by Hyder (2017), in her article written for Forbes, considering the new variety of literacy, social media literacy extends social platforms to make the digital landscape an integral part of one's professional and personal repertoire. Therefore, social media literacy translates to being a curator, connector, and to some extent, content creator in its sense. This is aside from its adaptability to ever-emerging technological trends, aggregation for successful media application, and authenticity for what it represents.

Consequently, media literacy education is relevant for several reasons. In social studies, media provide stories about everything, from people to places and also events. Culture, politics, history, and government are some of the many media contents that people knew. Students are also sourced out from the media on information about public policy and elections. In like manner, media literacy education can promote students' understanding and appreciation of their role in shaping and disseminating particular views of the world (Stein & Prewett, 2009). Furthermore, in his

study Media Literacy in action, Macdonald (2008) found detailed media literacy descriptions in action among the K-12 student respondents. He concluded that media literacy is an essential first step in effectively integrating media literacy constructs into teaching practice.

Globally, according to a study on first-year students women, half of their day was spent on social media use, i.e., browsing, texting, among others. Hence, many studies found that media usage was associated with lower grades and other adverse academic results. On the contrary, two exceptions were found to have positive academic results while using media: listening to music and reading newspapers. However, too many hours in media, movie/television viewing, social networking, use of cellular phones, and magazine reading were most negatively associated with later academic outcomes, particularly their academic performance ("Lifespan," 2013).

Due to this platform's increasing popularity, economists and scholars are starting to wonder whether students' academic performance is associated with how much time they spend on the web. However, educational conditions and many other determinants affect how a student studies, time spent "socializing" may significantly impact as SNSs can change students' time educationally and their general perspective on education. With its prevalence in today's youth, the study of Mingle and Adams (2011) confirmed that students' time spent on the study is affected, therefore impacting their academic grades. This was further supported by Ahmed and Qazi's (2011) study, where they discovered that SNSs like Facebook distract students mostly from studying. Thus, university administrators are keen on banning in schools because they see their disadvantages more than their uses. This measure affects teachers and administrators too. Therefore, some schools have imposed stringent limitations on social media use, citing concerns on security, confidentiality, and privacy.

In the Philippines, Morallo (2013) discovered that all students have more than one SNSs account and were significantly registered to all of them. Results also yielded that as students spend more time on social media, their academic performance increases. This is considering that most of them use SNSs to socialize with their friends online rather than study. On the contrary, despite the significant positive relationship between academic achievement and their use of SNSs, this confirmed that students devote more time to their preference for social media than studying. Results showed an opposing association between the respondents' grades, their number of accounts maintained in social media, the quantity and length of usage, and the time spent on study. The results revealed that as the factors above increase, so does the respondents' GPA, displaying that their time on social media somehow played a role in their higher grades achievement. However, these associations were found insignificant. The increase in academic achievement is credited not only on social media but also on other teaching-learning processes.

One of the issues thriving in the country today is the rampant spreading of fake news. Webwise (no date) described fake news refers to stories, news, or fabrications produced to create deception and misinformation. President Duterte pushed for the signing of a new Republic Act, establishing stricter punishments to curb the tide of ever-growing fake news sites (Lieberman, 2017). Many of the known news channels and sites in the country has now also published a list of fake news sites to help netizens be aware and "burst the fake news bubble" (Presse, 2017; Pesigan, 2017; Curato, 2017; Roxas, 2017; Crabistante, 2014). The rise of fake news in social media can be attributed to low social media use literacy and people's instinct to question news less when they see themselves in a public group. According to a study conducted by Jun, Meng, and Johar (2017), this is similar to how they often fact-check information.

Locally, a study conducted by psychology students revealed that most higher education institutions students have multiple social media accounts. The primary use for these platforms for the students is to connect with their friends, maintain communication, and keep up with trends, leading to a significant influence on their social lives (Abkilan, Colina, & Miolata, 2011). Seeing that there was no study yet conducted that examines the use and literacy of social media and determining its relationship to the student's academic performance; hence, this study.

This study is anchored on the viewpoint made by Jacobsen and Forste (2011), which said that the influence of electronic media on academic life is enormous, mostly even impacting students' performance negatively in terms of multitasking, focus, and time management. It also stated that electronic media usage among students has drastically increased within that last year alone. According to the Universal Journal of Educational Research (2013), students believe that using social media for educational purposes and their academic performance are interdependent.

This is further supported by the proposition stated by Lavy (2014), saying that students' social networks are essential not just in their academic performances but, most importantly, to their overall development. The social network's influence on students' educational attainment and non-cognitive behavior outcomes in school is significant, indicating some students' dependence on social media not just for socialization and connectivity with family and friends but also for some academic activities. O'Keeffe and Pearson (2011) also stated that youth's engagement in social media is beneficial to enriching information, social contact, and even specialized skills. However, some students should be cautious when exploring social networks because of their susceptibility to peer pressure and limited self-regulation.

The main gist of this study is to determine the levels of use and literacy of social media and its relationship to the academic performance of selected higher education students, and specifically, sought to:

1. evaluate the level of use of social media;
2. evaluate the level of literacy of social media;
3. measure academic performance;
4. determine the significant relationship between the level of use and academic performance;
5. determine the significant relationship between the level of literacy and academic performance;

Methods

The study used non-experimental quantitative research with the descriptive-correlational research methods to determine the level of use and literacy of social media and the academic performance of a selected higher education institution. As Mujis (2011) stated, the quantitative examination technique collects data to clarify occurrences or events via numerical information that is broken down utilizing scientifically based strategies. While descriptive research determines the type of methodology used to evaluate the current subject, a detailed investigation fundamentally concerns itself with what the subject is all about (The Association for Educational Communications and Technology, 2001). Correlation research is determining the association or connection of variables. When there is a visible change happening, one can have an idea of how these variables change. This often entails variables that are not controlled. (Kowalczyk, 2015).

This research was conducted in the second semester of the school year 2017-2018. The researchers utilized the self-made questionnaires, which underwent validation among experts and garnered a mean rating of 4.28, signifying *Very Good*. The study respondents were 296 students, randomly selected from the college population through Slovin's formula. But due to incomplete responses, unanswered questionnaires, and other unforeseen problems, only 193 responses were appropriate for analysis. To measure the respondents' academic performance, the researchers used secondary data—particularly the respondents' weighted average from the second semester of SY 2017-2018, taken from the Registrar's Office with the student's permission. The study utilized mean, regression analysis, and Pearson correlation to interpret and analyze the data.

In observance of ethical guidelines set by the Institution's Ethics Review Committee, the researchers procured necessary paces to ensure that the respondents' welfare and confidentiality were prioritized. Measures to protect the privacy and confidentiality of respondents were observed in the conduct of the study. The respondents were informed about their rights to clarify the questions being asked, criticize how the questions were asked, and decline in answering some parts of the questions. Respondents were also informed and assured that this study's data will only be strictly used for academic purposes. Moreover, it was explained to the respondents that their participation in this study was voluntary. They can withdraw at any time without being asked to provide reasons for declining to participate in the study.

Results and Discussion

Social media use

Shown in Table 1 is the overall response of students on their level of social media usage. The cited overall mean score of 3.66 or *high* was obtained from the factors' computed mean scores. The highest mean score was from "accessing social media accounts on the phone" with a rating of 4.59 or *very high*, followed by 4.41 or *high* for "using social media for group chat/class," third-highest was 4.21 or *high* for "using social media for connectivity with friends and family." All other factors were rated 4.15 and lower, indicating that most students use social media reasonably often in their daily activities.

Table 1. Level of Social Media Use

Social Media Usage	SD	Mean	Verbal Description
OVERALL	**0.57**	**3.66**	**High**

These results are not surprising, for, in the study of Abkilan, Colina, and Miolata (2011), they have found that higher education institution students indeed use not one but multiple platforms of social networking sites. Students use these platforms to connect with their friends, maintain communication, and keep up with trends, hence leading to a significant influence on their social lives. This is further supported by the proposition stated by O'Keeffe and Pearson (2011), that youth's engagement in social media is beneficial to enriching information, social contact, and even specialized skills. However, some students should be cautious when exploring social networks because of their susceptibility to peer pressure and limited self-regulation.

This further confirms the study of Universal Journal of Educational Research (2013), which found that electronic media usage among students has drastically increased within the last year alone. Based on the study, students believe that using social media for educational purposes and their academic performance are interdependent. Jabr (2011), in his research, found that Social Networking Services (SNSs) have infiltrated people's everyday life, and is making change inevitable. It had shifted from its original platform of entertainment and communication and extended to explore academically.

Social media literacy of higher education institution students

Table 2 presents the data on the level of social media literacy of higher education institution students with a general mean score of 4.17 described as *High*. The highest factor is Recognition, with a 4.28 mean rating   or *high*, followed by Understanding, with a mean score of *4.27* or *high*, then Validation, garnering the mean score of *4.18* or *high*. The rest of the factors, Evaluation, and Knowledge, gained scores 4.08 and 4.04, respectively, still described as high. These results indicate that improvements can still be made to further develop the students' literacy level when it comes to social media usage, especially their knowledge and evaluation skills.

Table 2. Level of Social Media Literacy

Social Media Literacy	SD	Mean	Verbal Description
1. I only post relevant and accurate information on my social media sites (Knowledge)	0.92	4.04	High
2. I evaluate the information I find online before sharing it with others (Evaluation)	0.93	4.08	High
3. I understand everything that I post and the purpose behind it (Understanding)	0.8	4.27	High
4. I create my content and respect the right of others (Recognition)	0.84	4.28	High
5. I validate the information I post and identify its source before sharing it with others. (Validation)	0.94	4.18	High
OVERALL	**0.69**	**4.17**	**High**

Naturally, a high level of literacy in social media is essential for students, especially in today's academic world. The internet and its platforms are part of day-to-day academic life. Indeed, media literacy education is relevant for several reasons. Also, media literacy education is relevant as it provides stories about culture, history, politics, public policy, and elections. In like manner, students' view about the world is shaped and disseminated by media (Stein & Prewett, 2009).

As media technology turns out to be more influential, Pfaff-Rüdiger and Riesmeyer (2016) stated, social practices intertwine with media in people's daily lives, being media literate person, therefore, becomes a priority, such that media literacy should take place. According to a study conducted by Jun, Meng, and Johar (2017), the rise of fake news in social media can be attributed to low social media literacy, hence confirming proper education's cruciality in its platform usage.

Academic Performance

Table 3 shows the overall average college student's grade point average. These results indicate that most students garner an average grade ranging from 2.86 - 3.18. This means that students perform adequately in their classes, but more than most are only passable and not exceptional.

Table 3.
Level of Academic Performance

Academic Performance	SD	Mean	Verbal Description
OVERALL	**0.79**	**3.18**	**Average**

Correspondingly, there are several reasons why students have a low-grade point average. Some of them have had struggles adapting to the higher workload of subjects and faster pace attempting intricate combinations of classes in the same semester, illness, family issues, employment, and college adjustment from a highly structured high school environment (Moody, 2019). The Australian Journal of Educational Activity found that individuals who spend more time on computer games or internet surfing suffer from average to low grades more than those who don't. By spending a higher percentage of time on other things that distract students from their academics, there is a big possibility that this leads to lower academic performance (Aldous, 2017).

