User Perspectives on the Provision of Virtual Archives in the Western Cape Archives and Records Service

Mini dissertation submitted in partial fulfilment of Master of Arts in Library and Information Science in the Department of Library and Information Science, Faculty of Arts and Humanities, University of the Western Cape

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Declaration

I declare that this dissertation, 'User perspectives on the provision of virtual archives in the Western Cape Archives and Records Service' is my own work and that all the sources that I used or quoted have been indicated and acknowledged by means of complete references. The dissertation was also submitted to Turnitin with a 9% similarity index.

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Dedication

I dedicate this work to the Lord God Almighty, my life and my saviour for this opportunity he gave me, and the paths opened to pursue this work. Without his love and guidance, I would not have completed this piece of work.

I also dedicate it with profuse gratitude to my late mother, Nozi Doris Maleki, who died on 19 December 2020 in my arms, to my sister Cebisa Maleki for advising and motivating me and to my children Avuye, Lisakhanya and Yolanda for their love, care, and support – and their greatest gift of all – for understanding the importance of education.

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Abstract

In the digital era, archival records/resources in physical formats have been made available to a larger audience and received much more usage as a result of digitisation and remote accessibility. The use of technology allows for archives to be accessed by users everywhere and at any time in different systems and formats. The Western Cape Archives and Records Service has faced various challenges to preservation and access to print records, namely damage due to frequent use, poor handling, and space shortage to accept archival records from governmental bodies which negatively impacts on access to archival heritage of the province. This descriptive case study aimed to investigate user expectations and perspectives on the provision of a virtual archive by the Western Cape Archives and Records Service. Expectation Confirmation Theory (ECT) was used to anchor the study which enquired into whether the expectation and perceived level of satisfaction from a virtual archive system can be met fully or not. A case study survey was conducted among researchers who use resources at the Western Cape Archive and Records Service and academics who are also users of the archival resources. The latter was included in the study to confirm the study findings since digital archive systems are already in use in their organisation. The study highlighted the impact and found that the development of virtual systems has been recommended by many respondents. Most of the respondents agreed on the importance of virtual archival services within archive repositories, and a minority showed lack of interest in the use of electronic archival services. The study findings indicate that the WCARS staff (archivists) have accepted the implementation of virtual archives as useful and see archives as moving in the direction of digitalisation. These findings show that there are numerous advantages in the use of virtual archives, however, challenges including insufficient funds and lack of training facilities were also identified. It is recommended that there is a need for innovation and implementation to develop strategic planning and sustainable quality control in the preservation of archival resources through digitisation. The study developed a conceptual framework from the results based on the ECT theory that anchored the study.

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Keywords: virtual archives, user expectations, expectation confirmation theory, archival preservation, archival access.

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List of Abbreviations

AtoM – Access to Memory

BMC– Baseboard Management Controller

DAC– Department of Arts and Culture

DAC- Digital Archives in China

CERN – Centre European de Recherches Nucleaire

DEIC – Dutch East India Company

ECM – Enterprise Content Management

EDA – European Digital Archives

ECT – Expectation Confirmation Theory

EDRM – Electronic Document and Records Management

IT– Information Technology

IPCC- Intergovernmental Panel for Climate Change

ISO – International Standards Organization

JVC –Java Virtual Machine

NAAIRS – National Automated Archival Information Retrieval System Archives

NARSSA – National Archives and Records Service of South Africa

NASA – National Archives of South Africa

NLA – National Library of Australia

OECD- Organization for Economic Co-operation and Development

PAIA – Promotion of Access to Information Act 2 of 2000

PANDORA – Preserving and Accessing Networked Documentary Resource of Australia

PANDAS – Pandora Digital Archiving System

UNESCO- United Nations Educational, Scientific and Cultural Organization

UVC – Universal Virtual Computer

VOC – Vereenigde Oostindische Compagnie

VA –Virtual Archives

VAN – Virtual Area Network

VMS – Virtual Management Systems

VNC– Virtual Network Computing

WCARS – Western Cape Archives and Records Service

W3C – World Wide Web Consortium

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Chapter 1: Background to the study

1.1 Introduction

The growing use of computers, electronic mail and other computerised information systems is becoming the norm in the world of business organisation and community society. Many government departments around the world aim to make their services available online and deliver them to their citizens in a professional and secure manner. E-government services aim to improve and facilitate communication between government and citizens by increasing the usage of information and communications technology (ICT) in government operations (Alshehri, et al., 2012). According to Wamukoya (2012) the adoption of e-government platforms by different countries is generating large numbers of electronic records (e-records) that need to be properly managed to enhance transparency and accountability in the management of public affairs and the effective delivery of services. The government archives too need to adopt and create electronic records that must be maintained in such a way that their authenticity, reliability, completeness, and usability are preserved for as long as the records are needed to serve organisational business needs and to meet accountability requirements prescribed by law and policy (Ngoepe and Saurombe, 2016). The archives are records in the custody of a repository that holds primary sources of information such as original manuscripts, books, documents, maps, and photographs, and they play a vigorous role in the various disciplines of information studies such as history, communication, social sciences, telecommunication technology, and information science. Information science is a sub-discipline of librarianship, and later archival studies and records of management were included (Van der Walt, 2015, p.16).

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The traditional idea of archival research is the academic historian using physical holdings of government, private archives or manuscript libraries for historical research leading to publication. This is, however, a stereotype; historians are not the only users of archives for research (Berzins, 2007, p.315-317). Because of changing times these users are faced with the challenges of having to adapt their old practices and to recognise the new world of technological trends (Pearce-Moses, 2005). In addition, because of climate changes and risks such as flooding, earthquakes, fires, direct sunlight, air pollution, theft, and poor handling practices, archives have no choice but to implement digital or virtual archives systems to improve and safeguard their records (Sahoo, 2004).

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The provision of virtual archives in the Western Cape Archives and Records Service (WCARS) seems to be a huge and challenging project after long years of providing paper-based records since this repository was created in 1934 as Cape Town Archives. Cox (2007) and Duff (2010) observe that online access to aids and records has been a reality since the 1990s, however, the practice of archival reference seems to have shifted slightly and slowly rather than significantly. McCausland (2011, p.309), further states that since the 1990s the availability of online aids and digitised surrogates of original records has changed the landscape of archival research. Digitisation is portrayed either as the answer to the future of access to archives or a threat to traditions of rigorous research using primary sources. Pugh (2005, p.3), highlights two important elements of change, namely that reference practice 'is no longer predicted on interaction between the user and the archivists', and that archival users (researchers) now independently find information and records online (Pugh, 2005). Pugh (2005, p.4) adds that the internet with its promise of quick access wherever you are to whatever you like requires archivists to better understand the information needs and research methods of their users (Pugh, 2005). Technologies driving the Fourth Industrial Revolution has forced archives to use the internet and to share their experiences. However, archives may have been slower to embrace the potential of Web 2.0 than libraries (Cox, 2007). Ocholla and Ocholla (2020, p.106) characterise 4IR by keyword analysis through Scopus (2014–2019) because of its indexing breadth and inclusivity of scholarly publications (Ocholla and Ocholla, 2020). Today the Fourth Industrial Revolution has emerged. in other libraries, particularly in the Unified Knowledge Service (Pvt Ltd) (UKS) – Africa's leader in library solutions. Just like other spheres of society which are impacted by the 4IR even job functions in the library of the University of Johannesburg (UJ) have to change. For example, staff who were shelvers, have had to be reskilled to perform other tasks such as running audio-visual equipment (Van Vuren, 2012). This has given archives and museums no choice but to recognise that there is a need for them to join in new technologically driven innovation. It is necessary, therefore, to ask what new perspectives information technology can offer to archives to present their records and information, and how the internet can be used as a knowledge-based communication system Samouelian (2009, p.315), finds an eagerness by archivists to use blogs, wikis, podcasts, tagging, and file sharing to increase a variety of online services offered to users. This study presents research of both physical and virtual archives, as they developed traditional to modern style – paper to electronic records.

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The literature review takes into consideration the following points: an overview of what virtual or digital archives are and the concepts that underpin virtual archive systems or services in the world, South Africa, and in the Western Cape Archives and Records Service (WCARS); the role of the virtual archive system; benefits and challenges with digitisation as well as advantages and disadvantages of using a virtual system; user perspectives on virtual archives systems generally, their experiences and expectations; and a discussion on ECT as a suitable theoretical framework.

1.2 Study Background

The intention of this research is to build a better future for provincial archives, specifically the Western Cape Archives and Records Service (WCARS). The WCARS, as part of its mandate to manage and facilitate public access to public records in the Western Cape, is in the process of creating a web portal using open-source software technologies. This virtual archive project will go 'live' on a date still to be determined and approved. COVID-19 has disrupted the way research institutions and universities perform and share research, which has led to a situation where many universities and research institutions have no choice but to engage in developing open access (OA) initiatives that can help researchers from different disciplines. Saini claims that institutional repositories promote visibility and open access to the research (Saini, 2018). Lynch (2003), observes that institutional repositories offer an essential infrastructure for scholarship in the digital age and a potential to revolutionise scholarly communication. Lynch also notes that a key part of the service is to manage technological change and the migration of digital content from one set of technologies to the next (Lynch, 2003). Theoretically, a virtual archival system has several purposes. One is to satisfy the individual information needs and demands of users. The other is sharing archival information. A third is to display archival collections through online exhibitions which may attract potential users to access archival resources online. Finally, yet importantly, the system supports archival preservation management.

Since the late 1960s archivists and technologists have developed and implemented innovative standards and practices (McCausland, 2012, p. 123). The use of technology has increased and is becoming very necessary in today's world in which its population grows and the climate changes. (Zarindast, Sharma and Wood, 2021). Unsurprisingly, archives seem to at risk in times of threat which has resulted in loss or the need for alterations on account of human error or natural disasters such as floods, fires, windstorms, and earthquakes. It is thus necessary to

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establish virtual archive systems to protect records from harmful and hazardous conditions, and it is equally important for archivists to adapt to new technological changes to understand how users interact with the information and digital objects that they create and post online (Green and Lampren, 2017). This research introduces virtual archives systems as a method that archivists can use to measure the actions, perspectives, experiences, and expectations of users, to understand some aspects of user behaviour, and to initiate an electronic programme that will improve online services (Raita and Oulasvirta, 2011).

WCARS contains information dating back to the arrival of the Dutch East India Company/Vereenigde Oostindische Compagnie (DEIC/VOC) at the Cape in 1652, and there is much potential for this kind of information to be made available on the World Wide Web, and for archivists to design electronic systems which will enable information seekers to access these records without their help. When information seekers can describe their information needs it can prompt archivists to design better research aids, including automated retrieval systems, electronic finding aids, metadata images, digital exhibits, social media products, and web interfaces that will guide the user to the information he or she wants (Pugh, 2017). This in turn, will increase the independence of researchers on both 'real and virtual' archives.

Szekely (2017) notes that the traditional memory-preserving institutions, especially the public ones (public archives, public libraries, and national museums), but to some extent also those private owned, are deeply embedded in the cultural fabric of society. Therefore, the existence of archives is both a public administration necessity and a cultural value that plays a fundamental role in education and in the society. Although most of the people do not visit archives physically, nor will they in the future, individuals enjoy and appreciate the comfort, speed and simplicity of online access or regard them as basic requirements. Additionally, the permanence of established administrative structures, intra-and inter-organisational traditions, and individual and communal interests and values form stabilising factors in ensuring the survival of memory-preserving institutions (Szekely, 2017, p.11).

WCARS is situated in Roeland Street, Cape Town. The building was originally Roeland Street Prison, which gained the image of an apartheid prison. It has been referred to as the "Black Hole" of Cape Town (Pullukattu, 2017). It was closed and partially demolished in 1970, and the site was developed to house the archives as the Western Cape Archives and Records Service. The outer wall and the old main entrance of the prison are preserved as monuments. The rich history of the archives can be traced back to 1876 when the colonial Cape government appointed

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a commission to collect, examine, classify, and index the archives of the colony (Archival Platform, 2015, p.60). During this tome South African archives in were mainly used by former colonies, the Boer republics, and after 1910, the Union Government of South Africa (Conradie, 2012) and, afterwards the apartheid government.

After the declaration of democracy in South Africa in 1994, the archive services changed. The South African government adopted a new Constitution in 1996 and with it promulgated the National Archives and Records Service Act (No. 43 of 1996). The basis for establishing a new archive and records management system for South Africa was provided for in Schedule 5 to the 1996 Constitution, which states that 'archives other than national archives are a functional area of provincial competence', and that each province should promulgate its own Act on archive and record services and should establish and maintain its own archival infrastructure. In April 2006, the Western Cape Archives and Records Service was transferred from national control to the provincial government of the Western Cape and now functions according to the Provincial Archives and Records Service of the Western Cape Act (Act 3 of 2005) (Ngoepe and Saurombe, 2016, p.33).

The Provincial Department of Cultural Affairs and Sport has four directorates, namely Library Services, Archives and Records Services, Sport and Recreation, and Museums. The Provincial Archives and Records Services of the Western Cape Act (Act 3 of 2005) stipulates the responsibilities of WCARS as managing, providing access to, preserving, and promoting the use of public and non-public paper-based archival records. The Act defines archives as 'records in the custody of an archival repository' (National Archives and Records Service of South Africa, in s. (2) of Act 43 of 1996 as amended by the Cultural Laws Amendment Act 36 of 2001). For the most part, the current legislation has not managed to keep up with the rapidly evolving developments in digital technology but does refer to the management of electronic records (Archival Platform, 2015). In terms of digitisation, WCARS is guided by a policy document, namely the WCARS Digitisation Policy for Access to Records of Government Bodies (2017), which has been adopted by the Department of Cultural Affairs and Sport. It specifies the need for the digitisation of records for access and preservation purposes and stipulates access and retrieval provided by web browsers. The Virtual Archives Project is currently under development.

According to the National Archives and Records Service of South Africa that was adopted in 2007, WCARS began implementing its digitisation programme in 2015. Government bodies

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noted that the digitisation process should be prioritised because of the stress of handling already fragile and damaged records, and because of the vulnerability of records which occur due to flooding, fires, earthquakes, theft, vandalism, and direct sunlight (Department of Cultural Affairs and Sport, Western Cape Government, 2017). They also recognised that the rapid evolution of technology and a variety of industry standards required that digitisation be considered as a way of minimising storage costs. It is evident that many knowledgeable people are convinced that digital technology is the solution to the age-old problem of access to archives, and that digitisation will help to alleviate some of the costs of travelling to archives and creating multiple paper copies. As stated by DiMaggio, (2016), online archives are a great improvement because they are readily searchable, which means that work that might have taken years of person-hours can be accomplished in a few hours. However, online archives are also vulnerable to the removal of documents in ways that are impossible to detect. DiMaggio (2016) gives the example of the New York Times v. Tasini decision (2001), which gave free-lance digital writers rights to their work in cases where their contracts did not transfer those rights explicitly, and newspaper publishers and aggregators removed many articles by freelancers from digital archives (DiMaggio, 2016).

Because of the ever-changing world of technology, many archivists in different organisations are shifting from physical records to electronic records, so the archives too must adapt and embrace this new radical change. There are, however, organisational challenges such as a 'lack of sustained resources, complexity of the collections, rapid changes in technology, and the need to adapt its culture to the expectations of a digital world' (Clough, 2013, p.49).Today's physical repositories of archives based on custody that will therefore become nodes in virtual archives which will also include records outside archival custody but under archival control, as they keep all copies of the ledger in sync and store encrypted data of past transactions while taking on new blocks for scalable growth. Yakel (2006) highlights that the interest from archives is very high in using the web to publicise their existence, services, and resources. However, the archives have been slow to adapt some of the more collaborating features that support social navigation. This is simply because of their wariness of moving from traditional relationships between archivists and researchers and their fear of overwhelming responses from the web and demands that archives should make available more digitised materials (Yakel, 2006). This would allow users to communicate online either synchronously through chat or asynchronously via blogs or by direct means of comment functionalities (Yakel, 2006).

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Krause and Yakel (2007), point out that social navigation shows the way people interact with information spaces by using and transforming them. Closely related to the concept of social navigation is the notion of social interaction (Krause and Yakel, 2007). It is evident that everyday social interactions in the physical world such as sharing experiences and providing support, are valuable endeavours; the authors seek to examine whether certain elements foster social interactions in an online environment (Lee, Davies, Miller, and Jung, 2001). Significantly, if the values and methods can be satisfactory for all respondents, it is then necessary to implement all forms of electronic communications systems and adopting Web 2.0 features and functionalities to increase accessibility (Hook and Svensson, 2003).

