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Abstract

The article investigated the factors influencing the behavior of academics towards peer reviewed electronic journals at three state universities in Zimbabwe. The study employed both quantitative and qualitative approaches with the use of a survey research design. Quantitative data were collected through closed-ended questionnaires that were administered to a sample of 363 academics. Qualitative data were collected through interviews that were held with nine professional librarians. The response rate for academics was 58.4%. Results show that barriers and other militating factors negatively affect the behaviour of academics towards peer reviewed electronic journals. These barriers include inadequate infrastructure to support access to electronic journals, inefficient and slow speed of Internet connection, lack of skills to navigate the electronic journals environment, challenges with off-campus access, unfriendly library website interfaces, and difficult electronic journal interfaces. The study found that state universities in Zimbabwe have not done enough to address the challenges that discourage usage of electronic journals.

Keywords: peer reviewed electronic journals, Zimbabwe State Universities, facilitating conditions

1. Introduction

The emergence of peer reviewed electronic journals in academia at the close of the 20th century marked a new milestone for research and scholarship that presented academics and students in universities with expanded opportunities for timely access to information. The journal publishers saw in electronic journals an opportunity to lower costs through reduction or elimination of printing and distribution charges (Tomney and Burton 1998; Curtis 2005). In addition, electronic journals allowed publishers to expand their audience by reaching out to researchers in institutions all over the world without the limitation of physical borders and distance (Herman 2001; Cox and Cox 2010). University libraries that were affected by the ever-increasing costs of print publications quickly welcomed the move that shifted emphasis from ownership to access. This reduced costs and broadened the resource base for their clients, chiefly academics and students (Simmonds and Andaleeb 2001).

University libraries in Zimbabwe responded to the opportunity presented by the peer reviewed electronic journals initiative by organising themselves into the Zimbabwe University Libraries Consortium (ZULC). The main goal of ZULC is to alleviate shortage of reading resources and increase access to scholarly information in member institutions. In 2003, ZULC managed to negotiate access to over 18000 full text and 7000 abstract peer reviewed electronic journals through the International Network for the Availability of Scientific Publications (INASP)'s Programme for the Enhancement of Research Information (PERii) initiative (INASP 2005). This initiative provides expensive academic journals online to institutions in developing countries at a cheaper or affordable price (INASP 2005). In addition to the PERii initiative, university libraries in Zimbabwe benefitted from other initiatives. For example, the World Health Organisation (WHO), Food and Agricultural Organisation (FAO), and the United Nations Environment Programme (UNEP) spearheaded the provision of information on health sciences, agricultural sciences, and environmental sciences, respectively, through electronic journal databases. The databases included Health Inter-Network Access to Research Initiative (HINARI), Access to Global Online Research in Agriculture (AGORA), and Online Access to Research in the Environment (OARE) (AGORA, 2008). Another initiative, the Electronic Information for Libraries (EIFL) has also provided electronic journals to university libraries in Zimbabwe.

The initiative by ZULC was expected to bring major relief to the academic community in Zimbabwean State Universities as it came at the back of declining government funding that had negatively affected the purchase of books and print journals. Universities depended more on donations, many of which were not suitable for academic purposes (INASP 2006). University libraries in Zimbabwe also expected electronic journals to easily gain traction with the academic community as the resources addressed its long-expressed needs of increased choice of information, timeliness, and convenience. However, contrary to expectations, and despite several efforts made by ZULC and individual university libraries in Zimbabwe to enhance access to peer reviewed electronic journals, the use of such journals among academics remains minimal. The statistics ZULC harvests from providers of peer reviewed electronic journals show depressed usage many years after introduction of these resources. Academics in Zimbabwe have been singled out for their failure to provide leadership in the use of peer reviewed electronic journals (Tsvere, Nyaruwata and Swamy 2013).