Significance of the Relationship between Social Media Use and the Academic Performance of College Students

Table 4 presents the test of significant results on the correlation in the variables. It had a computed r-value of -0.048 with a probability value of p<.05 or significant. This describes a significant inverse relationship, meaning that as the independent variable's value increases, the dependent variable decreases. In this scenario, the higher the students use their social media in day-to-day situations, the lower their academic performance becomes.

Table 4

Significance of the Relationship between Social Media Use and the Academic Performance of College Students

Social Media Use	Academic Performance
	r-value = -.048 p value = 0.05

These findings align with Morallo's (2013) study, where it yielded an opposing association between the respondents' grades, their number of accounts maintained in social media, the quantity and length of usage, and the time spent on study. The results revealed that as the factors above increase, so does the respondents' GPA, displaying that their time on social media somehow played a role in their achievement of higher grades. However, these associations were found insignificant. The increase in academic achievement is credited not only on social media but also on other teaching-learning processes.

Hence, this further confirms that the social network's influence on educational attainment and non-cognitive behavior outcomes of students in school is significant, indicating the dependence of some students on social media not just for socialization and connectivity with family and friends, but also for some academic activities. O'Keeffe and Pearson (2011) also stated that the youth's engagement in social media is beneficial to their communication, social connection, and technical skills.

Significance of the Relationship between Social Media Literacy and the Academic Performance of College Students

Displayed in Table 5 are the test of significance on the relationship between social media literacy and the academic performance of DDC students. The general correlation yielded the r-value of 0.135 with a probability value of p>.05 or not significant. This means that no association exists between the level of social

media literacy of students and their academic performance. Most students have enough knowledge about social media and its dynamics, regardless of their academic performance.

Table 5. Significance of the Relationship between Social Media Literacy and the Academic Performance of College Students

Social Media Literacy	Academic Performance
	r-value = 0.135 p value = 0.060

Indeed, students are undoubtedly potent creators and customers of media. Yet, they have limitations as they lack literacy and skills. Social media literacy should meet the challenge head-on when they access, analyze, and evaluate and create media content. There is a need to recognize that educators and students have essential roles in creating new media literacy approaches. As illustrated by the results of social media literacy and academic performance in this study, much is still needed to be learned for students to say that they are digitally and socially literate (Gammon & White, 2011).

Conclusion and Recommendations

The high-level result of the social media use of College Students is indicative of several things, mainly: those students are highly reliant on their social media for academic activities. These activities vary from teacher interaction to assignments, projects, class group chats, and information researching. Similarly, their social media literacy level is also great, indicating that their social media platforms usage is informed, valid, and knowledgeable. On the other hand, the student's academic performance level only yielded an overall result of average, suggesting that student-respondents are not so attentive to their social media usage when it comes to their studies.

Moreover, the study yielded a significant inverse correlation between students' social media use and their academic performance. Further, the study revealed that as students spent more time on social media sites, their academic performance is adversely affected. Due to these results, a few interventions could be applied to focus more clearly on their studies without social media distractions, especially within the school premises. Within the Wi-Fi scope, banning social media sites in-class hours can be one intervention and utilizing online learning platforms or learning management systems that do not link to social media networks.

Finally, the researchers recommend that further studies on the main variables of this research be conducted in the future, for in the study, it demonstrated significance. This might test the long-term impact of social media on students' learning modality or further understand social media literacy's role in the rapidly oncoming changes brought by the information revolution. Likewise, future researchers may dig deeper into the variables' relationship, using other research techniques such as interviews and discussions to discover and understand more of social media use and literacy as it associates with students' learning and academic performance.

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MEDIATING EFFECT OF INNOVATIVE WORK BEHAVIOR ON THE RELATIONSHIP BETWEEN STRATEGIC PLANNING FORMATION PROCESS AND ORGANIZATIONAL EFFECTIVENESS OF HIGHER EDUCATION INSTITUTIONS: AN EXPLANATORY SEQUENTIAL DESIGN

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Abstract

This explanatory sequential mixed-method study aimed to explore the mediating effect of innovative work behavior on the relationship between strategic planning formation and organizational effectiveness in the higher education institutions (HEIs) in Region XI. A total of 353 teachers in private HEIs in Region XI were surveyed, fourteen of whom participated in an in-depth interview and focus group discussion. Results revealed a high level of innovative work behavior, strategic planning formation, and organizational effectiveness among private HEIs. There was a significant relationship between innovative work behavior, strategic planning formation process, and organizational effectiveness. Innovative work behavior partially mediated the relationship between the strategic planning formation process and organizational effectiveness. The qualitative analysis findings showed several issues and concerns on the study variables raised by the teachers. Implications of the findings are discussed.

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Introduction

Organizational effectiveness is the primary concern of all higher education institutes. It has been a big concern by educational practitioners and researchers as it reflects the institutions' continued existence (Cameron, 2015). Lederman (2017) reported that 5.6 percent of academic institutions in the United States are on the verge of significant collapse that includes both profit and nonprofit institutions, which challenged the organization. Mafini (2015) stated that one of an organization's critical factors is always associated with an organization's long-term performance and survival. Organizational effectiveness described the extent to which the desired level of output was achieved.

In the Asian regions, there is considerable organizational pressure to attain better performance among higher education systems since many countries were hard-pressed to accommodate students' rapidly-increasing numbers. University budgets did not increase to keep up with enrolment (Mok, 2015). This issue led to the erosion of faculty salaries, hiring less-qualified instructional staff, and a decline in service (Flannigan, Jones & Moore, 2004). While enrolments and unit costs have increased, public funding has not kept pace, adding a further financial strain on universities (Clark, Morgan, Skolnik, & Trick, 2009).

Meanwhile, higher education in the Philippines is distinctive in many aspects, and the private sector's role is the most interesting to know. The private higher education sector of the Philippines is proportionally larger than that of any major country. However, the country keeps trailing other South East Asian countries in various education indicators, and the government has so far fallen short on a number of its own reform goals. The Philippines' lackluster performance in producing researchers (81 researchers per million populations versus 205 in Indonesia and 115 in Vietnam) and knowledge producers (28 out of 777 journals or 3.6 percent are listed under Thomson Reuters, Scopus, or both) indicates that the country has lagged behind many of its ASEAN neighbors in producing the innovators and solutions providers needed to function in a knowledge economy effectively.

On the other hand, only a minority of HEIs in the Philippines presently seek their programs' accreditation. In the 2016-2017 academic year, there were 671 higher education institutions with accredited programs in the Philippines (about 28 percent of all institutions) (Macha et al.,2018). Typical in provincial areas like Region XI, there are only a few schools are accredited by the Federation of Accrediting Agencies in the Philippines (FAAP), Philippine Association of Colleges and Universities Commission on Accreditation (PACUCOA), Philippine Accrediting Association of Schools, Colleges, and Universities (PAASCU) and most the higher education institutions have poor productivity in research (Dela Cerna, 2017). Nevertheless, the state's failure to frame an effective, precise policy for higher education and slow industrial development forces the private sector to follow the programs influenced by immigrants' foreign labor market. Higher education graduates' quality does not match the human resources requirements of an industrializing economy (CHED, 2001). There is a mismatch between degrees and employment.

The unemployment rate is around 11 percent, and the situation is alarming in educated unemployment. The Philippine labor force data shows that those with higher education levels have higher unemployment rates (Resurreccion, 2014; Arcelo, 2001).

With these scenarios, an academic institution needs to determine the mediating effect of innovative work behavior that explains better organizational effectiveness. This goal is especially so that the quality of graduates can be attributed to the school's effectiveness. Moreover, academic institutions can use the results to develop strategic management and decision-making to improve the school's organizational effectiveness and output, particularly in Region XI tertiary institutions.

Today, despite a plethora of literature on organizational effectiveness, innovative work behavior, and the persuasive arguments establishing its link to organizational effectiveness. Few studies hitherto have explored teachers' innovative work behavior; organization effectiveness is recognized within school context variables, particularly teacher effectiveness, which have essential effects on school improvement and school outcomes. Specifically, limited attention has been paid to explaining how organizations perceive the importance of stimulating innovative work behavior. According to Shanker, R., Bhanugopan, R., Van der Heijden, B. & Farrell, M. (2017), employees' innovative behavior is a vital ingredient of organization competitiveness; in other industries, it is heavily affected by the rapid technology development. Theories and past studies indicated that learning organization and work engagement were among the determinants of innovative behavior.

In this study, the researcher explored the individual associations of variables and their relationship. However, the research has not come across a study that explores the mediating effect of innovative work behavior on the

relationship between the strategic planning formation process and organizational effectiveness in the Philippines school.

Currently, society and businesses are witnessing an unprecedented change in the global nature of work and the workforce's diversity. Organizations in the world are pushing ahead into a limitless climate. Having the appropriate ability in urgent roles is a vital sign at the right time, having any effect on incomes, development, and association adequacy (Sharifirad, 2013).

In an organization, a representative knows about the business setting and works with partners to improve execution to support the association. Worker commitment builds up an uplifting disposition among the representatives towards the organization. Legitimate thoughtfulness regarding commitment techniques will increment hierarchical viability as far as higher profitability, benefits, quality, consumer loyalty, and employee retention (Stoffers, Neessen & Dorp, 2015).

Moreover, the strategic planning process is a disciplined effort that produces fundamental decisions and actions that shape and guide what an organization is, whom it serves, what it does, and why it is crucial, focusing on the future. Effective strategic planning articulates where an organization is going and the actions needed to make progress and how it will know if it is successful (Nataraja & Bright, 2018). An active organization is growing and hopes to sustain that growth needs a set of strategies to guide its program development, build a solid financial foundation, and prepare for challenges that lie ahead. A strategic plan is a vision of the organization's future and the necessary steps required to achieve that future. A good plan should include goals and objectives, desired outcomes, metrics for measuring your progress, timelines, and budgets (Shahin 2011; Richardson, 2014).

In this study, the researcher explored the mediating effect of innovative work behavior on the relationship between the strategic planning formation process and higher education institutions' organizational effectiveness. An explanatory sequential design is a research plan in which qualitative and quantitative data are collected simultaneously, analyzed separately, and merged. In this study, quantitative data was used to test and predicts variables such as strategic planning formation process, innovative work behavior, and organizational effectiveness among higher education institution at Region XI. The phenomenology explored the participants' lived experiences concerning the complex nature of organizational effectiveness in a higher education institution. The study also explored how teachers' experiences shape the attitude and dedication to collaborate to attain better organization. The reason for collecting quantitative and qualitative data is to corroborate the findings and explain the combined associations of variables on organizational effectiveness.

Methods

This study utilized the mixed-methods approach, specifically the explanatory sequential design. In this method, the survey was conducted first, followed by qualitative probing on selected issues from the investigation's quantitative strand. This approach was used because the researcher wanted to understand the teachers' lived experiences in higher education institutions as regards their experiences on organizational effectiveness.

The researcher conducted the study in Region XI, covering the Davao Region. Region XI consists of five provinces (Compostela Valley, Davao del Norte, Davao del Sur, Davao Occidental, and Davao Oriental), one highly urbanized city (Davao City), and five-component cities (Digos City, Island Garden City of Samal, Mati City, Panabo City, and

Tagum City). The study involved private higher education institutions in Region XI. In the interest of accessibility, the researcher chose the schools in this place, especially those near Davao City's heart.

Quantitative Strand

For the quantitative phase of the study, the selected teachers in private HEIs in Region XI were the study participants. A total of 353 teachers were selected with the use of the purposive sampling technique. This technique aimed to achieve a homogeneous sample whose units share the same characteristics or traits (Creswell, 2003).