> Many scholars argue about whether the archivists can satisfy requirements for 'integrity, reliability and archiving' of digital information as the National and Global Information Infrastructures will be unable to support such work. The rapid growth of the Internet into everyday life is a well-documented case study in technology transmission. As more people are overwhelmed with online, the development of web-based products and services are increased to meet and drive Internet or online-user expectations. While technology is expanding in many ways, theoretically it increases the likelihood of more frequent use of other similar or more advanced technologies including the Internet as a "complex landscape" of applications and purposes and users in which adoption of technological innovations cannot be predicted (Wellman and Haythornthwaite, 2002, p.10).

Cultural organisations are also taking advantage of synchronous tools that allow for online, real-time chats by users, which also may include graphical co-browsing or "follow-me" features. These may also be access to archives or library resources and services via the internet (Frederiksen, Cummings and Ursin, 2004). Today chat is very popular - it is evident that 'virtual reference' within knowledge and information management systems (KIMS) including archives will continue to stay as the world today is vividly concerned with the new technologies (Helfer, 2003, p.63). A survey that was conducted by Tenopir and Ennis, concluded that the success of many e-reference initiatives remains unclear as to whether users of information services expect or will use online help provided from websites (Tenopir, and Ennis, 2002, p.270-271).

Librarians are therefore investing funds and opportunities to establish the project 'Digital Ask a Librarian' services that respond to perceived user needs and are often surprised by low initial traffic and lack of repeat customers. In this context, research scholars are interested in examining a pilot virtual reference service project, looking for explanations of usage patterns and attitudes. Research studies have reported that these expectations were grounded in the desire to understand the apparent gap between expected and actual outcomes of virtual references. The authors also hope to find indicators that might explain adoption patterns for virtual reference

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services by looking at perceptions about existing interactive technologies, which are synchronous communication or chat (Frederiksen, Cummings, and Ursin, 2004).

1.3 Historical development of archives and administration

The history of archives seeks to understand archives as subjects of history, not just as its sources. The field has opened new ways of thinking about major historical trends: the rise of the nation state, the development of public and private spheres, the growth of global institutions, and the ever-increasing emphasis on data in our information-rich knowledge economy (Yale, 2015). According to Van der Walt (2015), archives originated from different organisations, whether large or small, which produced large amounts of documents as working tools during their activities. Archives are created to serve an original purpose, for example, for administrative purposes or to demonstrate governance compliance, and may then be preserved for future consultation when transferred into archival storage.

Archives have value for nations and regions, organisations, communities, and individual people. They provide evidence of activities which occurred in the past, tell stories, document people and identities, and are valuable sources of information for research purposes. Archives may be regarded as custodians of evidence which is completely trustworthy. This evidence is controlled by archivists in places which may be designed specifically for this purpose. Archivists, work with a specialised form of potential information, and are part of the broader fields of information work, information professions and information science. They are backbone of archival materials as well as the trustworthy custodians of historical evidence; meaning that archival documents bear witness to facts and events and the trustworthiness of archives is based on the circumstances at the time of their creation and preservation. Therefore, every archival document represents facts of the past and historical developments that have taken place and (Van der Walt, 2015, p.28).

There are various reasons for the establishment of archives. Archival repositories were established to preserve and arrange archives of individuals, institutions, or organisations, whether public or private, church, military, and business. No Business archives are important because they reveal whether the enterprise was short-lived or the subject of a bankruptcy, takeover, or amalgamation. Since business archives play a vital role in economic and business histories, the need to preserve them is the initial but important step to record the history of an enterprise. The same applies to church or religious archives, for they may establish religious

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reasons for preserving essential documents which reflect activities of the church, synagogue, mosque, and other religious organisations (Rodrigues, 2012, p.26). They also contain personal information about their adherents.

1.3.1 Archives administration

The origin of archives dates back to ancient times, dating back to developments that took place around the shores of the Mediterranean in classical times and during the Middle Ages and the Renaissance (Posner and O'Toole, 2003). It extends beyond this geographical area to include countries such as what was then Mesopotamia, and China. After the Renaissance in Europe, the establishment of state administrative practices increased so rapidly that procedures concerning archives and their arrangement and administration became the norm. A new era of archival administration was introduced at the time of French Revolution, following which the development of archives and records services and began to spread to all countries in Europe including their colonies and thus to the Dutch Colony at the Cape of Good Hope out of which South Africa grew. Apart from governments, many entities including businesses both religious and private, realised the need for and importance of storing and keeping records securely. In addition, individuals and communities, organisations and governments have been aware of the need to preserve records which contain administrative, financial, and judicial information of possible importance (Bausi, Brockmann, Friedrich and Kienitz, 2018).

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Van der Walt (2015) citing, Schellnack-Kelly, states:

> The development of archives administration has risen upon the period of antiquity to the French Revolution. The beginning of civilisations has also influenced other countries, which are Mesopotamia, Greece, Egypt, and Rome and thus resulted in the discovery of clay tablets where these tablets were preserved in clay pots on shelves. Later, the golden age of Greek civilization was formed. The Greek documents were later transferred to a central archive's depot. The development of writing and preservation of written materials in Egypt arose, and the use of papyrus was in a form of medium based, which is less durable than parched clay tablets. In ancient Egypt, the profession of archivist was held in high regard and was responsible for editing and translating written materials (Van der Walt, 2015) (p. 119).

Archives developed very slowly in Rome and many documents were destroyed by fires in 83 CE. Consequently, it was decided to build a large stone building, called the Tabularium, to protect documents against future fires. Not all the public records were housed in the Tabularium; some were housed in temples. The administration of archives developed across Europe to the point when it was realised that there was a need for records to be efficiently administered with

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care. During the Middle Ages few records were created as few people could read and write. However, the few existing archives were used for traditional administrative reasons as well as for religious, legal, and historical purposes. The Middle Ages in Western Europe saw the rapid expansion of ecclesiastical and secular archives as more records were created and preserved. In the late eleventh and twelfth centuries trade and commerce and the administration of European municipal governments increased exponentially (Bausi, Brockmann, Friedrich and Kienitz, 2018).

At the end of the Middle Ages in Europe (ca.1460 to 1520), a revival of learning, known as the Renaissance, took place. This flow of learning was accelerated during the fifteenth century by the sack of Constantinople (now Istanbul) by the Ottoman Turks which saw classical literature (previously unknown) carried into the West by refugees and the invention of the printing press. The spread of learning during the sixteenth and seventeenth centuries stimulated a renewed interest in the past and the preservation of materials for studying it. During the Renaissance libraries, manuscript collections and archival repositories were created, and these became increasingly viewed as a source of history for the period of the Renaissance. The growth of administrative government along with the invention of printing led to an expansion in record creation. With the emergence of the modern state in Western Europe during the eighteenth century, governments used continually developing machinery and accumulated large volumes of records as a by-product of their work (Bausi, Brockmann, Friedrich and Kienitz, 2018).

The French Revolution introduced a new era in archive administration in which new changes were embraced by replacing or destroying old regime documents with a new archives service in France. A comprehensive national archive administration was established, and the state accepted responsibility for the preservation of official archives confirmed by legislation, and public access was promulgated in legislation as well. This, in turn, resulted in the development of new ideas among the French Revolutionary archives administration that spread to other countries such as Great Britain and America. The French Revolution administrative principles were accepted and form the basis of current archival practices around the world (Van der Walt, 2015, p.125). The development of the post-industrial or information society forced archivists and librarians and other experts to re-think their scientific methods. Hence, the notion that the changing world of information business is not just present in the archival library and museum environment, has been accepted by staff who realise that they should make the shift to a digital society (Ceeney, 2008).

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1.3.2 National Archives of South Africa

The National Archives of South Africa was established by W.J. Fockens, archivist of the former Transvaal Republic and Jan Smuts, Prime Minister. Before the formation of the Union of South Africa on 31 May 1910, Fockens and Smuts recognised that there was a need to develop archive services for the Union in which the four former colonies would make their own provisions for the preservation and care of their archives. After unification, the responsibility was transferred to the central government under the Department of Home Affairs. Between 1910 and 1922 the issue under discussion was the preservation of archives created in the former colonies and the new provinces, as opposed to those created by the central government. Another issue that arose in the period between 1910 and 1922 was whether the archives depots should be centralised in large depots in Pretoria, or whether they should be administered as decentralised entities in the provinces.

According to the Archival Platform (2015), the first archives legislation was drafted by C.G. Botha (who became South Africa's first Chief Archivist) and passed in 1922 as the Public Archives Act 9 of 1922. In terms of the Act, the chief archivist was charged with the preservation, control, and supervision of documents in the archive's depot. The provincial archives of each province were preserved in depots of the provincial administrators. In 1953, the Archives Act of 1922 was replaced by the Archives Act 22 of 1953, and in 1962 this was replaced by the more extensive Archives Act 66 of 1962. The archives depot in the former South West Africa (now Namibia) was administered under the Archives Act until it was taken over by the South West African Administration on 1 October 1979. On 1 November 1963, the South African Archives Service saw the establishment of intermediate depots in Pretoria, Cape Town, Port Elizabeth (now Gqeberha), Johannesburg, and Durban. Finally, in 1996 the new Archives Act was passed, this being the National Archives and Records Services Act 43 of 1996. Rodrigues (2012), states that under the new Act, the National Archives is also required to collect non-governmental records that have enduring value and that producers of films, video or sound recordings are required to deposit copies of certain productions with the National Archives of South Africa.

The National Archives of South Africa (NASA) is the parent body or institution of archives in South Africa. The primary role of NASA is to provide a national archive responsible for the proper management and care of records of governmental bodies, the preservation and use of a

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national archival heritage, and the provision of matters connected therewith (Department of Arts and Culture, 2013).

The National Archives of South Africa was established by the promulgation of the National Archives of South Africa Act 43 of 1996. The Archival Platform (2015, p.53) states:

> The National Archives has been designed as a functional area stipulated by the legislative framework to permit legislation that applied to National Archives and Records Services and Provincial Governments to permit legislation applied to Local and Provincial Archives and Records Management Services.

This legislation converted the former State Archives Services into a National Archives service whose mission, functions and structure replicate the post-apartheid political order. This Act provides a significant shift and a separation of archival services between national and nine provincial governments and provides a distinctive relationship between national archives and provincial archives services. Hence, the Western Cape Archives and Records Service (WCARS) was formed. WCARS preserves the public records received from governmental bodies in the Western Cape (government departments and local authorities) and places them under the authority of their respective repositories as laid down in the Provincial Archives and Records Service of the Western Cape Act 3 of 2005. The Act also enables the provincial archives services to set standards, provide support and give permission for execution of the records management function (Department of Cultural Affairs and Sport, 2017).

This Act is accountable and liable to provide for a National Archives service, the proper management and care of the records of governmental bodies, the preservation and use of a national archival heritage, and matters connected therewith (Archival Platform, 2015). Additionally, this Act provides guidelines and promotes the administrative efficiency of an accountable and transparent government through the accurate management and care of records of governmental bodies. In the Act the constitutional rights and access of citizens to any information held by the state or government are addressed, and the state stipulates an attendant right that ensures that citizens' information and rights are protected. The National Archives ensure that archival records are created for right and specific purposes and for making sure that they are preserved for future use (Department of Arts and Culture, 2013).

1.4 Research problem statement

The Western Cape Archives and Records Service (WCARS) noted struggles in the rendition of the printed archives-based service because of challenges including heavy archivist workloads

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because of limited numbers of staff members, damages to documents from frequent usage and poor handling, and shortage of space since for new materials received and records continuously being created. The digitisation of archives and provision of an online service was considered as a solution by the WCARS Management. All provincial archives are mandated by the National Archives and Records Service of South Africa, (Act 43 of 1996) that they should sustain a national register of non-public records having enduring value to promote co-operation and co-ordination between institutions having custody of such records. Therefore, a system termed AtoM (Access to Memory) was approved for selection to be used as an electronic archival management system for the National Archives (Department of Arts and Culture, 2019). Research has shown that for archival digitisation to have the desired effect, the expectations of users must also be considered (Rikowsky, 2011) since archival institutions must build digital programmes that balance the priorities of the institution with user needs and expectations (Mills, 2015).

In response to these challenges, a new archival digitisation system was implemented to manage access to archival materials at the Western Cape Archives and Records Service. However, the perceptions of users and archivists of the new virtual archival need are yet to be studied and understood. There is a need to evaluate the implementation of the virtual archives system as well as its attraction and ability to meet the expectations of users. The aim of this study was to assess the delivery of a virtual archive system tailored to the needs of both users and an archival institution; in this case the WCARS. The study investigates user expectations and experiences of virtual archive systems with the aim of recommending a conceptual framework to address the access needs of archival users and institutions. A study of the new archival system is mandatory to be able to understand the efficiency and effectiveness of the new archival system and to formulate usage variables to develop strategies for the marketing and promotion of the new system at the WCAR. The use of Digital-marketing Communications in the Strategy of Promotion of Archival Information as stated by Biluschak (2020) has been used as an example in the popularisation of archival information.

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1.5 Research objectives

The aim of this study was to assess the delivery of a virtual archive system tailored to the needs of both users and archival institutions. The study investigates user expectations and experiences of virtual archive systems at WCARS. The specific objectives of the study are:

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1. To find out the challenges, if any, that archival users have encountered when trying to access the records of the WCARS from off-site.
2. To investigate the expectation of users of a virtual archive system.
3. To explore the archivists' responses to the expectations of users through the provision of virtual archives.

1.6 Research questions

The study sought to answer the following research questions:

1. What challenges, if any, face archival users when trying to access the records of the WCARS from off-site?
2. What do users expect from a virtual archive system?
3. How can archivists respond to the expectations of users through the provision of virtual archives?

1.7 Significance of the study

This research will provide new insights into user perspectives on the establishment of virtual archives in the Western Cape Archives and Records Service. The study aims to highlight the problems encountered by archival users when rendering the paper-based records and how these challenges can be solved by the institution to satisfy the user information needs. Also, the study considers user expectations and experiences in the utility of virtual archive systems and whether the system will be useful for them. In doing so, the study aims to recommend conceptual models and frameworks which address the access needs of users as well as important preservation and long-term management considerations.

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1.8 Scope and delimitations

This study focuses on a small group of researchers and archivists at the Western Cape Archives and Records Service (WCARS), along with two academic staff members at the University of Cape Town (UCT) who are already utilising virtual digital systems. The archivists who are responsible for the reference desk in the reading room and the digitisation staff also participated in this study to assess responses to user expectations through the provision of virtual archives systems. Although the WCARS employs administration staff, auxiliary staff, cleaning staff and

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internship students, the researcher was not allowed to do conduct any study among them; only the permanent staff (archivists) participated in this research.

1.9 Theoretical framework

Oliver's Expectation Confirmation Theory (1980). Expectation Conformation Theory (ECT), also called Expectation Disconfirmation Theory (EDT) by Richard Oliver (1980), was considered for this study, The theory first originated in psychology and marketing literatures and was developed in two papers written by Oliver in 1977 and 1980. It was afterwards adopted in many scientific fields, including consumer research and information systems (Oliver, 1980). Expectation Confirmation Theory (ECT) was first proposed for research applications in the fields of consumer behaviour and market service. According to Oliver (1980), the theory speculates that consumer satisfaction and repurchase intentions are determined by two major constructs: initial expectation on a product or service and confirmation level. This theory was also proposed as a model to explain user motives in the use of technology (Oliver, 1980). The other theory considered for this study was expectation-confirmation theory developed by Bhattacherjee (2001). These theories are alike each other, although Bhattacharjee's model was based on the use of information system. According to Bhattacherjee (2001), expectation confirmation was caused by satisfaction but also has a negative influence on attitudes. This model was developed to theorise the influence of expectation confirmation, measured as a post-use response to the question on whether performance was better than expected on both satisfaction and perceived usefulness.

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Since every theory has contextual history, the development of the theory of digitisation will be explained in relation to user perspectives and expectations to explore their satisfaction on the provision of virtual or digital archives systems based on three basic objectives, quality, integrity and value as described by Conway (2010a) that need to be considered in the usage of archival (online) programmes and services as discussed in the literature review. The basics of digitisation will be outlined along with certain words, phrases, themes or constructs, and models and will be evaluated to build a framework. The framework will be explained to provide relevant constructs to evaluate and interpret existing knowledge on the topic identified through the literature review. It is the aim of the study to strengthen the expectations of users in relation to the delivery of the digitisation process.

