Utilisation of Electronic Resources by Undergraduate Students at the Namibia University of Science and Technology (NUST)

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Abstract

The study that directed this article examined the use of electronic resources by undergraduate students at the Namibia University of Science and Technology (NUST). A survey-based research design was employed to collect quantitative and qualitative data—the quantitative paradigm being dominant. The population for this study consisted of undergraduate students at the NUST main campus (10 248) registered for the 2016 academic year. A stratified random sampling technique was used to select students from each of the four undergraduate levels of study. A sample size of 385 students was used. A self-developed questionnaire and a structured interview guide were used as data collection instruments. Responses from 274 questionnaires and 12 face-to-face interviews provided the raw data. The study showed that subscribed electronic resources were underutilised due to a lack of awareness. Students had positive attitudes towards electronic resources for academic purposes, research projects and keeping up-to-date. While the vast majority of students were confident in using computers, they lacked the search skills necessary to make full use of electronic resources. Barriers encountered included poor ICT infrastructure and internet connectivity, as well as slow, old, and inadequate computers. The recommendations included the need for improved ICT facilities and internet connectivity, regular information needs-assessment, end-user training, and the vigorous promotion of e-resources.

Keywords: academic libraries; library e-resources; undergraduate students; NUST library; Namibian universities; accessing e-resources

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Introduction and Background Information

Rapid technological change has transformed the way libraries operate. Traditionally, libraries have been a collection of books, journals, manuscripts and other print information (Ogunsola 2011). This has changed over time with the advent of new technologies. Many academic libraries have transitioned into hybrid environments fulfilling the educational, recreational and information needs of their clients. Modern technology has facilitated easy access to information and influenced the manner in which information is gathered, organised, retrieved and dispersed (Iyer 1998; Sharma and Bhardwaj 2010).

Therefore, Johnson et al. (2012) define e-resources as those requiring the use of a computer or other computing device for access. Common types of e-resources include e-books, e-journals, full-text databases, e-images and audio/visual resources (Johnson et al. 2012). Many academic libraries provide access to these resources locally and/or remotely through the Internet. According to Graham (2000, 1), e-resources have the capacity to store large amounts of information, which can be uncovered via information communication technologies.

Problem Statement

Electronic resources are resources available online and are accessible through the use of computers, and they are especially useful for research activities, supplementing print materials in the library (Dadzie 2005). E-resources provide users with timely information being updated frequently. In addition, they provide wide-ranging links to additional resources. However, a study by Okello-Obura (2010) indicates that many library users make limited use of e-resources, despite the immense benefits.

Notwithstanding the advantages provided by e-resources, studies show that these resources are not optimally used. Ray and Day (1998) found that the majority of students only made use of certain e-resources, particularly the Internet and CD-ROMs. A study in Africa by Dadzie (2005) found that although the general use of computers was high, the use of subscribed databases was relatively low due to limited knowledge about them. In India, Bhatia (2011) reported that a very low number of students accessed e-resources in their libraries. Among the reasons given for the low patronage of e-resources were unfamiliarity, students' attitudes and perception, inadequate training, lack of computers, and poor internet connectivity (Asemi and Riyahinia 2005).

Several studies in Africa (Adeniran 2013; Anaraki and Babalhavaeji 2013), and those in Namibia in particular (Ndinoshiho 2010), also confirm that the usage of digital resources in academic libraries has not grown significantly. Notwithstanding these research findings from academic libraries worldwide, the usage of e-resources may differ from one library to the next. There is, therefore, a need to examine the usage of e-resources in individual academic libraries, including at Namibia University of Science and Technology (NUST), a knowledge void which this study seeks to fill.

Use of E-resources at the Namibia University of Science and Technology (NUST)

The Namibia University of Science and Technology (NUST), previously known as the Polytechnic of Namibia, is a higher education institution in Windhoek, Namibia. The institution, established in 1994 by an Act of the Namibian parliament (NUST 2016), consists of a main campus and six centres across the country. The institution provides undergraduate and postgraduate qualifications in business management, engineering and information technology, journalism, hospitality, natural resources management and medicine, among others (NUST 2016).

The NUST library is the focal point of learning and research activities. The library aims to prepare students for academic success and to become global citizens in the information age. The library is dedicated to providing access to academic and research information, as well as offering ICTs and study facilities (NUST 2016). E-books, e-journals, theses and dissertations are among the online resources provided by the library and are accessible locally as well as remotely via the Internet. However, there have been concerns by librarians that some scholarly databases are not utilised adequately. Furthermore, the usage statistics of some databases (Directory of Open Access Journals, ERIC, ProQuest, Books24x7, and ACM) were shown to be low (NUST 2016). This may indicate that the purchases of these electronic information resources are not justified by their usage. In light of this, the present study examined the usage of e-resources and the elements that influence their use at NUST.