The underutilisation of peer reviewed electronic journals by academics in Zimbabwe comes against the backdrop of the increasing cost of subscribing to these resources (Veeramani and Vinagamooythy 2010; Shahmohammadi 2012). The arrangement that ZULC has with journal providers where affiliate universities subscribe to selected electronic journals at discounted rates has not insulated institutions from increasing costs. Justifying these costs to university administrators is a difficult task in the face of minimal usage. The libraries run the risk of having their electronic journals subscription budgets cut since usage statistics are not commensurate with the cost incurred in maintaining subscription to these resources.

Since the introduction of peer reviewed electronic journals into the academic world, researchers from different parts of the world have sought to understand the adoption and use. The researchers have been trying to establish why university communities, especially in Africa, have not embraced use of the electronic resources as expected. Findings have varied, including issues of awareness (Bayugo and Agbeko 2007; Dilek-Kayaoglu 2008; Khan and Ahmad 2009; Salaam and Aderibidge 2010; Shahmohammadi 2012), attitudes and perceptions (De Groote 2008; Salaam and Aderibidge 2010; Tyagi 2012), promotion (Thanuskodi 2011; Vasishta and Navivoti 2011), and facilitating conditions as factors that influence the use of these

resources (Ondari-Okemwa 2004; Bevilacqua 2005; Upadhyay and Chakraborty 2008; Salaam and Aderibidge 2010; Shahmohammadi 2012).

Among the factors affecting electronic journals usage in universities, the issue of facilitating conditions has been prominent, especially in the context of developing countries. Facilitating conditions are known to influence the bahaviour of users towards the use of electronic journals. The theories of Planned Behaviour (TPB) (Ajzen 1991; Taylor and Todd 1995), Diffusion of Innovation (DOI) (Moore and Benbasat 1991; Rogers 1995; Rogers 2003), and Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh, Morris, Davis and Davis 2003) have all identified facilitating conditions as a major factor influencing the use of electronic resources. Other factors influencing the behaviour of users towards electronic journals include infrastructure to support access, efficiency and speed of Internet connection, skills to navigate the electronic environment, availability of off-campus access, unfriendliness of university libraries' website interfaces and specific journal interfaces (Ondari-Okemwa 2004; Bevilacqua 2005; Upadhyay and Chakraborty 2008; Salaam and Aderibidge 2010; Shahmohammadi 2012).

Studies that have investigated the factors influencing the behaviour of academics towards peer reviewed electronic journals have focused on developed countries of North America, Europe, and some parts of Asia and the Middle East. Only a few countries in Africa (Nigeria, Uganda, Kenya, Tanzania, Malawi, Ethiopia, Ghana, and South Africa) have visible literature on the subject (Dadzie 2005; Ani and Ahiauzu 2008; Manda 2008; Harle 2010; Egberongbe 2011; INASP 2012). Zimbabwe is among other countries in Africa that have not yet conducted notable research in this area. In Zimbabwe for example, there are only a few published studies that cover factors influencing the behavior of academics toward peer reviewed electronic journals, despite the fact that state universities started offering them in 2003.

An investigation of the factors that influence the behaviour of academics towards peer reviewed electronic journals in the Zimbabwean context would therefore provide university librarians, policy makers, and organisations offering electronic resources with information on the key barriers affecting usage of these resources. This may result in corrective action that benefit wider university communities in Zimbabwe.

2. Purpose of the study

The study investigated the factors (facilitating conditions) influencing the behaviour of academics towards peer reviewed electronic journals at three state universities in Zimbabwe. The study addressed the following objectives:

- Establish the extent to which academics consider technological infrastructure in their institutions adequate to support access to peer reviewed electronic journals;
- Determine if the efficiency and speed of Internet connection in Zimbabwean State Universities is conducive for unhindered use of electronic journals;
- Find out the extent to which academics possess the skills necessary to navigate the electronic environment;
- Examine the accessibility of peer reviewed electronic journals off-campus; and,
- Establish the friendliness of university libraries' website interfaces and specific journal interfaces.

