

# A Study on the Utilization of e-Resources among College Students

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**Abstract**—E-resources are information resources that can be accessed through the use of electronic devices. With the fast development of technology, it is imperative that libraries also adapt to the changing times. Libraries are now incorporating e-resources to their collection to accommodate the needs of their clients. Gale is an electronic database that houses e-books and e-journals. This study examined the factors that affect the utilization of the Gale electronic resources among college students. Questionnaires were randomly distributed to a total of 201 3rd year and 4th year students. The factors identified, Awareness, Usefulness and Challenges were derived from related studies. The collected data were analyzed using SmartPLS. The results showed that the aforementioned factors influence the Utilization of e-resources. It was recommended that further research on the ways to improve awareness should be undertaken and provision of orientations and trainings will be helpful in spreading awareness were suggested.

**Index Terms**—E-resources, Philippines, students, utilization.

## I. INTRODUCTION

The Information Age is one of the terms used to describe the 21st century, an era dominated by the internet, computers, smartphones, and other devices that enable everyone to access the wide array of information available online. This has given many people the misconception that technology has threatened the existence of the library; on the contrary, it has given the library the opportunity to offer more services to the users and strengthen the information resources that will satisfy the users' information and research needs. One thing that the library is good at is its ability to adapt to newly-introduced technologies and the changing environment. It has managed information in various changing forms from era to era. Libraries has served generations of diverse users information in the form of papyrus, clay tablets, manuscripts, written documents, microfilms and now electronic and online resources [1].

Technology has not decimated libraries but it has impacted valuable information. With the use of technology, it facilitated the resource-sharing more manageable [2], [3] and accessible [4]. Elguindi [5] noted that automation has made it easier for users to determine what resources are available in other libraries; this has also made interlibrary loans between

libraries more convenient. Libraries need to prioritize and acquire materials that are relevant to the fields of study of the user community and supplement these materials with e-resources.

The management of information in university libraries has greatly changed due to the advent of electronic information resources [6]. With the use of electronic resources, this made it possible for researchers to gather and use the information needed anytime thus getting updated with the current trends and developments of the field [7]. E-resources serve as a solution to save space and regulate the flow of information in libraries [8], [9]. Libraries are now incorporating e-resources by purchasing licenses to electronic databases to augment the existing collections to accommodate the learning and research needs of the users by providing timely, reliable and accurate information resources [10].

The awareness and utilization of electronic resources requires great amount of budget to purchase, subscribe and access to the current and accurate information. However, despite the amount of money spent in acquiring these materials, some studies showed that the expected level of e-resource utilization is not met, some factors that has affected are the lack of awareness, low internet connectivity and availability of facilities and equipment [2]. Soni, [7] stated that libraries must have an evaluative measures of the electronic resources to determine the quality of the services provided to the users. Mirza [11] mentioned that one way to evaluate the effectiveness of library services is conduct user satisfaction survey to determine perception of the users on electronic-resource literacy and the challenges encountered.

City College of Angeles (CCA) Library subscribed to e-databases of Cengage in 2017, which is renewed every year. The subscription includes Gale Virtual Reference Library (GVRL), a database of an e-books and references focusing on different subject and the Expanded Academic ASAP, which provides e-journals, magazines and newspapers across various disciplines. It provides periodical indexes and full-text documents and scholarly journal articles which can also be downloaded for offline readings.

As of 2019, there has been no studies conducted that focused solely on the user awareness and utilization of the electronic resources, more specifically, the Gale databases, at the CCA library from the time of acquisition in 2017, thus the need to pursue this study on the factors that affect the utilization of the electronic resources.

## II. HELPFUL HINTS

Electronic resources could be defined as materials with data and/ or computer programs that can be encoded,

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interpreted and manipulated locally through the use of devices connected to the computer, or remotely through networks and internet [12].

Electronic resources are digital/ digitized materials selected, acquired and managed by librarians and made available for use by library clients and therefore must be easily discovered and accessed [13]. These include e-journals, e-books, e-databases such as full-text (aggregated), indexing and abstracting, reference (biographies, dictionaries, directories, encyclopedias, etc.), and numeric and statistical, e-images, and e-audio/visual resources. Similarly, the need to measure the users' level of satisfaction to improve the services rendered by the library and to meet users' needs is imperative [14].