Significance of the Study

The study is significant in promoting the use of electronic resources in academic libraries in Namibia, particularly at NUST, as no study of this type has been undertaken at the university before.

The study provided insight into how the usage of electronic resources could be enhanced in developing countries, including Namibia. The study also identified the challenges faced by undergraduate students in using electronic resources, and facilitated informed decision-making for addressing these challenges. Finally, the study contributed to the body of knowledge on electronic resources for researchers in the field of information sciences and digital library resources. This study is set to ascertain the level of awareness of electronic resources provided by the NUST library, determine the purpose of use of electronic resources, determine the frequency of use of electronic resources, identify factors that inhibit the use of electronic resources, and provide recommendations for optimal utilisation of e-resources.

Research Methods

The study employed a survey research design, which suited this study as it facilitates the collection of large amounts of information from a large sample in a cost-effective

manner (Rubin and Babbie 2010). The study adopted a multiple methods approach, which involved the use of both qualitative and quantitative data collection methods. The two research methods provide different standpoints, and each has its drawbacks (Creswell and Clark 2011). Frechtling and Sharp (1997) note that using different methods to study a phenomenon strengthens the validity of the results. The population for this study consisted of undergraduate students at the NUST main campus, registered for the 2016 academic year, which had a total of 10 248 undergraduate students enrolled at the main campus (NUST 2016). In determining the sample size to be used in a study, a margin of error of +-5% and a confidence level of 95% was used (Beri 2008; Royse 2008). The study used a published sample size table by Arboleda (1998) to determine the sample size. Therefore, the population size of 10 248 gave a total of 385 as the required sample size.

This study used stratified random sampling with a disproportionate sampling method to select respondents. Singh (2007, 104) states that stratified random sampling is concerned with portioning "the population into mutually exclusive and collectively exhaustive subgroups and then taking a simple random sample in each subgroup." Having identified a sampling frame with information on the stratification variables, the four subgroups representing undergraduate years were used as a basis for stratification. A sample of 385 was divided into four sub-samples. Simple random sampling was used to draw elements from each stratum by using a computer program (SPSS) for assigning and selecting random numbers (see table 1).

Table 1: Undergraduate students enrolled at NUST main campus (2016)

Level of study	Population	Percentage	Sample
1st year	3688	36	97
2nd year	2374	23	96
3rd year	2929	29	96
4th year	1257	12	96
Total	**10248**	**100%**	**385**

The questionnaire was used as the main data collection tool, comprising both closed and open-ended questions. Triangulation, using interviews, was applied for additional information and a comprehensive understanding of students' use of e-resources. Interviews were held for clarification and to complement and/or enrich the quantitative data. The validity and reliability of the research instrument were done through pre-testing. Having defined the strata based on the year of enrolment in the initial stage, the researcher focused on selecting sub-samples from only two subgroups of the population (first-year and fourth-year). Twelve interviews were conducted with respondents who were randomly selected from the two subgroups, i.e., first-year and fourth-year, six from each of the two subgroups. Twelve participants were deemed sufficient to ensure data saturation. Quantitative data were analysed using SPSS, while qualitative data from

interviews were tape recorded, transcribed and analysed using the content analysis technique.

Results and Discussion

Background Information of the Respondents

From a total of 385 questionnaires distributed, 274 were completed and returned (a 71% response rate), which was considered sufficient. All 12 selected students were interviewed, yielding a response rate of 100%. Out of the six first-year students interviewed, two (17%) were males, and four (33%) were females. while in the fourth-year category, there were three (25%) females and three (25%) males, meaning that more females (58%) were interviewed than males (42%). Table 1 shows the demographic characteristics of the respondents.

Table 2: Gender, age, level of study and faculty (questionnaires)

Demographics and credentials of respondents		Responses	N %
Gender	Male	151	55
	Female	123	45
			100
Age group	17–20	116	42
	21–30	150	55
	31–40	3	1
	41–50	3	1
	51–60	2	1
			100
Students' level of study	First year	91	33
	Second year	76	28
	Third year	66	24
	Fourth year	41	15
			100
Faculty	Faculty of Management Sciences	73	27
	Faculty of Engineering	44	16
	Faculty of Human Sciences	36	13
	Faculty of Health and Applied Sciences	26	9
	Faculty of Computing and Informatics	22	8
			100

As shown in table 2, more male students, 151 (55%), than females, 123 (45%), completed the questionnaires. Most students, 150 (55%), were aged 21–30, followed by 116 (42%) aged 17–20. The groups for those in their 30s, 40s and 50s had few students, each approximately 1% of the sample. A large number of students were in the age range 17–30, indicating that the study had more young students than older ones. This finding can be linked to the fact that most undergraduates complete their studies before the age of 30; thus, the high number of younger students was not surprising.