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1.10 Chapter summary

This research aims to establish a virtual archive system tailored to the needs of both users and archival institutions by establishing how archival institutions can respond to the expectations and experiences of users of a virtual archive. This chapter has outlined the problem statement of the research, research objectives, research questions, significance of the study, scope and delimitations of the study and ethical statement to align and give a clear picture of the researcher's intentions. The chapter has further discussed the theoretical framework that underpins the study. The next chapter reviews the literature related to the study along with theoretical debates on archives and virtual system/digitisation, followed by theoretical framework models.

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Chapter 2: Literature Review

2.1 Introduction

This chapter reviews the current problems found in the literature relevant to this research. The chapter gives an overview of what virtual or digital archives are and the concepts that underpin virtual archive systems or services in the world, South Africa, and specifically in the Western Cape Archives and Records Service (WCARS). The role of this virtual archive systems was reviewed and compared to other archival institutions already using this kind of technology. The literature also looks at research on the virtual reference system internationally and locally. The literature focuses on user perspectives on virtual archives systems in general, their experiences and expectations, and the challenges as well as the advantages and disadvantages of using a virtual reference system.

In addition, the literature focuses on archival users to explore respondents' behaviour, concerns, needs and desires to determine whether users will react well to new services, products, or ideas (Crowley et al, 2002). The literature review explores the content of user expectations and experiences on the provision of virtual archives systems based on the fundamental aspects of 'trust' in Digital Archival Content (TDAC) as stated by Donaldson (2019) in the article 'Trust in Archives–Trust in Digital Archival Content Framework'. The background to the study in the previous chapter revealed that WCARS has a prolonged history in using traditional archives since the early 1900s. By doing this, the researcher is trying to reveal the gap between trust in print and digital archives.

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2.2 Virtual archives system

'Virtual' or 'computer-generated' patterns consist of computer graphics to generate images in art, printed media, video games, simulators, computer animation and VFX in films, television programmes, commercials, and videos (Beane, 2012, p.1-3). The images may be dynamic or static and may be two-dimensional (2D), although the term 'CGI' is mostly used to refer to the 3-D computer graphics used for creating characters, scenes and special effects in films and television, described as 'CGI animation' (Cook, 2009). Milligan notes that other libraries and memory institutions around the world are increasing. Historians, for example, tackling any topic from the mid-1990s onwards that would benefit from using Web archives to answer scholarly questions. (Milligan, 2019, p. 19-20). These Web archives are useful to other disciplines:

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political science, sociology, digital humanities, and any others that seek to explore contemporary culture (Brugger and Milligan, 2018).

Schwab (2017) states that the world today is in the grip of the Fourth Industrial Revolution in which people are at the centre of technological advancements and are working hard to create institutional data repository applications (apps to provide information and services such as the payment of fines, the circulation of books and other materials, access to holdings, reference queries, and user information). Virtual systems change peoples' lives and directions from traditional ways and introduces everyone to modern systems. However, the use of virtual systems puts many people's works at risk in terms of job security. An example of this would be the application of robotic (mechanical) devices in the library whereby it replaces shelving, shelf-reading, and dusting of books on the shelves in other libraries (Van Vuren, 2012). Robots are coming to libraries, Google can find 'anything,' while social media is already widely used by technology smart students. Academics and academic libraries are engaging with these developments and harnessing it to ensure a relevant and productive future for themselves (Tella, 2020).

It is evident that most of the organisations today are keen to change direction and shift to virtual systems. Libraries are also on the move to introduce Library 4.0, which enables and embraces new technologies like 3D printing, artificial intelligence and robotics, 3D space, neurotechnology, biotechnology. Archives and museums are encouraged to develop and introduce digital images. Archives and archivists are in a transition, moving from a physical world to embrace developments in a virtual world (Dede, Dieterle and Clarke, 2007; Nelson, Ketelhut and Clarke, 2005).

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2.2.1 Virtual management system

A virtual system management (VSM) is the process of remotely managing the allocation and use of resources in conventional networks as well as in virtual area networks (VANs), virtual private networks (VPNs), virtual network computing (VNC) and virtual servers (Patel, Steve, Scott, and Freeman, 2013).

In general, the term 'systems management' (or 'system management') refers to practices and processes that optimise the use of information technology (IT) resources in an enterprise. This includes identifying requirements, purchasing hardware and software, distributing system elements to where they can best be used, configuring them, maintaining them with enhancement

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and service updates, setting up problem-solving processes and determining how well predetermined objectives are being met (Patel, Steve, Scott, and Freeman, 2013). A virtual system is one that represents one or more virtual machines that are hosted by a physical computer. A virtual system has the same relationships to subcomponents and applications that a physical system does. In other words, a virtual system has an operating system (such as Windows or UNIX), network addresses, and software. There is a need for the provision of appropriate, rationalised, and sufficient information on topics like education, food, health, security, gender equality, and democracy. Libraries can make provision for such access to such information to facilitate productive living. It is therefore essential for people to be experienced in recognising, attaining, consolidating, offering for use, and openly preserving materials regardless of the form in which it is packaged so that it is accessible when needed (Ukubeyinje and Ejitagha, 2019, p.270).

2.2.2 Virtual archival system and computer

For Schwier, (2007), the term 'virtual' indicates that the medium for communication and community formation are computer and related web-based technologies. A virtual computer (VC) creates a layer between the computer platform and the software which runs the platform in which this software performs. The software can therefore be run on any machine that supports virtual computers. Virtual computers are also known as Java Virtual Machines (JVMs) which allow software written in Java programming language to be used on any operating system that supports JVCs (Reynolds, 2003). According to Pea (2002), a definition of the term 'virtual' can be derived from examining three component words, namely 'virtual, learning and community'. The term 'virtual' indicates that the medium for communication and community formation is computer- and related web-based technologies. 'Learning' can occur in many ways from deliberate to fortuitous and is context- dependent; based on the goals of the community (Schwier, 2007). 'Community' refers to a group of respondents who have something in common; at the heart of any community is a shared sense of purpose for being together, which sets the tone for and delineates parameters of the community (Schwier, 2007).

A virtual or digital archive is similar in purpose to a physical archive, but the historical documents and objects that provide evidence of the past have been digitised (often by scanning or photography, unless a document was created digitally in the first place) and made available online. It is a web-accessible form of archives that helps promote historical and documentary analysis, usually created with the goal of preserving historical objects and making them

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available to researchers (Owens, 2014). Virtual is something that exists in the mind, or has been created by a computer. But the major differences between virtual systems are the subcomponents of the parent virtual system and the child virtual system All virtual systems have a baseboard management controller (BMC) and lineage connections. In the broader context virtual systems can be viewed and evaluated independently. There is no doubt that they are manipulated by the organisational and societal context in which they are implemented.

Today, virtual systems are the only possible solution for printed systems because the internet provides a backbone and a channel for vigorous communication. For virtual services to work effectively, they need to be built on a foundation of collaboration (Lankes et al., 2004). There is no doubt that VA electronic publishing is authorised and provided by institutions that have subscribed to change. This indicates and witnesses that virtual archive systems cannot survive without the organisation of metadata standards, the support of recordkeeping management, and the implementations of electronic communication systems. (Nalumaga and Byamugisha, 2021).

The management of digital records in South Africa was formulated in the 1980s among provincial departments, starting with the implementation of digital management software applications such as electronic document and records management (EDRM) systems and enterprise content management (ECM) systems. Several researchers, particularly those who had completed their master's level of study, investigated the role of the National Archives of South Africa regarding the management of electronic records in the country (Nguyen, Swatman and Fraunholz, 2007). Munetsi (2011) found that the application of EDRM was used ineffectively because the staff lacked adequate skills and competence in the new technology and there was also a need to improve security and long-term preservation within the system. (Katuu, 2012b; Kwatsha, 2010; Ngoepe, 2008). Additionally, a study based on a survey revealed that ten South African institutions had both substantive and sophisticated experience with ECM implementation (Katuu, 2012b).

2.2.3 Development of virtual/digital archives: International trends

The development of virtual/digital archives outside of South Africa is discussed in the following subsections. The National Library of Australia (NLA) established its Web Archive programme – Preserving and Accessing Networked Documentary Resource of Australia (PANDORA) – in 1996. PANDORA has collected online publications which may be associated with entire websites or website content. The material is collected by harvesting remotely, initially using a

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variety of freely available Web crawling tools using NLA's own PANDAS, (the Pandora Digital Archiving System). PANDAS was established in 2001 by the National Library of Australia with the aim to be readily available online. There was an initiative progress to preserve the collections (DPC & Pennock, 2013, p.19). The Digital Archive in China (DAC) was established in 2001 to identify archives and make accessible social and cultural web resources of relevance to Chinese studies. It focuses on social and political material in the Chinese Web domain. The project was jointly managed by the Institute of Chinese Studies at the University of Heidelberg and the Sinological Institute at Leiden University and focused on the creation of a highly successful web archive (Brown, 2006).

The European Digital Archive (EDA) was established in Amsterdam in 2004 as a non-profit organisation (Mia & Charles, 2011, p. 31). It was built as an open archive for public use with the aim to build web archiving and to collect multimedia material to be readily available in the public domain. In 2014 the Impact Investing Policy Collaborative (IIPC) was mainly concerned with the maintenance of technology sharing agreements with the internet archive and acts together with cultural institutions with an interest in web archiving.

2.3. Users of archives

Users in an archive environment, like in other organisations, are crucial and are all beneficiaries of historical information. Elsie Freeman Finch affirms that archivists need to understand their users, how they perceive archival services and how they use its resources and these are preconditions of good and quality public relations (Finch, 2003). Yale (2015) states that archivists need to become more aware of how and when records are used. For example, in media richness theories, methods of communication are selected according to the ambiguity of the decision being addressed or the type of knowledge needed.

Finch (2003, p.20) states:

> Search and retrieval are the most essential part which is the starting point in view of the centrality of the reference function to the users' perception of their services. In many archive organisations, they are likely to place expert archivists to approach researchers on their materials. However, their aim is to develop procedures that enhance the self-sufficiency of their users with the best service to them; how to define the research questions in terms that relate to records and show them how to move creatively between reference tools and records.

The final 'application' or use of archival information from records is of vital importance as it defines the perspective of users. It is also important to know what motivates the researcher to

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access an archive and the scope of the archival information he or she seeks. More importantly, the archivist's knowledge as to whether the user needs specific or narrowly defined records such as birth certificates or court case files or broad documentation, is useful as an aid in identifying access tools and a personal service appropriate to the user's requirements (Finch, 2003).

2.4 Digitisation process of archives

Digitisation acts as a central hub in the archive environment as it preserves and maintains Research by Tsvuura and Ngulube (2021) reveals that, 'it has become a norm all over the world that organisations should have sound records management frameworks that would assist them to access records for appropriate decision-making' (Tsvuura and Ngulube, 2021). Though the concern of society today is with technological aspects, it is true that people cannot run away from traditional (paper- based) ways of doing things. Rich history needs to be preserved for the future, and the digitisation of archives is the solution to protect that history from not fading away due to harmful factors such as fires, floods, and theft. Digitisation can be simply defined as the transfer of printed material to electronic media. The Digital Preservation Coalition (DPC) online handbook (2012) defines digitisation as the process of creating digital files by scanning or converting analogue materials. Besides the protection of material, digitisation ensures usage of the material by more users (Senturk, 2012).

Digitisation can convert physical objects such as manuscripts, maps, correspondences, photographs, and tape recordings, from a collection that is rare or unique or very fragile. Photographic prints or negatives are scanned into digital format consisting of JPEGs which are made up of 1400 pixels and TIFFs composed of 2 000 pixels of files (Library of Congress, 2000). Physical objects are migrated to a digital medium, and digital files are transferred into and managed with the use of software programmes. Then the digital files may be read, compacted, transferred, and retrieved over computer networks and made available and viewed on computer monitors to be accessed by end-users (Beamsley, 1999, p.364). Today, archival institutions are struggling to develop digital projects to provide access and to reduce the over-handling of materials, thereby preserving it for future use. Because archives hold objects of historical value, it is the duty of the institution to ensure that their collections continue to be digitised (Kenney and Rieger, 2000, p.4).

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Figure 2.1: Digital archive through digitisation (Max Archive Services, 2014)

Figure 2.1 shows that a digital archive enables usability through digitisation and safeguards, scans, indexes and digitises physical collections; provides online access to users and preserves physical material. Max Archives Services (2014) is used as a guide for institutions who wish to establish digitisation projects to digitise, access and preserve their archives for long-term preservation. Max Archives Management is built on AtoM, a web-based archives management system. It is therefore vital for WCARS to acquire this system and to adopt this style to run an efficient and successful project. The transformation of digital projects is one of the most important elements in every organisation and needs to be driven by strategic goals. However, institutional goals often encounter conflict in terms of structuring an ideal digital conversion project (Smith, 2000, p.3). For an institution to embark on a digital conversion project, proper planning, risk management, and correct infrastructure, both professionally and technologically are required to avoid the project from collapsing and the goals left unattended (Kenney and

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Rieger, 2000, p.3). Digitisation ensures long-term integrity, and information is easily searchable and accessible. A further advantage is the possibility of maximum usage. Flexibility of digital material is another advantage, and it saves time and money (Smith, 2000). Digitisation decreases the reduction of maintenance costs for printed materials whilst it increases high demand for access from users in which libraries or archives have the desire to improve access to a specific collection. Digitisation reduces the handling and use of fragile or heavily used original materials and creates a 'back-up' for endangered materials such as bristle books or documents. Also, it gives the institution the opportunity for development of its technical infrastructures and staff skill capacity (Archimedia, 2005, p.11).

There are many risks involved in digitisation which includes the cost of technology, workflow costs, intellectual property costs and institutional costs that can sometimes be incorrectly measured. Financial costs are extremely high, and cultural institutions usually operate with either effectively or slightly increasing budgets and the risk of loss is very high (Conway, 2007). Digitisation projects are expensive in terms of funding, storage, maintenance, and preservation. Patra (2014), states that the main disadvantages of digital information are the limitations of the computer monitor, as it increases challenges in terms of reading. Many institutions lack expertise in technical skills, and preparation of the process must be well-planned (Ingram, 2000, p.18).

2.4.1 Archives and digital preservation

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As with any other cultural organisation, the mandate of the WCARS is to acquire, preserve and make accessible records of enduring value. The use of physical records can cause delays in access because of the large number of volumes of records and the many functions that archivists need to perform. This has resulted in excessive backlogs and inaccessible records. Records management is concerned with the management of government records throughout their entire life cycle from creation to disposal and through the transfer of records to the archive's repository. Records management protocols were primarily designed for a paper environment and in practice digital records are inclined to fall outside this scope.

To fulfil its mandate, the WCARS has developed a technical infrastructure and policy tools for permanently preserving digital objects. The archive's digital repository implements the functional requirements of the open-source platform, Access to Memory (AtoM) which has established the minimum requirements for a digital preservation repository along with a set of

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archival concepts that address all the major parts of an information-preserving repository. Many digital preservation systems were created from open-source technology (Rowe, 2016). The digitisation of archives and online services, particularly AtoM implementation, is considered a solution at WCARS. WCARS defines the primary objective of digital preservation activities as maintaining the ability to effectively access digital content over time. Safely preserving the electronic master file is the primary concern, ensuring the original physical content is optimally preserved and handling is reduced. The preservation of digital content also ensures authenticity, integrity, and provenance (Department of Arts and Culture (2019).

Digital preservation entails materials created in digital format as well as those converted from analogue format. Digital preservation focuses on the policies, technologies, and strategies to ensure that digital library objects and collections are available and usable now and in the future. What matters in digital content is that it is not unique to digital libraries; all resources in digital format are fragile and susceptible to information loss. Berman, (2010), p. 9) notes that 'digital preservation is a universal and urgent societal problem'.

Although the concepts and principles of preserving analogue materials are well established in the library and archival community, Cloonan (2007, p.278) states that 'the institutional, custodial model is somewhat paradoxical in the modern world'. Preservation is understood as an act of responsible custody aimed at preventing the deterioration of cultural heritage materials and restoring their usefulness and information value (Conway, 2007, 2010a). Conway argues that the fundamental principles of digital preservation are the same as those of the analogue world and define the priorities for ensuring the longevity and useful life of information resources. Conway (2010a) concludes that the core concepts of preserving analogue materials regarding longevity, choice, quality, integrity, and access carry over to the digital environment, but the methods and practice are fundamentally transformed (Conway, 2010a).