The results of a study conducted on the use of e-resources by university lecturers suggested that the respondents have high level of awareness but low usage level. It also found out that knowledge and skills about electronic resources and the sufficiency of devices are factors that influence users to maximize its use and services. [2]. the study noted that inadequacy of library infrastructure and trained library staff as well as low internet bandwidth are the hindrances to access the materials.

Dumebi [10] on a study on awareness of online information sources among university students noted that more than ninety percent (98 percent) of students have knowledge of online information sources; however, not many are familiar with the online information sources that university provides. Bakare [15] focused on study about students' perception, access and usability of e-resources, e-resources utilization found significant in the study.

Tariq [16] enumerated the factors that affect the use of e-resources among university students as the slow internet connection, power failure, viruses, subscription issues and lack of trainings. Veena [17] conducted a similar study on awareness and use of open access e-resources of university students which revealed that majority of the respondents are aware of the existence of open-access e-resources. The results of the study showed that 47 percent uses open-access e-resources on a daily basis.

Soni [7] conducted a survey on the awareness and usage of e-resources focusing on the Library and Information Science research scholars and determined that 73 percent of the respondents' access e-resources. Mirza and Mahmood [11] studied the user satisfaction on e-resources and services in University Libraries. Findings showed that users are very satisfied with the use of available electronic resources and services which includes OPAC, Internet, and are satisfied with online databases, CD-ROM databases, virtual/electronic reference service, CAS, SDI and scanning and printing facilities. Another study conducted to determine the usage of electronic resources and the barriers accompanying the access and use of the e-resources in college libraries in Chandigarh, majority of the users pointed the lack of knowledge and skill in using e-resources as the main problem encountered in accessing e-resources, followed closely by limited access to computers [18].

Mawere [19] carried on a case study on utilization of e-resources in the Great Zimbabwe University. Findings showed that there is poor utilization, and lack of awareness and technical knowledge among students, awareness program to inform and familiarize on the available e-resources in the library is highly recommended. Haque [20] stated that the pattern of e-resource use by university students

found that e-books are generally favored by users, general knowledge of e-journals are more reliable than websites, large number of respondents preferred using websites than e-journals. It was also revealed that databases are the least used form of e-resource at the university library. On the other hand, Tamrakar [14] conducted study on users' perception on e-resources. It was found out that user's preferred e-journals more than print journal.

Dauda [21] on utilization of e-resources focused on undergraduate students at the University of the Philippines, results revealed that low level of awareness and mobilization are the factors that hinder the library users to maximize e-resources thus leading to low level of utilization. One of the biggest problems encountered is the unavailability of the needed materials and it was suggested that a wider range of e-books and e-journals must be provided. It is essential that users must have a wide range of knowledge to access and use e-resources. Further, it was suggested that there should be a provision of devices and provide trainings for both users and librarians to successfully utilize the e- resources [21].

Remoto [22] aimed to determine the level of utilization and the challenges faced in using e-resources at the City State Polytechnic College and Zamboanga City State Polytechnic College e-Library. It was revealed that (52%) of students use the e-library more than the faculty members (48%). Results showed that faculty respondents did not use e-library due to lack of proper and wide dissemination of information. Lack of computer units, lack of e-Media, and access restriction to certain e-Media, lack of space and furniture as well as slow internet speed are the most common problems encountered.

With the above concepts on e-resources, the following variables to determine the factors influencing the use of e-resources among the students of City College of Angeles are hereby presented in Fig. 1.

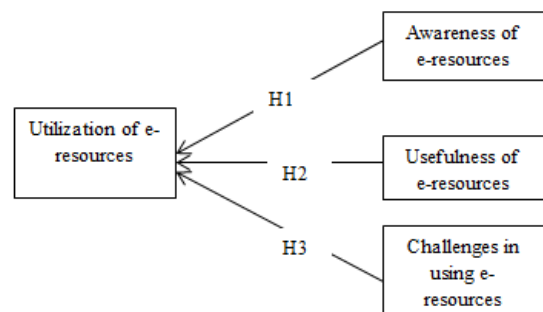


Fig. 1. Hypothetical framework.