Students were asked to indicate their level of study. This was important to show how all four levels of the study were represented. The results showed that a majority of the students, 91 (33%), were first-years, followed by second-years, 76 (28%), and third-years, 66 (24%). The fourth-year category had the lowest representation, 41 (15%). The low representation in the fourth-year category could be attributed to non-continuation/student attrition. As shown in table 2, the majority of students were from the Faculty of Management, with 73 responses (27%). The Faculty of Health and Applied Sciences and the Faculty of Computing and Informatics had the lowest response rates, 26 (9%) and 22 (8%) respectively.

Level of Awareness of E-resources

As cited in various studies (Kinengyere 2007; Ramlogan and Tedd 2006; Rehman and Ramzy 2004), lack of awareness is one of the main hindrances in the use of e-resources. Hence, awareness is fundamental in the usage of e-resources. Students were asked to point out if they were aware or unaware of the e-resources provided by their library.

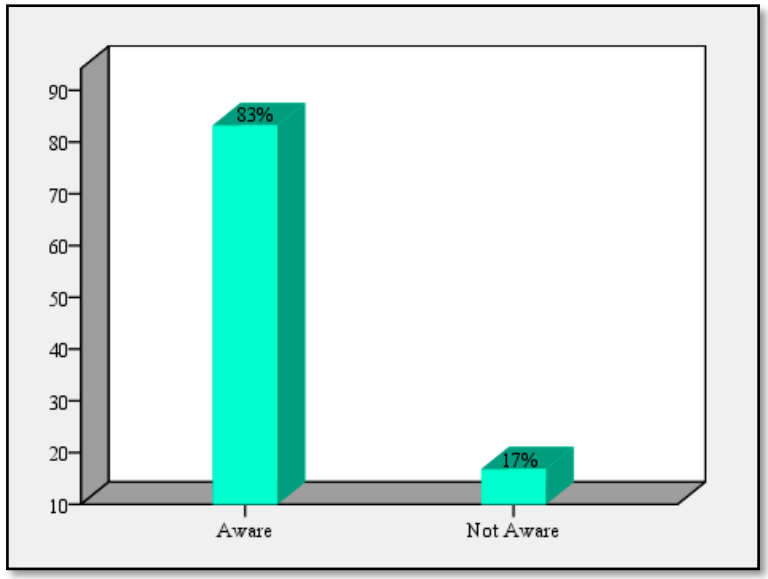

Figure 1: Student awareness of e-resources

As illustrated in figure 1, most students, 228 (83%), were aware of the e-resources provided by the library, while 46 (17%) were not aware. Cross tabulations and Chi-squared significance tests were used to test the dependence of awareness of e-resources on gender, age, year and faculty of study. A single statistically significant outcome emerged for year of study, with a p-value of = 0.004, and well within the 0.05 significance level. The results showed a strong relation between year of study and awareness of e-resources. The Chi-square tests for gender produced a p-value of 0.236, for age a p-value of 0.068, and for faculty of study a p-value of 0.197, none of which

was statistically significant. Table 3 below shows the cross tabulation between awareness and the level of study.

Table 3: Awareness of e-resources and level of study cross tabulation

Year of study		Students' awareness of e-resources		Total / %
		Aware	Not aware	
	First-year	67	24	91
		74%	26%	100%
	Second-year	67	9	76
		88%	12%	100%
	Third-year	54	12	66
		82%	18%	100%
	Fourth-year	40	1	41
		98%	2%	100%
Total		228	46	274
%		83%	17%	100%

The results in table 3 show that awareness of e-resources was higher amongst the fourth-year students, with 40 (98%) acquainted with e-resources compared to fewer in the junior years. It is evident that fourth-year students were the most aware of e-resources. It could be construed that perhaps fourth-year students obtained information from multiple sources, given the number of years spent at university. It is probable that students' sources of information widen over time. These findings support Waldman (2003) that students in their early college stage rarely view the library as a place to obtain specialised resources, perhaps due to a lack of familiarisation. Waldman (2003) further notes that, for the most part, students only get to know about the library resources when doing research, which partly explains why fourth-year students were more aware of e-resources, possibly because of their need for information for theses and research projects.

Source of Awareness of E-resources

Students who said they were aware of e-resources were asked to indicate how they obtained information about e-resources relevant to their studies. Students were given a list of possible sources to choose from, or could indicate if they learned through other sources. Table 4 summarises the results.