3. Literature review

Literature and technology adoption theories argue that for an innovation to be adopted and used there should be "facilitating conditions". These are conditions that make it easier for the intended user to adopt and use a given technology (Ajzen 1991; Taylor and Todd 1995; Moore and Benbasat 1991; Rogers 1995; Rogers 2003; Venkatesh, Morris, Davis and Davis 2003). Absence of these conditions constitutes "barriers" to use. Electronic journals have been readily accepted in countries and institutions where barriers to access and use are minimal. In contrast, they have not been readily accepted in situations where users are faced with barriers (Salaam and Aderibidge 2010; Shahmohammadi 2012).

Several African scholars agree that one of the major hindrances to the adoption and use of electronic resources on the continent is lack of the requisite infrastructure. Harle (2010) notes that the advent of electronic journals came as a blessing to the continent. It meant, at last, African scholars could access rich resources stored in developed world servers. This move, however, came with its challenges as institutions needed to upgrade their ICT facilities and infrastructure. This includes core technologies such as computers, telecommunications

technologies, Internet, bandwidth, power supply, as well as peripheral technologies like printers, copiers, and scanners (SUL 2001). In addition, institutions must ensure they have adequate institutional contracts and licenses with publishers and other libraries in order to have rights to access electronic journals. There is also a need to engage adequately skilled administrative and support personnel. Manda (2008) notes that African institutions have largely been affected by inadequate information infrastructure and the absence of basic facilities required to access electronic resources effectively and efficiently.

Manda (2008) further notes that while many African universities have at last managed to improve academics' levels of access to computers connected to the Internet with the ratio almost 1:1, one major infrastructural constraint is limited bandwidth. In Tanzania, for example, 69% of the institutions reported that they had bandwidth available to their libraries for downloading at less than 1 megabyte per second. This adversely affects the efficiency of downloading. Shija (2009) identifies the same bandwidth problem. Many users in Tanzania, according to Shija's research, access bandwidth ranging from 16 to 32 kilobytes per second (Kbps), only a few used above 32Kbps. This bandwidth range is very low for Internet connectivity and access. AGORA specifies a bandwidth size from 56Kbps for users to access the electronic journals from its database. The problem of bandwidth and connectivity was also reinforced by Harle (2010). He pointed out that at Chancellor College, in Malawi, where they relied on Very Small Aperture Terminal (VSAT) satellite link, the situation was dire. The connection was slow and when downloading journals, data packets were frequently lost and files corrupted. In interviews conducted at the institution many respondents bemoaned poor connections, slow speeds, dropping connection, and the related challenge of intermittent power supply.

Elsewhere in Africa, Watts and Ibegbulam (2006) examined some of the barriers to the usage of electronic information resources available at the medical library of College of Medicine, University of Nigeria, Nsukka. Their findings revealed, that lack of an adequate ICT infrastructure posed a problem to the access and use of these resources. At Jomo Kenyatta University of Agriculture and Technology in Kenya the use of electronic journals was also hampered by lack of infrastructure. This meant despite the marketing of electronic resources they were still not used optimally (Gikandi and Ndungu 2011). The university provided wireless network with many hot spots scattered across the university however, users were often frustrated

by low bandwidth. At the University of Agriculture, Abeokuta, Nigeria the major constraint to the use of electronic journals is the unstable supply of electricity. This problem of poor electricity supply was also reported by Chisenga (1997) and Owolabi and Agboola (2010) as the biggest problem affecting the use of ICT facilities in many African institutions.

Respondents in another Kenya study identified the following challenges they were experiencing in accessing electronic resources: inadequate computers, poor Internet connectivity, delays in downloading information, and lack of support facilities such as printers (INASP 2011). The Kenya study recommended that efforts be made towards upgrading and increasing the existing infrastructure including computers, Internet bandwidth and skilled staff. At Makerere University in Uganda academics said they were hindered in the use of electronic journals by inadequate facilities, slow speed or poor bandwidth, lack of printers to print research results, and poor computer communication systems (Agaba, Kigongo-Bukenya and Nyumba 2004). This led to poor utilisation of these resources.

