

USERS' PERSPECTIVES ON COMPUTERS AND INTERNET SERVICES OFFERED BY PUBLIC LIBRARIES IN BRIDGING THE DIGITAL DIVIDE IN NGAKA MODIRI MOLEMA DISTRICT

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ABSTRACT

Amongst the requirements for people to participate actively in the global economy is equitable access to information. This is made available to them through the use of computers and the internet. To this end, governments across the world have identified public libraries as establishments which should provide these services and resources to their users. Many people rely on public libraries to access ICTs as a means of bridging the digital divide. This study investigated the users' perspectives on computers and internet services provided by public libraries in an attempt to bridge the digital divide. The research methodology utilised in this study was descriptive in design and quantitative by nature, and a questionnaire was administered to the users of selected public library services in Ngaka Modiri Molema District Municipality in the North West province of South Africa. The results revealed that most of the library users who participated in this study perceive their public libraries as playing a significant and crucial role in bridging the digital divide, as they grant them access to computers and allow them to browse the internet free of charge. The respondents also indicated that they are able to type up documents of an academic and a personal nature, and to access email communications via these services. Challenges such as internet disconnection and overcrowded computer labs were, however, also identified. The study recommends that the

district government in Ngaka Modiri Molema sustain the provision of computers and internet services, and establish information literacy programmes in public libraries. Further research into the role of public libraries in bridging the digital divide in other districts of the North West province, or other provinces where digital divides exist, is recommended.

Keywords: computers; digital divide; information technology; internet access; Ngaka Modiri Molema district; North West province; public libraries; social media use

INTRODUCTION

Access to computers and the internet serves as a gateway that links millions of people across the world, allowing them to communicate and share ideas on the global economy. Computers and the internet provide unlimited opportunities for people to access information, enhance educational and job opportunities, communicate, and enjoy online entertainment. Hart (2010, 83) notes that providing internet connectivity to the developing world will help realise goals for health, education, employment and poverty reduction. Unfortunately, in developing countries, these prospects are held back by the gap that exists between people who have access and people who do not have access to computers and the internet. This gap is referred to as the digital divide. Charles (2007) writes that even though more people are gaining access to the internet at work and at home, thanks to expanding broadband services, a gap still exists between Africa and the rest of the world. He refers especially to Europe and the United States (US), as far as accessing information by means of computer is concerned. In this era of digital information, a community without access to the internet and World Wide Web is at a disadvantage, because it is deprived of opportunities to utilise prospects offered by information and communications technologies (ICTs) to improve the quality of their lives. Sedimo, Bwalya and du Plessis (2011) view the digital divide as a “roadblock to socio-economic development in different regions and countries”. Such a divide means that the information “have-nots” are deprived of the prospect of contributing to new ICT-based jobs, e-government services, ICT-improved healthcare and ICT-enhanced education (Mphidi 2004; Wilhelm 2004).

In South Africa, the dilemma of a “digital divide” is experienced precisely because of past injustices. Disparities in access to ICTs may be the result of differences concerning class, race, age, culture and geographical location, as well as other aspects that effectively limit certain people from playing an integral role in the global economy. These limiting aspects include a lack of education, an unskilled occupation or a low level of income (Kroukamp 2005, 112). Government identified a need to bridge these disparities or inequalities and has attempted to do so by providing communities with free access to computers and the internet.

Across the world, governments have identified public libraries as physically and programmatically capable of delivering not only physical access to computers and the internet, but also (to a certain extent) of helping communities with computer and

information literacy skills programmes (James 2012, 59). Lor (2003) subdivides the concept of a digital divide into a number of dimensions, to identify the possible role national libraries can play in offering this service. Hart (2010) acknowledges that the potential of public libraries to bring rural and other marginalised communities into the global information society is also recognised by entities other than librarians and politicians. Ikolo (2015) emphasises that “internet facility and connection is one of the most important types of facilities that the 21st century libraries should provide to their users”. Virtually all public libraries offer public access to computers and the internet as a primary role of their mission and vision across the world, and South Africa is no exception. In a concrete effort to bridge the local divide, Mzansi Online was launched as a project which aims to provide free internet access to the public through public libraries in all nine provinces, including the North West province.