In December 1994, the Commission on Preservation and Access and the Research Libraries Group created a Task Force on Digital Archiving. The aim of the Task Force was to investigate the means of ensuring continued access into the future of records stored in digital electronic form. To preserve digital information, digital archives will continually 'migrate' information from one digital hardware and software formation to another. The Society of American Archivists' (2005), 'Glossary of Archival and Records Terminology' defines migrated archives as 'the archives of a country that have moved from the country where they were originally accumulated, removed archives.' The purpose of migration is to preserve the integrity of digital

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objects and to retain the ability of clients to retrieve, display, and otherwise use them in the face of constantly changing technologies. Although the process of migration is too expensive, digital preservation functions must be done throughout the whole digital collections. Though digital archives are working closely with other cultural institutions, they are unique in terms of providing long term preservation, storage facilities and access to digital information (Kamatula, Mnkeni-Saurombe and Mosweu, 2013).

The Task Force regards migration as an essential function of digital archives. Also, they find that digital collections need refreshing and migrating to new systems to maintain accessibility. Copyright and licensing could become the issue and troublesome, it is important for every digital collection to be managed and be used with permission (Gasaway, 2005).

2.4.2 Benefits and challenges with digitisation

Understanding the potential benefits of digitisation is also helpful when assessing the strategic viability of committing to a digitisation project. It is useful to look to successful organisations to gain a sense of why they have undertaken digitisation projects and what could be gained from such projects. It should be noted that the process of digitisation is not something that can be done overnight, planning is very important as it also involves staff, budget, and IT (UNESCO, 2021, p.30). Accessibility is one of the potential benefits that leads to increasing number of users to access digitised collections from any networked location. Furthermore, users are no longer having to physically travel to access materials. According to Anderson and Maxwell, (2004, p.1) 'digitisation has benefits beyond improved accessibility, it protects originals from excessive handling and repeated copying. Therefore, digitisation can be a significant component of an institution's preservation strategy'.

UNESCO (2021) further states that strategic and operational benefits should be considered, namely greater ability to support the current work of an organisation through integration in business systems and workflows; reduction of hybrid systems (paper/analogue versus digital), thereby facilitating access to more complete records on a topic or matter; reduction of delays and increased accuracy when searching for and retrieving records; increased access to and knowledge of digitised historical records and information may significantly enhance current programme creation and implementation; development of staff skills and organisational capacity (such as staff knowledge and experience and IT infrastructure); and greater institutional

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awareness of the value of archives and heritage collections, as well as the need for more digitisation (UNESCO, 2021, p.31).

Preservation plays a significant role in digitisation projects in terms of and long-term conservation since it reduces physical handling and exposure to light. Additionally, it plays a crucial role in creation of backup copies of unique materials. This is especially valuable in locations that are prone to flooding, infestation, or other high-risk environmental conditions, or where no disaster recovery policies are in place (UNESCO, 2021, p. 31). Digitisation creates digital surrogates and reduces the handling of old or fragile materials (De Stefano, 2000, p.21). Digital imaging projects offer unique advantages and the ability to provide user access to unique special collections which may be the most attractive feature of digital conversion projects. Digitisation projects help the archivists to develop professionalism, gain new skills, become knowledgeable and gain expertise (Smith, 2000, p.3). Conway (2010b) states that image quality can be quite good and is often enhanced with continuously improving capabilities.

Some of the most disadvantageous issues in digitisation projects is lack of knowledge of and staff expertise in information and communication technology (ICT) aspects as well as inefficiency in the use of resources and the costs involved. Financial costs are extremely high. Coupled with great costs of staff time and funding, the risk of loss is very high and unacceptable in terms of purchasing insurance cover and other resources involved (Conway, 2010a). Another disadvantage is that the ease of access to a digital collection can lead to high expectations. Despite this cost in terms of funds it is also a life saver as it helps reduce the space required for physical materials. There is also a perception on the part of the user that every piece of information is true and accurate, and that everything available online is free.

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2.4.3 Digital and knowledge gaps

This section discusses the gaps in the review of literature among digital and knowledge capacity. The digital gap was identified in the literature surveyed. The literature includes the following topics: digital skills in which digital literacy is key, internet access which involves information and communication technology skills, abilities and perceptions which involve expert knowledge and collaboration, innovation and social media, and cultural and education programme.

Littlejohn, Beetham and McGill (2012) argue that full political and social participation in society requires digital skills, which means that digital literacy is key to what higher and further education can offer. Digital literacy is defined as ‘the capabilities required to thrive in and

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beyond education, in an age when digital forms of information and communication predominate' (Littlejohn, Beetham and McGill, 2012, p. 547). Istance and Kools (2013, p. 43) based their definition on the OECD work on technology and education (2013) stating that digital literacy is a 'fundamental learning objective including information-handling skills, and the capacity to judge the relevance and reliability of web-based information'. Pates and Sumner (2016) point out that 'digital literacy must necessarily be less about tools and more about ways of thinking and seeing' as defined in the 2010 Horizon Report (Johnson et al., 2010, p. 5). They add (Johnson et al., 2015) that faculties need to be better equipped for digital literacies can be instilled in their students, but that there remains an absence of consensus as to what digital literacy comprises.

Many authors agree that there is a great need for digital systems in communities (Giorgetti, Campbell and Arsian, 2017). It was found in the literature in the studies examined by the researcher that, although the use of information technologies is increasing today, many archives still do not address the issue of digitisation. The findings in the study reveal that archivists who are 50 years and above, are not comfortable with the shift from print to no-print records. They only care about the nature and uniqueness of archives, authenticity, reliability, integrity, and value of the records. Additionally, most archivists are not knowledgeable in terms of virtual learning and are not technologically driven (Morgan and Bullen, 2013). Digital literacy empowers the user and makes things easier for archivists in terms of arranging, sorting, and describing records to make them accessible to users. Currently digital literacy is a learning curve for both users and archivists to gain confidence in digital technologies. It is recommended that digital literacy for be introduced in schools and in community centres such libraries, and that training should be provided to people of all ages.

The internet, the world's leading network of networks that every organisation globally and the society at large cannot live or survive without it. It is true that business organisations, research organisations, education, health institutions, cultural institutions, government, and homes are all likely to be able to connect to the benefits of the internet. Many scholars such as DiMaggio and Hargittai (2001); Lievrouw and Farb (2005); Hargittai, and Jennrich, 2016) are beginning to have doubts about the assumption that the information society means an informed society for everybody. Basically, their worry is the expansion of the digital divide which has resulted in a wide social gap between the 'information rich and information poor'; that is those people without access to the computer and the internet (Persaud, 2001). It was predicted that the

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internet would propel the division of society into classes: those who are linked to the network and those who are not (Schwanen, Kwan and Ren, 2013). These concerns seem to be of political importance and are becoming of interest since the underlying assumption is that information and knowledge changes into social power and that inequalities in knowledge can lead to an exclusion from social resources and inequalities in social power (Van Dijk, 2005).

Apart from an acknowledgment of the debates among scholars about the social gap between the information rich and the information poor, the researcher needs to raise other issues. Today, most organisations face challenges caused by financial difficulties in the telegraphs and telecommunications sector such as the Post Office in which there is now a risk of not making sufficient profit because the demand for its services has fallen off (Baron, 2002). Also, the practice of using banks is decreasing as people are using their smartphones to do transfers and make deposits when making payments and businesses make electronic payments.

The development of the mobile phone in the information and communication technology sector (ICT) is becoming popular as it performs many functions such as sending messages, making phone calls, e-mailing, all of which is now done via the transmission of channels using radio waves in all directions. The rapid growth of mobile phone system or cellular networks with its demand since the 1980's has caused a huge gap toward communication channels as they seem to overtake the use of wireless communication channels. With increasing demands for green wireless communication, energy-efficient device-to-device (D2D) communications have attracted increasing attention. Device-to-device (D2D) communications have great potential to alleviate the extra construction and maintenance costs in the exponential explosion of smart devices (Han, 2018). With mobile applications and the increase in of mobile phones, most people these days are no longer connected to any installations or cables related to telecommunication (Baron, 2002). However, in government offices and private companies' telephones are still very important. This is contradiction that cannot be helped by anyone or any circumstances as technologies are driving by the Fourth Industrial Revolution (Van Vuuren, 2012).

There is an assumption among abilities and perception gaps in the internet connectivity and skills that needs to be considered. These assumptions can be seen as hidden barriers of judgement among gender equity and is more impacted in societies. For, example, women are less active in using or controlling the devices of internet and its activities to the fullest. Wirth

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(2019) believes that there is differentiation concerning the origins of knowledge gaps, especially when it comes to abilities and perceptions. The concept of knowledge includes everything present in a person's mind. This implies a mental dimension and that everything a person knows is true, irrespective of whether it is true, or false (Van der Walt, 2015, p.19). Nie and Erbring (2000) find that the internet leads to the huge gaps in the supply and access to information but not in the use of information. However, scholars conclude that meaningful use of the internet must be based on new skills like purposeful searching strategies, assessment of sources of credibility and construction of meaningful frames for interpretation. Furthermore, there is an assumption that females are inferior to males and do not have self-confidence in ICT abilities even if they are proficient in computer and information literacy.

The innovation gap is one of the most fundamental aspects of all modern developed economies. Brown (2019) believes that the importance of innovation is not only in its promotion of growth in an organisation, but also in ensuring its survival. Scholars have many questions concerning the huge gap between the need to innovate and the ability of organisations to innovate successfully. They conclude that the problem is not lack of innovative ideas but rather an inability to transform the best of these ideas into bottom-line results. Many institutions have responded to this 'innovation gap' by purchasing outside companies to acquire innovation and technologies with proven results (Brown, 2019). Social media platforms emerged in the early 2000s and have been adopted by many organisations. However, in archive services it needs to be marketed as it is a new window for marketing within this environment (Jain, 2014).

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It is evident that updating social media accounts in archive organisations is an innovative opportunity that makes it easier to promote an awareness of the services they have and to promote public access also via Facebook, Twitter, YouTube, and blogs. As stated by Ngoepe and Ngulube (2011), some archival institutions are using Web 2.0 technologies to reach out to a wider archive audience and potential users. Garaba (2012) observes that many archival institutions have opened Facebook accounts to communicate information about their institutions' opening hours, addresses, contact information, websites, special events, exhibits and new acquisitions. Garaba (2012) also found that Facebook and Twitter are often used by archival institutions to advise audiences of upcoming events, new programmes and changes in hours of service. Today's organisations are embracing Web 2.0 technologies, specifically social media and social networking tools. The adoption of social media works well in academic institutions whilst in archives is not working well yet but is 'promising'. On the other hand,

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public archives hold personal documents such as births, deaths, and marriage registers that bear confidential information and cannot be distributed or displayed in the public space.

Culture and education have been working closely together these days and sharing common ideas. For over 2,000 years and every organisation needs to adopt a language for culture and then measure it (Kuppler,Garnett, & Morehead, 2014). Most of the leaders and organisations lack an understanding of cultural change and miss a clear connection between culture, team building and leadership development. The studies conducted by UNESCO (2005) reveal that there is a need to engage culture in educational activities to gain a better improvement effort that is focused on an organisation's strategic problems. UNESCO's Convention on the Protection and Promotion of the Diversity of Cultural Expressions and in full harmony with the Declaration of the Council of Ministers of Culture of South-East Europe, highlights the important role of culture and art in the field of education, as education through culture "promotes cultural awareness and expression, creativity and diversity as well as contributes to human development, social and cultural welfare and social cohesion". The archives are still unknown to society; therefore, it is necessary to be marketed in schools, social media, radios, and television. Therefore, a marketing strategy is needed to reach out to the public. This gap should be closed by opening new doors and revealing a bigger picture to create awareness of education programmes (UNESCO, 2006).

2.5 Theoretical framework

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Abend (2008) defines a theoretical framework as the structures that holds or supports a theory or the theories of a research study. A theoretical framework introduces and describes theory that explains why the research problem in the study exists. Expectation confirmation theory (ECT) by Oliver (1980) has been used to anchor this study. The ECT posits that satisfaction is directly influenced by the disconfirmation of beliefs and perceived performance and is indirectly influenced by both expectations and perceived performance by means of a mediational relationship which passes through a disconfirmation construct. It is a cognitive theory which purports to explain post-purchase or post-adoption satisfaction as a function of expectations, perceived performance, and the disconfirmation of beliefs (Oliver, 1980).

Since the framework of the study is based on ECT, which is influenced by perceived performance, post purchase and the level of satisfaction thereof, the three basic objectives of quality, integrity and value need to be considered in the usage of archival online programmes

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and services as described by Conway (2010b). The users then need to be evaluated based on their level of satisfaction regarding the practices of archive services. The quality of archival programmes and services has been evaluated according to the understanding archivists have of user information needs and their willingness to serve to meet those needs. This quality includes an understanding of how researchers define their tasks in terms of the subject, format, and scope of the information they need. Furthermore, it includes an understanding of the users' research capabilities and expectations as to service, research strategies and problem-solving methods and nature and degree of satisfaction with the research process. A model of expectation confirmation theory (given below) is made up of four primary constructs: expectations, perceived performance, disconfirmation of beliefs, and satisfaction.

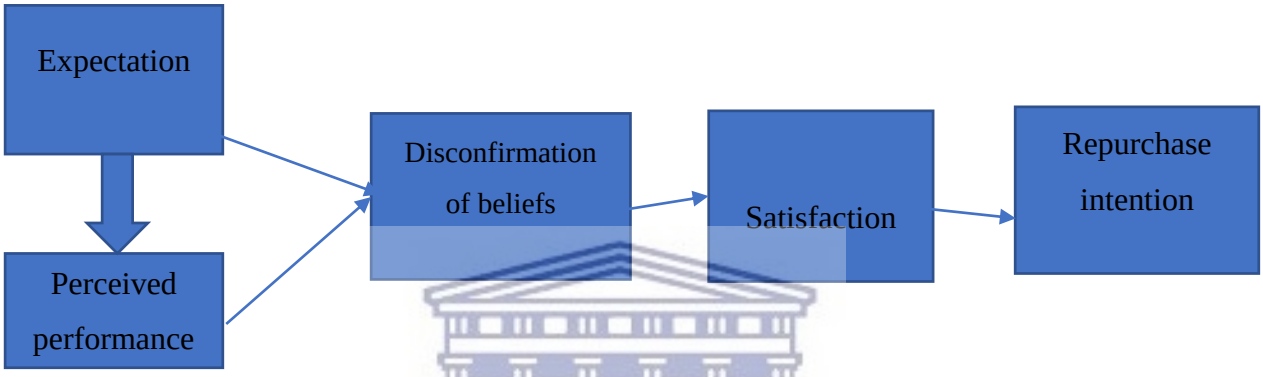

Figure 2.2: Expectation Confirmation Theory (Oliver, 1980)

Expectation confirmation theory was adopted to explain continuance intention to repurchase in a variety of contexts. Oliver's ECT (figure 2.2.) demonstrates that expectation, perceived performance, and disconfirmation of beliefs determine the level of satisfaction and repurchase intention. As illustrated in Fig. 2.2, the whole process is measured by which customers form a repurchase intention in an ECT framework. ECT posits that customers repurchase intention is primarily determined by their satisfaction with their prior use of a product or service. Satisfied customers have the intention to repurchase while dissatisfied users discontinue purchasing. Satisfaction is based on pre-consumption expectation and post-consumption confirmation level. Expectation could be positively confirmed (perceived performance exceeds expectation), confirmed (perceived performance equals expectation), or negatively confirmed (perceived performance falls below expectation). Expectation provides a baseline for customers to evaluate satisfaction. If confirmation occurs, satisfaction increases or decreases from this reference level (Oliver, 1980).

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As stated by Oliver (1980), Expectations are posited to directly influence both perceptions and performance and disconfirmation of beliefs and are posited to indirectly influence post-purchase or post-adoption satisfaction by way of mediational relationship through the disconfirmation construct. Pre-confirmation to satisfaction and perceived usefulness could all contribute considerably to the users' intent to reuse a website and conclude that the extended ECT model could be an appropriate tool for the study of website effects. Pre-purchase or pre-adoption expectations form the basis of comparison against which the product, service, or technology artefact is ultimately judged. Perceived performance is also posited to indirectly influence post-purchase or post-adoption satisfaction by the way of a mediational relationship through the disconfirmation constructs. Disconfirmations of beliefs are judgements or evaluations that a person makes with respect to a product, service, or technology artefact. These evaluations or judgements are made in comparison to the person's original expectations. When a product, service, or technology artefact outperforms the person's original expectations, the disconfirmation is positive, and this is posited to increase post-purchase or post-adoption satisfaction. Also, when a product or service or technology artefact underperforms the person's original expectations, the disconfirmation is negative. This is then posited to decrease post-purchase or post-adoption satisfaction, which means increased dissatisfaction. Satisfaction is when a person is pleased or content with a product, service, or technology artifact. Expectation confirmation theory that posits satisfaction is directly influenced by both expectations and perceived performance by means of mediational relationship which is posited through the disconfirmation construct (Oliver, 1980).