Table 4: Source of awareness of e-resources

Source of awareness	Multiple Responses	
	Number	**%**
Library website	120	40
Fellow students	65	22
Lecturers	52	17
Library staff	26	9
Library training sessions	20	7
Others	13	4
Library bulletins	4	1
Total	300	100

The results in table 4 reveal that the majority of the students, 120 (40%), obtained information about e-resources through the library website. This was followed by those who learned from fellow students, 65 (22%), while about 52 (17%) of students found out from lecturers. Results show that quite a few students obtain information about e-resources from librarians 26 (9%), library training sessions 20 (7%) and library bulletins 4 (1%). This could mean that the library, as a place, was not the main source of awareness of e-resources for most students, given that the "library staff" and "library training sessions" options received few responses. This finding suggested that students had inadequate information about e-resources provided by their library, since they rarely consulted librarians who could provide them with useful information. Perhaps much still needs to be done on the part of the library to heighten awareness of e-resources.

About 13 (4%) of the students revealed that they found out about e-resources from other sources such as the Internet and lecture notes.

The results from the interviews are closely in line with those of the questionnaires. The majority of students interviewed reported that they found out about e-resources mostly from their friends and lecturers, while some said they obtained information about e-resources from student portals and the library website. One of the fourth-year students made the following comments:

> My lecturers and friends inform me about e-resources relevant to my study.
>
> I have been doing my research this year, and I have used some e-journals for the first time from when my lecturer told me about them.

Most students interviewed indicated that they had attended a course (English for Academic Purposes) where they were acquainted with relevant resources to consult on the library website. The first-year students mentioned that they had attended an orientation at the beginning of the academic year, which they felt was a revelation to most library resources. Bem-bura (2015) points out that library orientation programmes

are critical in educating and explaining what, why, and how students will benefit from the library.

Suggested Methods to Improve Awareness of E-resources

This was an open-ended question which sought to get students' opinions on ways that the library could improve awareness of e-resources. The suggestions were grouped into categories. The results are summarised in table 5.

Table 5: Methods to improve awareness

Methods to improve awareness	Multiple Responses	
	Number	**%**
Send emails and text messages	85	23
Posters and flyers	84	22
Regular orientation	75	20
Incorporate e-resources into ICT modules	75	20
Social media platform	57	15
Total	376	100

The most common suggestion from students, 85 (23%), was that the library should send e-mails and text messages to students. Only 57 (15%) felt that the library could improve awareness through social media platforms. Other awareness creation methods mentioned: include posters and flyers around campus 84 (22%), regular orientations 75 (20%) and incorporating e-resources into ICT modules further 75 (20%). According to Thanuskodi (2013), raising awareness of e-resources is one of the first steps toward enhancing their usage. In order to be successful, factors need to be considered such as the size of the population, time and the library budget. Through the interview, a fourth-year student opined that the library could use the campus radio to raise awareness of e-resources. The student commented that:

> This is a station w(h)ere most NUST students tune into. The library has the potential of reaching a large number of students at once by going there to talk about e-resources.

As suggested in the questionnaires, some interviewees felt that the library should put up posters around campus, especially at places where students gather in between classes, for example, at the cafeterias. Yi (2016) affirms that users can easily be reached through traditional tools, for instance by using flyers, newsletters, brochures and posters, as using these tools is relatively effortless and inexpensive. The new technologies such as RSS alert services, blogs, Facebook, Twitter, Instagram and WhatsApp are equally effective methods to raise awareness of e-resources, since they are interesting and add more fun (Bhat 2009).

Students have also mentioned social media as an effective method of promoting awareness of e-resources. This is especially true because students use these platforms

quite often through their mobile devices, which provides great potential for the library to reach many students. Akporhonor and Olise (2015) note that social media facilitates information exchange, eases interaction with students, provides an opportunity for feedback, and ultimately enhances the usage of library resources.

Use of E-resources

Students were asked to point out whether they used e-resources. The results are shown in figure 2.

