Use of Electronic Resources by Postgraduate Students of Information Studies at the University of Zululand, South Africa

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Abstract

The purpose of the study was to investigate the level of use of electronic resources (e-resources) by postgraduate students at the University of Zululand in South Africa. The theoretical basis of the study was informed by the Technology Acceptance Model proposed by Davis in 1989. The study adopted a post-positivist research paradigm to enable numerous perspectives by using both quantitative and qualitative research approaches. A total of 66 questionnaires were sent to postgraduate students and 46 (70%) were returned. In addition, interviews were conducted with eight information librarians and two e-resource librarians from the University of Zululand. The study revealed that the use of the library by postgraduate students at the University of Zululand was exceptionally high. In the same vein, the level of awareness about the availability of e-resources was high. Librarians and postgraduate students were able to identify the different types of e-resource available at the University of Zululand library. Electronic databases and electronic journals (e-journals) were highly used, but electronic books (e-books), electronic catalogues (e-catalogues), and CD-ROMs were rarely used. The marketing methods of e-resources include departmental and faculty conferences. The study unveiled a limited budget and inadequate functional computers as challenges that hinder the effective use of e-resources by postgraduate students. The study recommends that the management of the University of Zululand increase the budget for e-resources. The institution should also consider seeking funds to purchase additional computers and expanding the computer laboratory to accommodate a larger number of postgraduate students.

Keywords: electronic resources, marketing, information and communication technology, postgraduate students, Technology Acceptance Theory

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Introduction

The University of Zululand library, like any other academic library, has put in place facilities to cater for postgraduate students. In this regard, Ocholla, Mutsuvunguma and Hadebe (2017) showed that the University of Zululand library has facilities such as the Research Commons and Info Cellar. Notably, the Research Commons supports researchers, and masters and doctoral students in their academic work. The Info Cellar has space for just a few networked computers for all students, particularly the undergraduates. The Research Commons has a Wi-Fi network that supports postgraduate students to search, access, and download electronic databases, electronic journals (e-journals), and electronic books (e-books) for their academic work. According to the University of Zululand Library Research Support (2014), the University of Zululand library subscribes to 83 e-databases, which include Science Direct, JSTOR, and Web of Science, to mention a few. The e-resources mentioned above are meant to support the academic work of postgraduate students and other researchers. Ocholla, Mutsuvunguma and Hadebe (2017) stated that the University of Zululand library provides workshops as a new means of providing information services to all library users.

According to Ocholla (2016), academic libraries are preparing themselves technologically to effectively provide the necessary support to the university academic community in the Fourth Industrial Revolution. In other words, the twenty-first century has experienced the amazing propagation of e-resources that have immensely changed the information-seeking attitude of students and researchers worldwide (Ternenge and Kashimana 2019). Lefuma (2017) thus reports that in this present-day society, e-resources have been identified as the major sources of information that are highly utilised by students and researchers in academic institutions. Ocholla and Ocholla (2020) revealed in their study that academic libraries are now putting their effort into the services such as the internet of things, embedded systems, cyber–physical systems, big data, cloud computing, information management, data acquisition or handling, and network security to ensure that they remain relevant in the Fourth Industrial Revolution. According to Adeleke and Nwalo (2017), developments in information technology (IT) have altered the way in which information for postgraduate students and academic research is accessed and disseminated by academic libraries. It can be said that academic libraries are central to higher educational systems, through the provision of timely information that will aid the improvement of learning and dissemination of knowledge (Ankrah and Atuase 2018).

Problem Statement

Academic libraries worldwide have huge budgets to spend on acquiring e-resources to support teaching, learning, and research. However, experience has shown that the use of e-resources especially by postgraduate students at the University of Zululand is exceptionally low. E-resources such as e-books are not fully used, yet a lot of money is spent on such resources. Ankrah and Atuase (2018) highlighted the discouraging status

of using e-resources by postgraduate students and other researchers in academic libraries. Postgraduate students' quest to use e-resources for their academic work encounters difficulties of access and usage. Notably, the major barrier to the use of e-resources is the lack of marketing of these information products to users (Mulla 2011). Academic libraries therefore need to invest more in the marketing and training of their customers (such as postgraduate and undergraduate students and academics) on the way in which to access and use e-resources. In addition, academic libraries need to inform all their users, through marketing, about what is available in the library to avoid the customers having to guess (Madhusudhan 2010). Unfortunately, there has been no comprehensive study conducted at the University of Zululand regarding the use of e-resources by postgraduate students and the way in which the library markets those e-resources. In that light, the study of this nature is essential as it will give an insight into the current state of the use and marketing of e-resources by the University of Zululand library. It will unveil the reasons for not using other resources compared to others.