To attain homogeneity, the data were obtained from the respondents who met the following criteria, as follows – he or she should be a full-time employee in the higher education institution, and at least has reached three years of being tenured in the academe. Part-time teachers with less than three years of teaching experience were not included in the study. Teachers from private higher education were chosen as the research participants for the reason that the Philippines is distinctive in many aspects. Among all its features, the role of the private sector is the most interesting to know. The private higher education sector of the Philippines is proportionally larger than that of any major country.

Qualitative Strand

For the qualitative phase of the study, 6 teachers from private higher education institutions were invited for an in-depth interview and another 7 participants for the focus group discussion. The participants came from the same group who answered the questionnaire for the quantitative data collection. The results of which were used to identify the emerging themes and patterns or responses based on their lived experiences and the items to generate the questionnaire. The participants were determined with the use of the purposive

sampling technique. Purposive sampling is a form of non-probability sampling in which researchers rely on their judgment when choosing members of the population to participate. This sampling method requires the researcher to have prior knowledge about the study's purpose so that the researcher can properly choose and approach eligible participants (Johnson, 2014). In this study, the informants who are teachers were selected so that the information needed to attain the study goal was achieved.

Instrument

Quantitative Strand

For the quantitative phase, three survey questionnaires were used to gather quantitative data. The first survey instrument from Basel (2011) was used to gather data on the strategic planning formation process's status. The instrument has seven indicators. The second survey instrument was used to obtain data on the status of organizational effectiveness of higher education institutions, adapted from IOWA State University (1985). It is composed of ten dimensions. The third instrument was used to gather data for the status of teachers' innovative work behavior in their respective institutions. The adapted survey questionnaire has five indicators.

In line with these instruments' soundness, the researcher invited experts to validate the questionnaires both in the qualitative and quantitative study. Five experts were invited to perform content validity of the interview questions and check the items' suitability that captured the underlying dimensions on organizational effectiveness, innovative work behavior, and strategic planning process. The critiquing of the tools ensure the readability and comprehensibility of the questionnaire.

Revisions on the questionnaire were

done following the suggestions of the expert-validators. This ensures the extent to which a concept is accurately measured in the quantitative study (Heale &Twycross, 2015).

Strategic Planning Formation Process (SPFP) Scale

This questionnaire was adapted from Basel (2011), which has seven indicators, namely: initiating and agreeing on a strategic planning process, organizational mandate, vision statement, mission statement, assessing the environment and strategic issues, strategies and plan development, and monitoring and evaluation. The instrument has 29 constructed items and utilizes a 5-point Likert scale ranging from (1 = Strongly disagree) to (5 = Strongly agree). The scale has a higher internal consistency of items with Cronbach's alpha value of 0.7.

Innovative Work Behavior (IWB) Questionnaire

This questionnaire was adapted from Messman and Mulder (2011). This scale consists of five dimensions of innovative work behavior, namely: opportunity exploration, idea generation, idea promotion, idea realization, and reflection. The instrument is composed of 30 constructed items. The Cronbach's alpha of the scale is measured as follows: opportunity exploration (a=0.76), idea generation (a=0.85), idea promotion (a=0.83), idea realization (a=0.78) and reflection (a=0.86).

Organizational Effectiveness

This tool was adapted from Abdulrahim (1985) of IOWA State University. This scale consists of 10 dimensions of organizational effectiveness: organizational health, organizational climate, student career development, ability to attract resources, administrative concerns, student dissatisfaction, leadership style, resource availability, system openness, community interaction, and

professional development and quality of faculty. The instrument comprises 42 constructed items using a 5-point Likert scale ranging from (1 = Strongly disagree) to (5 = Strongly agree).

Qualitative Strand

In the qualitative phase, the researcher prepared an interview guide used during the in-depth interview and focus group discussion. The prepared guide questions were based on the results of the quantitative strand. Five-panel experts then validated the guide questions. It was composed of open-ended questions regarding educators' lived experiences about organization effectiveness, strategic planning formation process, and innovative work behavior. The qualitative instrument provided an insight into how a group of teachers thinks about organization effectiveness, the range of options and ideas about organization effectiveness, and the similarities and variations in their beliefs, experiences, and school practices. This was used to obtain data from the participants who underwent answering a series of probing questions.

Data Collection

Quantitative Strand

The researcher followed protocols and procedures in the collection of quantitative data. Letters requesting to conduct the research study were submitted to the school chairperson of private higher education institutions in Region XI. After the approval was obtained, the researcher, with the help of the representatives contacted the teachers of the target schools and requested the dates of data gathering without disrupting classes and giving enough time to facilitate the giving of instruction in answering the questionnaire. On the day of data collection, the participants were requested to sign the consent letter, which is specified in the instrument for their voluntary participation in the study. Only those who signed the consent letter were considered as part of the study. Participants were assured that their responses would be kept confidential and that their names should not appear in any part of this study. After the data was retrieved, the encoding of the data with the proper label was carried out.

Qualitative Strand

Before the data collection, this dissertation proposal was subjected to the scrutiny of the Research Ethics Committee (REC) of the University of the Immaculate Conception. Ethical issues such as consent, confidentiality, and the possible risk were assured before the conduct of the study. The guide questions used in the actual data collection had passed the REC. They were properly validated by two-panel members and three qualified evaluators from different universities to ensure clarity, suitability, understandability, and capability to elicit narratives, comments, and insights of the research participants.

After UIC-REC and the in-depth interview guide approved the study was validated, this semi-structured questionnaire was subjected to pilot testing to some teachers who are not participants in the study. This was to ensure that the questions were clearly stated and elicit the necessary data to answer the study's query. Further, it was carefully planned that the conduct of the in-depth interview of the participants must be in a quiet location, free from distractions at all times. It was the most suitable place for the study participants (Gill, Stewart, Treasure & Chadwick, 2008).

The researcher secured a letter of endorsement from the Dean of the graduate school to be given to the different chairpersons of private higher education institutions in Region XI. After the approval from the person in authority. The researcher then proceeded to the selected HEIs. The researcher personally handed over the letters of request to conduct the study to the institution's chairperson. The researcher then gathered the participants' data through an in-depth interview and focus group discussion with the participants. Before the interview proper, the researcher gave an orientation about the study and its purpose. The participants were given an informed consent form (ICF) to review the scope of the study's purpose, procedure, benefits, and confidentiality of participants' information and

have it signed. Upon signing the informed consent form, the participants confirmed their voluntary participation in the study. The researcher then proceeded to the interview proper.

Data Analysis

Quantitative Strand

In the quantitative data analysis, the mean was used to determine organizational effectiveness, innovative work behavior, and strategic planning formation. Standard deviation was used to determine the homogeneity and heterogeneity of the group's responses. Pearson's product-moment correlation coefficient was used to measure the relationship between the variables. Multiple regression analysis was utilized to assess the influence of the independent variables on organizational effectiveness. Sobel z-test was used to determine the mediating effect of innovative work behavior on the relationship between the strategic planning formation process and the organizational effectiveness of HEI's.

One reason for testing mediation is to understand the mechanism through which the initial variable affects the outcome. Mediation analysis is a crucial part of what has been called process analysis. When most causal or structural models are examined, the model's mediational part is the most exciting part of that model. Hence, the amount of mediation is called an indirect effect. An increasingly popular method of testing the indirect effect is bootstrapping (Bollen & Stine, 1990; Preacher & Hayes, 2004).

Qualitative Strand

In the qualitative study, the data was analyzed in the following order:
- preparing and organizing the transcriptions from the responses

- reducing the data into thematic statements
- determining a specific theme that captured the contents of the thematic statements that are common

These essentials themes with the thematic statements will be summarized into tables for more accessible presentations (Creswell, 2013).

In this research, the interviews' data were analyzed initially from transcribing the spoken words to facilitating the analysis. After the data was transcribed, it was proofread to ensure correctness. Similarities, differences, contrast, sequences, and patterns were identified. Then the similarities and differences of the teachers were identified through coding. The researcher used post-it stickers toward labeling commonalities as revealed through the stories and impressions of the participants. Then, the similarities were grouped, and likewise for the differences. Consequently, other emerging themes of their travails were carefully noted. The reliability of findings was triangulated through the focus group discussion and peer-reviewed by research experts.

Sequence, Emphasis, and Mixing Procedures

Sequence. This study utilized mixed methods, specifically, explanatory sequential, composed of two-fold phases: the first phase is the collection and analysis of quantitative data followed by the collection and analysis of qualitative data. The qualitative results assisted in explaining and interpreting the findings of the quantitative results.

Emphasis. In this study, the quantitative data was given more importance since the qualitative result is only a follow-up to help explain the results in the quantitative phase.

Mixing Procedures. In the explanatory sequential design of mixed-method research, the qualitative result aims to help explain the

quantitative result. The qualitative phase was done after the quantitative phase, wherein the selected informants in the qualitative phase were also participants of the quantitative phase. After collecting and analyzing both phases' data, the researcher determined whether the qualitative results confirm or support the quantitative conclusion.

Results and Discussion

Quantitative Phase

Table 1.1 shows the status of higher education institution teachers' strategic planning formation process in Region XI. The strategic planning formation process contains seven indicators: initiating and agreeing on a strategic planning process, organizational mandate, vision statement, mission statement, assessing the environment and strategic issues, strategies and plan development, and monitoring and evaluation. The overall mean for the strategic planning formation process is 3.73, described as a high level. This means that the institutions have an excellent strategic planning formation process. The standard deviation (SD) is less than 1.00, representing the homogeneity of responses from the participants.

Table 1.2 shows the level of innovative work behavior of higher education institution teachers in Region XI. The innovative work behavior contains five indicators: opportunity exploration, idea generation, idea promotion, idea realization, and reflection. The overall mean for innovative work behavior is 3.95, which is described as a high level. This means that innovative work behavior is often evident among teachers. The standard deviation is less than 1, which represents the homogeneity of responses from the participants.

Table 2 shows the level of organizational effectiveness of higher education institution teachers in Region XI. The innovative work

behavior consists of 10 dimensions of organizational effectiveness, namely: organizational health, organizational climate, student career development, ability to attract resources, administrative concerns, student dissatisfaction, leadership style, resource availability, system openness, and community interaction and professional development and quality of faculty. The overall mean for organizational effectiveness is 3.84, which is described as a high level. This means that the effectiveness of institutions is often evident. The standard deviation is less than 1, which represents the homogeneity of responses from the participants.