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2.6 Application of Expectation Confirmation Theory (ECT) in this Study

The study presents a model examining user perspectives based on expectation confirmation theory. Expectation can be either confirmed when the experience with the product meets the expectation or disconfirmed when the experience is different from what expected. Oliver claims that disconfirmation is a method that describes two things: positive and negative disconfirmation. For instance, expectations are positively disconfirmed when experience exceeds them, and negatively disconfirmed when the experience does not meet expectations. It is true that when the users' expectations are met or exceeded, their positive attitudes are increased, and their levels of satisfaction expand. When the user's expectations are not met at all, their level of satisfaction becomes less relevant, and they develop a negative attitude. This

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indicates that a positive disconfirmation should lead to a very positive rating, while a negative disconfirmation should result in a negative rating (Oliver, 1977).

Brown et al., (2008), discuss three theoretical models from the expectations research in the fields of organisational behaviour and user psychology. Brown, Venkatesh, and Goyal (2012) propose a model to investigate expectation confirmation in information systems based on the assimilation-contrast model and prospect theory and recommended that both are required to account for the magnitude and direction of deviations between experiences and expectations. Lin (2005) studied the value of including 'playfulness' in expectation confirmation theory (ECT) when investigating the continued use of a website. They state that perceived playfulness, confirmation of satisfaction and perceived usefulness could all contribute considerably to user intent to reuse a website and conclude that the extended ECT model could be an appropriate tool for the study of website effects (Lin, 2005).

Bhattacherjee (2001) studied the difference between the initial decision to use a system and the continued use of the system using expectation confirmation theory. Bhattacherjee found that expectation confirmation was a strong determinant of satisfaction but in general also has a negative influence on attitudes (Bhattacherjee, 2001). Venkatesh and Goyal (2010) found that expectations may be analysed separately for usefulness and ease of use. Brown, Venkatesh and Goyal (2012) developed a model and coded responses among employees of organisations adopting an intranet-based knowledge sharing system and found that disconfirmation is a predictor of level of use but low levels of disconfirmation. Likewise, positive disconfirmation was a strong predictor of perceived usefulness. Brown et al., (2008), have also found that many studies of expectations in information systems have been developed, which include expectation disconfirmation theory (EDT). EDT has also been applied to study IT adoption, IT usage, IT outsourcing success, and user satisfaction (Schwarz, Schwarz, and Black, 2014; Brown, Venkatesh, and Goyal, 2014; Lankton, McKnight, and Thatcher, 2014; Schwarz, 2011; Premkumar and Bhattacherjee, 2008; Kettinger and Lee, 2005). The authors posit that EDT influences satisfaction with factors relating to student engagement. According to EDT, an individual forms their expectations about a product or service when they first hear about it. Later studies based on the modelling approach associated with the technology acceptance model (TAM) were developed (Davis, 1989). Fred Davis proposed this model in 1989 as a model developed to explain user's motives towards the use of technology. Although TAM was based on information systems, it was seldom linked to or used in user experience research.

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Theoretically, authors' opinions on the idea of expectation, find that there is some confusion in usage between the idea of 'user expectation' and related ideas such as wants and needs (Horsham, Jurket, and Shi (2004). Fast and Campbell (2004, p. 138) have argued about the comparison between perception and expectations of university students for searching the Web and library databases and Novotny (2004) examined perceptions and expectations of user communities and librarians in a New Zealand academic library. Griffiths and Brophy (2005, p.552) provide a detailed report on the relative use made of web search engines and academic resources by British students. As Straw (2003) states, the disconnect between the users' expectations and librarian reality is often greater in the virtual world than in the traditional face to face meeting. Many users see the virtual reference encounter as magically solving a whole range of problems with instant answers along with full text electronic content. Most of the studies above suggest that expectations of digital services include comprehensive, accessible, immediate gratification, followability of data, ease of use, and multiple formats. It is believed that the users' expectations have drawn on the gratification and attention of both researchers and practitioners. Additionally, the growth of the internet with the strong effect of satisfaction may simply serve to increase user expectations further. (Hsu, Chiu and Ju, 2004; Massad, Heckman and Crowston, 2006).

When expectations of digital access reach the point at which only digital information will satisfy most users' needs, as may already be the case in respect of universities, corporations, and government departments, libraries, archives and museums must digitise to a level of quality that supports a wide range of actual and potential uses (Conway, 2010b). In the past few years experts have measured trends towards evaluating the quality of digital reference services. Kasowitz, Bennet and Lankes (2000) suggest that several characteristics could be used to review the quality of digital reference services, and these characteristics form the basis of 'Virtual Reference Desk Projects' - a service that allows librarians and patrons to communicate with each other in real time through the internet by e-mail, chat, or instant messaging that can be measured by facets of quality. These facets relate to the annotations themselves, not to the underlying evidence sources from which they are derived, or the truth value of the claims used in their construction. It is believed that digital archives will help the society of users to make information more available, raise its quality, and increase its diversity (Mutula and Ojedokun, 2008).

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In archival science, Hedstrom and Lee (2002) argue and partly show that trust may be embedded in the properties of the archival document rather than in the perceptions of those who use it. Meaning, in archives organisations there is nothing more important than uniqueness and trustworthy of archival materials than the perceptions of archival users. Yeo (2010) builds on this idea in his thorough assessment of how document properties contribute to the uniqueness and originality of archival documents and help sort out the distinctive qualities of digital archival documents. Donaldson and Conway (2015) suggest that to varying degrees and with varying levels of emphasis, users conceptualise document trustworthiness in terms of accuracy, authenticity, believability, coverage, currency. Their findings also indicate that study respondents conceptualised trustworthiness at the document level in terms of reliability and seemed to have an innate grasp of the practical implications of confronting digitised archival records that are and are not reliable.

Archival programmes and services attempt to understand and take action to ensure that the information in the archives is preserved and made available for future use, regardless of the format in which it is located (Conway, 2010b). Brown (2008) states:

> the integrity of digital material is always ensuring that nothing can change any direction in an unauthorised manner. Many studies agree that there are positive threats that can be associated with integrity of digital material that may cause accidental corruption, deliberate alterations caused by unauthorised users and alteration caused by malicious codes such as viruses. These threats can be controlled slightly using security access measures. Additionally, Brown (2008) weighs in on the utmost importance of periodically testing the integrity of archival collection, as preservation of integrity is the significant goal from passive preservation and checking of integrity (Brown, 2008, p.5).

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The value of archival programs and services is assessed in terms of the effects and safeguarding of use on individuals, groups, and society. The WCARS archivists are working very hard to understand the value of individual researchers as being part of groups with similar interests and activities. Conway (2010b) proposes that archivists should design their own methods and define their own goals to develop a commitment and a truly user-responsive archival profession. Value embraces understanding between individual researchers as being part of groups with similar interests and activities. Sitts states 'before the digitisation process takes place, the materials need to be digitised according to the value in relation to organisation's approval scope of collection statement in terms of informational, administrative, artificial, evidential and monetary value' (Sitts, 2000, p. 44).

Theoretically, the study reveals from the perspective of serving users, it is important to know what motivates the researcher to hold the archives and the scope of the archival information that

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might be needed by the researcher. Knowing that the individual is enthusiastic or approaches the archives within the context of the archival information can enable the archivists to choose which archival information needs to be made available to satisfy the users' expectations. Lastly, the archivists, whether professional or managerial, must keep in mind the vital purpose of acquiring records which is that they are being used and must remember that archivists are user responsive when they seek to effect change (Finch, 2003, p.21).

2.7 Chapter summary

This chapter reviewed the empirical literature and the theoretical framework based on expectation conformation theory with a focus on users' perspectives and expectations regarding virtual or digital archives in general, and in the Western Cape the Archives and Records Service (WCARS) in particular. The literature review has focused on the nature of virtual archives systems, their definitions and the concepts that underpin their functions as well as a comparative view of the development of virtual or digital archives internationally. The researcher has sought to provide an overview of digitisation and its models with regards to the management, advantages, and disadvantages of digitisation. The second section of this chapter explained the theoretical framework of the study. The constructs provided a systematic, explicit, and reproducible method for identifying, evaluating, and interpreting the existing literature on the expectation of users and how they can be satisfied with the provision of virtual archives, as well as how archivists can respond to expectations to fill the gaps. The next chapter discusses the research methodology that has been used in this research study.

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Chapter 3: Research methodology

3.1 Introduction

This chapter provides an outline of the methodology used in the research to gather and analyse data. The case study arose because of a fundamental change in the current use of physical records at WCARS, namely the implementation of a virtual archives system with the capacity to serve long-term digital repositories for the records of the institution and the creation of a new platform for publishing archival descriptions and digitised records. This creation sparked a re-examination of the institution's archival programmes and services which has led to the implementation of digital archives and preservation.

3.2 Research method and design

The research design is based on a descriptive case study method. Creswell (2012, p. 274) explains that the purpose of a descriptive method is to find a detailed explanation and description of the object of the research. Ngulube (2020) states that descriptive research generates both qualitative and quantitative data and that the most common descriptive research design used in LIS is surveys. A qualitative research method is used in studies of human behaviour, people's opinions, themes motivations, (Ngulube, 2020). According to Conrad and Serlin (2011) qualitative research focuses on the thoughts, understanding, experiences, and perspectives of the research respondents. A case study is an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident (Yin, 2009, p.18). According to Yin (2003) a case study design should be considered when: (a) the focus of the study is to answer 'how' and 'why' questions, (b) you cannot manipulate the behaviour of those involved in the study, (c) you want to cover contextual conditions because you believe they are relevant to the phenomenon under study, or (d) the boundaries are not clear between the phenomenon and context (Yin, 2003, p.545). The research employs qualitative techniques as these give a unique depth of understanding which is difficult to gain from a closed question survey in quantitative studies. Also, the study selected a qualitative approach since the study is conducted with a limited number case study. The main aim of the study was to assess the perceptions and experiences of users on the delivery of virtual archives in the Western Cape and Archives Service. This method better assisted in proving an understanding of the users' experiences in the provision of virtual archives systems at the WCARS. Qualitative methods

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offer a dynamic approach to research as the researcher has an opportunity to follow up answers given by respondents in real time, generating valuable conversations around a subject.

3.3 Population

For Kumar (2014), a population is a group of people which a researcher wants to find something out about. This set of people could be working in a specific organisation or living in a specific community or area. The researchers that use the database on which the list of users was registered as regular clients of the WCARS, and registered archival users of the WCARS were the selected population. The population of registered users was not disclosed to the researcher. The WCARS is the oldest government archive in the country and represents the Western Cape province. This archive repository holds records from previous administrations starting from Dutch East India Company (VOC) and holds the oldest record with Jan van Riebeek's signature, dated 1652. The selected respondents agreed to contribute to the research.

3.4 Sample and sampling technique

This research used non-probability sampling and focused on the users of the WCARS. According to Ritchie, Lewis and Elam (2003), qualitative researchers are identified with non-random or purposeful sampling. This research utilised a purposive sampling technique. The researcher aimed to sample on-site archival users of WCARS. The sampled users were regular users. The sampling frame based on regular users (researchers) who use sources of WCARS and WCARS reference archivists. A participation request was sent via email to these users, who were drawn from a larger database of registered users at WCARS. The researcher also aimed to select three reference archivists from the reading room, two archivists from the digitisation section, as well as academics who are users from UCT. Purposive sampling, also referred to as a judgmental or expert sampling, is a type of nonprobability sampling. The main objective of a purposive sample is to produce a sample that can be logically assumed to be representative of the population (Lavrakas, 2008). The small group of individual users were purposely selected to determine their level of satisfaction on the provision of virtual archives, these being of the resources provided by the WCARS and frequently used for their research work. Patton (2002) argues that 'the logic and power of purposeful sampling lies in selecting information-rich cases for study. Information-rich cases are those from which one can learn a great deal about issues of central importance to the purpose of the inquiry, hence the term purposeful sampling' (Patton, 2002, p. 440).

3.5 Data collection and Data Analysis

This study used a web-based Google forms questionnaire accompanied by an information sheet

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and consent for participation by the archival users, archivists and UCT academics**.** The link to the questionnaire was sent to participants. The questionnaires were sent to respondents as a link by email. Data was kept in the form of a spreadsheet that can be exported for data analysis. The quantitative aspect of the survey was descriptively analysed using frequencies, simple percentages. The results are presented in the form of tables, charts, and textual format to draw conclusions. The researcher adopted open coding at the beginning of the analysis and used this extensively in identifying segments that might be useful. Using ATLAS ti, the codes were assigned, and core themes were compiled into separated memorandums which contained more than one survey.

3.6 Questionnaire design

The questionnaire covered the actual usage of digital tools by both archival users and the archivists' perceptions of and experiences with the use of digital tools and electronic records for archival work purposes, and the usefulness of digital tools, websites and databases as well as electronic records. The questionnaire for archival users consisted of 10 questions and was divided into two sections, A and B: **5** questions each section. Section A of the online questionnaire provided the details of the research project and provided a section for respondents to provide their consent in taking part in the research, and section B provided details to evaluate the new database system (AtoM) and web tools. For the archivists, the questionnaires consisted of 10 questions. All the questions were based on their expectations and experiences on the provision of a virtual archives system. For the UCT academics the questions comprised one section only composed of **5** open-ended questionnaires.

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3.7 Research limitations

The study focused on a limited number of users through online surveys. The findings were limited to the opinions of a small group of users. Therefore, conclusions cannot be generalised. However, the study will benefit from understanding user perspectives on the provision of virtual archives in the WCARS to gain a broader picture of the attitudes and behaviours within the institution.

3.8 Ethical statement

The research was guided by and fully adhered to the ethical principles of the University of the Western Cape Senate Research Committee. Permission to conduct research was requested from the Western Cape Archives and Records Service and approval to conduct research was issued.

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All the respondents in this study were required to grant consent prior to completing the survey. The respondents were informed of their right to withdraw from the study at any time. Although the qualitative approach provides a sound basis for research, the technique can in certain contexts benefit from more specific form of implementation. Patton (2002) further reveals that the trustworthiness of a researcher depends on training, experience, track record, status, and the performance he shows. (Patton 2002, p.152). The anonymity and confidentiality of the respondents were protected throughout the research process, and no personally identifiable information was used in the mini thesis or in any subsequent reporting of this study's findings. The respondents were also assured that the research data would strictly be used for this research and academic purposes. The respondents were provided with detailed information about the purpose of the research project and consent to participate in the research was obtained from them.

3.9 Chapter summary

The focus of this chapter was on outlining the research methodology. The research was qualitative in nature and aimed to understand how people make sense of their experiences because the researcher sought to understand and decode people's experiences and expectations in using virtual archive system plus the problems they faced when remotely accessing WCARS records. The researcher used online survey questions as the main sources of data, with WCARS staff (archivists) among the groups of people (archival users) to be reviewed.

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Chapter 4: Data Analysis and Presentation

4.1 Introduction

This chapter presents the analysis of the data that was gathered in the research. The research aimed at examining the delivery of a virtual archive system tailored to the needs of both users and archival institutions and investigated user expectations and experiences of virtual archive systems. They provided feedback about what they expect from virtual systems and how archivists can improve and market virtual systems.

4.2 Study Participation

The WCARS users were categorised into groups. The researcher classified and differentiated the groups in which the respondents were placed as seen below, since the population sampled was drawn from the same institution, namely users and staff. This also ensured anonymity.

Table 4.1: User group representation

Respondents	**Group**	**Institution/Department**
Researchers	A	Archival users (researchers) at WCARS
Archivists	B	Reference archivists from reading room at WCARS Archivists from digitisation section at WCARS
Archivists	C	Academics at UCT

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The data was gathered from the WCARS researchers who were regular users, and from the WCARS staff (archivists) (from reading room and digitisation) and academic staff at UCT who also utilise the virtual archival system. Respondents in group A (archival users/researchers) were examined about their expectations on the use of virtual archives.