According to the Ngaka Modiri Molema District Municipality (NMMDM) *Annual Report* (2009/2010), this municipality is one of four districts in the North West province, which has Mahikeng as its capital. The NMMDM is a semi-rural area that covers 31 039 square km and shares an international border with the Republic of Botswana. The NMMDM comprises five local municipalities, namely Mafikeng, Ratlou, Ramotshere Moiloa, Ditsobotla and Tswaing. According to the NMMDM *Annual Report* (2009/2010, 201), as a predominantly rural area, the province does not have sufficient spatial guidelines for development at a local level. The area is characterised by inadequate infrastructure and service delivery, poverty, high unemployment, inadequate skills and education. The ICTs provided in public libraries are therefore considered key potential factors in economic growth and social development, and are recognised as mechanisms that could play an essential role in transforming various aspects of life in the area.

While computers and internet access are now available to all users of public libraries in NMMDM, there is still a need to identify and document the perspectives, opinions and satisfaction levels of those users. This is especially relevant in those communities where the government has made some strides in overcoming unequal access, by making available computers and granting internet access to users of public libraries. In this study, the computer and internet services offered by public libraries attached to NMMDM in the North West province, as a means of bridging the digital divide, are evaluated according to library users' feedback. The objectives of this study are the following:

1. To establish the purposes for which library users use computers and the internet
2. To evaluate users' satisfaction levels and their impression of the computer and internet services provided by public libraries
3. To identify the challenges library users encounter in gaining access to computers and the internet in libraries

Studies such as the current one will help to maintain and sustain the services of public libraries as they continue providing the public with access to computers and the internet, especially in rural communities. Such studies will also enable district policymakers

to approve and allocate more financial resources to the provision of free access to computers and the internet in public libraries. Hopefully, the constant provision of both services will be prioritised.

LITERATURE REVIEW

In the past few years, a large number of studies (Al-Jaradat, Al-Dwari, and Obeidat 2014; Chowdhury 2013; Shuva and Akhter 2011; Obeidat 2015; Weiss 2012) have scrutinised the use of information technology universally, specifically the use of computers and the internet in information centres and public libraries. Although these studies follow numerous procedures to arrive at different conclusions, they do, however, agree on two essential points, namely that 1) telephone technology offers near complete and ubiquitous coverage, while 2) the use of computers and the internet is only in its infancy, but developing quickly. Roos and Jordaan (2006) acknowledge that although the number of internet users in South Africa is increasing, it is doing so at a slow rate. The use of computers and the internet has grown exponentially where free access is prioritised through public libraries. However, the extent to which these libraries play a role in bridging the digital divide in developing countries such as South Africa has never been reported, especially not from the perspective of the users who utilise the services on offer. In 2010, Hart commented on the extent to which the digital divide remained problematic in the developing world, and suggested that countries like South Africa, Brazil, India and China join the ranks of developed nations in providing easy access to information by means of information technologies provided by public libraries. However, according to Khati (2013), in South Africa the sum of R32 million has been put aside towards Mzansi libraries online, to offer free access to internet connectivity for all South Africans through public libraries.

Several studies have subsequently revealed that the digital divide is the direct result of a variety of demographic differences within society (Bentley 1998; Davis 1986; Mutula 2004; Robert 2004; Salinas 2003; Singh 2009). Disparities in gender, age, geographical factors, level of education, income level, race, as well as skills and competencies in using ICTs, have been labelled as the major causes of the digital divides which occur in every society. Thus, any study concerned with the digital divide should start by analysing the demographic characteristics of the population (e.g. age and gender distribution, educational levels, sources and levels of income, occupation).

A user's self-reported perspective and his/her degree of satisfaction with the computer and internet services provided by a library are taken to be a subjective measure of any public library's performance (D'Elia and Walsh 1983, 109). According to Ngulube and Minishi-Majanja (2009, 118), researchers concur that service quality should be defined and measured from the customers' perspective. Therefore, users' feedback has been used to measure and evaluate the performance of the various services provided by public libraries in the area under study. D'Elia and Walsh (1983, 110)

distinguish between two means of measuring user satisfaction, namely objective and subjective approaches. With the former, the library is the unit of analysis; while the proportion of items the library can supply in response to user demand is the measure of satisfaction. In the latter, the user is the unit of analysis, whereas users' opinions of how well the library has performed in satisfying their demands is the measure of satisfaction. This study adopts the subjective approach, in which the opinions of public library users in NMMDM in the North West province were solicited for their satisfaction with, and impressions of, the availability and accessibility of computers and the internet.