Table 1.1. Status of Strategic Planning Formation Process

	Mean	SD	Description
Initiating and Agreeing on a Strategic Planning Process			
1. Reaching agreement among main stakeholders about the purpose of strategic planning before starting the process of strategic planning	3.44	.737	High
2. Reaching agreement among main stakeholders about who should be involved in the process of strategic planning	3.47	.750	High
3. Agreeing on and documenting the steps of the strategic planning formation process before starting the process	3.37	.770	Moderate
Category mean	3.43	.716	High
Organizational Mandate			
1. Providing clear interpretation of what is required/forbidden by the mandate in the organization	3.88	.715	High
2. Communicating clear formal and informal mandates of the organization to the participants in the strategic planning process	3.64	.827	High
Category mean	3.76	.699	High
Vision Statement			
1. Clarifying organizational visionary goals and the organization's position in the future	4.07	.743	High
2. Circulating and communicating the vision statement among stakeholders	4.07	.699	High
Category mean	4.07	.669	High
Mission Statement			
1. Clarifying the purpose of existence of developed mission statement, optimum goals and provide a framework by which strategies are formulated	4.16	.575	High
2. Circulating and communicating the mission statement among internal organization's members and external stakeholders	4.07	.753	High
Category mean	4.11	.630	High
Assessing the Environment and Strategic Issues			
1. Conducting a comprehensive strategic analysis as part of the strategic planning process which includes internal and external factors	3.50	.992	High
2. Identifying the strategic issues facing your organization, division or department	3.37	1.051	Moderate
3. Using the strategic issues to formulate the strategies and plans	3.51	.927	High
Category mean	3.46	.953	High
Strategies and Plans Development			
1. Encouraging each department to participate in the strategic planning process of the institution	3.30	1.031	Moderate
2. Developing a strategy map for the particular organization level	3.39	.783	Moderate
3. Deciding what current strategies should be kept, improved or stopped during the strategic planning formation process	3.39	.776	Moderate
4. Deciding what new strategies and plans should be initiated, when, why and by whom during the strategic planning formation process	3.48	.613	High
5. Implementing the developed strategies and plans successfully	3.73	.592	High
Category mean	3.46	.672	High
Monitoring and Evaluation			
1. Monitoring the execution of the strategies and plans	3.78	.554	High
2. Evaluating the outcomes of the strategies and plans	3.90	.541	High
3. Revising some of the strategies, systems, policies and goals as a result of the evaluation process.	3.79	.618	High
Category mean	3.82	.506	High
Overall mean	3.73	.530	**High**

Table 1.2. Level of Innovative Work Behavior

	Mean	SD	Description

Opportunity Exploration

1. Informing the teacher about the organization's status	3.94	.581	High
2. Engaging the teacher in exchanging thoughts on recent developments with one's colleagues	4.03	.645	High
3. Keeping the teacher informed about the latest developments within the school	4.17	.707	High
4. Informing the teacher about new concepts/insights within the professional field	4.07	.703	High
5. Keeping the teacher informed about new developments in other organizations outside the institution	4.05	.584	High
Category mean	4.05	.586	High

Idea Generation

1. Giving the teacher the chance to express personal evaluations of a problem	3.88	.639	High
2. Allowing the teacher to address the things that have to change directly	3.95	.611	High
3. Giving the teacher the luxury to express new ideas	3.79	.560	High
4. Encouraging the teacher to ask a critical question relevant to new ideas	3.90	.493	High
5. Allowing the teacher to suggest improvements on expressed ideas	4.06	.548	High
Category mean	3.92	.472	High

Idea Promotion

1. Informing the teacher who is the key person to provide necessary permissions and resource allocation	3.76	.769	High
2. Encouraging the teacher to promote new ideas to colleagues to gain their active support	4.01	.483	High
3. Giving the teacher a chance to promote new ideas to the supervisor to gain her/his active support	4.01	.617	High
4. Allowing the teacher to promote the application of the new solution within one's work context	4.05	.582	High
5. Encouraging the teacher to make a plan on how to put an idea into practice	4.08	.593	High
Category mean	3.98	.481	High

Idea Realization

1. Introducing colleagues to the application of a developed solution	3.92	.524	High
2. Testing evolving solutions for shortcomings when putting ideas into practice.	3.79	.744	High
3. Analyzing evolving solutions on unwanted effects when putting ideas into practice	3.79	.736	High
Category mean	3.83	.646	High

Reflection

1. Providing opportunity and support to the teacher in identifying possible triggers for change	3.90	.826	High
2. Engaging the teacher in assessing the progress while putting ideas into practice	3.86	.835	High
3. Conducting activities that helps the teacher to systematically reflects on recently-made experience	3.75	.765	High
4. Supporting the teacher on the newly acquired knowledge	3.96	.600	High
5. Performing teacher evaluation of behavior	4.24	.592	Very High
6. Facilitating the dissemination of possible strategies of action for comparable future situations	3.96	.730	High
7. Encouraging the teacher to express how one's skills have improved through experiences	4.03	.715	High
Category mean	3.96	.623	High
Overall mean	3.95	.481	High

Table 2. Level of Organizational Effectiveness

	Mean	SD	Description
Organizational Health			
1. Providing a social environment that is cooperative, supportive, and has mutual concern for others	4.03	.590	High
2. Providing an organization that is flexible in the sense that it is willing to change, adaptive, and progressive	4.14	.554	High
3. Observing suspicion, fear, distrust, and insecurity among people in this institution	3.66	.923	High
4. Observing a large number of conflicts, disagreements, anxiety, and friction in the institution	3.52	.856	High
5. Resolving conflicts and disagreements	3.69	.738	High
6. Seeking talents and expertise of faculty members and administrators	3.93	.702	High
7. Functioning productively	4.27	.613	Very High
8. Observing a long-term planning and goal setting	3.98	.561	High
Category mean	3.90	.513	High
Organizational Climate			
1. Helping the students to develop and progress academically	4.51	.675	Very High
2. Training and progressing the students toward occupation and career	4.60	.659	Very High
3. Observing faculty members and administrators who are satisfied with their employment	4.57	.671	Very High
4. Developing high quality and professionally developed faculty members	4.54	.682	Very High
5. Acquiring resources such as good students, faculty, financial support, etc.	4.45	.722	Very High
6. Providing productive and satisfying internal processes and practices in the university	4.48	.622	Very High
Category mean	4.53	.616	Very High
Student Career Development			
1. Obtaining employment of students who graduated from this institution in a major field of study	4.32	.633	Very High
2. Designing the undergraduate courses offered in the institution to produce career-oriented students	4.10	.713	High
3. Obtaining the first choice job of the students who entered the job market after graduating from the institution	4.01	.721	High
4. Knowing the importance of training and knowledge received from the institution to help students obtain employment after graduating	4.24	.672	Very High
Category mean	4.17	.547	High
Ability to Attract Resources			
1. Providing an attractive hiring offering	3.81	.714	High
2. Attracting the best high school graduates in the country	3.84	.806	High
3. Attending for learning rather than the competition	3.82	.681	High
Category mean	3.83	.641	High
Administrative Concerns			
1. Providing awareness of the internal environment status of the institution to the stakeholders	4.01	.885	High
2. Encouraging teachers to participate in the financial and budgeting planning of activities	3.25	.988	Moderate

in the institution

3. Giving supports to all the stakeholders through research grants and scholarships	3.83	.777	High
4. Providing awareness to stakeholders regarding their rights and other legal matters concerning their scope and limitation of responsibilities	4.01	.874	High
5. Providing an office that caters to all the student's affairs concerns	3.96	.667	High
6. Preparing the institution for external environment threats and opportunities	3.79	.569	High
7. Committing to public service in providing community extension programs for the welfare of the people in the community	3.80	.807	High
Category mean	3.81	.557	High
Student Dissatisfaction			
1. Perceiving high dissatisfaction among students in general in the institution	2.87	1.134	Moderate
2. Observing a large number of students who either drop out or those who did not return because of dissatisfaction with their educational experiences	2.51	1.234	Low
3. Observing a large number of students who complain regarding their educational experience in the university	2.90	1.340	Moderate
Category mean	2.76	1.167	Moderate
Leadership Style			
1. Controlling administrators' internal processes.	4.14	.655	High
2. Engaging administrators in teamwork at all times in institutional activities	3.56	.848	High
3. Showing unilateral direct approach in decision-making processes from the administrators	3.52	.839	High
4. Responding to the needs of the stakeholders	3.75	.748	High
Category mean	3.74	.593	High
Resource Availability			
1. Providing opportunities for professional development among its employee	4.18	.707	High
2. Engaging all the stakeholders and providing equal opportunities for community involvement	3.94	.796	High
3. Providing a strong policy for faculty who seeks grants in research and scholarship, as well as financial supports in attending local, national, and international conferences for continuing professional development	4.22	.876	Very High
Category mean	4.11	.678	High
System Openness and Community Interaction			
1. Providing professional activities outside the regular institution to faculty members and administrators	3.95	.829	High
2. Serving the community as consultants	3.54	.794	High
3. Sponsoring an adequate number of community programs that involve all departments by the institution	3.61	.776	High
4. Sponsoring community program for each department of the institution	4.26	.663	Very High
Category mean	3.84	0.766	High
Professional Development and Quality of Faculty			
1. Publishing a book or an article in a professional journal by a majority of faculty members	2.88	1.043	Moderate
2. Giving teaching loads to faculty members that are based on their field of expertise, engaging them in the preparation of the syllabus, and encouraging them to research the current issues in the field.	4.04	.764	High
3. Actively engaging the faculty members in professional development activities	3.90	.764	High
Category mean	3.74	.570	High
Overall mean	3.84	.378	High

The level of the strategic planning formation process of higher education institution teachers in Region XI is high. This means that the institutions have an excellent strategic planning formation process. This finding was corroborated by Ghaffarian and Zavareh (2011) study regarding the use of high strategic management to increase the efficiency of institutions. The study also presented how strategic decisions can lead to excelling in a competitive environment. When strategic decisions are successfully implemented and benefits are realized, this, in turn, increases the legitimacy and confidence of employees and the community with leadership and the organization in general.

Specifically, the study found out that the level of the strategic planning formation process of higher education institution teachers in initiating and agreeing on a strategic planning process, organizational mandate, visions, and mission statements is high. This is concordant with the findings of Arend, Zhao, and Song (2017), who reported that educators at the managerial level should possess high strategic planning skills in initiating and planning education policies, vision and mission statements, and organizational mandates. According to Bouhali, Mekdad, Lebsir, and Ferkha (2015), the strategic planning process is deemed to be successful when teachers in higher education institutions agree and document on the steps of the strategic planning formation process before starting the process, provide a clear interpretation of what is required/forbidden by the mandate in the organization, and communicate the vision statement among stakeholders.

On the other hand, this study also reported a high level of strategic planning formation process in assessing the environment and strategic issues and strategies and plan development. This result concurs with the study of Baumgartner and Rauter (2017), who mentioned that the conduct of a comprehensive strategic analysis as part of the strategic planning process which includes internal and external factors, as well as the development of a strategy map for the particular organization level, is essential in the attainment of strategic planning formation process objectives.

Meanwhile, a high level of strategic planning formation was observed in monitoring and evaluation. This result was corroborated by the study of Kizilcec, Pérez-Sanagustín, and Maldonado (2017), who found out that teachers in the massive open online courses were successful in formulating management strategies because they practice extensive monitoring and evaluation of the existing strategies, systems, policies, and goals. Nair, Jayaram, and Das (2015) also found out that to implement the strategies, the execution of strategies should be monitored, and the outcomes of plans should be evaluated.

Meanwhile, the results of the standard deviation show that the response of the participants is homogeneous. This means that the rating of the participants on the level of the strategic planning formation process is almost the same which is of the same mean range.

Moreover, this variable has seven indicators namely: initiating and agreeing on a strategic planning process, organizational mandate, vision statement, mission statement, assessing the environment and strategic issues, strategies and plan development, and monitoring and evaluation. Among the seven indicators, the mission statement obtained the highest category means which is described as a high level of the strategic planning formation process. This means that the institutions have a very good strategic planning formation process. Meanwhile, the results of the standard deviation show that the response of the participants is homogeneous. This means that the participants' rating on the strategic planning formation process is almost the same, which is of the same mean range.