Thus, the hypotheses developed were as presented:

H1: Student Awareness has a significant influence on the utilization of the Gale e- resources. H2: usefulness of the Gale e-resources has significant influence on the utilization of the technology, H3: Challenges encountered in accessing e-resources has a significant influence on the utilization of the Gale e- resources.

### III. METHODOLOGY

This study adopted a quantitative research method. A quantitative method of research allows easier generalization and offers a comprehensive view of the whole population [23]. Unstructured questionnaire which composed of four parts was used to determine student awareness, utilization, usefulness and challenges encountered in using e-resources.

A 5-point likert scale, ranging from 1- Strongly disagree to 5- Strongly agree, was used to identify the level of Awareness, Usefulness and Challenges, while a scale of 1- never, 2- rarely, 3-sometimes, 4- often and 5-always was used for items on Utilization. The items were generated based from the findings of previous related studies on utilization of e-resources. The questionnaire was validated by experts, heads of the different college institute and librarians. The questionnaires were randomly distributed to a sample of 201 third year and fourth year students from the City College of Angeles, Philippines. The gathered data were encoded on Microsoft Excel, and were analyzed using SmartPLs.

#### A. Analytical Tools

This study used SmartPLs to formulate a model that describes the relationship between the Utilization of e-resources and the variables on Awareness, Usefulness and Challenges. SmartPLS is a tool that provides a way to create a path model that illustrates the relationship between variables and indicators as well as explain the effect of the different hypotheses on each other. Furthermore, with bootstrapping, a t-test result for all paths is determined [24], [25].

#### B. Construct Reliability

The consistency of responses determines the level of reliability of an instrument [26]. This study used composite reliability, rho and Cronbach's alpha to measure the reliability of items.

#### C. Convergent Validity

Convergence validity describes average variance extracted (AVE) of the selected values 0.5 above.

#### D. Discriminant Validity

Discriminant validity is determined to make sure that there is a discrepancy between the underlying constructs used to measure the causal relationship under the study [27], [28]. In this study, Heterotrait-Monotrait Ratio (HTMT) is adopted to measure the discriminant validity. This criterion is proven of high quality to detecting discriminant validity in a study [27].

### IV. ANALYSIS AND RESULTS

Analysis and results presented in this section are based on 201 responses collected from the CCA students.

#### A. Demographic Details

TABLE I: DEMOGRAPHIC DETAILS

Categories		Frequency	Percentage (%)
Institute	IBM	84	41.79
	IEAS	20	9.95
	ICSLIS	97	48.26
TOTAL		201	100
Year Level	3 <sup>rd</sup> Year	101	50.25
	4 <sup>th</sup> Year	100	49.75
	TOTAL	201	100

Table I summarizes the demographic information of the respondents. It shows that majority of the respondents came from the Institute of Computing Studies and Library and Information Science (ICSLIS) with a total of 48.26%, while 41.79% came from the Institute of Business Management (IBM) and 9.95% from the Institute of Education, Arts and Sciences (IEAS). The Table I, also shows that 50.25% of the

respondents are 3rd years and the other 49.75 % are 4th year students.

#### B. Construct Reliability and Validity

The reliability of the study was depended on the recommended Composite dependability, rho and Cronbach's Alpha value which ought to be greater than 0.7 and the validity was dependent on the proposed Average Variance Extracted (AVE) which ought to be greater than 0.5.[29], [30], reliability and validity constructs were accomplished as appeared on the Table II.

TABLE II: CONTRUCT RELIABILITY AND VALIDITY

	Cronbach's Alpha	rho_A	Composite Reliability	AVE
Challenges	0.880	0.926	0.911	0.672
Awareness	0.765	0.766	0.865	0.681
E-resource Utilization	0.952	0.954	0.963	0.839
Usefulness	0.978	0.978	0.983	0.918

#### C. Discriminant Validity

Table III presents the Discriminant Validity through Heterotrait- Monotrait Ratio which should have a threshold of 0.85 [31], [32] supported.