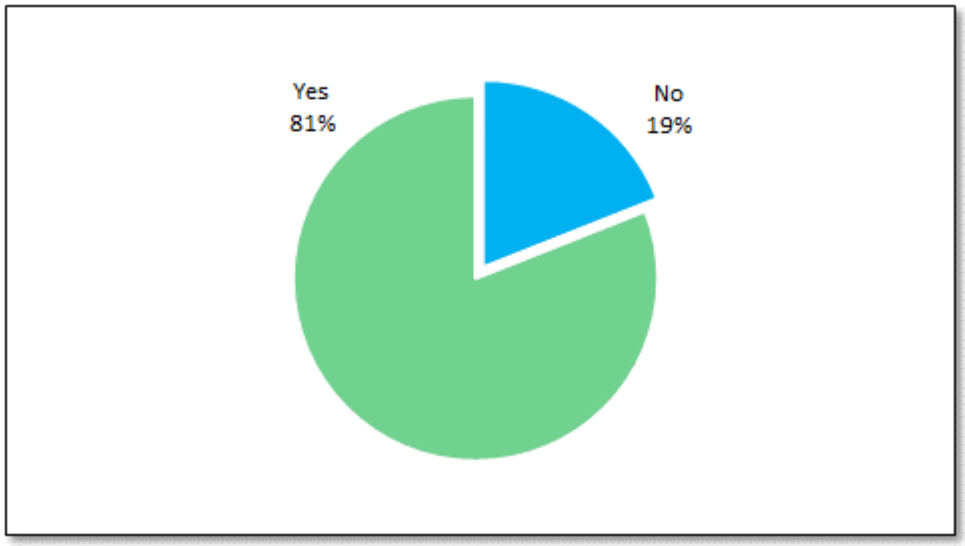

Figure 2: Use and non-use of e-resources

Figure 2 reveals that the general use of e-resources was high (81%), as 223 students indicated that they used them. Only 19% indicated the non-use of e-resources. The high usage of online resources may possibly be attributed to the fact that most students in this study were familiar with them. This finding is in line with Gakibayo, Odongo, and Okello-Obura (2013), where both the awareness and the usage of e-resources were high.

Cross tabulations and Chi-squared significance tests were used to test the dependence of the use of e-resources on gender, age, year and faculty of study. Two statistically significant results were produced, showing a connection between use and age (p-value of 0.003) and level of study (p-value 0.019). The variations by gender and faculty of study had p-values of 0.730 and 0.119 respectively, which were not statistically significant as they were not below the pre-set threshold of 0.05. This clearly indicated that younger students used e-resources more than older students. Similarly, Daramola (2016), Hamutumwa (2014), Ndinoshiho (2010), and Ramaiah (2013) found that the younger generation used e-resources more frequently. Lankshear and Knobel (2008) use the term “digital natives” in describing the younger generation. Numerous studies have

acknowledged the significance of age in relation to the use of digital information. Table 6 and table 7 below summarise the results of the cross tabulations between the usage of e-resources and the students' age groups and year of study.

Table 6: Use of e-resources and age group cross tabulation

Age groups		Use of e-resources		Total / %
		Yes	No	
17–20		100	16	116
		86%	14%	100%
21–30		119	31	150
		79%	21%	100%
31–40		2	1	3
		67%	33%	100%
41–50		0	3	3
		0%	100%	100%
51–60		2	0	2
		100%	0%	100%
Total		223	51	274
%		81%	19%	100%

Table 6 shows that students in the age group of 17–20 and in the age group of 21–30 used e-resources the most, by 100 (86%) and 119 (79%) respectively. The age groups from 30 years and above had a few students who made use of e-resources. Therefore, it is evident that e-resources were utilised more by younger students than older ones.

Table 7: Use of e-resources and year of study cross tabulation

Year of study		Use of e-resources		Total / %
		Yes	No	
First-year		82	9	91
		90%	10%	100%
Second-year		62	14	76
		82%	18%	100%
Third-year		51	15	66
		77%	23%	100%
Fourth-year		28	13	41
		68%	32%	100%
Total		223	51	274
%		81%	19%	100%

Table 7 shows that the percentage using e-resources in each year group was highest amongst first-year students, 82 (90%), followed by second-years, 62 (82%), and third-years, 51 (77%). The fourth-year category had the lowest percentage of students, 28 (68%), who used e-resources. The findings show that the use of these resources decreases from high usage by first-year students to low usage by fourth-year students.

This finding demonstrates that the use of e-resources by fourth-year students was seldom, in spite of the fact that they knew more about them than students in the lower levels of study. A possible explanation for this could be reluctance or fear of technology since most fourth-year students were older. This issue warrants further investigation. As a follow up, students who indicated that they did not use e-resources were asked to state their reasons for non-use. The results are shown in table 8.

Table 8: Reasons for the non-use of e-resources

Reasons for not using e-resources		Multiple Responses	
		Number	%
	Unaware of e-resources	39	29
	Do not know how to use them	34	25
	Unable to access	27	20
	Too much time consuming	13	10
	Less useful	10	7
	Others, specify	8	6
	Less informative	5	4

As revealed in table 8, the primary reason for not using e-resources was lack of awareness (29%), as indicated by 39 students. The second most mentioned reason for not using e-resources was not knowing how (25%), as mentioned by 34 students. Students also mentioned the following reasons for not using e-resources: the inability to access (20%), time consuming (10%), less useful (7%), and less informative (4%). Other non-specified reasons contributed 6% of the reasons for not using e-resources, as indicated by 8 students. Information retrieval skills are paramount to the ability to find information.

Types of E-resources Used

Students were asked to indicate the type of online resources they made use of. This was a multiple response question where a respondent could give more than one answer. The results are depicted in table 9.

Table 9: Types of e-resources used

E-resources used		Multiple Responses	
		Number	%
	Online reference materials	162	43
	E-books	117	31
	Electronic journals	48	13
	Full-text databases	36	9
	Audio/visual	16	4
	Total	379	100

Table 9 shows that a majority of the students, 162 (43%), used online reference materials, while 117 (31%) used e-books. Electronic journals, full-text databases and audio/visual received low response rates of 48 (13%), 36 (9%) and 16 (4%) respectively.