Infrastructural capabilities improved in some African countries post 2010. Harle (2010) observes that Internet connectivity, particularly in some east African universities is steadily improving with the installation, in 2009 and 2010, of three new high speed undersea fibre-optic cables. However, substantial infrastructural challenges remain beyond major cities, and from coastal countries to landlocked countries. The use of electronic journals has continued to be depressed in those countries and cities where Internet connection is poor.

The value of adequate infrastructural support in the adoption and use of electronic resources can be seen from a study in Iran. In a study that covered 232 Social Science academics in 7 Iranian universities, namely: Ran University, Shiraz University, Ahvaz University, Karman University, Esfahan University, Tehran University, and Mashhad University, it was reported that academics were dependent on electronic resources. However, Social Science academics in Iran were afforded adequate infrastructure to enable them to access and use electronic journals. For example, they were provided with computers and Internet facilities. Furthermore, they were provided with free Internet connections at their residences through their universities and campuses were WI-FI enabled (Negahban and Talawar 2009).

The adoption and use of electronic journals particularly in Africa has also been hampered by lack of skills to negotiate the electronic environment. Borah,

Kuchida, Lee, Lippincott and Nagaraj (2004) complain about what they call the "access paradox" syndrome, where an increasing amount of information is increasingly being made available in electronic format, but that users are unable to find it because they lack the necessary skills. They advise that users should be able to construct effective search strategies, critically appraise information sources, use information sources appropriately, and cite and create references.

Ondari-Okemwa (2004), Ashcroft and Watts (2005), and Oduwole and Sowole (2006) identified problems in the adoption and use of electronic resources in Nigeria. The main problem identified was the lack of adequate Information Communication Technology (ICT) skills among academics. Shija (2009) noted that for someone to access and use electronic journals effectively and efficiently, there is need for a good command of skills of how to use the computer and Internet. He notes that the necessary skills were still inadequate in Africa and advised that training was necessary to enable academics to benefit from the electronic resources at their disposal. He alleges that the problem of lack of ICT skills in Africa has not yet been seriously addressed. Some institutions offer one off training workshops to researchers while others offer no training at all. Shija's findings resonate with the findings of Manda (2008) who carried out an extensive study of twenty-three institutions of higher education in Tanzania. Only 41% of the institutions reported that they had trained their users in the use of electronic resources. The reasons given for lack of training in many of these institutions included inadequate skills on the part of the library staff, a lack of interest by academics or a heavy workload which deprived academics of time to attend formal trainings. The methods of training in these institutions seemed inadequate. Training was mainly conducted through short seminars and workshops, or informally where users were requested to register for training on a voluntary basis.

4. Methodology

The study employed both quantitative and qualitative approaches with a survey research design. Quantitative data were collected through closed-ended questionnaires that were administered to a sample of 363 academics from three state universities in Zimbabwe: National University of Science and Technology (NUST), Bindura University of Science Education (BUSE), and Midlands State University (MSU). The sample was allocated proportionately to the population of

academics in the given universities as follows: NUST – 138, BUSE – 82, and MSU – 143. Qualitative data were collected through interviews that were held with nine professional librarians from the same universities. From each of the three universities interviews were held with the Librarian, Sub-Librarian responsible for Reader Services, and Systems Librarian. The response rate for academics was 58.4% as 212 questionnaires were returned out of the 363 that were distributed. Of the returned questionnaires 193 were deemed usable for this study. Quantitative data were analysed using the Statistical Package for Social Sciences (SPSS) while thematic analysis was applied for qualitative data.

5. Results and Discussion

The results of the study are organised according to objectives and are now presented below:

5.1 Infrastructure to support access to electronic journals

Academics were asked if their institutions had adequate infrastructure and resources such as desktop computers, laptops, computer laboratories and related facilities to allow unfettered access to electronic journals. About 41.4% of academics agreed that infrastructure was in place while only 5.2% strongly agreed with the statement. Most academics (53.4%) were not happy with the infrastructural investments their institutions had made. They displayed their unhappiness by disagreeing to varying degrees with the statement that suggested their institutions had adequate infrastructure to enable them to access electronic journals as shown in Table 1 below.