This study aims to investigate the level of use of e-resources by postgraduate students from the Department of Information Studies at the University of Zululand.

The study adopted the following objectives:

- identifying the types of e-resource available in the University of Zululand library;
- determining the level of awareness and use of e-resources by postgraduate students;
- examining the availability of infrastructure and human resources for marketing e-resources in the University of Zululand library; and
- identifying challenges faced by the University of Zululand library when marketing e-resources.

Literature Review

Electronic Resources Available in Academic Libraries

The primary role of academic libraries is to provide information products and services that will fulfil library users' information needs. For academic libraries to meet the information needs of their customers in the twenty-first century, they are expected to provide e-resources in different formats and forms (Akuffo and Budu 2019). Studies by Mogase and Kalema (2015), and Pietersen and Raju (2015) reveal that academic libraries are purchasing e-journals and e-books to ensure that customers have access to both printed and e-resources. E-resources also include e-databases, biographies, dictionaries, directories, and encyclopaedias, e-books, e-images, and e-audio and visual resources (IFLA 2012, 3).

One advantage of using e-resources as one of the core sources of information is that library users can access it while being on- or off-campus (Amankwah 2014; Rassiya and Chinnasamy 2014, 142). In other words, e-resources are accessible wherever a user is; at any location (Deng 2010, 92) and by using different electronic devices such as smartphones, desktop computers, laptops, iPads, tablets, and mobile phones (Kwadzo 2015, 16). Barriers to access these e-resources include the lack of training, poor networks, the lack of IT knowledge, unfamiliarity with the way in which to access the e-journals, and the perception that e-journals are of lower quality than print (Kwadzo 2015).

Level of Awareness and Use of Electronic Resources by Postgraduate Students in Academic Libraries

It is widely argued that several academic libraries have provided adequate information and technology (ICT) infrastructure and created awareness to ensure that students are aware of the e-resources they offer, however, there are other academic libraries that neither maximise the use of ICTs nor create awareness for the use of e-resources (Adekunmisi 2017). It is based on the aforementioned argument that the availability of e-resources does not necessarily ensure awareness and use among students (Kwafoa, Imoro and Afful-Arthur 2014, 4). Borteye and Dadzie (2015), and Yang and Li (2015) revealed that in some academic libraries the awareness level of e-resources is high. The more academic libraries use different technologies as tools to create awareness about e-resources to students, the more students become aware of information products that meet their academic work and the more they visit the library for such information (Borteye and Dadzie 2015). In this regard, the more students are aware of the availability of e-resources, the more they use the information for their academic work. Dadzie and Van der Walt (2015) established that digital resources affected faculty members positively despite low levels of awareness and use. Gakibayo, Ikoja-Odongo and Okello-Obura (2013, 16) revealed that the high use of e-resources among postgraduate students is because they are current and freely available to access (Deng 2010). Okite-Amughoro, Makgahlela and Bopape (2014) showed that postgraduate students are choosy when it comes to the use of e-resources. According to these authors, postgraduate students prefer to use e-journals and e-databases.

Amankwah (2014) posited that in the twenty-first century, technology is highly used to access information in different forms. However, studies by Amankwah (2014) revealed that the use of e-resources by students and academics in tertiary institutions is lower than expected. It is, however, argued by Akussah, Asante and Adu-Sarkodee (2015, 37), and Gakibayo, Ikoja-Odongo and Okello-Obura (2013, 17) that the reason for the lack of use of some other e-resources by students and staff in tertiary institutions is because of the lack of awareness of such e-resources. E-resources are available in academic libraries but there is a low level of use owing to the poor search skills among students and academics, the lack of formal training on the way in which to download and use e-resources, poor connectivity, and congested use of the internet (Amankwah 2014; Ani, Ngulube, and Onyancha 2014, 170).