TABLE III: DISCRIMINANT VALIDITY

	Challenges	Awareness	E-resource Utilization	Usefulness
Challenges				
Awareness	0.251			
E-resource Utilization	0.488	0.410		
Usefulness	0.461	0.557	0.709	

#### D. Path Coefficients and Hypotheses Reports

The path coefficients were drawn based on the standard deviation, t-statistics and p-values. Thus, the coefficients are as illustrated in Table IV.

TABLE IV: PATH COEFFICIENTS

	Sample Mean	Standard Deviation	t-statistics	p-values
Challenges -> E-resource Utilization	0.186	0.085	1.987	0.047
Awareness -> E-resource Utilization	0.168	0.081	2.035	0.042
Usefulness -> E-resource Utilization	0.585	0.090	6.525	0.000

All factors hypothesized are supported and found significant to the study with t-statistics at 1.96 and with  $p < 0.05$ .

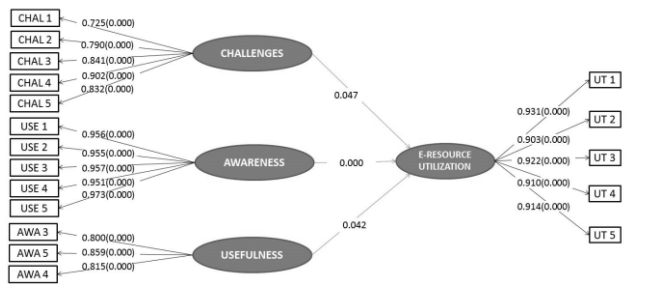


Fig. 2. E-resources bootstrapping model.

Fig. 2 illustrates the factors that influence the use of Gale e-resources among City College of Angeles students. Furthermore, Smartpls Algorithm ran, and r-square was reported at a total of 48% to justify variance explained of the study.

## V. DISCUSSIONS AND CONCLUSION

The findings of the study presented the effect of Awareness, Usefulness and Challenges to the Utilization of the Gale e-resources of the City College of Angeles students. The results revealed that Awareness, Usefulness and Challenges in Accessing the Gale e-database have a significant impact on its Utilization. The results of the study confirmed that lack of awareness and technical knowledge hindered the students to use the e-resources resulting in a low level of utilization. Findings also found out that library users are familiar with online resources but are not aware of the online and electronic resources provided at the university library.

The study focused only on the 3rd year and 4th year students of City College of Angeles based on the experience in using the library. Future study that includes responses from the undergraduates, postgraduates as well as faculty members in different locations is highly encouraged to support generalizability of this study. Similar studies maybe conducted to further identify the areas of improvement thus upgrading the quality of conducting orientations, trainings and seminars related to use and awareness of library's e-resources.

## CONFLICT OF INTEREST

The authors declare no conflict of interest

## AUTHOR CONTRIBUTIONS

Rebilyn G. Roman worked on writing the paper; Charles Spencer P. Trobada, Catherine Kate Gania and Ferginia Gatón performed the data collection; Roman, Trobada, Gania and Gatón carried out the Literature Review; Solomon Ayodele Oluyinka analyzed and interpreted the data; Heidie O. Cuenco provided the funding for the paper; Richard G. Daenos acted as the adviser; all authors had approved the final version.

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**Richard G. Daenos** is a multi-awarded educator and researcher with a special interest in cultural and heritage tourism and teacher education. He completed his doctor of philosophy major in educational management, master of arts in special education and master of arts in education major in English and bachelor of secondary education major in English at Angeles University Foundation. In

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He has become a part of the teaching force of leading universities and academic institutions in Asia and Philippines, including Southeast Asian Ministers of Education Organization Innotech (SEAMEO Innotech), De la Salle University, University of Sto. Tomas and Angeles University Foundation. Dr. Daenos was appointed as the Tourism Officer of Angeles City in 2014 – 2016. He was elected as Secretary of the National Committee on Monuments and Sites of the National Commission for Culture and the Arts in 2016 and still holds the same post to date. He likewise serves as a member of the Board of the International Council on

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