Table 1: Adequacy of infrastructure to support access to electronic journals

Response	**Frequency**	**Percent**
Strongly Disagree	14	7.3
Disagree	63	32.6
Neutral	26	13.5
Agree	80	41.4
Strongly Agree	10	5.2
Total	**193**	**100**

In responding to a supporting question, 38.3% of academics indicated that infrastructure was a major barrier to their use of electronic journals. About 50.8%

indicated that infrastructure was a minor barrier, but nevertheless a barrier. Only 10.9% indicated the issue of infrastructure and resources did not pose a barrier to their use of electronic journals. About 22.3% of academics indicated they had problems accessing a computer to enable the use of electronic journals. Additionally, 32.1% indicated they had full time access to computers and 45.6% reported that they had some sort of access to computers. This could be shared access which would mean that one does not have full time access to the resources that enable them to use electronic journals.

The MSU appeared the most prepared university among the three institutions surveyed in this study with regard to internet infrastructure. Most academics at the institution (78.7%) either agreed or strongly agreed that their institution had adequate resources to enable unfettered access to electronic journals. Only 6.3% of academics disagreed while 15% chose to be neutral. At NUST most academics (59.6%) either disagreed or strongly disagreed with the view that their institution had adequate resources. About 28.9% either agreed or strongly agreed that they had the resources they needed while 11.5% chose to be neutral. At BUSE 70.5% of academics either disagreed or strongly disagreed. Furthermore, 15.9% of academics at BUSE felt they had the resources they needed to access electronic journals while 13.6% chose to be neutral. The statistics regarding adequacy of infrastructure per university are summarised in Table 2 below.

Table 2: Adequacy of infrastructure to support access to electronic journals per university

Response	**NUST**	**BUSE**	**MSU**	**Total**
Strongly Disagree	5 (7.4%)	9 (20.5%)	0 (0%)	14
Disagree	36 (52.2%)	22 (50%)	5 (6.3%)	63
Neutral	8 (11.5%)	6 (13.6%)	12 (15%)	26
Agree	16 (23.2%)	7 (15.9%)	57 (71.3%)	80
Strongly Agree	4 (5.7%)	0 (0%)	6 (7.4%)	10
Total	**69 (100%)**	**44 (100%)**	**80 (100%)**	**193**

Professional librarians in the three universities confirmed the feelings of academics in their institutions. The Librarian for MSU, an institution whose academics were mostly happy with resources at their disposal, stated that her institution had invested heavily in computer laboratories and the attendant technologies. At NUST, the Librarian indicated that the university had challenges with resources and infrastructure, but urged academics to maximise what was available. The Sub-Librarian for Reader Services at NUST opined that the university had tried to provide the necessary resources within the constraints of economic conditions. The Systems Librarian at NUST complained about the lack of laptops for academics' use. This, he argued, impacted negatively on off-campus access. At BUSE both the Librarian and Sub-Librarian for Reader Services indicated that they were not happy with the infrastructure for electronic journals access at the institution. They, however, indicated that some initiatives were in the pipeline to ease the situation. They also highlighted that academics were being encouraged to buy laptops and iPads from private companies at favourable rates negotiated by the university.

The results of this objective, particularly about the infrastructural conditions of NUST and BUSE, agree with the findings of other researchers who studied institutions in Africa. These include Watts and Ibegbulam (2006), Manda (2008), Shija (2009), Harle (2010), and Owolabi and Agboola (2010). These researchers agree that financial constraints have undermined the efforts of institutions in Africa. While they may negotiate access from the providers of electronic journals they struggle to upgrade their own infrastructure because of limited funding.