Infrastructure and Human Resources for Marketing Purposes and the Use of Electronic Resources in Academic Libraries

The use of the latest infrastructural technology for networking is always a good indication of the development of a library (Singh 2011). The local area network, intranet and the internet facilitate the effective dissemination of information to library users (Singh 2011). A review of the literature showed that ICT applications have been used from elementary through secondary to tertiary levels (Kumpulainen 2007; Usluel and Bas 2008). ICTs offer opportunities for enhancing strategic learning (Lopez-Nicolas and Soto-Acosta 2010).

The term human resources refer to all library staff who play key roles in ensuring that the information products and services are accessed and used by library patrons by marketing all the information products and services rendered (Jose and Bhat 2007). It is the responsibility of the library staff to interact with customers daily to ensure that users are aware of what is available in the library that will meet their information needs. According to Gupta and Jambhekar (2002), both the inside and outside of the library building must be eye-catching, so the customers would want to use the library. Moreover, Ankrah and Atuase (2018) highlighted some of the most important tools used by academic libraries to market their information products and services, namely, the library's orientation programmes, seminars or workshops, library staff, lecturers, the library guide, the library's website, and colleagues or friends. Bowlby, Franklin and Lin (2011) concluded that students and staff become aware of a variety of sources in the library through friends, exhibitions, radio programmes and word of mouth by lecturers and librarians.

Challenges Faced by Academic Libraries when Marketing Electronic Resources

The provision of quality services in academic libraries is critical in the present-day information society (Atkinson and Walton 2017). Library customers regard an academic library as not just a physical place, but also as a place for the provision of, and access to, quality service. Technology and automation have also changed the way people perceive libraries (Atkinson and Walton 2017). The challenge becomes that of knowing how to determine the level of quality. Kavulya (2004) observed that inadequate funding and its effects, such as poor facilities, equipment and resources, are a major hindrance to the provision of electronic library services to university communities. In addition, university libraries do not have sufficient funds to build computer laboratories in which postgraduate and undergraduate students can sit to surf the internet (Atkinson and Walton 2017).

Access to e-resources is provided through the availability of computers, network systems, the ability to work with tools, and the network infrastructure that supports quick and convenient connections (Sivasubramaniyan and Batcha 2012). It is sad to note that academic libraries lack such infrastructure required to meet the expectations of all users who rely heavily on e-resources for their academic work. It is important to

understand that for the efficient use of e-resources one has to be trained on the way in which to download and use the product rendered. However, postgraduate students do not have enough space in which they can be trained by librarians to have basic computer skills to access e-resources (Sivasubramaniyan and Batcha 2012). The slow speed of the internet when accessing e-resources by postgraduate students is a big concern as they become frustrated. Moreover, there is an outcry from postgraduate students who stay off-campus that they do not have access to the internet and lack skills to access e-resources (Hadebe 2010; Soyizwapi 2005). In other words, part-time postgraduate students are generally inexperienced in the use of e-journals and e-databases.

Theoretical Perspectives

This study is largely anchored by Davis' (1989, 320) Technology Acceptance Model (TAM). This model elucidates the two factors that influence users' decisions to use ICTs. These factors are perceived usefulness (PU) and perceived ease of use (PEOU) (Thistoll 2011, 263). The term PU is regarded as the extent to which a user expects benefits when using technology, and the term PEOU is regarded as the degree to which users of technology expect fewer hindrances in the use of the technology (Davis 1989, 320).

The TAM has been widely applied successfully in several studies that dealt with the adoption and use of ICTs, mainly e-resources (Dulle and Minishi-Majanja 2011). The TAM was also adopted because it spells out clearly why technologies are used to access, in this case, e-resources (Wu, Tao, and Yang 2007). In Africa, Ikoja-Odongo and Wokadala (2010) adopted the model in academic libraries in Uganda, while Dulle and Minishi-Majanja (2011) applied the TAM in the open access of e-resources at Tanzanian universities. Fari (2015) also adopted the model in information and knowledge sharing in Nigeria and South Africa. In a nutshell, the TAM can be widely used in a variety of situations in which technology is applied. Summarily, the TAM, in the present study, deals with access, use, and marketing of e-resources and the systems that are in place to market the e-resources.