4.3 Data Presentation: Group A (Archival users)

In group A, four (100%) out of four respondents replied to the questionnaires and indicated a willingness to change from traditional archives to virtual archives as they expected the WCARS to provide full digitisation of the archive's holdings. There was only one (25%) respondent who did not want to use online services. As can be seen in Table 4.2, respondents in group A were asked to indicate their perceived levels of usefulness of the online service using a Likert scale to measure or to collect their attitudes and opinions using the rating scale in the table below:

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Table 4.2: Usefulness of digital and electronic records of finding aids

	Extremely useful /likely	**Very useful/likely**	**Somewhat useful/likely**	**Not so useful/unlikely**	**Not at all useful/very unlikely**
Digital tools					
Digital images	-	4 (100%)	-	-	-
Websites					
Database system (AtoM)	-	-	4 (100%)	-	-
Electronic records					
Online finding aids	-	3 (75%)		1 (25%)	-

As can be seen in Table 4.2, it was found that four out of the four respondents (100%) in group A rated their scale of satisfaction as 'very useful/likely', three out of four (75%) rated their scale as 'somewhat useful/likely' and two out of four (50%) rated it as 'not so useful/unlikely', when they were asked whether were ready to use the virtual archives system. One of the respondents who rated the utility of the website and database system (AtoM), four (100%) considered its use as 'somewhat useful/likely' and were not sure whether the new database system (AtoM) would be more useful than the current database system (NAAIRS) because the new system is not familiar to them as it was initially introduced only to the archivists.

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From Figure 4.1 below, the analysis identifies the usefulness of a virtual archives system in meeting the expectations of users on the utility of a websites and database system. The analysis indicates that many users about (100%) were not sure if the new database system (AtoM) would be useful or not. Also, the analysis indicates that the uses were not happy with changes. It is clear that because of their long service with NAAIRS database, in their opinions they assume that the new database system (AtoM) might not be good or work for them.

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Figure 4.1: Usefulness of the virtual archives system in meeting expectations

As Table 4.2 indicates, digital images are the most online resources that the users would use. Four respondents (100%) were very satisfied with the utility of digital tools. Most of the respondents indicated that they were very prepared and would be pleased if the WCARS could digitise all their archives holdings so that they could easily access digital images. Three respondents (75%) indicated that it was 'very likely' that their needs would be met if they were to use electronic records, specifically in finding aids. However, a few users are not sure whether it would work for them, as some are challenged by internet access. One respondent out of four (25%) regarding electronic records was not concerned with the implementation of virtual archives and showed no interest in the replacement of physical records by electronic records. The respondents were asked to indicate how likely they were to replace their use of the current services (physical or paper records) with electronic records. The respondents in group A indicated that they would be happy to use online services. Some were very enthusiastic to see digital services expanded in archives. Print books remain important to other few users as they are not comfortable with Fourth Industrial Revolution technologies. A respondent in group A stated:

> I recommend using archival Website design, as I was inspired by the Web 2.0 as they provide an efficient, flexible, and user-oriented interface. Additionally, the implementation of virtual space would facilitate rich user experience, as well as supporting content sharing and online communities.

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The respondents were questioned on what they see as potential strengths of the resources provided by WCARS digital archives and whether the establishment of digital archives would be the solution or not? A respondent in group A agreed that:

> the digital archives would save me much money and time which is usually taken by travelling to the archives, meaning that I would be able to access the documents I needed at any time and as many times as I need to, and concluded that it would be helpful.

The respondents agreed that digital online resources were fast and thus made it easy for them as the document can be read while accessing it, can be download, printed, or viewed later, without having to visit the archives physically. One respondent in group A stated:

> it correlates with the Fourth Industrial Revolution and is time efficient and cost effective because many potential users live at a great distance from the institution, so a virtual archives system allows for the records to be accessed without having to go directly to the archives building.

On the primary challenges of using electronic records in the WCARS, most of the respondents in group A revealed that the main challenges of using an electronic service would be the internet, and particularly internet access with enough data to support large documents, as all archival documents need to be digitised. It would nevertheless be better for archives to replace print records with electronic records if the archivists could place or create the finding aids on the web as they are quick and save time without having to travel or to place an order of a copy of finding aid and pay for photocopying or to log a telephone call through a reference archivist. In this regard, archivists are having a lot of work to do, they need to scan and digitsed those paper-based finding aids to be readily available on the web, so that it will be easy to be accessed by users for ongoing process.

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User satisfaction and/or dissatisfaction on the provision of online systems was also queried. The respondents were asked to indicate whether they were satisfied or dissatisfied with the use of the virtual archive system.

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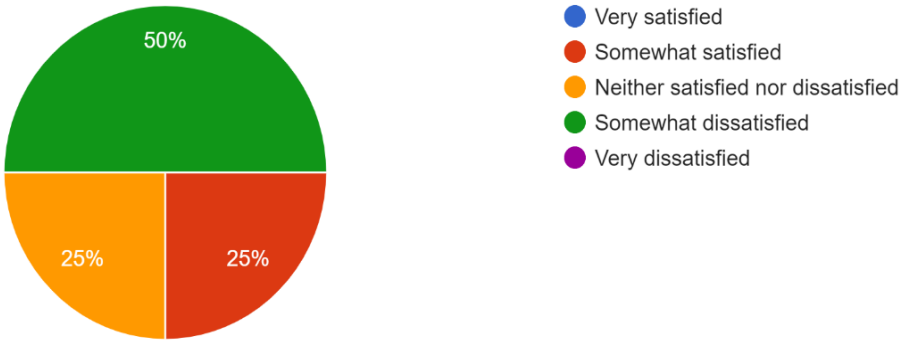

Figure 4.2: Satisfaction/ dissatisfaction with the provision of online/digital archives

Figure 4.2 gives an indication that the respondents were satisfied and prepared for the provision of virtual archives in the WCARS. Jin et al (2012) found that users' intentions to continue sharing knowledge was directly influenced by their past feelings which consist of two dimensions: satisfaction and knowledge self-efficacy. They also found that knowledge self-efficacy and confirmation mediated the relationship between benefits and satisfaction. Such benefits may include acquired experience in using digital systems and database systems and web tools.

Figure 4.2 indicates that although most of the users were very satisfied to use digital archives, a user in group A was unsure of this system and whether it would work for them when they think of personal records such as births, marriages, deaths, and documents of court cases that should be open to the public because they contain personal information. Bhattacherjee (2001) found that expectation confirmation is a strong analyst of satisfaction but also in general has a negative influence on attitudes. This means that where there is positive, there is also a negative, and/or where there are advantages there are also disadvantages. This proves that the more people lack assurance or uncertainty about something, the less the desired ego disappears. It is true that you cannot purchase something that you are not sure of; you either need to be satisfied completely to re-purchase or if you have doubts you need to discontinue purchasing it. For example, a respondent from group A commented that 'the digital archives would save me much money and time which is usually taken by travelling to the archives, meaning that I would be able to access the documents I needed at any time and as many times as I need to'.

This means that the analysis of data supports the theory of ECT as a potential gateway in the evaluation of both archival users and archivists on the usage of virtual archives in the WCARS.

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4.4 Data Presentation: Groups B (Archivists)

All the respondents in group B (100%, i.e., 5 out of 5) are very pleased with the implementation of the virtual archives system in the WCARS. Usage of the virtual archives system is found to be more to these respondents as it is easy to retrieve documents, saves the records from damage due to mishandling, and reduces workloads. All five respondents (100%) saw the virtual archives system as a potential gateway to success for both users and archivists as it enables people to develop their own multimedia exhibits and create their own digital stories on the websites. One respondent agreed that because times have changed and the world is evolving, people need to catch up with things that will make daily lives easier and will reduce time wastage. A respondent in group B stated that the new database system, AtoM, is much more user friendly, simple, and much clearer than the NAAIRS database and it shows that that system was incompetent and impracticable in terms of searchable skills.

The respondents' opinions were also sought on social media/Web 2.0 use in the archival environments. All five respondents (100%) said that Web 2.0 can work for them in terms of communicating and sharing information with the public locally and internationally using Facebook, Twitter, blogs, and many other social platforms. Another respondent states that a growing number of people worldwide use social (or the internet in general) media to give the public access to records.

The respondents were queried about the challenges in making archival collections accessible as well as how these challenges could be addressed. All five respondents (100%) in group B agreed about their challenges in making their archival collection accessible to users, some of them stated that they encountered problems when the documents become damaged and needs to be repaired and thus a real challenge as they will not be accessed to users for a certain period. Another respondent said excessive backlogs of records, inadequate staff to maintain and arrange the records, and a shortage of space to acquire transfers of records from other departmental governments are the main challenges in making archival collections accessible to users. Whilst one respondent said many people are interested in doing research at WCARS, this has resulted in heavy workloads for archivists and adds to another challenge to making the archival collection accessible to users. Most of the respondents revealed that they were unable to provide records to researchers on time as the records need to be arranged and sorted on each floor according to the number requested thus complicating everything and jeopardising service delivery. Finally, another respondent saw these issues above as the actual challenges that

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resulting from physical or traditional archives, in which they would have not been done when digital systems have been practised in the institution as it saves time and energy.

> One respondent in group B came up with another challenge, 'the issue of understaffing is really a problem as they cannot satisfy their users while they have a shortage of staff, especially in the digitisation section, as there is only one archivist with four internship students with no technical skills.'

With respect to the major opportunities of having a virtual archives system, all five respondents (100%) agreed that archivists will benefit in terms of storage and retrieval of archival materials as it saves storage space in a physical building, and retrieval is easier because an archivist does not need to go find and fetch records. The users can access as many collections as they wish wherever they are, and they do not have to make copies because they have access to every page of the record they need. Some of the respondents agreed that this avoids access delays and avoids unnecessary explanations to users. It also limits the conflict between the two interest groups, saves paper, equips users with Fourth Industrial Revolution skills, and saves time, energy, and money spent on travelling. All five respondents (100%) agreed that the new database system (AtoM) is much more user-friendly and clearer than the NAAIRS database system and is an improvement on the predecessor. One respondent in group B revealed that the excessive backlogs of records was done due to the obsolescence of the NAAIRS database system, shortage of staff, shortage of space, and budget constraints: all major challenges. A respondent in group B stated that the implementation of virtual archives will enable them to make it easier to retrieve records and this will help avoid access delays from traditional archives, assist in sharing of archival information and avoid conflicts between users and archivists. The respondents in group B were asked to indicate their perceived levels of satisfaction of virtual archives systems and whether they would like to continue using print records or recommend the use of virtual/digital archives system and whether the provision of digital services would be a solution in the pandemic of COVID-19.

4.5 Data Presentation: Group C (UCT academics)

The respondents in Group C also viewed the Web 2.0 technological tools as the best for every library or institution and felt there is no reason for anything not to be digital these days. The respondents suggested that for librarians or archivists to obtain the best results in the implementation of digital or virtual systems, the need to employ competent management and specialists is very important. If public records are available to be accessed on social media the public will not have to go directly to a physical archive institution and request a record, instead

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they can retrieve it at home. One of the two respondents in Group C (50%) revealed that their departments have not encountered any challenges from the use of a virtual facility as it provides many systems for their users, and these are not preceded by any print or traditional systems. The respondents concluded that their users are keener to use online records than print records. They concluded that having a virtual archives system saves the collections from getting damaged.

The questions were arranged in a Likert scale, 'Very likely, Likely, Neither likely nor unlikely, Unlikely, Very unlikely.

Table 4.3: Replacement of existing archival system

	Very likely	**Likely**	**Neither likely nor unlikely**	**Unlikely**	**Very unlikely**
Replacement from paper to VA	4 (80%)	1 (20%)	-	-	-
Recommendation to use VA	4 (80%)	-	-	-	-

Table 4.3 shows that four out of five (80%) respondents in Group B are very likely to replace paper records with electronic records. The findings show that they are very fond of virtual or digital archives and are pleased to change physical records to electronic records. Although one respondent (20%) rated as likely – meaning as 'probably acceptable'–we all know that today the print (paper) records are substituted by electronic records, and the findings show that the digital environment has rapidly changed people's minds and their lives. All five respondents (100%) rated themselves as very likely and recommended the use of the virtual archives system at WCARS. After a long period of using physical records dating back to 1652, the institution finds that there is a need for transformation. The use of a virtual archives system prevents records from damage through the mishandling of physical records. It also reduces the workload of archivists in terms of time and energy. All five respondents (100%) agreed that a virtual archives system is the solution to paper records, 'as we are living in the Fourth Industrial Revolution and with this pandemic of COVID-19, so anyone needs to be protected and can find the information without physically in danger his health'.

4.6 Discussion of Findings

The findings from the data collected for the study has been presented above. The aim of this study was to assess the delivery of a virtual archive system tailored to the needs of both users and archival institutions. The study has investigated user expectations and experiences of virtual

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archive systems at WCARS. As the world of the twenty-first century becomes increasingly embracing of technology and many organisations encouraged to archive their resources electronically, it is understandable that some organisations are still reluctant to archive certain confidential paper records. Many organisations such as archives retain paper-based records, not just because they wish to but also for legal purposes. Szekely (2015) notes that archival organisations have gone through extensive changes that are also linked to severe challenges. These changes have affected archival science and practices and place much stress on the disciples of archives and records management. Ketelaar (2017) emphasises this in the article 'Archival turns and returns' and witnesses a growing multidisciplinary interest in different aspects of archives and archival phenomena which are embraced by various disciplines outside the traditional boundaries of archival science such as anthropology, sociology, psychology, philosophy, cultural and literary theory, and artists. Drastic changes have led to assumptions that have impacted archival science. Among these assumptions is a need for archival institutions to adapt to the new changing environment when restructuring their functions and activities. In this respect, reflections on the digital revolution must take place in archives to overcome the challenges encountered by users when trying to access records from off-site.

Users face certain challenges when accessing the records from off-site storage. Although the use of off-site records helps to reduce space from on-site storage, there are many concerns about this. The major challenge is that users cannot access the documents easily and quickly when they need to go through the files of documents. Users become dissatisfied when their search results are delayed; they need a quality and a quick service that will enhance their own efficiency. Currie (2006) stresses that moving to a storage facility involves planning, communication, selection, and knowledge of the facility. The National Archives of United Kingdom (NAUK) (2009), identifies and recommends for off-site storage of physical records, they the need to engage with either their own expertise or to engage outside management expertise to ensure that final specification will provide appropriate offsite management services.

Currie (2006) notes that there is a need to consider the crucial decisions for off-site storage. It is evident that when there is no planning, communication, selection, and knowledge regarding storage facilities the challenges and problems may occur. It is evident that there are burdens that affect off-site users. These burdens involve extra costs that include monthly storage fee payments in lieu of accessing records physically from the institution or archives repository. Another challenge is the high security risk to documents that can be damaged in unforeseen

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natural disasters such as damage to the building or accidental fires or floods which can destroy essential and irreplaceable information. In support of this, archivists seek to minimise the risks to records through identifying and eliminating some. The National Archives of UK (2009) witness on the records in which are not organised in a safe and appropriate manner, you can imagine that it will take more time to locate those records than records which have been stored in a logical sequence. Currie (2006) states that opening and closing hours are often challenges when researchers need physical access to stored items, for example if the facility is closed for lunch or there is no service available on the day at all. When items have already been retrieved for a day or a week or the requested material has been misplaced, it means that researchers cannot access the records. There are also times when archives are closed for fumigation, maintenance of the building by contractors or because of technical and electrical breakdowns. Apart from the challenges associated with closing times, solutions can be initiated, depending on the importance of the request and the location of the off-site storage facility.

User expectations are mainly based mainly on opinions and judgements, usually linked with basic knowledge and experience, and are related to user wants and needs. When looking at the future of archives based on the usage of virtual archives systems, anyone could question how archives with their present outmoded methods could participate in technological trends. The establishment of online sources has brought about many changes in the roles of reference librarians at the information desk, and archival staff members are facing the same situation. Helfer (2003) argues that online initiatives remain unclear in libraries as to whether the library users expect or will use online services or e-references help on the library website. Today's organisations are conscious about the Fourth Industrial Revolution (4IR), it is believed that cultural organisations such as archives, libraries and museums are also unified and adapt to this new technology. The results in this study reveal that the digitisation of archives saves much money and time (for the user), usually taken up by travelling to archives as it is easier to access the documents at anytime and anywhere when they are required (Tenopir and Ennis, 2002).

It is evident that the use of web search engines is determining user expectations of what an information retrieval system should look like, how it works and how to interact with it. Griffiths and Brophy (2005, p.550) claim that most users like to use search engines, often with minimal or no training at all. Also, the results indicate that digital online resources are fast and allow easy access for users to read a document while retrieving it, or even to download or print it, or view it at a later stage, without having to visit the archives physically. The digitisation of

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resources commenced with digital libraries and then moved to digital archives to facilitate easy access and produce satisfying results (Griffiths, Brophy and Bawden, 2005, p.552).