Moreover, this variable has seven indicators: initiating and agreeing on a strategic planning process, organizational mandate, vision statement, mission statement, assessing the environment and strategic issues, strategies and plan development, and monitoring and evaluation. Among the seven indicators, the mission statement obtained the highest category means, described as a high level of the strategic planning formation process. This means that the institutions have an excellent strategic planning formation process. This finding concurs with Kirk and Nola's (2010) study, which showed that the mission statement was noted as an essential first step in the strategic management process in a recent review of strategic management models. Babrik et al. (2014) posited that a good mission statement makes strategy formulation, strategy implementation, and strategy evaluation much easier.

The essential step in the strategic management process is a recent review of strategic management models. Babrik et al. (2014) posited that a good mission statement makes strategy formulation, strategy implementation, and strategy evaluation much easier.

The level of innovative work behavior of higher education institution teachers in Region XI is high. This means that innovative work behavior is often evident among teachers. The study's finding corroborates the study of Beatty and Quinn (2010) reported that the level of innovative work behavior among school teachers in higher education institutions was high. Beatty and Quinn (2010) also reported that an organization's ability to innovate, interactions between teams, and continuously improving processes are vital factors influencing an organization's success. In this regard, school organizations that seek ways to foster innovative work behaviors in their employees need to recognize the importance of building up self-leaders who can successfully meet the required expectations and innovative behavior standards.

Specifically, the study found out that the level of innovative work behavior in opportunity exploration is high. This is in agreement with Ornek and Ayas (2015) 's findings, who reported that to foster innovation in the workplace, the employees should explore opportunities that allow them to engage in exchanging thoughts on recent developments. According to Shanker, Bhanugopan, Van der Heijden, and Farrell (2017), informing the teachers about the new concepts and insights within the professional field increases their innovative behavior in the workplace.

On the other hand, this study also reported a high level of innovative work behavior in idea generation, promotion, and realization. This result concurs with Akram, Lei, and Haider (2016), who mentioned that providing the teachers the chance to express personal evaluations of a problem in the education practice and the opportunity to suggest improvements on expressed ideas, promotes new ideas to the organization. Based on the study of Messmann and Mulder (2015), an organization is said to be proactive and innovative when teachers are allowed to promote the new solution within one's work context.

Meanwhile, a high level of innovative work behavior was observed in the aspect of reflection. This result was corroborated by the study of Shanker, Bhanugopan, Van der Heijden, and Farrell (2017), who found out that programs that help the teachers to reflect on recently-made experiences systematically are significant in encouraging innovative work behavior in the education workplace. The results of the standard deviation show that the response of the participants is homogeneous. This means that the participants' rating on innovative work behavior is almost the same, which is of the same mean range.

Moreover, this variable has five indicators: opportunity exploration, idea generation, idea promotion, idea realization, and reflection. Among the five indicators,

opportunity exploration obtained the highest category mean, described as a high level of innovative work behavior. This finding concurs with the studies of Prieto and Santana (2014), which suggested that opportunities in the form of training complement staffing by providing an ongoing improvement of skills and abilities, by training in teamwork and creative work skills, by showing how to do things well, and by raising the confidence in coworkers' abilities. The studies also presented that these opportunities, in turn, improve the innovative work behavior among the employees.

The level of organizational effectiveness of higher education institution teachers in Region XI is high. This means that the effectiveness of institutions is often evident. This finding corroborated the study of Burnes and Jackson (2011), which reported that a specific organization's actual effectiveness is determined by the degree to which it realizes its goals. The same study revealed that organizations need to execute strategies and engage employees to achieve increased and sustainable results. Effectiveness is measured by analyzing where the organization is concerning its goals and its mission. It is dependent on many factors, both internal and external (Burnes & Jackson, 2011; Richardson, 2014).

Specifically, the study found out that organizational effectiveness in the aspects of organizational health and climate is high and very high, respectively. This is in agreement with Di Fabio's (2017) findings, who reported that in healthy organizations, the culture, climate, and practices create an environment conducive to employee health and safety and organizational effectiveness. According to Parke and Seo (2017), organizational health and climate differentially impact four organizational effectiveness outcomes: relationship, productivity, creativity, and reliability performance.

On the other hand, this study also reported a high level of innovative work

behavior in student career development, the respondents' ability to attract resources, and administrative concerns. This result concurs with the study of Akkermans, Brenninkmeijer, Schaufeli, and Blonk (2015), who mentioned that an education organization attains high effectiveness if the undergraduate courses offered in the institution are designed to produce students who are career-oriented and if administrators are committed to public service in providing community extension programs for the welfare of the people in the community. Based on the study of Messmann and Mulder (2015), an organization is effective when the administration is providing awareness to stakeholders regarding their rights and other legal matters concerning their scope and limitation of responsibilities.

Meanwhile, a high level of innovative work behavior was observed in system openness and community interaction and professional development, and quality of faculty. This result was corroborated by the study of Deem, DeLotell, and Kelly (2015), who found out that an education organization could attain high effectiveness when teachers are provided with professional activities outside the institution and sponsored with an adequate number of community programs. Also, Pee and Kankanhalli (2016) reported that educators who engage in various professional seminars and training and immerse in research and publication of studies in international and national journals positively influence the organization, thereby increasing its effectiveness in delivering quality learning to students.

Table 3 shows the relationship between the strategic planning formation process, innovative work behavior, and organizational effectiveness. The results show that all the independent variables have a significant relationship with organizational effectiveness ($p<.05$). There is a significant relationship between the strategic planning formation process and organizational effectiveness ($r=.626$, $p<.05$). The strength of the correlation between the two

variables is moderate and has a directly proportional relationship, as revealed by the coefficient of .626.

In the same way, there is a significant relationship between innovative work behavior and organizational effectiveness (r=.759, p<.05). The correlation between the two variables is strong and has a directly proportional relationship, as revealed by the coefficient of .759. Similarly, there is a significant relationship between the strategic planning formation process and innovative work behavior (r=.751, p<.05). The correlation between the two variables is strong and has a directly proportional relationship, as revealed by the coefficient of .751.

Table 3. Relationship between the Variables

	R	p-value	Remarks
SPF & Effectiveness	.626	.000	Significant
IWB & Effectiveness	.759	.000	Significant
SPF & IWB	.751	.000	Significant

Legend: SPF=Strategic Planning Formation; IWB=Innovative Work Behavior

The results revealed that there is a significant relationship between the strategic planning formation process and innovative work behavior. The strength of the correlation between the two variables is strong and has a directly proportional relationship. This means that as the strategic planning formation process increases, the innovative work behavior of teachers also increases. Conversely, as the strategic planning formation process decreases, the innovative work behavior of teachers also decreases.

This finding concurs with the study of Batra et al. (2018), which revealed that strategic planning could assist in new product innovation. Batra et al. (2018) also found a positive relationship between strategic planning and innovation. Also, the commitment to learning showed a significant positive moderating effect on the relationship between strategic planning and innovation. Another report corroborated the results of the present study. Andersen (2004) found that the strategic planning formation process was significantly related to innovative work behavior among 185 organizations operating in computer products.

Meanwhile, the results revealed that there is a significant relationship between innovative work behavior and organizational effectiveness. The strength of the correlation between the two variables is strong and has a directly proportional relationship. This means that as innovative work behavior increases, the organizational effectiveness of teachers also increases. Conversely, as innovative work behavior decreases, the organizational effectiveness of teachers also decreases.

This finding coincides with Karakas et al.'s (2017) study, which reported a positive relationship between innovative work behavior and organizational effectiveness. In the same way, this study's findings also corroborate the survey research conducted by Karim et al. (2017); this study reported that innovative work behavior as measured by product innovation, process innovation, and organizational innovation has a positive impact on organization performance. Similarly, the study of Mafini (2015) revealed that there is a strong positive

relationship between innovation and organizational effectiveness.

On the other hand, the results revealed a significant relationship between the strategic planning formation process and organizational effectiveness. The strength of the correlation between the two variables is moderate and has a directly proportional relationship. This means that as the strategic planning formation process increases, the organizational effectiveness of teachers also increases. Conversely, as the strategic planning formation process decreases, the organizational effectiveness of teachers also decreases.

This finding concurs with Ferreira and Proenca (2015) study, which found a significant relationship between the levels of adopted strategic planning and levels of organizational effectiveness. The study also demonstrated that the levels of organizational effectiveness are influenced by the degree of sensitiveness of the management in terms of administrative practices and the organization's size.

Similarly, the present study's findings corroborate the random-effects meta-analysis study conducted by George et al. (2019). Based on their analysis, strategic planning has a positive significant impact on organizational effectiveness. The analysis also demonstrated that the positive link between the variables is strongest when strategic planning is measured as formal strategic planning.

Moreover, the present study supports Ali's (2018) findings, which conducted a comprehensive review and analysis of studies exploring the relationship between strategic planning and organizational effectiveness. Based on the review and analysis, the relationship between strategic planning and organizational effectiveness is significantly positive, which means that the intensity of strategic planning causes better organizational effectiveness.

The data were analyzed using the regression method as an input to the Medgraph. In Table 4, the result of regression is shown. Mediation analysis was developed by Baron and Kenny (1986). Mediation refers to considering how a third variable affects the relation between the other two variables (MacKinnon, Fairchild, and Fritz, 2007). There are three steps to be met before testing mediation hypotheses. The results in Step one confirmed that the strategic planning formation process (independent variable) is a significant predictor of organizational effectiveness (β=.447, p<.05). Step two shows that innovative work behavior (mediating variable) is a significant predictor of organizational effectiveness (β=.597, p<.05).

Consequently, Step three shows that the strategic planning formation process is also a significant predictor of innovative work behavior (β=.681, p<.05). Finally, Step 4 shows the combined influence of the strategic planning formation process and innovative work behavior on organizational effectiveness. The results conform to Baron and Kenny's (1986) standards as preconditions before conducting mediation analysis. The use of additional mediation analysis to further assess the mediation effect's significance was applied to the variables since the three paths are significant.

Table 4
Steps in Mediation Analysis

Singular Influence	Organizational Effectiveness			
	Unstandardized Beta	Standard Error	p-value	Interpretation
Strategic Planning Formation Process	.447	.030	.000	Significant
Innovative Work Behavior	.597	.027	.000	Significant
Combined Influence	Unstandardized Beta	Part Correlation	p-value	Interpretation
Strategic Planning Formation Process	.129	.085	.000	Significant
Innovative Work Behavior	.521	.437	.000	Significant

Qualitative Phase

Table 6 shows the participant's standpoints on the variables, their relationships, and the resulting mediation. The table presents the results of the responses' categorization as transcribed from the in-depth interviews and focus group discussion.