Research Methodology

The study adopted a post-positivist research paradigm to enable numerous perspectives. Both quantitative and qualitative research approaches were used during a single phase of data collection. Quantitative data were gathered by the survey method involving self-administered questionnaires to postgraduate students from the Department of Information Studies at the University of Zululand in South Africa. The qualitative data were gathered by both survey and qualitative content analysis, largely through open-ended questions, which were embedded in the semi-structured interviews held with information librarians and electronic librarians. An in-depth literature review and document analysis formed part of the qualitative content analysis. The study is a census of all postgraduate students of the Department of Information Studies and all librarians from the University of Zululand library. The total number of postgraduate students in

the Department of Information Studies was 66 and there are 10 information librarians. The demographic characteristics of the respondents are represented in Table 1.

Table 1: Demographic data of librarians and postgraduate students

Variable	Librarians		Postgraduate students	
	F	**%**	**F**	**%**
Gender				
Female	8	80	29	63
Male	2	20	17	36.9
Total	10	100	46	100
Age				
21–25	–	–	18	39
26–30	2	20	14	30.4
31–40	4	40	8	17.4
41–50	3	30	6	13
51 and above	1	10	–	–
Total	10	100	46	100
Level of study				
Honours	–	–	16	34.8
Masters	–	–	21	45.6
PhD	–	–	9	19.5
Total	–	–	46	100
Work experience				
Less than a year	1	10	–	–
1–5 years	2	40	–	–
6–10 years	4	40	–	–
11–20 years	1	10	–	–
21 years and above	2	20	–	–
Total	10	100	–	–
Position				
Information librarian	8	70	–	–
Assistant librarian	–	–	–	–
E-resource librarian	1	10	–	–
Senior e-resource librarian	1	10	–	–
Total	**10**	**100**	**–**	**–**

Discussion

This section presents and discusses the results of the study under six themes. These themes are awareness of the types of e-resource available for use by postgraduate students, access to and use of e-resources by postgraduate students, purposes of using

e-resources by postgraduate students, benefits motivating the use of e-resources by postgraduate students, and problems encountered when accessing e-resources used by postgraduate students.

The study found that 44 (95.6%) postgraduate students use the library for their academic work and 2 (4.3%) do not use the library for their academic work (Table 2). The study findings by Madhusudhan (2010) indicated that when postgraduate students are aware of what the library offers and that meets their academic work requirements, they are bound to always use the library.

Table 2: Use of the library by postgraduate students

Variable	Frequency	Percentage (%)
Yes	44	95.6
No	2	4.3
Total	**46**	**100**

A total of 20 (43.5%) postgraduate students reported that they use the library daily, 13 (26%) use the library weekly, and another 13 (28%) indicated that they use the library once or twice a month (Table 3). Similar views are shared by Borteye and Dadzie (2015) who highlighted that the more academic libraries use different technologies as tools for creating awareness of e-resources to students, the more students become aware of information products that meet their academic work requirements, which implies the desire to visit the library more.

Table 3: Frequent use of the library

Variables	Frequency	Percentage (%)
Daily	20	43.5
Weekly	13	28
Once or twice a month	13	28
Total	**46**	**100**

As indicated in Table 4, two (4.4%) respondents indicated that they were not aware of any e-resources available in the library, and 35 (76%) were fully aware. It was found that there were only 9 (19.5%) respondents who were partially aware of the availability of e-resources at the University of Zululand library. These findings proved that most respondents are aware of the availability of e-resources at the University of Zululand library. The study findings were in line with those by Borteye and Dadzie (2015), and Yang and Li (2015) which also recorded high awareness levels at the University of Ghana and the Texas A&M University, respectively. However, studies by Amankwah (2014), and Kwafoa, Imoro and Afful-Arthur (2014, 15) contradicted the findings of the

current study by reporting that the awareness and use of e-resources by students and academics in tertiary institutions is lower than expected.

Table 4: Awareness of the availability of e-resources

Variable	Frequency	Percentage (%)
Fully aware	35	76
Partially aware	9	19.5
Not aware	2	4.4
Total	**46**	**100**

When postgraduate students were asked to state if they were using e-resources, an overwhelming number (44, 95.6%) agreed that they were using e-resources at the University of Zululand library. It was not surprising to find that only two (4.4%) were not using e-resources (Table 5). These findings indicate that postgraduate students were supported by the University of Zululand library in their academic work. According to the TAM, one is inspired to use ICTs when one anticipates there are benefits to be derived (Davis 1989, 320). Similarly, Chirra and Madhusudhan (2009) found that 100 per cent of doctoral research scholars were using e-resources for their academic work.