Identifying and measuring user satisfaction levels as regards the services provided by public libraries is a key management issue for such entities. Chang and Holland (2005) confirm that as more libraries offer computer and internet services, "evaluation emerges as a critical issue to measure user satisfaction with the various service forms and to aid in selecting enhancements or making critical budget choices". Many libraries therefore measure user satisfaction by means of surveys (Tan, Chen, and Yang 2017). Ryker, Nath and Henson (1997) remark that computer users' expectations are known to influence their satisfaction with a computer system, and that user satisfaction with a computer information system has always been used as a surrogate for system effectiveness. Thus, measuring user satisfaction and users' impressions of the computer and internet services provided by public libraries will be equal to measuring the effectiveness of these facilities at the entities under study.

People use computers and the internet for a variety of reasons. While many studies have focused on the purpose for which computers and the internet can be used in public libraries, many failed to focus on the actual extent of usage of those resources, especially in South Africa. In a study by Becker, Crandall and Fisher et al. (2010), 74 per cent of public library users in the US reported using library computers and the internet to maintain personal connections. Among these, 60 per cent reported using library computers to connect with friends and family. The study further shows that 42 per cent of users leveraged the library's technological resources to help them achieve their educational goals. Chiware and Mbambo-Thata (2009) argue that advanced technologies can help to level the playing field where there are disparities in terms of educational facilities. Becker et al. (2010) further found that 40 per cent of people in the US who participated in this study use computers and internet services in public libraries to seek employment or to perform career-related activities, to work on their resumés or obtain job-related training. Computers and internet facilities in public libraries are further used to research health and wellness issues, including learning about medical conditions, finding healthcare providers and assessing health insurance options, doing research and learning about diseases, illness, diet and nutrition (Becker et al. 2010).

Choudrie, Weerakkody and Jones (2005, 568) acknowledge that the successes achieved through the use of ICTs in the private sector have influenced governments to offer public sector services which capitalise on the internet revolution. Public library users can therefore also use computer and internet services to access government services and

programmes, learn about the legislation of the country, download government forms, and seek help from government officials and agencies. Mpinganjira (2012, 500) maintains that most mainstream government departments now use the internet as a channel to provide public services to their citizens. In as much as there are opportunities for the citizenry to access government services via the internet, Mutula and Mostert (2010) have identified a number of challenges. They maintain that libraries in this country have yet to leverage e-government to provide a wide scope of information services. The study of Mutula and Mostert (2010) seeks to find out whether this sentiment is valid, despite the provision of computers and internet facilities to public libraries in the country.

When people seek information, they often encounter a number of challenges. These challenges in accessing information to satisfy their daily needs, have contributed to the creation of the theoretical framework on which this article is based. Wilson's models of information behaviour reveal a number of variables that serve as determinants for user access to information via computers and the internet. The models (Wilson 1981a and 1981b; Wilson 1996) emphasise that as people seek information there are prospects of failure, barriers and intervening variables which emanate from, or may be linked to, the phenomenon of the digital divide. Wilson's first model (1981a) posits that information-seeking behaviour arises as a consequence of user's perceived information need. The information-seeking process results in either success or a failure to discover pertinent information. Failure to access information can be caused by the fact that some users – especially in rural areas – do not have access to well-structured information services such as public libraries with proper ICT infrastructure. Therefore, due to digital disparities such as a lack of computer user skills, unstable internet connections in public libraries and a shortage of computers, many users fail to find the requisite information.

In his second model (1981b) Wilson (1996) indicates that

the context of any one of these needs may be the person him- or herself, or the role demands of the person's work or life, or the environments. However, when one looks for information to fulfil his or her role demands within which that life or work takes place, he or she encounter socio-political, economic and, technological barriers.

It is suggested that “the barriers that impede the search for information will arise out of the same set of contexts” (Wilson 1999, 252). Political barriers may refer to the fact that some information may not be accessible on the internet because it is classified or banned due to its political influence. Economic barriers may include affordability – can users access the ICT resources they need? Due to poverty, certain groups of people in a community cannot afford to buy computers or subscribe to internet services for themselves, and instead rely on public libraries to access information. Technological barriers may pertain to a lack of skills in using ICTs to navigate online information. Should public libraries in the NMMDM work to eradicate the abovementioned barriers, they will be playing a crucial role in bridging the digital divide.