The findings of the study show that users' expectations of virtual archives are very high and they are inclined to be satisfied with the provision of virtual archives systems. As Conway (2010b) emphasises, the archival programme objectives cannot be evaluated solely by researchers who visit the archives but should also be assessed by former researchers, potential users and the institutional community who serve the archives since are determined by the quality of archival online programmes and services. The results indicate that users expect to be provided with virtual archive systems. They are fascinated with digital libraries which seems to prove that the provision of virtual archives systems is satisfactory. Furthermore, it is evident that many users today do their research using mobile devices or smart phones. Amedie (2015) indicates that the expectations of users of a virtual archive system are confirmed by their satisfaction in respect of the service they receive and express on social networking platforms such as Facebook, Twitter, and blogs. Although WCARS users showed no definite interest in virtual archives system, or they can be seen as having no confident in online services. However, the use of social media such as Facebook and Twitter can be used to promote archives services and give notice of archives' news and annual events (Archives Week). Khan and Bhatti (2012) point out that respondents' use of social networking can create professional connections and YouTube can be used to share video conferences, workshops and other archival programmes and services. The results from the study thus indicate that many users enjoy using digital archives and make it clear that they would be pleased if the WCARS would use Web 2.0.

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It is evident that online archives have increased an interest in and focus on users' expectations. According to Feeney (1999) users believe that online search aids will be useful only if there are guides, generally known as 'finding guides', to make things easy to understand. This is true, as many users are used to reference support from archivists in accessing print records. On the other hand, there seems to be slight doubts about the expectations of a full digital archive when compared to traditional services, and users tend to misjudge what may be achieved. Many authors like Fast and Campbell (2004) and Griffiths and Brophy (2005) state that Google is the most popular search engine holding first place in the world and is trusted by many users. The researcher also found that Google is reliable as it guides one in any kind of search or information that one is looking for.

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As with any other cultural organisation such as libraries and museums, an archival environment is one that can create a very good reputation by delivering good services with consistent online programmes combined with professional staff. Unlike reference library materials, archival records cannot be borrowed or browsed; they must be used in a supervised reading area, usually known as a reading room or finding-aids room. In this regard, archivists play a significant role in rendering archives services and are guided by different technical principles aligned with different types of materials that are created in terms of their origins and characteristics (Bausi, Brockmann, Friedrich, and Kienitz, 2018).

O'Reilly (2008) confirms that Web 2.0 is a concept that makes user experience more interactive, useful, and interconnected, as it has brought about another way of interconnecting the world by means of collecting information and allowing it to be effectively shared. The emergence of social networks and other interactions has driven libraries and archives to adopt technological tools in their daily routines to meet users' expectations and information needs. Web 2.0 had revolutionised information communication by providing faster information sharing, networking, and enabling multimedia services to operate (Singh and Naidu, 2015).

The findings in the study reveal that most of the archivists in WCARS are interested in the use of virtual archives systems. Some, however, are technophobes, meaning that they have a fear of using technology since they lack the required IT skills. Munetsi (2011) found that the application of EDRM was used ineffectively because the staff lacked adequate skills in the new technology, and there was also a need to improve security and long-term preservation within the system. It is true that there is a necessity for archivists to be fully equipped with skills and training developments in ICT.

Duranti (2016) stresses that archivists are professionals who are keen to provide valuable evidential information that is authentic, reliable, and trustworthy and are doing a great job in managing stored records effectively. Additionally, while technology may seem to be a challenge for archivists in terms of archival management, records and archives professionals need to develop and promote computational archival science (CAS) as an interdisciplinary field focused on the application of computational methods. It is evident that even if archivists are technophobes, they deliver helpful ways to support training and professional development for their users in digital archives (Wright and Benoit III, 2019). Furthermore, archivists can categorise user expectations of digital archives by providing information in all formats, instantly accessible through simple searching. Lankes et., 2004) argue that archivists need to provide

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virtual reference services that will enable users to submit their reference queries in a search box or blog. By allowing this, archivists will be able to improve their service delivery. This can also help users to show an interest in the establishment of virtual archives systems of their choice.

4.7 Chapter summary

This chapter presented an analysis of data gathered on the provision of virtual archives among users and archivists at the WCARS. The data was collected by means of online surveys using Google form templates. The data shows that a high percentage of respondents feel that virtual archives systems will solve the problems they encounter in the print records. It is evident that the usage of electronic records would save archivists from the challenge of access delays caused through heavy workloads. A high-rate percentage of respondents in the data analysis agree that the usage of Web 2.0. like Twitter, LinkedIn, Facebook WhatsApp, and Wikis plays a significant role in people's lives and make things easy for them in terms of communicating and sharing of information. The study reveals the strong impact of satisfaction on customers on the use of virtual archives system.

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Chapter 5: Summary, Conclusion and Recommendation

5.1 Introduction

The study aimed to examine the delivery of virtual archives system in the WCARS, which are tailored to the needs of both users and archival institutions. It also aimed at investigating user expectations and experiences of virtual archive systems, as well as how archival institutions can respond to these expectations and experiences in their creation of virtual archives. The specific objectives were to find out the challenges, if any, archival users have encountered when trying to access the records of the WCARS from off-site, to investigate the expectations users have of a virtual archive system and explore the archivists' responses to the expectations of users through the provision of virtual archives. This chapter summaries the findings of the study, makes conclusions based on the results and gives recommendations.

5.2 Summary of findings

A variety of questions were asked to find evidence of what challenges encounter the users when trying to access the records of the WCARS from off-site. The challenges were mentioned in the survey and the answers of the archivists were essentially, although the questions were conducted separately. The answers to this question include access delays which have negatively affected service due to excessive backlogs of records, the neglect of the NAAIRS database system, a shortage of staff, a shortage of space and budget allocation constraints.

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The issue of access delays was one of the huge challenges that affected the WCARS and resulted in the institution's being affected by serious access delays due to backlogs of records when the researchers requested the records. As the researcher mentioned at the beginning, the institution was formerly a prison and kept records dating back to the arrival of the Dutch East India Company (VOC) in 1652. The condition of the building is not good since it was built in 1889. There was a period when the lifts began to collapse, and this was a real problem that caused severe access delays. This situation resulted in complaints from researchers as there were a limited number of records that could be requested per client, and reference archivists found themselves in a difficult situation as they were unable to provide good quality service.

Because of the neglect of NAAIRS, NARSSA insisted that all provincial archives services select another system. The WCARS selected AtoM as an open-access platform of archival management. The implementation of AtoM would enable users to access the records anywhere

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without visiting the institution and thus protect the documents from damage due to frequent use and poor handling conditions, theft, direct sunlight, vandalism, and other threats. It has been revealed that NARSSA did not take the issue of the NAAIRS database seriously as it took many years to substitute this system after it was declared obsolete in 2011. It has emerged that NARSSA did not work closely with archivists or carefully consider the issue as a problem in all provincial archival institutions using NAAIRS (Archival Platform, 2015. It is evident that NAAIRS crashed a long time ago and that the National Archives of South Africa could not do anything about it as IT specialists were unable to solve the problem.

One of the fundamental challenges revealed in the surveys was the shortage of staff both in the reading room and the digitisation section. Due to this, archivists have been unable to or struggle to perform their tasks effectively, resulting in excessively heavy workloads, as there are only three archivists working in the reading room, and two in digitisation section with four internships students in the digitisation section. The sections had no restrictions on clients' requests other than that no researcher was allowed to request more than six items of records at a time or per day. This made it difficult for the existing staff members to conduct good care of digital and preservation records as well as the migration of records. In addition, the Department of Cultural Affairs (DCAS) should consider employing more skilled technical staff for the digitisation section.

There was a time when the institution did not have any space for collecting the new transfers of records from government departments or other institutions. Since records continuously created, it is evident that a far more spacious building is required. As the researcher mentioned earlier in the problem statement, the collapse of the lifts because of the age of the building has caused a sense of negativity and a serious delay in access to materials. As to the provision of a purposely built infrastructure, the department has persistently advised the government to consider providing for a building that is spacious and purposely built. Earlier there was a disaster on account of records piling up in the passages in boxes and it was acknowledged that there was a need to extend the building to accommodate records transferred from other government departments. The issue of the new building was approved by the Head of Department in 2018 and such approval was sent to the Department of Public Works. At a stage when they were ready to rehouse the equipment and other materials, the Department of Public Works postponed the construction until further notice because of insufficient funds. This issue also affects users in group A (archival users) as most of the documents that are kept in the library are moved away to the central storage and cannot be in use for a certain time.

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Due to the limited funds that the WCARS receives from its mother body, namely the Department of Cultural Affairs and Sport (DCAS), the institution is struggling to perform its duties as DCAS is managing other departments such as the provincial library services and museums. Archival functions are underfunded, and they have very little political support from government, so it takes time to make things happen and function well. It is believed that the WCARS has been constantly receiving low budgetary allocations. The implementation of the budget in the archives has never been properly costed and consequently what was needed to provide capacity in an ideal situation was never given by the National Treasury which always declares that it has no funds to meet the needs of the institution. As a result, allocation of resources to capacitate the WCARS has reduced over time, and this has crippled the activities of the institution which means that the digitisation project remains at a standstill. In short, the WCARS has not received a budget allocation that suits its needs. Budget allocation always focuses on priority areas, and WCARS is not considered one.

5.3 Conclusions

All the respondents in group B (archivists in both the reading and digitisation sections) indicated a high level of satisfaction with the implementation of the virtual archives system. One of the respondents in group C (UCT staff) stated very clearly that their users were more excited about using online systems than print or traditional systems. Most respondents reported that they would use online resources more frequently than print materials. They also like to use digital images. The research findings discovered that though many respondents are satisfied with the use of the virtual archives system, others are not happy with the changing practices of traditional archives. It has been revealed that it is necessary to have a dual system as it not practicable to completely replace traditional archives with an online system while there are records that contain personal information that cannot be kept online. Additionally, the purpose of implementing virtual archives is to advance virtual processes to demonstrate important archival collections in a virtual way to prevent the risks of failure due to threats to and disasters such as floods, fires, and earthquakes.

The findings in the study show that the development of virtual or digital systems is a world-wide occurrence. Most respondents who are confident users of digital services have proven that nothing can stop people from being technologically driven. The findings from the study have also indicate the reverse: there are some who have technological phobia. Also, it is evident that there are advantages and challenges in the use of virtual services in an archive environment

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since there are certain documents concerning personal histories that cannot be displayed in public. In the case of archival records of historical value, it is difficult for these to be made available online to be viewed at any time. Such records need to be protected and safely preserved for future use. It is true that where there are challenges, there are also advantages within that incident. For example, the use of virtual services plays a significant role and advantageous in the ease of use, saving time and costs, easily accessible anywhere at any time without restrictions on the number of records to be consulted and without the need for multiple photocopies. It is therefore very important for the archival environment to keep relevant information, policy, and planning procedures up to date to ensure that sustainable, innovative, and quality controls are met for future trends.

The study has investigated the perspectives of users about the provision of virtual archives in the Western Cape Archives and Records Service. It has discussed the findings based on expectation confirmation theory in relation to the knowledge, abilities, and perceptions of users, all of which indicate that there is always a difference between users' abilities and perceptions. This is because the perceptions of users can never be the same, there are many levels involved. The findings show that though there are always differences and similarities of certain kinds within the perceived level of experience and satisfaction, the overall level of opinion cannot be the same.

5.4 Implication of the findings on Policy and Practice

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The significance of this study is that it investigates users' perspectives regarding the establishment of virtual archives in the Western Cape Archives and Records Service. It is important for archival institutions to satisfy users' information needs, and it is worthwhile to consider users' expectations and experiences when implementing virtual archive systems. The study revealed that 80 per cent of the respondents are very satisfied with the provision of a virtual archive system in the WCARS. Further, they seem to be ready for the transformation from print to electronic records. Data gathered from the study revealed that 100 per cent of the respondents were 'very likely' to use digital archives and concluded that they would be pleased if the WCARS can digitise all their archival holdings so that they can easily access scans of online documents.

Data from the study has indicated that 100 per cent of the respondents although happy to use online services, are 'somewhat likely' (not sure) about using the new database system (AtoM)

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as they still have to establish whether the system will work for them because it is still new and they are not yet used to it. It is therefore necessary to clarify uncertainties of new systems with users, in this case the archival users before setting up and implementing a new virtual archival system. The training and retraining of users on how to utilise the newly implemented archival systems will also go a long way in making users more comfortable. The research findings further prove the point of the usefulness and necessity of virtual archival systems. Regardless of the challenges involved in the provision of virtual archive systems, it is advantageous to market virtual systems otherwise there will be a gap between the users and the archivists regarding perceptions of digital services. It is evident that archivists need to be well informed about ICT tools. According to Jain and Mnjama (2016, p.157), most archivists are not technologically skilled in dealing with the challenges of long-term digital preservation. The problem arose from the long service of preserving paper-based records of individuals, institutions, organisations, churches, the military, and businesses. But due to the evolution of technological hardware and software new systems were introduced and replaced the traditional ways in which institutions used to record, store, and retrieve information (Ngoepe and Saurombe, 2016). Therefore, it is necessary for archives to adopt strategies to ensure continued access to digital materials to close the gap.

5.5 Implication of the findings on the Theoretical Framework

Expectation confirmation theory (ECT) by Oliver (1980) was adopted for this study to explain post-adoption satisfaction as a function of expectations, perceived performance, and the disconfirmation of beliefs. This was suitable to examine if archival users' expectations of the virtual archive system can be fully met and managed through a variety of services, training, advice, and documentation. The data from the study supports expectation confirmation theory (ECT) as described by Bhattacherjee (2001). The model was developed to theorise the influence of expectation confirmation measured as the post-use response to the question about whether performance was better than expected on both satisfaction and perceived usefulness. However, Venkatesh, and Goyal (2010) found that expectations may be analysed separately for usefulness and ease of use.

This study opines that ECT mainly supports satisfaction and perceived usefulness though it also revealed negativity in terms of judgmental feelings. Two (50%) out of four respondents indicated that they are neither likely nor unlikely to replace print records with electronic records, and this proved that they are neither somewhat satisfied nor somewhat dissatisfied with using

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the virtual archives system. But the overall results show that most of the respondents (80%) are pleased with and expected to use virtual archive systems to improve their knowledge and become experts in ICT and related web technological tools. Figure 5.1 shows that users' expectations of virtual or digital services have strong links with comprehensive satisfaction from the use of archival resources, easily accessibility, immediate gratification, followability of data, ease of use, and intend to reuse archival sources of information.

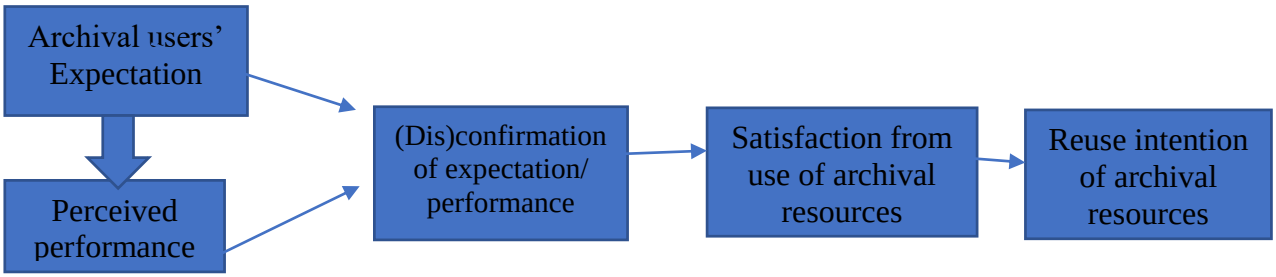

Figure 5.3: Conceptual Framework of the ECT Informed by the Study Results

Users' perceptions are shaped by their perspectives. What they see depends on their viewpoint. User perspectives refer to the perception of actors in the demand side which are affected by or in a specific service or system. Expectations refer to the attributes or characteristics that a person anticipates or predicts will be associated with an entity such as a product, service, or technology artefact. Expectations are the products of speculation that are directed to influence both perceptions of performance and disconfirmation of beliefs and indirectly influence post-purchase or post-adoption satisfaction by a mediational relationship through disconfirmation constructs (Bhattacherjee, 2001).

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The collected data has revealed that most of the respondents expect that the WCARS would provide online access to high quality scans of documents and provide the full service of digitisation that would be able to search and download high quality scans of documents. Users' expectations have drawn on the gratification and the attention of both archival users and archivists. It is evident that the growth of the internet leads to the strong satisfaction on user's needs and expectations. Bhattacherjee (2001) found that expectation confirmation is a strong analyst of satisfaction but also in general has a negative influence on attitudes.