Table 5: Use of e-resources

Variable	Frequency	Percentage (%)
Yes	44	95.6
No	2	4.4
Total	**46**	**100**

The findings showed that all information librarians and e-resources librarians had a vast knowledge of the types of e-resource available in their library; however, postgraduate students only knew about e-journals. The other known types of e-resource, which scored far above 50 per cent by postgraduate students, were e-databases and e-books (Table 6). The findings of the study agreed with those by Akuffo and Budu (2019) that also reported that academic libraries meet the information needs of customers in the twenty-first century by purchasing different formats of e-resources. Studies by Mogase and Kalema (2015), and Pietersen and Raju (2015) revealed that academic libraries are purchasing e-databases, e-journals and e-books to ensure that customers access both printed and e-resources.

Table 6: Types of e-resource available in the library (numerous responses)

Variables	Librarians 10		Postgraduate students 44	
	Frequency	%	Frequency	%
E-databases	10	100	36	81.8
E-books	10	100	27	61
E-journals	10	100	44	100
CD-ROMs	10	100	4	9
E-catalogues	10	100	6	13.6

These results indicated that both librarians and postgraduate students agreed that the highly used e-resources in the library were e-databases and e-journals and the least used e-resources by postgraduate students were e-books, e-catalogues and CD-ROMs (Table 7). According to Thistoll (2011, 263), the TAM postulates that two factors are essential when determining ICT use, namely, the PU and the PEOU. Part of the findings of the study concurred with those by Okite-Amughoro, Makgahlela and Bopape (2014) which argued that postgraduate students are selective when it comes to using e-resources. They revealed that doctoral students prefer to use only e-journals and e-databases.

Table 7: Most used e-resources (numerous responses)

Variables	Librarians 10		Postgraduate students 44	
	Frequency	%	Frequency	%
E-databases	8	80	39	88.6
E-journals	8	80	37	84
E-books	4	40	4	9
E-catalogues	1	10	2	4.4
CD-ROMs	1	10	1	2

The study established that many reasons influence postgraduate students to prefer some e-resources compared to others (Table 8). The reasons for not using other e-resources as mentioned by both librarians and postgraduate students were identified as postgraduate students only use e-databases and e-journals because these e-resources solve their research problems; some e-resources have a few users at a time; postgraduate students are selective when it comes to e-resources; and the lack of interest when attending workshops on the use of e-resources apart from e-databases and e-journals, to mention a few. The study findings concurred with those by Ahmad and Panda (2013) which also reported that postgraduate students only use e-resources that focus on their academic works. The lack of knowledge leads them to choose specific e-resources over

others (Gakibayo, Ikoja-Odongo, and Okello-Obura 2013, 17; Okite-Amughoro, Makgahlela, and Bopape 2014).

Table 8: Reasons for poor use of other e-resources (numerous responses)

Variables	**Librarians 10**		**Postgraduate students 44**	
	Frequency	**%**	**Frequency**	**%**
Lack of interest when attending workshops on using e-resources apart from e-databases and e-journals	8	80	20	45.4
Academics do not encourage postgraduate students to consult librarians for any service needed	5	50	15	34
Lack of awareness of all e-resources	–	–	10	22.7
Postgraduate students only use e-databases and e-journals because they solve their research problems	10	100	44	100
Postgraduate students are selective when it comes to e-resources	5	50	27	61
E-books have a few users at a time	7	70	44	100

The responses by the librarians and postgraduate students when asked to mention the methods used by the library to market its e-resources to postgraduate students are captured in Table 9. Interestingly, librarians and postgraduate students mentioned the marketing of e-resources through departmental and faculty conferences, during library orientation, through social media (for example, Facebook), the use of the library website, face-to-face conversations with clients, the library newsletter, and faculty board meetings. The study findings were similar to those by Ankrah and Atuase (2018) which reported different methods used by the University of Cape Coast library, such as library orientation programmes, seminars or workshops, library staff, lecturers, the library guide, the library's website, and colleagues or friends.