In Wilson's (1996) model, intervening variables can be associated with failure to access information (also see Wilson's models, 1981a and 1981b); such barriers include psychological, demographic, interpersonal, and environmental and source factors. When investigating the concept of the digital divide, these variables should always be taken into consideration. It is also important to show how the people in the NMMDM are affected by psychological, demographic, interpersonal, and environmental and source characteristics as they seek access to information using computers and the internet.

The NMMDM is concerned about digital disparity, because it is located in a semi-rural area which is populated by both wealthy and poor people, from different backgrounds. The researchers assumed that, due to the diverse socio-economic characteristics of this district, there was likely to be an element of a digital divide, since some users could afford to buy their own computers and subscribe to internet services, while others could not. Public libraries in the North West province are ideally situated to eradicate imbalances in users' access to information, by making available computers and internet services. This role does, however, need to be documented for future planning and development concerning the library facilities.

METHODOLOGY

This study adopted a descriptive approach and quantitative research design to investigate the perspectives of library users as regards the computer and internet services public libraries in the NMMDM provide, in an effort to bridge the digital divide. The district has 16 libraries which are based in townships attached to the NMMDM. For the purpose of this study, half of those libraries, i.e. eight, were selected through convenience and purposive sampling methods, due to their proximity to the researchers and the fact that they are all equipped with computers and internet connections. In each library, 20 questionnaires were handed to the librarians, who in turn distributed them to library users who accessed the computers. Of the 160 questionnaires distributed in the participating libraries, only 100 (62%) were completed and returned to the researchers. For the purposes of this article, the data obtained are analysed and presented in the form of tables and bar graphs.

RESULTS AND DISCUSSION

Demographic Factors

The first section of this study looks into any variables that might cause a digital divide. Table 1 reveals that 54 male respondents and 46 female respondents completed the questionnaire. This is significant, as the NMMDM *Annual Report* (2014/2016, 9) shows that the females in the district have always outnumbered the males (2012–2015). Singh (2009, 17) notes that males have more access to the internet than females have. This

disparity is partly ascribed to the observation that information technology is a practical topic for men, and something from which many females turn away. This might be a causal aspect, since most females, especially in rural areas, still have the perception that computers are the domain of males (Bentley 1998, 145).

Gender, age, geographical factors, levels of education, income level, race, as well as skills and competencies in using ICTs either narrow or widen the digital divide in society (Bentley 1998; Davis 1986; Mutula 2004; Robert 2004; Salinas 2003; Singh 2009). Access to information technology might be difficult to accomplish because of certain characteristics of the individual information seeker. According to Wilson (1999, 557), such characteristics could serve as either enablers or barriers to accessing information technology during the information-seeking process. In Wilson's (1996) information behaviour model, these are referred to as psychological and interpersonal variables.

Table 1 shows that 42 respondents were between 16 and 20 years of age, 36 were between 21 and 30, 16 were between 31 and 40, three were aged between 41 and 50, and five were 51 and older. The study revealed that more young people utilise information technology resources, probably because they were born in the electronic age. Many elderly individuals suffer from computer anxiety, lack computer literacy or have no access to a casual system of information and maintenance. Age thus plays a significant role in widening the digital divide (Bentley 1998, 3).

Ninety-eight respondents were Africans, one was white and one was coloured. No Indians or other race groups completed the questionnaire. This is probably because the NMMDM is mainly inhabited by African people, and they predominantly use the library's computers and internet services (NMMDM *Annual Report* 2014/16, 10).

Table 1: Demographic factors (N = 100)

Variables	Responses	Number	Percentage
Gender	Male	54	54
	Female	46	46
	Total	100	100
Age	16–20	42	42
	21–30	36	36
	31–40	16	16
	41–50	3	3
	51–above	5	5
	Total	100	100

Variables	Responses	Number	Percentage
Race	African	98	98
	White	1	1
	Coloured	1	1
	Indian	00	00
	Others	00	00
	Total	100	100
Level of education	Secondary school	32	32
	Senior certificate	22	22
	At college/university	30	30
	Junior degree	12	12
	Other	4	4
	Total	100	100
Monthly income	None	70	70
	R500–1 500	4	4
	R1 600–3 000	6	6
	R3 000–6 000	2	4
	R6 000–15 000	11	11
	R15 000 or more	7	7
	Total	100	100

Table 1 further shows that 32 respondents were secondary school learners, 22 had obtained senior certificates (matric), 30 were at college/university, 12 had obtained junior degrees/diplomas, and four had other qualifications (e.g. BA Honours or Master's degrees). Bentley (1998, 16) claims that "an individual's level of education causes the digital divide in the sense that individuals who are not educated may not have the passion to browse the internet and subsequently, they suffer the inequalities of the digital divide".