Identifying the themes that emerged from the transcripts started from creating a matrix of responses of all the study participants in each research question. The response was then grouped to determine patterns of similarities and differences. There were several reviews made from the reasons of informants before coming up with the essential themes. Specifically on the issues that were rated high and rated moderate from the quantitative study. During the analysis process, a theme is noted when the informants emphasized a particular experience or statement. The researcher considered 10 essential themes that were drawn out from the in-depth and focus

group discussion of the informants on the specific research question. There are four essential themes under issues that were rated low and moderate: (1) Communications and Clarifications Issues on Strategic Planning, (2) Poor and/or Limited Students Services, (3) Low Level of Research Publication Productivity, and (4) Non-alignment of the task. Also, six essential themes were drawn out from informants under issues rated high:

1. Evident Organizational Effectiveness across the Academe for Client Satisfaction
2. Critical Role of Faculty in Institutional Development Planning
3. Innovation Ecosystem, and Landscape Development
4. Strategic Planning as Determinant of Organizational Culture
5. Innovative Work Behavior as Factor for Organizational Effectiveness Evaluation
6. Impact of Innovation Culture on Planning and Organizational Growth

Table 6. Participant's Standpoints on the Variables, their Relationships, and the Resulting Mediation

Issues	Reasons	Themes	Nature of Integration
FOR ITEMS RATED LOW AND MODERATE **Initiating and Agreeing on a Strategic Planning Process** 3. The steps of the strategic planning formation process were agreed on and documented before starting the process. (M=3.37) Moderate **Strategies and Plans Development** 1. Each department is encouraged to participate in the strategic planning process of the institution. (M=3.30) Moderate **Assessing the Environment and Strategic Issues** 2. Strategic issues facing your organization, division, or department have been identified. (M=3.37) Moderate	No invitation in the rank-and-file for the strategic planning Not confident enough due to limited experiences in strategic planning Unable to attend strategic planning because of a schedule conflict Teachers believe that strategic planning is only for supervisors Disappointments from certain criteria regarding salaries and other fringe benefits No clear system in the delegation of the task Unclear protocol on teaching and non-teaching staff 's participation in strategic planning The system being too bureaucratic	Communications and Clarifications Issues on Strategic Planning	Connecting-clarifying
Students Satisfaction (*Note: Student Dissatisfaction Items were score reversed*) 3. A large number of students are satisfied with their educational experience at this university. (M=2.90) Moderate	Different school services are ineffective. Students were dissatisfied in the area of instruction due to neophyte teachers Loopholes in terms of provision of scholarships Students are dissatisfied with the current instructional resources and other student services Inadequacy of the facilities and the laboratory room	Poor and/or Limited Students Services	Connecting-explaining
Professional Development and Quality of Faculty 1. The majority of faculty members at this institution published a book or an article in a professional journal. (M=2.88) Moderate	Research culture in school is not fully evident Teachers do not have enough time for research No clear incentives in research publication The limited research output of faculty research	Low Level of Research Publication Productivity	Connecting-validating
Administrative Concerns 2. Teachers are encouraged to participate in the financial and budgeting planning of activities in the institution. (M=3.25) Moderate	Few teachers are involved in budgeting, specifically in projecting revenues and expenses considering the number of enrollees.	Nonalignment of the task	Connecting-validating

			Connecting-reinforcing
FOR ITEMS RATED HIGH Areas in the organization that is excellently managed. **(Organizational Effectiveness--- organizational health, organizational climate, student career development, ability to attract resources, administrative concerns, leadership style, resource availability, system openness, and community interaction and professional development and quality of faculty)**	The organizational structure is well defined. The organizational climate is democratic and effective in conflict management The organization is performing well in instruction, faculty development, and students' services The school provides good medical benefits to the teachers. The school offers a good salary, incentives, and other fringe benefits Scholarships grants are evident for continuing education	Evident Organizational Effectiveness across the Academe for Client Satisfaction	
The strength of involving the teachers in strategic planning. **(Strategic Planning Formation Process --- initiating and agreeing on a strategic planning process, organizational mandate, vision statement, mission statement, assessing the environment and strategic issues, strategies & plan development and monitoring & evaluation)**	School supporting and enabling faculty involvement in the strategic planning formation Identification and specification of attainable goals set through the strategic planning Sense of contribution in terms of engagement in the planning. Strategic planning can predict the possible challenges and possibly better outcomes of a specific process. Teachers' involvement in the formulation of the vision and mission of the institution. Updating the faculty on the internal and external issues of the organization.	Critical Role of Faculty in institutional development planning	Connecting-explaining
Innovative work behavior practices of the Teachers **(Innovative Work Behavior --- opportunity exploration, idea generation, idea promotion, idea realization, and reflection)**	Evidence of collaborative-task opportunities in and out of the academe Sharing of ideas for the attainment of vision, mission, and goals Innovatively making use of technology for communication, e.g. Facebook Transparency of the institution regarding the organizational status. The planning involvement is coming up with a clearly-articulated program to achieve the goals set in each school year.	Innovation ecosystem and landscape development	Connecting-validating
Relationship between strategic planning formation process and organizational effectiveness	Effective strategic planning to identify common key areas that need organizational development Involvement in strategic planning influences the effectiveness of an organization e.g. participating in various activities, sharing ideas,	Strategic planning as a determinant of organizational culture	Connecting-explaining

	and implementing programs towards personal and institutional goal achievement Strategic planning helps the organization overcome possible threats in the organization. Strategic planning to set the direction of organizational success		
Relationship between Innovative Work Behavior and Organizational Effectiveness	Innovative work behavior providing an opportunity in terms of collaboration of ideas Innovative work behavior influencing and exploring ideas towards the attainment of institutional goals Innovative behavior shaping the attitude of teachers towards providing quality education Innovative work behavior promotes teamwork among the faculty through the sharing of ideas	Innovative work behavior as a factor for organizational effectiveness evaluation	Connecting-validating
IWB partially mediates the relationship between SPFP and Organizational effectiveness	Institutional/administrative support to employees' innovative behavior enhances organizational effectiveness Strategic planning through brainstorming regarding innovative work plan can obtain many ideas towards goal achievement Innovative practices of collaborating with other instructors from external organizations provide more knowledge to address current organizational issues Innovative behavior is vital in crafting the strategic direction of the institution towards organizational effectiveness	Impact of innovation culture on planning and organizational growth	Connecting-reinforcing

Conclusion and Recommendations

Based on the findings of the study, higher education institutions in Region XI have a very good strategic planning formation process. The innovative work behavior of teachers is described as a high level, implying that innovative work behavior is often evident among teachers in Region XI. Moreover, the level of organizational effectiveness of higher education institutions in Region XI is described as a high level. This is means that the effectiveness of institutions is often evident. There was a significant relationship between innovative work behavior, strategic planning formation process, and organizational effectiveness. Sobel test showed that innovative work behavior partially mediated the relationship between the strategic planning formation process and organizational effectiveness.

Based on the participants' standpoint as regards the variables measured, their relationships to one another, and the resulting

mediation, the researcher was able to identify ten (10) essential themes drawn out from the in-depth and focus group discussion. These are the following: (1) Communications and Clarifications Issues on Strategic Planning, (2) Poor and/or Limited Students Services, (3) Low Level of Research Publication Productivity, and (4) Nonalignment of the task. Also, six essential themes were drawn out from informants under issues rated high as follows: (a) evident organizational effectiveness across the academe for client satisfaction, (b) critical role of faculty in institutional development planning, (c) innovation ecosystem, and landscape development, (d) strategic planning as a determinant of organizational culture, (e) innovative work behavior as a factor for organizational effectiveness evaluation, and (f) impact of innovation culture on planning and organizational growth.

The study has several implications to note. Looking back into the responses of the teachers on their experiences on their teaching profession pursuit; coping with their career challenges; initiating their innovativeness in the workplace, and their insights about their experiences with regards to organizational effectiveness and strategic planning, teachers in general presented a wide contribution to higher education institutions and administrators regarding their perspective about responding to the needs of teachers.

It is a challenge to every academic institution to strongly perform its basic functions in the community in terms of human resource management, instructions, strategic management, research, and community extensions adherence to society's needs. The school's effectiveness is being judged on outcomes. Supportive school environment condition fosters strong relationships among stakeholders. These include positive, sustained relationships that foster attachment and connections, physical, emotional, safety, and a sense of belonging and purpose.

Academic institutions need to establish a system of supports that enables healthy development to student needs and addresses learning barriers. These include an effective academic, health, and social support system that provides personalized resources within and beyond the classroom to address and prevent developmental detours.

Moreover, the issues and concerns as presented by the informants of the study may be adapted or modified based on the specific issues of organizational effectiveness and the strategic planning formation process that were rated moderate based on the responses of the informants.

The status of the strategic planning formation process of teachers in higher education institutions is high; the researcher may recommend to the higher education institutions to continue in initiating strategic planning activities as it fosters positive results in teachers' professional development. The strategic planning process is a disciplined effort of all the stakeholders that produces fundamental decisions and actions that shape and guide the organization; it significantly influences the higher education institution's effectiveness.

The results of this study revealed that teachers' engagement in strategic planning ensures commitment in shaping the attitude of teachers in achieving the institutional vision, mission, and goals. However, some of the teachers expressed that the strategic planning formation process steps were not agreed on and not documented before starting the process. Teachers' involvement made them aware of the organization's current status, its strength, and weakness in terms of internal and external issues. The researcher would like to recommend that the higher education institutions administrators may create strategic planning activities engaging all the stakeholders to acquire a genuine assessment of the current situation of the institution, take a hard look at what is happening externally and internally and

pay special attention to the needs of the stakeholders.

The study also revealed some students' dissatisfaction in terms of student services; school administrators are encouraged to provide quality services to students that strengthen satisfaction and provide a school environment that fosters quality education and exemplary learning experience.

The higher education institution may provide teachers professional development opportunities in their field of expertise and encourage them to engage in research works to strengthen research publications in their institutions. Provide strategic planning that helps establish research cultures among teachers with clarity of purpose and have clear goals. Administrators and the teachers should monitor the research progress, measure outputs, and outcomes and obtain feedback from the teachers to establish open communications for harmonious teamwork.

Innovative work behavior of teachers was evident in the result of the study; in today's rapidly changing environment in the academe, the institution's ability to gain competitive advantage is partly dependent on the school's capability to innovate. To innovate, the innovative work behaviors of teachers are of essential importance. The researcher would like to recommend that the teachers be open to any challenges that the institution is facing, engage in school activities which allows sharing of ideas towards the achievement of institutional goals. For the administrators, establish a short-term and long-term faculty development plan where teachers can enhance their potentials. More related studies may be done to explore and expand the phenomenon on the organizational effectiveness of higher education institutions.

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WHY DO ANGELS HAVE TO LEAVE THE SICK ROOM?

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Abstract

The shortage of nurses worldwide highlights the importance of understanding why nurses leave the nursing practice. This study explored the seven non-practicing nurses why they have to leave the nursing practice in Davao City. It aimed to describe why they opted not to be in the sick room and determine their socio-demographic data. The case study method was used to have an in-depth and detailed study of the seven selected participants. Of the seven participants, three cases were selected. The researcher gathered primary data through critical informant interviews and applied thematic content analysis to analyze the data. There are two emergent themes in this study, namely: work-related stress and low monetary rewards. The first theme has two sub-themes, namely: random work shifts and work overload. The second theme also has two sub-themes, namely: low pay and inability to save money. Through the utilization of qualitative case study design, the researcher concluded that nurses left the nursing practice because of work-related stress and low monetary pay. The data also showed that most of the participants resign before they reach the age of 30, and most of them are male, married, and were able to obtain three years of hospital experience.

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Introduction

Nurses are said to be the angels in the sick room. They portray angels in starched skirts and nursing caps, which look like Florence Nightingale, the nursing profession model, and inspiration. Becoming a nurse is not an easy task. Many personal, professional, and financial sacrifices are required, so when a nurse leaves the nursing profession, it is a cause for concern.