Table 9: Different methods of marketing e-resources (numerous responses)

Marketing methods	Librarians 10		Postgraduate students 44	
	Frequency	%	Frequency	%
Departmental and faculty conferences	8	80	29	65.9
Faculty board meetings	9	90	2	4.5
Library orientation	10	100	24	54.5
Social media (e.g. Facebook)	7	70	39	88.6
Face-to-face conversations with clients	5	50	21	47.7
Library website	6	60	29	65.9
Library newsletter	7	70	12	27

The postgraduate students at the University of Zululand revealed that they learned of the availability of e-resources through a friend 33 (75%), followed by the library website 30 (68%) and another 30 (68%) said social media (Table 10). The study also showed that there were 29 (65.9%) who became aware of the availability of e-resources through e-billboards and another 29 (65.9%) who mentioned their supervisor. The study findings were supported by those by Wu, Tao, and Yang (2007) which reported that the TAM is relevant because it sheds light on why technologies are used. According to Soyizwapi (2005), and Bowlby, Franklin and Lin (2011), postgraduate students learn of e-databases from a variety of sources such as friends, library orientation programmes, academic staff, and library websites.

Table 10: The way in which postgraduate students learned of e-resources in the University of Zululand library

The way in which respondents gained knowledge about the availability of e-resources	Postgraduate students 44	
	Frequency	Percentage (%)
Friends	33	75
Library website	30	68
Social media	30	68
Electronic billboards	29	65.9
Supervisors	29	65.9
Library orientation	21	47.7
Faculty librarians	20	45
Library brochures	19	43
Library newsletter	7	15.9

As shown in Table 11, the overall findings indicated that 7 (70%) librarians strongly disagreed and disagreed that the library has adequate infrastructure and human resources for marketing e-resources. These findings concurred with the findings that indicated that 34 (77%) postgraduate students strongly disagreed and disagreed that the library has adequate infrastructure and human resources for marketing e-resources to postgraduate students. A total of 3 (30%) librarians and 10 (22.7%) postgraduate students agreed that the University of Zululand library has adequate infrastructure and human resources for marketing e-resources.

Table 11: Adequacy of infrastructure and human resources for marketing e-resources

Variables	**Librarians 10**		**Postgraduate students 44**	
	Frequency	**%**	**Frequency**	**%**
Strongly agree	–	–	–	–
Agree	3	30	10	22.7
Strongly disagree	5	50	12	27
Disagree	2	20	22	50
Total	**10**	**100**	**44**	**100**

As shown in Table 12, it became clear that both librarians and postgraduate students had strong reasons for agreeing that the University of Zululand library had the adequate infrastructure and human resources for marketing e-resources. The identified reasons were the availability of a computer lab, 25 working computers in the lab, Research Commons, Info Cellar, the internet, e-billboards, and qualified librarians. These findings are in line with those by Singh (2011) which reported that some academic libraries are providing adequate ICT infrastructure and are creating awareness to ensure effective use.

Table 12: Reasons for strongly agreeing or agreeing (numerous responses)

Variables	**Librarians 3**		**Postgraduate students 10**	
	Frequency	**%**	**Frequency**	**%**
Availability of a computer lab	3	100	5	50
The library has computers that are working	3	100	8	80
The internet is available	3	100	7	70
Electronic billboards	2	66.6	10	100
Research Commons	3	100	10	100
Info Cellar	2	66.6	10	100
Qualified librarians	3	100	–	–

As shown in Table 13, it became clear that both librarians and postgraduate students had strong reasons for disagreeing that the library had the adequate infrastructure and human resources for marketing e-resources. The common reasons that were identified by librarians and postgraduate students were: the computer lab is available but it is too small to accommodate a larger number of postgraduate students; the computers are available but not enough to accommodate a larger group of postgraduate students; and the library has only one computer laboratory which houses about 25 students per session. These findings align with those by Kavulya (2004), Atkinson and Walton (2017) which also found that academic libraries do not have adequate funding, which leads to poor facilities.