According to Table 1, 70 respondents had no income in a month, four earned between R500 and R1 500, six earned between R1 600 and R3 000, two earned between R3 000 and R6 000, 11 earned between R6 000 and R15 000 and seven earned R15 000 or more. According to Bentley (1998, 9), the income level mostly contributes to the digital divide, as people who cannot afford computers, smart phones and an internet connection – especially in rural communities where there are no public libraries – are affected by the disparities brought about by economic imbalances. The NMMDM *Annual Report* (2014/16, 10) shows that 73, 56 and 43 per cent of the proportion of

households as participated in the study in 2013, 2014 and 2015 respectively had no income, while 54, 21 and 24 per cent represented the proportion of the population in lowly skilled employment in the same years respectively.

PURPOSES FOR WHICH COMPUTERS AND THE INTERNET IN THE LIBRARY ARE USED

After establishing the circumstances under which these library users live, the next question was to ask them about the purpose for which they use the library's computers and internet services. Becker et al. (2010) comment that people from all walks of life rely on the internet to look for jobs, find healthcare services and read the latest news. In the digital age, computers and the internet are also used for other reasons: for doing research, sending and receiving emails, playing computer games, and typing professional or personal documents. Becker et al. (2010) mention social connections, education, employment, health and wellness, and e-government as some of the benefits the American public derive from accessing US libraries. Table 2 reveals the purposes for which users in MMMDM use computers and the internet in public libraries.

Table 2: Purpose for which computers and the internet are used (N = 100)

Frequency						
Purpose	Never	Seldom	Sometimes	Often	Always	Total
Research	27	5	16	19	33	100
Sending and receiving e-mails	25	14	16	20	25	100
Social networking	37	14	30	13	6	100
Typing (word-processing)	28	6	16	20	25	100
Playing games	75	7	12	5	3	100

The largest number, 75, have “never” used the computers and the internet in the library to play games, while 33 “always” use them for research. Thirty respondents “sometimes” use the computers and the internet to maintain their social networks, while 25 “always” use them for typing and email communication purposes. This was probably because most of the users were students/learners and the unemployed, who presumably used the computers and online facilities to search for jobs, conduct research about academic work, type their CVs and school assignments, and research general information. Khati (2013) indicates that patrons utilise computers and the internet at public libraries for similar purposes, which include doing research, sending emails, connecting on social media, typing documents and playing games. Raseroka (2004, 101) adds that these services are also used for doing research on school assignments and projects.

The number of respondents who “always” used library computers and the internet to send and receive emails was the same as those who “never” used them for those purposes. Becker et al. (2010) indicate that US public library computers and internet facilities are mainly used to send and receive emails. Thirty respondents in the local study “sometimes” used computers and the internet for social networking, probably because they used Facebook to connect with friends. This is supported by Darries (2003, 67), who indicates that the youth in particular use library computers and the internet for social networking. Few respondents used them “seldom” (14) and “often” (13) for the same purpose. Perhaps these users felt restricted by the time allocated to each individual in the library, since it was insufficient to do social networking as well as research. Many servers cannot provide assistance for that period of time; some libraries provide only for internet users who make use of the internet for purposes other than social networking.

CHALLENGES ENCOUNTERED IN USING COMPUTERS AND THE INTERNET

In their quest to access computers and the internet at public libraries, users might encounter challenges, especially in rural or semi-rural areas such as the NMMDM. Insufficient broadband, erratic power supply, disconnections, overcrowding due to a limited number of computer workstations, as well as inadequate computer skills might hinder most library users. Table 3 reveals the extent to which library users are affected by such challenges.