Nurses are said to be angels in the sick room because they watch over patients round the clock. Whether it is monitoring critically ill patients, giving a sponge bath, or cleaning up a wound, they offer their tender loving care. They often work long shifts on their feet, sometimes having to lift people in their beds to adjust them, help people up who have fallen, and use their heavy-lifting skills in other various situations. They also have to be quick in whatever they do because there is always another patient waiting for medication, water, or help to get to the bathroom.

Nurses are also said to be the doctor's help. Their work involves more than nurturing; they also include assessing, diagnosing, planning, implementing, and evaluating (Gordon, 2005). Nurses save lives, prevent diseases, treat illnesses, and prevent further complications. The role of nurses in the hospital requires multitasking. They need emotional stability to cope with human suffering, emergencies, and other stresses. They also need good judgment, negotiation skills, and

leadership qualities. However, Aiken (2004) states that their work does not equate with their compensation.

The shortage of nursing professionals has been a well-known and ongoing crisis worldwide for the past decade. This situation is of great concern in many countries because of its impact on its efficiency and effectiveness. The World Health Statistics Report in 2013 revealed that there are about 29 million nurses and midwives around the world. However, it is projected that by 2020, one million nurses will still be needed (WHO, 2013).

Moreover, according to the "United States, Nurse Workforce Report Card and Shortage Forecast" published in January 2012 issued by the American Journal of Medical Quality, the shortage of nurses would likely blowout all over the country between 2009 and 2030. It means that there would be a lack of skilled and qualified nursing staff to provide the care for the patients (Duffield & O'Brien-Pallas, 2002).

The Philippines is known as one of the leading countries in Asia that exports nurses because of their technical skills and English proficiency that makes them suitable for international employment (Aiken 2004; Bach 2003). According to Lorenzo, Dela, Paraso, Villegas, Isaac, Yabes, Trinidad, Fernando, & Atienza (2005), there is a surplus number of registered nurses in the Philippines. However, there are still 300,000 of them who remain unemployed, and around 250,000 are underemployed.

Nowadays, the shortage of nurses worldwide highlights the importance of understanding why nurses leave the nursing practice. Most research regarding career switching is done in quantitative methods. In the Philippines, qualitative research about why nurses leave the nursing practice is limited. Adversario (2003) noted that the factors identified why Filipino nurses leave their jobs

are low wages, poor benefit packages, limited opportunities, lack of enforcement of labor laws, and nursing standards.

According to Cañedo (2018), most of the barangays in Davao City are experiencing a shortage of doctors, nurses, and midwives due to the increasing number of residents. However, approximately 20,000 nurses are working different jobs far from health workers, according to Philippine Nurses Association data (2018). It means that nurses' supply is not the problem, but nurses' willingness to practice their profession.

It indicates the need to explore this phenomenon using a case study type of qualitative research to gain a profound understanding of this condition. Thus, the purpose of this study is to gain insights and probe into the experience of the non-practicing nurses why they opted not to be an angel in the sick room.

I am also a Registered Nurse and used to work in a government hospital on a contractual basis. As a nurse, I was assigned in the delivery room to provide quality patient care to the mothers that give birth via expected spontaneous delivery. Just like any other nurse, my experience in the hospital was not comfortable. When I got married, I decided to quit working in the hospital as I thought that random working shifts would hinder me from giving more time to my family. As a non-practicing nurse, I wanted to explore other factors why nurses leave the nursing practice.

Nurse Shortage

Most people have likely heard about the nursing shortage for years now. The global problem of nurses' poverty is a threat to the nursing profession and the workforce and facility planners. Buerhaus (2008) states that this shortage will prolong, especially there is a growing and aging population. It was found out that the effects when nurses leave their organizations would be poor health outcomes for

patients (Aiken, Clarke, Sloane, Sochalski & Silber, 2002). In the report released by the American Hospital Association in July 2007, they identified the multiple factors contributing to the growing nursing shortage. These factors include: (1) existing nurses are leaving the profession due to dissatisfaction with their jobs; (2) the nursing workforce is aging, and many of these nurses are reaching retirement age; (3) and fewer younger persons are entering into this profession. According to Baumann, O'Brien-Pallas, Donner, Tomblin, Lochhaas & Luba (2001), there is an increased workload for those who remain when there is a staff shortage. There is a projection of a shortfall of one million registered nurses by 2020. Only 64 percent of the projected demand will be met (American Hospital Association, 2007b; American Hospital Association, 2006; Biviano, Fritz & Spencer, 2004).

Furthermore, the Philippines is known for being the supplier of nurses worldwide. Thus, the country began to face massive migration of nurses and other health workers to the point that it becomes a problem for most private hospitals because of the scarcity of competent health workers (Department of Budget and Management, 2005). Approximately there are 1,600 hospitals in the Philippines, about 60 percent of which are private. The services provided by the small and private hospitals differ significantly, and poor working conditions and low salaries at many of these institutions affect nurse migration (Galvez, 2005). The impact of massive nurse migration is already evident. According to the Philippine Hospital Association (2005), 200 hospitals decided to close within the past two years due to scarcity of doctors and nurses, and 800 hospitals have partially closed for the same cause. It is also because of failure to meet accreditation standards, which prevents reimbursement and eventually leads to a financial crisis.

Factors Why Nurses Leave the Profession

Nurses' turnover is a chief reason for the nursing shortage (Borda & Norman, 2000). Given that patients are becoming sicker and older, baby boomer nurses are retiring, which means that the nursing workforces' needs will become worse by 2023 (American Association of Colleges of Nursing, 2002). Coomber and Barriball (2007) identify the four top reasons why nurses leave. These include (1) leadership, (2) development opportunities, (3) stress, and (4) pay.

Workload and Work Environment

It has been said that workload and work environment are factors why employees tend to leave. The organization's success is closely related to the job performance of its employees. Aiken, Sochalski, and Andersen (2000) state that when nurses are overloaded with work and feel burnout, they will become less effective in caring for them. As a result, a nurse may become dissatisfied and may tend to leave. The work environment is an organizational factor contributing to the outcomes of job performance and commitment. For nurses, favorable work environments support nursing practices and continuing professional career development. A nursing work environment can be defined as the organizational features that enable or constrain the application of skilled nursing (Fallatah & Laschinger, 2016).

In Ballard's (2003) study, it was found out that nurses' toxic work environment can result in stress and fatigue. Thus, this may also lead to higher health care errors, failures, and injuries. The study further stated a more significant health outcome when nurses could give quality care, which can only be achieved when nurses are satisfied with professional development, adequate staff, and regulation. On the other hand, Groff Paris and Terhaar (2010) pointed out that one of the strongest predictors of job dissatisfaction and intent to leave is the work environment. Heavy workload,

relationships with colleagues in the unit, and an unsafe working environment would result in job dissatisfaction.

The workload is defined as the volume of work required to accomplish this applies to the nursing profession. Alghamdi (2016) states that nurses' workload comes in a two-dimensional manner by performing operational and administrative work for their patients. With this being said, nurses' only measure for workload can be determined, which comes with a cost. According to MacPhee, Dahinten, and Havei (2017), heavy workload perceptions result in unsatisfying work conditions leading to burnout, and from this, absenteeism, tardiness, and unproductiveness branch out, indicating lower rates for job satisfaction. Such tendencies are rooted in interruptions within the workplace, as Myny, Van Hecke, De Bacquer, Verhaeghe, Gobert, Defloor, and Van Goubergen (2012), where nurses feel the need to execute tasks even in spare time. This is somewhat a psychological clock that triggers them to be alert when in leisure through switching to another activity beyond their scope. Furthermore, this quality of being proactive comes naturally among nurses due to the demanding environment, thus disrupting flow and order (Cornell, Herrin-Griffith, Keim, Petschonek, Sanders, D'Mello, Golden & Shepherd, 2010) in the work scenario.

On the other hand, one outcome associated with the workload is job satisfaction and intention to leave or quit among nurses. In the study conducted by Gouzou, Karanikola, Lemonidou, Papathanassoglou, and Giannakopoulou (2015), a more significant workload results in lower job satisfaction and leads to quitting the job. When nurses feel unsatisfied, productivity decreases and an additional task in the workload means more to accomplish in a fast-paced environment. This is viewed as a reason for the shortage of nurses in Greek hospitals (Gouzou et al.), which is also associated with burnout degrees.

Moreover, the distribution and intensity of workload significantly contribute to medical errors performed by nurses. According to Amin (2011), this is due to nurses' hectic timetables leading to fatalities that may endanger their safety. However, this is not solely the case for medical errors as it can be rooted in various factors within the workplace. Moreover, when a nurse is physically and emotionally cheerful, more excellent performance is not too far behind. Having the right working environment minimizes the absenteeism of the employees. Thus, there would be increased productivity (Boles, Pelletier & Lynch, 2004). Quality workplace impacts employee morale, productivity, and participation (Chandrasekar, 2011).

American Hospital Association (2007) states that nurses help patients cope with illnesses, promote health, and prevent diseases. They observe, assess, and record symptoms; take note of the reaction and progress in patients; give medications; assist doctors during surgeries, deliveries, treatments, and examinations; and manage nursing care plans.

Nurses' Motivation

Motivation is a significant factor to face work challenges in a healthcare team. A worker's inspiration is the outcome of the interactions between persons and their work environment (Franco, Bennett & Kanfer, 2002). When nurses are motivated, it impacts well-being, organizational performance, satisfaction, retention, participation, and commitment (Gagne, 2005). A nurse's well-being is relevant in the organization, which can be evident when he or she is motivated, interested, and happy (Meng, Luo, Liu, Hu & Yu, 2015).

Methods

This study used a qualitative case study design. In the case of study research, the single point is typically selected to illustrate an issue, and the researcher compiled a detailed description of the setting for the patient. An interview guide was used to conduct in-depth interviews and Key Informant Interview (KII), where open-ended questions made the flow of conversations unpredictable. To get the demographic data of the participants, I administered a survey to the seven non-practicing nurses. I made the interview questions, and the panel members approved of

this study. The purposive sampling technique was employed among registered nurses who at that time of research were non-practicing nurses. The seven participants were asked for an in-depth interview for about 30 to 45 minutes using the researcher's guide questions. I selected three participants for the case study. The inclusion criteria were: (1) participants must be registered nurses but non-practicing nurses at the moment, and (2) participants must at least have one year of clinical hospital experience in a private hospital. On the other hand, the exclusion criteria were: (1) registered nurses who own a business or a stockholder, and (2) registered nurses who have previous work abroad.

Results and Discussion

The result shows that most of the participants were male, married, and 30 to 33 years old. On the other hand, most of them have worked in the hospital for about 3 to 5 years. Also, nearly all of the participants' average years working outside the nursing practice is 3 to 6 years.

The youngest generation of nurses has the highest rate of nurses' turnover. Kovner and Djukic (2009) found out that more nurses left the nursing practice during the first two years in the service. Nurses turnover was highest in the age groups between 25 and 35 years of age. On the other hand, Kim and Lee (2017) said that more male nurses tend to leave the nursing practice than female nurses because of four factors: (1) pursuing occupational values, (2) being dissatisfied with the treatment, (3) seeking a relaxed and stable life, and (4) conflict related to organizational culture. Another factor of nurses' intent to leave is marital status. Alharthi and Damanhouri (2018) state that when a nurse has their own family, it would be difficult for them to work in the hospital due to erratic shifting. Additionally, Aiken (2004) states that three years is the longest time for a nurse to stay in the organization.