Although the NUST library provides access to wide-ranging online resources, the findings showed that subscribed e-resources, in particular, were underused. Instead, most students made extensive use of the general internet, mostly through the Google search engine, to meet their information needs. These findings agree with those of Ankrah and Atuase (2018), Dadzie (2005), Gakibayo et al. (2013), Madondo, Sithole, and Chisita (2017), and Egberongbe (2011), who found that internet search engines, predominantly Google and Yahoo, are widely used to search for information online.

Although all types of e-resources are important, it was essential to make comparisons on the usage pattern of e-books because books are known to cover a topic in depth and provide background information. The cross tabulation between year of study and usage of e-books showed that students in their fourth-year utilised e-books the most, as shown below in table 10.

Table 10: Usage of e-books and year of study cross tabulation

Year of study		E-books		Total / %
		Not used	Used	
First-year		54	37	91
		59%	41%	100%
Second-year		44	32	76
		58%	42%	100%
Third-year		42	24	66
		64%	36%	100%
Fourth-year		17	24	41
		41%	59%	100%
Total		157	117	274
%		57%	43%	100%

Table 10 reveals that e-books were used the most by fourth-year students (59%). The other year categories had many students who did not use e-books: third-years (64%), first-years (59%) and second-years (58%) did not use them. The usage of e-books at NUST was below par mainly because only fourth-year students made much use of them. The other students knew nothing about e-books, which ones might be useful, or they lacked the necessary skills to use them.

The study sought to establish which scholarly databases provided by the NUST library were used by students. Students were asked to show the databases they utilised from the list provided. The results are shown in table 11 below.

Table 11: Databases utilised by students

Databases		Multiple Responses	
		Number	%
	ScienceDirect	86	29
	EditLib	41	13
	Emerald	35	12
	EBSCOhost	33	11
	IEEE	29	10
	ProQuest	24	8
	HINARI	21	7
	JSTOR	17	6
	Others	13	4
	Total	299	100

Table 11 shows that the greatest percentage of students, 29%, used ScienceDirect. Educational and Information Technology Library (EditLib) and Emerald databases were also used by a significant number of students, with 13% and 12% respectively, while the least used database was JSTOR.

It has emerged that most databases were never used, while some were used on a minimal basis. The study demonstrated emphatically that scholarly databases were under-utilised, with a negligible number of students making use of them.

In light of this, librarians should ensure that students are well acquainted with online information sources so that they are able to make a more critical evaluation of the information found online.

Purpose of Use of e-resources

Students were asked to provide reasons for using e-resources. Figure 3 presents the students' purposes for using e-resources. Students could give more than one answer to this question.

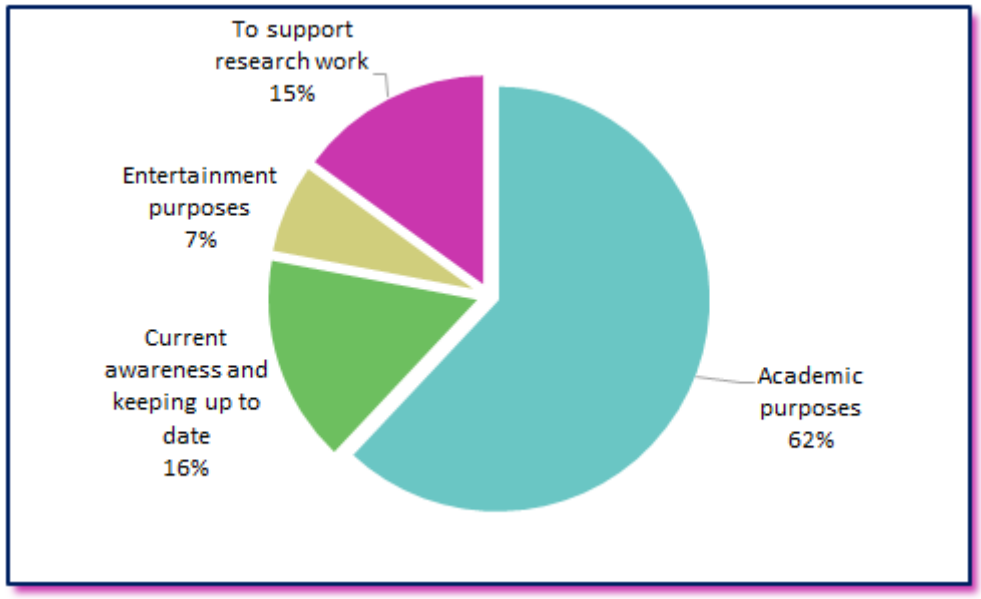

Figure 3: Purpose of use of e-resources

Figure 3 evidenced that more than half of the students, 231 (62%), used e-resources for academic purposes. The results further revealed that 59 (16%) used e-resources for current awareness and to stay updated, while 56 (15%) of the students used them to support research work. A small proportion of them used e-resources for entertainment purposes. It was also reported in other studies (Adeniran 2013; Hamutumwa 2014; Sudhier and Seethalekshmi 2011; Thanuskodi 2013) that e-resources are primarily used for academic purposes, research work and for current awareness.