Table 3: Challenges of using computers and the internet (N = 100)

Frequency						
Challenges	Never	Seldom	Sometimes	Often	Always	Total
Computer lab closed	50	11	26	12	1	100
The internet disconnected	36	20	30	10	4	100
Lack of computer skills	69	12	15	2	2	100
Computer lab overcrowded	29	14	24	13	20	100
Not enough computers	32	7	22	15	24	100

The highest number of respondents, 69, had “never” lacked computer skills, followed by 50 who “never” found the library computer lab closed. Thirty-six respondents “never” found the internet disconnected in their libraries. One respondent “always” found the computer lab closed, two “always” lacked computer and internet skills, while only four “always” found the internet disconnected. These results reveal the contradictory expectations of users of libraries operating in rural and semi-rural areas, in terms of encountering problems with internet connections, computer skills and other

interruptions. Twenty-nine respondents reported that the computer labs are “never” overcrowded, while 32 indicated that there are “never” enough computers.

SATISFACTION WITH AND IMPRESSIONS OF LIBRARIES AND COMPUTERS

General impressions regarding the existence of computers in libraries are favourable (see Figure 1), with most users rating the online services provided as “excellent” and/or “good”. These respondents may have taken into consideration the fact that even those who were disadvantaged by financial disparities had access to modern ICTs. A few considered these facilities to be average, perhaps because they still experience challenges due to a lack of computer skills, computer labs being overcrowded or the internet frequently disconnecting. More often than not, individual studies (as discussed in the literature review) found that computer use led to outcome improvements, supporting the optimistic statement by Sivin-Kachala and Bialo (1991, 3) that computer and internet facilities in public libraries help bridge the digital divide. However, concerns regarding the quality and significance of these reviews clarify the hesitation of Kirkpatrick and Cuban (1998, 6) to admit that huge positive impacts derive from the provision of computers and the internet in public libraries. On a positive note, this study found that the users of public libraries are generally impressed with computers and the internet services on offer.

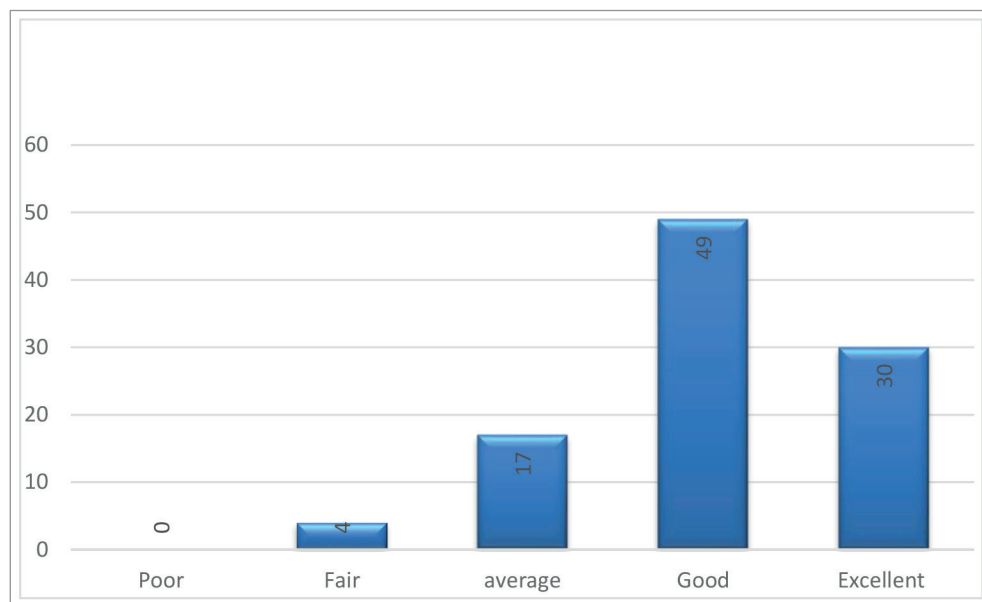


Figure 1: General impressions about computers and the internet (N = 100)

CONCLUSION

Based on the results of the study, it can be concluded that public libraries in the district under study play a crucial role in bridging the digital divide. Many computer and internet users at these facilities do not have an income, and when they want to use these services they visit their public library. It is also indicated that many respondents are generally impressed with the status of the ICT services on offer in these libraries, and the services they provide to bridge the digital divide. The findings reveal that more male clients utilise the library's computers and internet services than females. Teenagers and young adults are also more frequent users than any other age group that participated in this study. Both unemployed and employed users make use of the library computers and the internet; those without an income were regular users, while more Africans used these facilities than any other race group. Secondary school learners who had obtained their senior certificates and those at college and university also utilise these services. The study shows that the level of education to a significant extent determines users' familiarity with these ICTs. Therefore, public libraries provide equal access to computers and the internet to all members of the community, and as such play a crucial role in bridging the digital divide. Users of the NMMDM's public libraries indeed benefit from using their computers and internet services to do research, receive and send emails, type documents and search for career/employment opportunities, where these services can be accessed free of charge.