Reasons for Leaving the Nursing Practice

The narratives' summary allowed me to identify themes derived from the participants' significant statements. Based on the participants' descriptions and transcriptions, two emergent themes surfaced reasons why they left the nursing practice: (1) Work-Related Stress and (2) Low Monetary Rewards.

Emergent Theme 1: Work-Related Stress. This theme enumerates and describes the factors contributing to the nurses' decisions to leave the nursing practice and pursue another career instead. In this study, work-related stress was one of the factors identified by the participants. Stress has been linked to low job satisfaction and leads to nurses' intent to leave the organization (Boyle, Hansen, Woods & Taunton, 1999).

In the study conducted by MacKusick and Minick (2010), it was found that the three primary reasons for nurses' intent to leave were: (1) unfriendly workplace, (2) emotional distress related to patients' care, and (3) fatigue and exhaustion. In this study, the participants identified that random work shifts and work overload triggered them to leave the nursing

practice. Case Study 1 is Melvin, a registered nurse working as a Bank teller in one of the

Bank Firms in Davao City.

Case Study 1: Melvin the Bank Teller

Melvin is a Registered Nurse who is currently working as a Bank Teller in Davao city's prestigious banks. He is married and has an eight-year-old daughter. His wife is also a registered nurse and is currently working at New Zealand home care centers. During Saturdays and Sundays, he attends International English Language Testing System (IELTS) review as he is planning to follow his wife in New Zealand.

His career transition from being an angel in the sick room to a banker was not easy. The nature of work is far from what he was trained for in his baccalaureate degree. However, because of his will to learn and desire to become a regular staff in his organization's status, he could adapt to the work's nature and the working environment as if it was all given. Although he is enjoying his career, he cannot deny that nursing is still in his heart. It is just that he did not like working shifts.

Cluster Theme 1: Random Work Shifts. The sentiments of Melvin represent the other sentiments of the participants of this study. As Trinkoff (2006) said, "lack of sleep is one of the nurses' stresses and reasons to leave. American Journal of Nursing (2015) stated that rest has a vital role in normal brain functioning. Many studies have found that sleeping fewer than seven hours per day may be a precipitating factor of endocrine, cardiovascular, immune, and neurologic diseases. Melvin highlighted that he hated the night shift (11 PM-7 AM) because he experienced poor sleeping habits. While nurses take care of others' health, they unconsciously compromise their health and safety by working shifts of 12 or more hours (Bae, 2012).

Emergent Theme 2: Low Monetary Rewards. Most nurses graduate and start

working in the hospital and then find out that they are not what they thought they would be. Others may work a while and perceived that they were underpaid and leave the profession (Drennan, Halter & Haris, 2016). Pay and benefits may be the cause why nurses leave their jobs (Buerhaus et al., 2002).

Cluster Theme 1: Low Pay. Most research has shown that pay is a strong motivator for employees to perform well. Warr (2013) said a nurse is more likely to perform best if they are happy with their earnings. In this study, Melvin disappointedly shared that he had little amount received despite the work overload he served in the ward. As the family head, he could hardly provide for his family when he was still working in the hospital. His wife's expenses for operating in New Zealand were sponsored by his parents-in-law-in-law. It was the point in his life that he needed to leave the nursing practice and look for a high-paying job since he will be left alone to raise his daughter while his wife will start her career outside the country.

According to Kaplan and Norton's (2004) study, one of the most useful implementations of any performance plan relies on the monetary incentives it offers. Therefore, when nurses are given fair pay based on their performance, they will be motivated to work hard. This study is supported by Lavoie-Tremblay, O'Brien-Pallas, Gelinas, Desforges, and Marchionni (2008) that states "nurses' intent to leave is related to low monetary reward."

Furthermore, Melvin also shared that although he missed doing a nursing job, he did not regret his decision to leave his hospital work. His coping in his new career went well, and currently, he is enjoying doing his job as a bank teller.

Case Study 2: Kris, the Medical Representative

Kris is a Registered Nurse who was once working at a medical ward in the hospital. As a medical ward nurse, she was directly involved in the treatment and was usually the primary contact for patients. After working for three years, she left the nursing practice and shifted her career as a Medical Representative of one of the Philippines' biggest biopharmaceutical companies. For three years now, she is enjoying the career she pursued. Kris did not have difficulty adjusting from being a nurse to being a medical representative since she was familiar with the endorsing product. Looking back to what triggered her to resign, it was work overload and low pay, as she recalled.

"Gikapoy ko sa ka daghan trabaho labi na ang pag bedside care (I was tired because of lots of things to do especially the bedside care)."

Cluster Theme 2: Work Overload. Nursing is a noble profession. American Hospital Association (2007) states that nurses are working to help patients cope with illnesses and promote health and prevent diseases. They observe, assess, and record symptoms; take note of the reaction and progress in patients; give medications; assist doctors during surgeries, deliveries, treatments, and examinations; and manage nursing care plans. In this study, Kris shared that she was tired of the routine as a bedside nurse in the medical ward.

Kris also disappointedly shared that the salary was low like any other nurse despite much work to do. According to Warr (2013), a nurse is more likely to perform best if they are happy with their earnings. This study is supported by Kim (2017) who states, "a nurse is more willing to perform well when he or she feels his or her financial rewards are a fair trade-off."

Case Study 3: Mary the Human Resource Staff

Mary has been working as an H.R. staff at one of the Information Technology (I.T.) Solution providers in Davao City for four years already. The transition of her career went well, according to her. After gaining three years of experience in the hospital, she thought of finding a job that could afford her to go on vacation. A job that also allows her to be with her family on holidays like Christmas and New Year. She is single and has no obligations to her family since all her siblings have landed decent jobs in Davao City. Mary left the nursing practice for two reasons: low pay and irregular work shifts.

"Wala koy pang travel2x sa kagamay sa akong sweldo (I didn't have money for travel because I had low salary)."

Cluster Theme 2: Inability to Save Money. Savings is the portion of an individual's income not spent on expenditures. In other words, savings pertains to setting aside extra money for future use. Canova, Rattazzi, and Webley (2005) state that "savings consist of the amount left over when the cost of person's consumer expenditure is detracted from the amount of disposable income earned in a given period."

"Ni hawa ko kay inig matungnan nga duty ka sa pasko or new year, wala gyud kay mahimu kay alangan naman paulion nimo imo mga pasyente. Then, kapoy pud kaayu ng irregular shift. Example karon nga bulan morning ka tanan. Then sunod bulan night shift na pud. (I resigned from my job because of the random work shifts. Even holidays, like Christmas and New Year, nurses are obliged to go on duty. I did not like the schedule of our duty as well)."

Nurses could hardly save money because their salaries are just enough for daily consumption. In this study, Mary also shared that she had no savings when working in the hospital because her salary was only enough for her daily expenses. According to Mary, she also asked for money from her parents when she wanted to buy things with high price tags.

"Dili ko ka save ato ug kwarta kay sakto ra sa ako ang akong sweldo para sa pang adlaw2x nga expenses (I was not able to save money because my salary was enough for my daily expenses)."

Furthermore, Mary was promoted last January 2019 as an H.R. manager in the company. She has two H.R. staff working with her, and one of them is also a Registered Nurse by profession. Mary also mentioned that she is planning to earn units related to the Human Resource program.

The implication of Work-Related Stress to Organization

Stress affects the individual in different ways. In this study, work-related stress was one of the factors why the participants left the nursing practice. The implication of pressure in the organization is many, including low production, poor performance, and morale; therefore, this concern should not be addressed too long. According to Murphy (2000), "stress is harmful physical and emotional responses that occur when requirements of a job do not match the worker's capabilities, resources or needs." When nurse is overstressed, they cannot give the quality care their patients need. Consequences are, the patient's recovery is low, there is a risk for a complication of the disease, and a worse patient's life may come to an end.

Therefore, the hospital management should give intervention to the factors that cause stress to the nurses and other health workers. For instance, one of the aspects contributing to stress to the participants in this study while working in the hospital was too much workload. In this case, the management should see to it that the nurse-to-patient ratio is appropriate. According to American Hospital Association (2007), hospital management should create a staffing plan specific to each unit. An example of a proper nurse-to-patient ratio is one nurse to two patients (1:2) in the Intensive Care Unit (ICU). This is justified because all patients in the ICU are entirely dependent on the medical team's care.
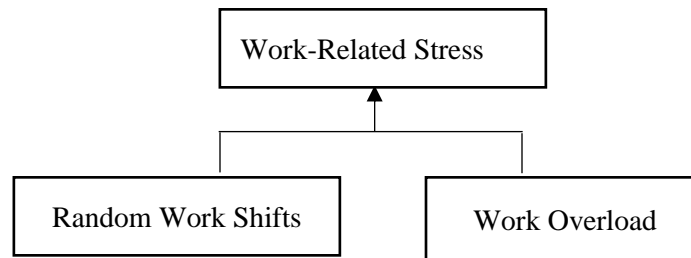
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Figure 3. Emergent Theme 1: Work-Related Stress

Conclusion and Recommendation

Most employees are motivated by money, according to various researches. The salary an employee is paid by his or her employer can significantly influence his or her performance in the organization. In this study, the participants left their job because the salary they received was too little, and they were not able to save a portion of it. The implication of this would be higher nurses' turnover. The impact of nurses' turnover on its organization affects the working operation and its productivity.

Moreover, the possible impact of retention rates if the nurses are well compensated may be high. They do not need to leave in the organization to make ends meet. Performance rates are typically high as nurses feel motivated to work (Ayyash et al., 2011). Absentee rates tend to be low as nurses want to work for rewards (Azar et al., 2013).

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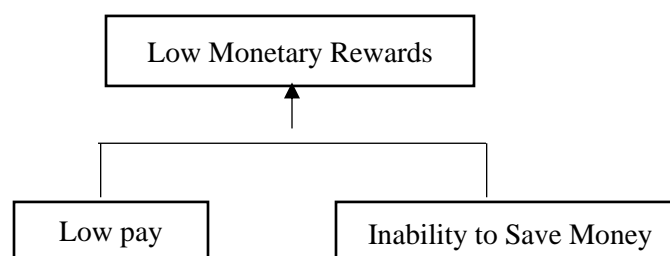
Figure 4. Emergent Theme 2: Low Monetary Reward

Based on the emergent themes, it can be said that the factors why the participants have to leave the nursing practice are Work-Related Stress and Low Monetary Rewards. These factors are firm ground for the participants to leave the organization. Stress in Nursing has been linked to decrease job satisfaction and nurses' intent to leave the organization (Boyle et al., 1999). Indicators of prolonged job-induced stress have been said to be the reason for the intention to quit (Dailey, 1990).

The participants also shared that receiving low salaries despite their essential roles in patients' care also prompted them to resign. Pay is the chief source of every employees' financial security. Kaplan and Norton (2004) said that one of the most useful implementations of any performance plan relies on the monetary incentives it offers.

Applying the Two-Factor of Motivation of Herzberg (1959) theory, the participants identified their motivational factors to be low brought about by low monetary rewards. The

Hygiene factors identified by the participants were work-related stress and low financial rewards. Additionally, the Theory of Organizational Equilibrium's implication in this study emphasizes that motivating the nurses to continue making contributions in the organization is one of the most important roles of management. The organization's ability to attract nurses' contributions will ensure its survival. When nurses perceive that they are paid according to their assistance, this will help promote nurses' retention.

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