The results from the interviews made it obvious that a great number of students used e-resources to complete assignments and to support research work, confirming the results from the questionnaires. It was discovered, however, that fourth-year students made primary use of e-resources for research activities, but that first-year students made use of them mainly to carry out assignments and for entertainment purposes.

In terms of preferences, a majority of students interviewed, 9 (75%), preferred using internet search engines such as Google, as opposed to the library e-resources. Students found search engines to be more useful and easier to use than subscribed e-resources.

Students who preferred using library e-resources explained that contents from these sources were more trustworthy compared to those from the general internet. A fourth-year student said:

> I mainly use e-resources provided by the library, databases like Emerald and ScienceDirect for academic purpose(s) because they are trustworthy and I find them relevant to my course.

The results from the interviews further revealed that most first-year students, 4 (66%), seemed unfamiliar with the library e-resources and rather opted for search engines for their academic work and for leisure purposes.

In addressing the issue of whether the year/level of study has an influence on the usage of e-resources, specifically between first-years and fourth-years, the interview results revealed that students from both sub-groups used e-resources. However, the difference is in the types of e-resources they accessed. Most fourth-year students used the library subscribed e-resources extensively, while many first-year students used the general internet more to address their information needs. These findings were expected. Typically, students embark on research projects only when in their final year, which means that they are compelled to conduct literature searches using e-resources, since they are essential tools for research.

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Reasons for Choosing to Use E-resources

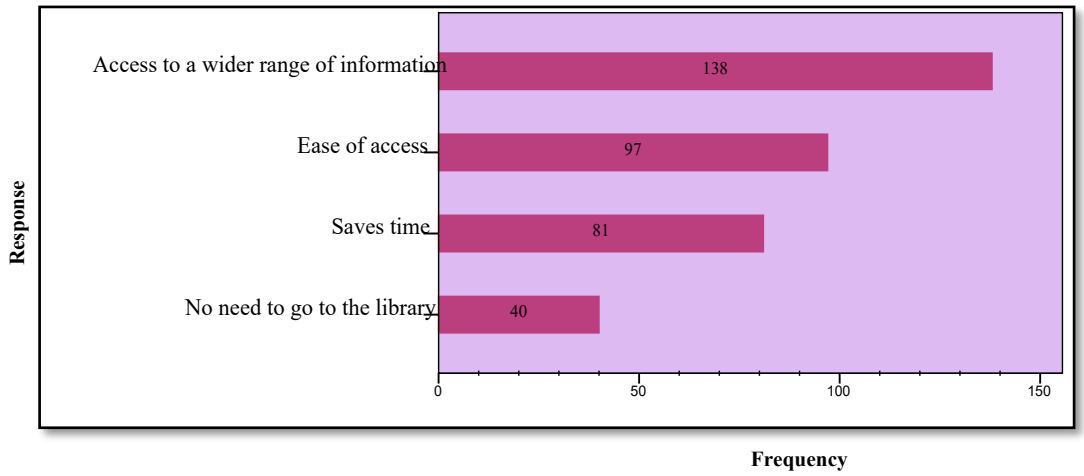

Figure 4: Reasons for choosing to use e-resources

The study aimed to determine the perceived benefits of e-resources. Students were asked to provide reasons for choosing to use them. Students could give more than one answer to this question. The results are summarised in figure 4, which clearly shows that many students, 138 (39%), felt that e-resources provided access to wide-ranging information. A total of 97 (27%) chose to use e-resources because of their ease of access, while 81 (23%) said that using e-resources saved time and 40 (11%) used e-resources because they were not required to be physically present in the library to access them. Wu (2005)

states that technology enables quick updates of information, convenience, portability, lower costs and lower space needs—features that are highly valued by students.

Use of E-resources and its Impact

Students were asked how using e-resources affected their studies. This was an open-ended question which sought to establish how the use of e-resources influenced their academic performance. Students who used them stated that using e-resources had indeed improved their academic performance, as they used them to complete assignments that, in turn, boosted continuous assessment marks. Students indicated that e-resources had made work easier because accessing them was swift, since they were readily available. E-resources inspired new thinking. One student said e-resources had improved his vocabulary and quality of work.

Students interviewed shared the same sentiments as those who completed the questionnaires, as they mentioned that e-resources played a significant role in their academic life. For instance, a fourth-year student remarked that he used e-resources as a supplement to print sources. These findings are consistent with those of the questionnaires.