In conclusion, the study recommends that district municipalities and the provincial government continue providing computers with internet connections to all public libraries in the NMMDM, and that they train public librarians so that they can impart computer skills to their communities. Public librarians should also initiate computer orientation courses to provide basic skills to those who are not computer literate.

REFERENCES

- Al-Jaradat, O. M., K. M. Al-Dwari, and O. A. Obeidat. 2014. "The Role of Digital Library in Bridging the Language Divide: Comparison Study of Arabic and other Languages." *Information and Knowledge Management* 4 (12): 1–17.
- Becker, S., M. D. Crandall, K. E. Fisher, B. Kenney, C. Landry, and A. Rocha. 2010. *Opportunity for All: How the American Public Benefits from Internet Access at US Libraries*. USA: Institutes of Museum and Library Services.
- Bentley, T. 1998. *Learning Beyond the Classroom: Education for a Changing World*. London: Routledge. <https://doi.org/10.4324/9780203201756>
- Chang, H. R., and M. P. Holland, 2005. "User Satisfaction Survey of Ask-A-Question Service at the Internet Public Library." *Internet Reference Services Quarterly* 10 (2): 61–73. https://doi.org/10.1300/J136v10n02_06

- Charles, P. 2007. "Bridging the Digital Divide". *Quest* 4 (1): 34–45.
- Chiware, E. R. T., and B. Mbambo-Thata. 2009. "Current Trends in the Collection and Use of Statistics in Academic and Public Libraries in Africa." In *Library Statistics for the Twenty-First Century World*. Proceedings of the Conference Held in Montreal on 18–19 August 2008, Reporting on the Global Library Statistics Project, edited by M. Heaney, 71–87. Munich: K. G. Saur.
- Choudrie, J., V. Weerakkody, and F. Jones. 2005. "Realising e-Government in the UK: Rural and Urban Challenges." *Journal of Enterprise Information Management* 18 (5): 568–585.
- Chowdhury, G. G. 2013. *Digital Divide: How can Digital Libraries Bridge the Gap?* UK: University of Strathclyde.
- Darries, F. 2003. "Internet Access and Use in Reference Services in Higher Education Institutions in South Africa." *South African Journal of Library and Information Science* 70 (2): 72–85.
- Davis, F. D. 1986. *A Technology Acceptance Model for Empirically Testing New End User Information Systems: Theory and Results*. Massachusetts: MIT Press.
- D'Elia, G. and S. Walsh. 1983. "Satisfaction with Library Service: A Measure of Public Library Performance." *Library Quarterly: Information, Communication and Policy* 53 (2): 109–133. <https://doi.org/10.1086/601359>
- Hart, G. 2010. "New Vision, New Goals, New Markets? Reflections on a South African Case Study of Community Library Services." *South African Journal of Library and Information Science* 76 (2): 81–90.
- Ikolo, V. E. 2015. "User Satisfaction with Library Services: A Case Study of Delta State University Library." *International Journal of Information and Communication Technology Education* 11 (2): 80–89.
- James, H. 2012. "E-Readers and E-Books in Public Libraries: Measuring Library Patron Expectation." *International Journal of Digital Library Systems* 1 (1): 48–59.
- Khati, P. 2013. *The Role of Public Libraries in Bridging the Digital Divide: A Cape Town Case Study*. Cape Town: Department of Information Science.
- Kirkpatrick, N., and L. Cuban. 1998. "Should We Be Worried? What the Research Says About Gender Differences in Access Use, Attitude and Achievement with Computers." *Educational Technology* 38 (4): 56–61.
- Kroukamp, H. J. 2005. "E-governance in Developing Countries: The South African Experience." In *Building e-Governance: Challenges and Opportunities for Democracy, Administration and Law*. Seoul, Korea: International Institute of Administrative Science.
- Lor, P. J. 2003. "National Libraries and the Digital Divide." *Mousaion* 21: 62–78.
- Mphidi, H. 2004. Digital Divide or Digital Exclusion? The Role of Libraries in Bridging the Digital Divide. *International Journal of Communication, Network and System Science* 1 (11).
- Mpinganjira, M. 2012. "Discussion of e-Government Services: A Citizen's Perspective." *Journal of Public Administration* 47 (2): 500–517.