Table 13: Reasons for disagreeing or strongly disagreeing (numerous responses)

Variables	**Librarians 7**		**Postgraduate students 36**	
	Frequency	**%**	**Frequency**	**%**
The library has only one computer laboratory which houses about 25 students per session	7	100	30	83
Inadequate computers for conducting workshops	7	100	36	100
Connectivity is poor	5	71	12	33
Insufficient budget	7	100	–	–
Lack of proper marketing skills	3	42.8	20	55.5
Librarians lack research skills to keep up with postgraduate students' demands	5	71	27	75
Research Commons only houses about 20 postgraduate students	4	57	33	91.6

The study found that librarians at the University of Zululand library encountered several challenges when marketing e-resources to support the academic work of postgraduate students (Table 14). It was revealed that 10 (100%) librarians believed that the library has a limited budget towards the marketing of library materials, and another 10 (100%) said the library has few working computers to demonstrate the use of e-resources to postgraduate students. A total of 10 (100%) librarians pointed out that the majority of part-time students are not attended to because they visit the university library over the weekend. Eight (80%) librarians indicated that there is no marketing plan in the university library for e-resources and only five (50%) said the librarians lack skills in e-resources marketing. These findings agreed with those by Kavulya (2004) which noted that academic libraries are suffering from inadequate funding and that equipment and resources are a major hindrance to the provision of electronic library services.

Table 14: Challenges faced by information librarians when marketing e-resources

Variable	Frequency	Percentage (%)
Limited budget towards marketing of library material	10	100
No marketing plan in the library for e-resources	8	80
The library has few working computers to demonstrate the use of e-resources to postgraduate students	10	100
Librarians lack the skills to market e-resources	5	50
Most part-time students are not attended to because they visit the library on weekends	10	100

Table 15 shows that most respondents (38; 86%), indicated that only a few users are allowed to access e-books, followed by slow internet from Friday throughout the weekend (29; 65.9%), and the lack of data bundles for students staying off-campus (26; 59%). Other challenges of lesser degrees were the lack of proper guidance because there is no librarian responsible to assist part-time postgraduate students on weekends (12; 27%), the lack of passwords to access electronic databases (12; 27%), and the lack of e-journals for part-time postgraduate students and poor searching skills (9; 20.5%). The findings of the study concurred with those by Sivasubramaniyan and Batcha (2012) which found that if library users are not trained, the use of information products and services will be poor and that the lack of internet facilities for postgraduate students who stay off-campus is another big challenge when accessing e-resources.

Table 15: Challenges encountered by postgraduate students when accessing e-resources (numerous responses)

Variables	Frequency	Percentage (%)
Slow internet from Friday throughout the weekend	29	65.9
Lack of proper guidance because there is no librarian responsible to assist part-time postgraduate students on weekends	12	27
Poor searching skills	9	20.5
Lack of passwords to access e-databases and e-journals for part-time postgraduate students	12	27
Lack of data bundles for students staying off-campus	26	59
A limited number of users to access e-books	38	86

Conclusion and Recommendations

The study concluded that the extent of use and the level of awareness of e-resources by the postgraduate students from the Department of Information Studies at the University of Zululand are exceptionally high. The awareness of e-resources by postgraduate students is triggered by their level of using the library as some visit the library daily, weekly and monthly. These findings were related to what the TAM suggests; that a user uses technology because he or she perceives that it will be beneficial to use the technology (Davis 1989). The study showed that the e-resources identified by postgraduate students were similar to those mentioned by information librarians and electronic librarians even though information librarians and electronic librarians had more in-depth knowledge of the available e-resources in the library. Despite the high level of awareness of e-resources by postgraduate students, it was amazing to discover that they were only using e-databases and e-journals. The study unveiled that e-books, e-catalogues and CD-ROMs were underused. One reason for underusing some e-resources is that they can only be used by a few users at a time. The study suggests that library training on using all e-resources should be done through departmental training as the library is using a constrained budget for e-resources.

The study uncovered several challenges facing the marketing of e-resources by librarians at the University of Zululand. These challenges include a limited budget, only a few working computers, and the lack of a librarian for part-time postgraduate students, to mention a few. To alleviate these challenges, the library management should solicit for an increase in their budget allocation from the management of the University of Zululand, so that they can expand the computer laboratory to accommodate a larger number of postgraduate students. It is also recommended that the management of the University of Zululand library appoint a librarian that will attend to the information needs of part-time postgraduate students.

The Fourth Industrial Revolution tests the readiness of academic libraries to provide information services remotely (Ocholla and Ocholla 2020). It has also come to challenge students that are not willing to take advantage of available technologies to access e-resources. In addition, the Covid-19 lockdown has compelled libraries and users to work remotely. In this regard, this calls for a vigorous discussion about the new trends that the Fourth Industrial Revolution and Covid-19 impose on academic institutions, particularly academic libraries that should support teaching, learning, and research.

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