Most fourth-year students reported that the quality of their research projects had gradually improved with the use of e-resources, because these resources provided access to research papers done by previous researchers. A fourth-year student made this comment:

> I would not have accomplished some chapters of my research without the examples provided electronically. I find e-resources relevant and up-to-date.

Frequency of Use of E-resources

To establish the degree of usage of e-resources, students were asked to indicate how often they used e-resources. The results are summarised in table 12.

Table 12: Extent of use of e-resources

Extent of use		**Responses**	
		Number	**%**
	Usually	94	34
	Sometimes	71	26
	Rarely	59	22
	Never	47	17
	No response	4	1
	Total	274	100

It is evidenced in table 12 that a large number of students, 94 (34%), used e-resources frequently. These findings demonstrate a reasonable use of e-resources, with 60% of the students making use of them regularly or sometimes.

Madhusudhan (2010) acknowledges that determining the degree of usage of online resources is paramount as it informs librarians about the usefulness of their resources. Moreover, understanding which e-resources are used and why is important for development planning and budget allocation (Hamutumwa 2014).

Frequency of Use of Information Sources for Research and Assignment

Students were asked how often they used the listed information sources for research projects and assignments. The results are summarised in table 13.

Table 13: Frequency of use of information sources for research projects and assignments

Information resources	**Responses**				
	Quite often	**Often**	**Sometimes**	**Rarely**	**Never**
E-journals	24 9%	27 10%	38 14%	43 16%	142 52%
Search engines	159 58%	64 23%	28 10%	5 2%	18 7%
Library e-resources	40 15%	61 22%	64 23%	55 20%	54 20%
Online reference materials	60 22%	65 24%	63 23%	38 14%	48 18%
E-books	38 14%	41 15%	57 21%	64 23%	74 27%

About a quarter of students, 64 (23%), revealed that they used library e-resources sometimes, while 63 (23%) used online reference materials only sometimes. A similar number, 64 (23%), rarely used e-books, while 55 (20%) rarely used the library e-resources, although only 5 (2%) indicated that they rarely used the Internet. The results clearly show that the Internet was used extensively in comparison to other online sources.

Studies show that students who are not sensitised about subscribed online resources provided by their library tend to use general search engines to address information needs (Dubicki 2009; Nkebukwa 2016).

Databases Frequency of Use

In another question, students were asked to show how often they made use of the databases shown in table 14.

Table 14: Frequency of use of scholarly databases

Databases used	Responses				
	Quite often	**Often**	**Sometimes**	**Rarely**	**Never**
EditLib	15 5%	18 7%	28 10%	57 21%	156 57%
EBSCOhost	25 9%	23 8%	23 8%	63 23%	140 51%
Emerald	51 19%	50 18%	40 15%	54 20%	79 29%
HINARI	10 4%	16 6%	28 10%	27 10%	193 70%
IEEE	43 16%	34 12%	38 14%	53 19%	106 39%
JSTOR	9 3%	18 7%	37 14%	51 19%	159 58%
ProQuest	59 22%	38 14%	31 11%	61 22%	85 31%
ScienceDirect	65 24%	55 20%	38 14%	65 24%	51 19%

Table 14 shows most of the scholarly databases were rarely used. Only a few databases such as ScienceDirect, Emerald, ProQuest and IEEE were frequented, although by a negligible number of students.

This study found that lack of awareness of library subscribed e-resources, alongside poor information search skills, were impediments to their use. This finding is consistent with Dadzie (2005), who reports that most databases are used infrequently due to the lack of information about their existence. Similarly, Ramlogan and Tedd (2006) observe that some e-resources are rarely used, while some are never used due to a lack of awareness of their existence.

Conclusion and Recommendations

Students in this study were aware of e-resources, particularly those of general search engines; however, they had much lower awareness of subscribed e-resources, which led to their underutilisation. The study found that the library was not the main source of awareness of e-resources, which indicated passive involvement in the creation of awareness of e-resources by the librarians. In addition, awareness of e-resources was higher among fourth-year students than among other students. The findings showed that e-resources were primarily used for academic purposes and students appreciated their unique features and benefits such as ease of use, ready availability, wide-ranging sources of information and the limited physical space needed.

The study recommends that vigorous awareness campaigns that are focused on subscribed e-resources should be under taken. Librarians and lecturers need to work collaboratively towards raising awareness of e-resources. Lecturers should be strongly encouraged to direct students to use library e-resources throughout the course of the year.

New technology such as social media accounts (Facebook, WhatsApp, Instagram and Twitter), designed specifically for the library, should be created and maintained. Other traditional methods such as posters, brochures, fliers and radio remain effective and efficient in getting the message across and should be used extensively. The study recommends that the usage statistics of scholarly databases should be closely monitored with a view to promoting or re-evaluating underused ones.

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