- Mutula, S. M. 2004. "IT Diffusion in Sub-Sahara Africa: Implications for Developing and Managing Digital Libraries." *New Library World* 102 (1202/1203): 281–289 <https://doi.org/10.1108/03074800410551039>
- Mutula, S. M., and J. Mostert. 2010. "Challenges and Opportunities of e-Government in South Africa." *The Electronic Library* 28 (1): 38–53. <https://doi.org/10.1108/02640471011023360>
- Ngaka Modiri Molema District Municipality. 2009/2010. *Annual Report*. North West Province.
- Ngaka Modiri Molema District Municipality. 2014/2016. *Annual Report*. North West Province.
- Ngulube, C. J. P., and M. K. Minishi-Majanya. 2009. "Using Focus Groups to Investigate Service Quality Determinants for Customer Satisfaction in Selected University Libraries in Sri Lanka." *South African Journal of Libraries and Information Science* 76 (2): 118–128.
- Obeidat, O. A. 2015. "Investigating the Role of Public Libraries in Bridging the Digital Divide in Jordan: Using Computers and the Internet." *Information and Knowledge Management* 5 (5): 1–12.
- Raseroka, K. 2004. *Impact of Information Communications Technology on Academic Libraries in Sub-Sahara Africa, with Specific Reference to Botswana*. Botswana: Gaborone Publishers.
- Robert, W. F. 2004. *Race and the Digital Divide*. California: University of California, Department of Economics.
- Roos, L., and A. C. Jordaan 2006. "Access to Information and Communication: Estimating the Determinants of Internet Usage in South Africa." *Communicare* 25 (1): 1–22.
- Ryker, R., R. Nath, and J. Henson. 1997. "Determinants of Computer User Expectations and their Relationships with User Satisfaction: An Empirical Study." *Information Management and Processing* 33 (4): 529–537. [https://doi.org/10.1016/S0306-4573\(97\)00016-2](https://doi.org/10.1016/S0306-4573(97)00016-2)
- Salinas, R. 2003. "Addressing the Digital Divide through Collection Development." *Library and Information Studies* 23 (3): 131–136. <https://doi.org/10.1108/01604950310484456>
- Sedimo, N. C., K. J. Bwalya, and T. du Plessis. 2011. *Conquering the Digital Divide: Botswana and South Korea Digital Divide Status and Interventions*. SA, UJ: Department of Information and Knowledge Management.
- Sivin-Kachala, J., and E. R. Bialo. 1991. "The Effectiveness of Technology in Schools: A Summary of Recent Research." *Journal of Computer Science* 25 (1): 1–14.
- Singh, A. M. 2001. *The Effectiveness of Internet Marketing: A Management and Consumer Perspective*. Durban: University of Durban Westville.
- Singh, M. 2009. *Information and Communication Technology Programmes in e-Government and e-Learning – their Impact on Rural and Regional Communities*. RIRCD Publications.
- Shuva, N. Z., and R. Akhter. 2011. "Bridging the Digital Divide through Public, School and College Libraries: Case Study of Bangladesh." *Journal of Bangladesh Association of Young Researchers* 1 (1): 25–69. <https://doi.org/10.3329/jbayr.v1i1.6839>

- Tan, T. E., T. L. Chen, and P. H. Yang. 2017. "User Satisfaction and Loyalty in a Public Library Setting." *Social Behavior and Personality* 45 (5): 741–756. <https://doi.org/10.2224/sbp.5999>
- Weiss, R. J. 2012. "Libraries and the Digital Divide." *Journal of the Library Administration and Management Section*, 8(2):25.
- Wilhelm, A. G. 2004. *Digital Nation: Towards an Inclusive Information Society*. Cambridge, Mass: MIT Press.
- Wilson, T. D. 1994. "Information Needs and Uses: Fifty Years of Progress." *Journal of Documentation* 1 (1): 15–55.
- Wilson, T. D. 1999. "Models in Information Behaviour Research." *Journal of Documentation* 55 (3): 1–22. <https://www.google.co.za/search?q=wilson+information+behaviour+model&biw=1366&source=Inms&tbm> ((Accessed December 12, 2015).)