5.2 Efficiency and speed of internet connection

Closely related to the issue of availability of resources to accessing electronic journals dealt with above is efficiency and speed of Internet connection. This influences a user's motivation to use electronic journals. Most academics (51.8%) indicated that they were frustrated by erratic and unreliable Internet connection. Academics especially from NUST and BUSE noted that their Internet had long periods of down time, an issue that frustrated their use of the resources. About 76.8% of academics at NUST felt Internet unreliability was a major factor negatively impacting their use of electronic journals, 18.9% pointed to the issue of Internet connection as a minor barrier while only 4.3% said the Internet connection did not

constitute a barrier to their use of electronic journals. At BUSE 90.9% of academics indicated that Internet unreliability was a major barrier to their efforts to use electronic journals, 6.8% cited the issue of Internet connectivity as a minor barrier while only 2.3% felt they were not affected by Internet connectivity. Academics at MSU were satisfied with the service with only 8.6% of them citing Internet connectivity as a major barrier, 71.4% stated that it was a minor barrier, and 20% indicated that it was not a barrier at all.

Professional librarians complained that electricity cuts affected their ability to provide a reliable service. Librarians from NUST and BUSE complained more of electricity cuts. Librarians at NUST noted that only the Faculty of Medicine was spared the cuts since it was housed within Mpilo Central Hospital which is exempt from electricity cuts, being a health institution. The standby generators installed at the university do not cover the whole university. At BUSE the librarians indicated that the problem of electricity cuts severely affected those academics based at their satellite campuses. Academics based at the main campus were assisted by standby generators. At MSU the librarians reported that load shedding did not affect use of electronic journals as the institution invested in generators that cover all faculties and computer centres.

Data from the questionnaire showed that academics were also concerned about Internet speed. The majority complained of low bandwidth which caused slow download speeds. About 63.2% of academics complained of slow download speeds and noted that this was a major hindrance to their use of electronic journals. Academics at NUST and BUSE were very concerned with speed whereas those at MSU were satisfied. About 65% of academics at MSU expressed satisfaction with the speed of the Internet at their institution. At NUST only 23.2% were satisfied with download speeds whereas at BUSE only 6.8% were satisfied.

In interviews, professional librarians from the three institutions seemed to agree with their academics. The Sub-Librarian for Reader Services and the Systems Librarian at NUST reported that their Internet was slow owing to low bandwidth which stood at 160 Mbps. Considering the number of Internet users at NUST this size of bandwidth is inadequate and causes slow download speeds. To increase bandwidth, they needed funds, which were not available. At BUSE both the Sub-Librarian, for Reader Services and the Systems Librarian were concerned about the Internet speed though they noted efforts were being made to upgrade the bandwidth.

Bandwidth at BUSE stood at 32 Mbps, far lower than the other two institutions in this study. At MSU the professional librarians were very happy with their bandwidth. The Librarian indicated the university was operating on a bandwidth of 200 Mbps.

The unreliability of Internet connection and low bandwidth cited by academics and professional librarians at NUST and BUSE respectively mirror the frustrations of other academics and librarians in African institutions. Agaba, Kigongo-Bukenya and Nyumba (2004), Watts and Ibegbulam (2006), Shija (2009), Harle (2010), and Gikandi and Ndungu (2011) conducted studies in Uganda, Nigeria, Tanzania, Malawi, and Kenya respectively and concluded that the use of electronic journals was still undermined by erratic Internet connections and slow download speeds owing to low bandwidth. Harle (2010), however, notes that the situation is different in South African institutions, where these challenges have largely been addressed.

5.3 Skills to negotiate the electronic journals environment

The use of electronic journals is greatly affected by the level of skills of the target users. The researchers sought to establish if academics had the necessary skills to use electronic journals. Academics were asked to rank themselves accordingly. The results represented in Table 3 below showed that most academics had very low to average skills. About 5.2% indicated very low skills, 10.9% reported low skills, and 44.6% indicated they had average skills. This finding suggests 60.7% of academics surveyed were not confident users of electronic journals.

Table 3: Level of skills of academics in the use of electronic journals

Ranking	Frequency	Percent
Very Low	10	5.2
Low	21	10.9
Average	86	44.6
High	61	31.6
Very High	15	7.7
Total	**193**	**100**

The results in Table 3 above show that only 31.6% of academics reported high skills and 7.7% reported very high skills. This suggests 39.3% of academics were comfortable with their skills with the rest showing hesitation. Responses from supporting questions confirmed the above. For example, 30.1% of academics indicated that the lack of skills was not a barrier in their use of electronic journals

whereas 69.9% reported that their skills level was a barrier. About 69.4% of academics reported that they needed training to improve their skills. Another 30.6% indicated that they did not need any further skills development to access and use the resources.

When the level of skills was considered per university, the results show that academics at NUST were the most confident users. About 36.2% of them reported a high level of skills and 11.6% reported very high skills. This means 47.8% of academics at NUST fall in the high to very high skills categories compared to 35% at MSU and 34.1% at BUSE respectively. A significant number of academics for all the institutions fall in the average users categories. Researchers such as Ondari-Okemwa (2004), Oduwole and Sowole (2006), Manda (2008), and Shija (2009) have all highlighted the issue of lack of skills as a major hindrance to the use of electronic journals in African institutions. The results of this study seem to confirm the same. Despite promising results from NUST, most academics in the three institutions fall in the low to average skills categories and many still consider their skills level as a barrier to their use of electronic journals.

5.4 Accessibility of resources off-campus

Some academics indicated that they had challenges accessing electronic journals when they were off-campus. About 13.5% of academics cited this as a major barrier, 55.4% cited it as a minor barrier, and 31.1% indicated that this was not a barrier. These results mirror those of researchers such as Bevilacqua (2005), Salaam and Aderibidge (2010), and Shahmohammadi (2012) who reported that the issue of off-campus accessibility is still a concern, especially in developing country universities.

Academics from NUST and BUSE complained more of challenges with off-campus access than those from MSU. At NUST 21.8% cited challenges with off-campus access as a major barrier to their use of electronic journals. About 15.9% of academics at BUSE had a similar complaint while 5% had the same complaint at MSU. The Sub-Librarian for Reader Services at NUST and the Systems Librarian claimed that these challenges were mostly self-inflicted. They noted that academics who failed to access the resources off-campus had overdue books in their library accounts and unpaid fines for returning library books after due date, as the system was configured to reject access to such users. The two were, however, unsure if academics were aware of this rule. At BUSE the Systems Librarian reported major

challenges with their off-campus access facility. At MSU the Librarian reported that their off-campus access system worked well.

5.5 Friendliness of Library Website Interfaces and Specific Journals Interfaces

The friendliness of the library websites come into question insofar as access and use of electronic journals is concerned (Chowdhury 2004). Less than half of academics (41.4%) felt their library website interfaces were either easy or very easy to work with. The rest faced challenges with library interfaces.

Most academics at NUST and BUSE felt their library website interfaces were a challenge with 36.2% of academics at NUST reporting that the interface was either difficult or very difficult to negotiate. About 30.4% of academics chose to be neutral while 33.4% said the interface was easily negotiable. At BUSE 13.6% felt their library website interface was easily negotiable while 43.2% thought the interface was either difficult or very difficult to negotiate. An equal percentage was neutral. At MSU 63.8% of academics felt their library website interface was either easy or very easy to negotiate while 11.3% felt it was difficult and 24.9% chose to be neutral.

Academics seemed to have challenges with interfaces of certain databases. They used databases they were comfortable with and whose interfaces they could easily negotiate. Professional Librarians reported that academics were more comfortable with databases such as Emerald Insight, AGORA, HINARI, and Ebsco Host. These databases, professional librarians argued, were easy to use.

6. Conclusion

The study concludes that the behaviour of academics towards peer reviewed electronic journals at the selected state universities in Zimbabwe is negatively affected by the barriers they must contend with in their quest to use these resources. These barriers and factors include inadequate infrastructure to support access to electronic journals, inefficient and slow speed of Internet connection, lack of skills to negotiate the electronic journals environment, challenges with off-campus access, unfriendly library website interfaces, and difficult electronic journal interfaces. These debilitating factors affect academics in different Zimbabwean institutions to different degrees. The academics at MSU were in a better position than their counterparts at NUST and BUSE. Overall, however, state universities in Zimbabwe have not done enough to eliminate the challenges that discourage usage of electronic journals.

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