The analysis of the data thus supports ECT theory as a potential gateway in the evaluation of both archival users and archivists on the usage of virtual archives in the WCARS. Conway (2010b) emphasises that the quality of archival programmes and services is measured in terms of how well archivists understand the information needs of their users and how well the

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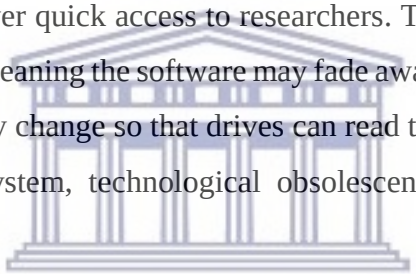
programmes and services can meet the needs they are intended to serve. It is evident that the quality of service involves an understanding of the research capabilities and expectations of users which involves research strategies and problem-solving as well as understanding the nature and degree of satisfaction with the research process. Meeting users' expectations should be the primary focus of archival institutions when developing digital libraries and archives systems.

5.6 Recommendation

The findings in the study indicate that the provision of virtual services in the WCARS have radically impacted most of the respondents in terms of the usage of information and that it has many benefits such as: ease in searching for information and accessing it faster, ensuring the integrity of records for legal value preservation, better management of retention periods and storage, enabling paperless offices and processes, easily managing privacy data, and mitigating the chance of losing data. However, these benefits are also accompanied by challenges and can be labelled as brand-named processes with obsolete formats, poor accessibility of files that can bring large and difficult to deliver quick access to researchers. These benefits can also put the software and hardware at risk. Meaning the software may fade away or be altered and/or updated over time, and the hardware may change so that drives can read the digital media that might be disappear through operating system, technological obsolescence and archives storage and backup issues.



The use of social media in archives can help to promote public representation and enhance the communication and outreach strategy of archival services. Archivists need to be more proactive in ensuring that contextual information is linked to digitised materials. It is recommended that the WCARS open Facebook and LinkedIn accounts to make it easier for users to communicate with one another as well as with the institution when there are upcoming events like outreach programmes such as Archives Week, important events and other changes in relation to hours of service. It is important for the WCARS to promote and develop in-house training workshops to make the work of its staff easier and to equip them with essential skills that will help them to satisfy their users' information needs. Additionally, the WCARS should create programmes initiatives: awareness programmes like case studies on the value of archives. It is also recommended that the institution should hire qualified IT specialists to train archivists as well as maintain the digital resources efficiently.

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For WCARS, it is necessary to create back-ups of their records to ensure long-term accessibility and preservation. This will ensure a significant aspect of the need to prolong the lives of archives and records for future access and use. The study recommends that the positive outcomes of preservation programmes be implemented, that external expertise be sourced to support the preservation of digital records programmes, and that more human resources equipped with ICT skills be recruited. This could be achieved through development opportunities such as training of staff members through workshops that will lead to career growth. It is recommended to procure extra funding and necessary infrastructures to assist with preserving digital records and formulation of policies and standards to prevent the problems that can occur within preserving digital records in archives.

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https://etd.uwc.ac.za/

References

Abend, G. (2008). The meaning of 'theory'. Sociological Theory. SAGE, 26(2), 173-199. Retrieved July 12, 2021, from https://doi.org.10.1111/j.1467-9558.2008.00324.x

Alshehri, M., Drew, S. & Alhussain, T. (2012). The Impact of Trust on E-Government Services Acceptable: A Study of User's Perceptions by applying UTAUT Model. *International Journal of Technology Diffusion (IJTD)*, 3(2), 50-61.doi.10.4018/jtd.2012040105

Amedie, J. (2015). The impact of social media on society. *Pop Culture Intersections, 2*. Retrieved from http://scholarcommons.scu.edu/engl_176/2

Anderson, C., & Maxwell, D. (2004). Starting a Digitisation Center. Oxford: Chandos Publishing.

Archimedia, S. A. (2005). The digital library software and digital services. *Athens*. Retrieved January 18, 2023, from http://www.ynet.gr/archimedia

Archival Platform. (2015). State of Archives : An analysis of South Africa's National archival system. Retrieved April 4, 2019, from www.archivalplatform.org/news/entry/executivesummary

Baron, S. N. (2002). "Who sets e-mail style? Prescriptivism, coping strategies, and democratizing communication access,". *Information Society, 18*(5), 403-413. Retrieved September 22, 2022, from http://dx.doi.org.10.1080/01972240290108203

Bausi, A., Brockmann, C. Friedrich, M. & Kienitz, S. (Ed.). (2018, July 23). Manuscripts and Archives: Comparative Views on Record keeping. In M. Friedrich, H. Isaacson & Quenzer, J. B. (Ed.), Manuscripts and Archives: Studies in Manuscript Cultures (Vol 11). Berlin, Boston: *De Gruyter*. Retrieved February 8, 2022, from https://doi.org/10.1515/9783110541397

Beamsley, T. (1999). Securing digital image assets in museum and libraries: A risk management approach. *Library Trends, 48*(2), 358-378.

Beane, A. (2012). *3D Animation Essentials*. Canada: John Wiley Publication.

Berman, F. L. (2010). *Sustainable Economics for a Digital Planet: Ensuring long-term access to digital information.* Final report of the Blue Task Force on sustainable digital preservation and access. Retrieved June 4, 2021, from http://brtf.sdsc.edu/biblio/BRTF-FinalReport.pdf

https://etd.uwc.ac.za/

Berzins, B. (2007). The Mitchell's Library Reading room: A personal memoir about 1960's to the 1980's. *Australian Library Journal*, 312-321.

Bhattacherjee, A. (2001). Understanding Information Systems Continuance: An Expectation - Confirmation Model. *MIS Quarterly, 25*(3), 351-370. doi:10.2307/3250921

Bizer, C., Heath, T. & Berners-Lee, T. (2009). International Journal on Semantic Web and Information Systems. *IGI Global, 5*, 1-22. doi:10.4018/jswis.2009081901

Blue Ribbon Task Force on Sustainable Digital Preservation and access. Sustainable economics for a digital planet: Ensuring long-term access to digital information. (2010). Retrieved June 19, 2021, from http://brtf.sdsc.edu/biblio/BTRF-Final Report.pdf.

Brophy, J. A. & Bawden, D. (2005). Is Google enough? Comparison of an internet search engine with academic library resources. *Aslib Proceeedings, 57*(6), 498-512.

Brown, A. (2006). *Archiving Websites: A practical guide for information management professionals.* London: Face Publishing.

Brown, A. (2008, August). Digital Preservation Guidance, Note 2: Selecting storage media for long-term preservation. The National Archives, 2, 1-7, Retrieved March 1, 2023, from http://www.national.archives.gov.uk/documents/selecting-the file-formats.pdf.

Brown, S. A. Venkatesh, V. & Goyal, S. (2012). Expectation Confirmation in Technology Use. *Information system Research, 23*, 474-487.

Brown, S. A., Venkatesh, V., Kuruzovich, J. & Massey, A. P. (2008). Expectation Confirmation : An examination of three competing models. *Organizational Behaviour and Human Decision Processes, 105*(1), 52-66.

Brown, S. A., Venkatesh, V., & Goyal, S. (2014). Expectation Confirmation in Information Systems Research: A Test of Six Competing Models. *MIS Quarterly*, 38(3), 729-756.

Brown, C. (2019). How to close the innovation gap? American Management Association (AMA). *Visionmine.com.*

Brugger, N. & Milligan, T. (Eds.). (2018). *SAGE Handbook of Web History.* London: SAGE Publications.

Ceeney, N. (2008). The Role of a 21st Century National Archive: The Relevance of the Jenkinsonian Tradition, and a Redefinition of the Information Society. *Journal of the Society of Archives, 29*, 57-71.

Cloonan, G. W. (2007). The Paradox of Preservation. *Library Trends, 56*, 133-147.

UNIVERSITY of the WESTERN CAPE

https://etd.uwc.ac.za/

Clough, G. W. (2013). Best of Both Worlds: Museums, Libraries, and Archives in a Digital Age. Smithsonian Institution. Retrieved January 15, 2023, from https://doi.org/10.5479/si.9780981950013.

Conrad, C. & Serlin, R. C. (2011). *The Sage handbook for research in education: pursuing ideas as the keystone of exemplary inquiry*. (2nd ed.). California: SAGE.

Conradie, B. (2012). Taking Stock: South African Society of Archivists from 1960s to beyond the millenium. *Journal of the South African Society of Archivists, 45*, 85-95.

Conway, P. (2007). The relevance of preservation in a digital world. *North East Document Conservation Center (NDCC), 6*(4). Retrieved September 21, 2019, from http://www.nedcc.org/free-resources/preservation-leaflets/6-reformatting/6,4

Conway, P. (2010a). Preservation in the age of Google digitisation, digital preservation, and dilemmas. *Lib, Q., 80*(1), 61-79.

Conway, P. (2010b). "Modes of Seeing Digitized Photographic Archives and the Experienced User". *American Archivist, 733*(2), 425-462.

Cook, A. D. (2009). A Case Study of the Manifestation and Significance of Social Presence in a Multi-user Virtual Environment. *M.Ed. Thesis*. Retrieved July 8, 2019, from https://hdl.handle.net/10388/etd-09102009-012757

Cox, R. J. (2007). Machines in the Archives: Technology and the coming transformation of archival reference. *12*(11), 1-30. Retrieved August 8, 2019, from https://www.uic.edu/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/2009/1894

Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (4th ed.). Boston, MA: Pearson.

Crowley, K., Trinder, J., Kim, Y., Carrington, M. & Corain, I. M. (2002). The Effects of Normal Aging on Sleep Spindle and K-Complex Production. *Clinical Neurophysiology, 113*(10), 1615-1622. Retrieved January 25, 2023, from http://doi.org/10.1016/S1388-2457(02)00237-7

Currie, S. (2006). The challenges of off-site library storage facilities: Cataloguing access and management of off-site serials. T*he Serial Librarian*, 50(3-4), 259-265. Retrieved January 15, 2023, https://doi.org/10.1300/J123v50n03-09

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quartely, 13*, 319-340.

Dawes, S. S. (2009). Governance in the digital age: a research and action framework for an uncertain future. *Govern. Inform. Quart., 26*(2), 257-264.

https://etd.uwc.ac.za/

De Stefano, P. (2000). Selection for digital conversion in Academic Libraries and Archives. *Moving theory into practice: Digital imaging for libraries and archives (A. Kenny & Rieger (eds.),*pp.11-23 Retrieved February 23, 2023, from http://www.nedcc.org/digital/dighome.htm

Dede, C., Dieterle, E., Clarke, J., Ketelhut, D. & Nelson, B. (2007). Media-based learning styles. (M. Moore, ed.) *Handbook of Distance Education*, pp. 339-351. Retrieved May 11, 2022, from http://books.google.ca/books?hl=en&id=MA9-Q73SeesC&oi=fnd&pg=PA339&dq=muve+3-D+simulate+global&ots=Wc9zwzyfSig=IbijkEsIL8DFUlhjDfmUiaXIPh0

Department of Arts and Culture. (2013, June). *Revised White Paper on Arts, Culure and Heritage.* Version 2.

Department of Arts and Culture. (2019). *AtoM implementation readiness assessment*. Department of Arts and Culture.

Department of Cultural Affairs and Sport. (2017, March). Digitisation policy of the Western Cape governmental bodies. Western Cape Archives and Records Service.

De Vos, A., Strydom, H., Fouche, C. & Delport, C. (2011). Research at Grass Roots: for Social Sciences and Human Services Professions. Pretoria: Van Schaik Publishers.

DiMaggio, P. & Hargittai, E. (2001). "From the 'Digital Dvide to Digital Inequality': Study in Internet Use as Penetration Increases", *Working Paper 19*.

Dimaggio, P. (2016, July 20). Challenges to Archives in an Age of Digital Abundance. As almost everyone by now, the twenty-first century is the age of data-big, plentiful, and full of threat and promise.*Insights from Social Science (SSRC).*

Donaldson, D. & Conway, P. (2015, December). User Conceptions of trustworthiness for Digital Archival Science and technology. J*ournal of the Association for Information Science and Technology,* 66(12), doi:10.1002/asi

Donaldson, D. (2019). Trust in Archives-Trust in Digital Archival Content Framework. *The Journal of the Association of Canadian Archivists*, 45(3), 50-83.

DPC. (2012). Preservation handbook. Retrieved from http://www.dpconline.org.handbook

DPC & Pennock, M. (2013, March 01). Web-Archiving. DPC Technology Watch Report 13. *Digital Preservation Coalition (DPC).* Retrieved February 20, 2023, from http://dx.doi.org/10.7207/tw13-01.

Duff, W. (2010). Archival mediation. In &. H. T. Eastwood (Ed.), *Currents of Archival Thinking* (pp. 115-136). Santa Barbara: Libraries Unlimited.

https://etd.uwc.ac.za/

Duranti, L. (2016). *Building a trustworthy system: What will trustworthy system look like in the future.) Trustworthy systems for digital objects: Theory and practice. (P. C. Bantin Ed.)* Lanham, MD: Rowman & Littlefield

Fast, K. V. & Campbell, D. G. (2004). I still like Google : University student perceptions of searching OPAC's and the Web. *Proceedings of the 67th ASIS & Annual Meeting*, (pp. 138-146).

Feeney, K. (1999). Retrieval of archival findings aids using World Wide Web search engines. *The American Archivist, 62*(2), 206-228. Retrieved January 10, 2023, from http://www.jstor.or/stable/40294121

Finch, E. F. (2003). Advocating archives: An introduction to public relations for archivists. Lanham, Maryland & Oxford: *The Society of American Archives & The Scarecrow Press, Inc*.

Fredericksen, L. J. & Cummings, J. L. (2004). User perceptions and the Reference Services. The Virtual Reference Experience: Integrating Theory into Practice. 43-61. Washington, State: Neal-Schuman. Retrieved March 2, 2023, from https://hdl.handle.net/2376/2293

Garaba, F. (2012). Availing the liberation struggle heritage to the public: some reflection son the use of Web 2.0 technologies in archives within the East and Southern Africa Regional Branch of International Council on Archives (ESARBICA). *Information Development, 28*(1), 22-31.

Gasaway, L. (2005). "Questions & Answers", Against the Grain. *17*(5), 64-68.

Gertz, J. (2000). Selection for preservation in the digital age: An overview. *Library Resources & Technical Services, 44*(2), 97-104.

Giorgetti, F. M., Campbell, C. & Arsian, A. (2017, March 06). Culture and education: looking back to culture through education. *Paedogical Historica,* 53, 1-2, 1-6, Retrieved February 27, 2023, from https://doi.org/10.1080/00309230.2017.1288752.

Glossary of archival and records terminolgy. (2005). *Society of American Archivists*. Retrieved May 26, 2012, from http:www2.archivists.org/glossary/terms/m/migrated-archives

Green, H E. & Lampren, P. (2017). User Engagement with Digital Archives for Research and Teaching: A case studyof Emblematica Online. *Libraries and the Academy, 17*(4), 759-775.

Griffiths, J. R. & Brophy, P. & Bowden, (2005). Student searching bhaviour and the Web: Use of academic resources and Google. *Library trends, 53*(4), 539-554.

https://etd.uwc.ac.za/

Han, G., Wan, L, Rodrigues, J., Wu, H. & Zang, D. (2018, December 26). " IEEE access special editorial: Green communications and networking for 5,". IEEE Access, 6, 79263-79271. Retrieved February 20, 2023, from 10.1109/ACCESS.2018.2885258

Hargittai, E. & Jenrich, K. (2016, October 28). The online participation devide. In M. Lioyd & L. Friedland (eds.), The communication crisis in America, and how to fix it (pp.199-213). New York: Palgrave. Retrieved February 22, 2023, from https://doi.org/10.1057/978-1-349-94925-0_13

Hedstrom, M. & Lee, A. C. (2002). Significant properties of digital objects: Definitions, applications, implications. *Proceedings of the DLM-Forum 2002, Parallel Session 3* (pp. 218-223). Washington, D. C.: Digital Library Federation.

Helfer, D. (2003, February). Virtual reference in libraries: status and issues. *Leading Libraries, 11(2),* 63-65. Califonia: Information Today. Retrieved January 14, 2023, from http://hdl.handle.net/10211.2/1669

Hook, K. & Svensson, M., Laaksolahti, J. & Waern, A. (2001). "Social Navigation of Food Recipes". *Proceedings of the CHI 2001 Conference on Human Factors in Computing Systems, March 31 - April 5, 2001.* Seatle, WA, USA. doi:10.1145/365024.365130

Horsham, P. J., Jurket, M. P. & Shi, X. (2004). Satisfaction formation processes innlibrary users: Understanding multisource effects. *Journal of Academic Librarianship, 30*(2), 122-131.

Hsu, M. H., Chiu, C. M. Ju, T. L. (2004). Determinants of continued use of the www: An interation of two theoretical models. *Industrial Management & data Systems, 104*(9), 766-775.

Ingram, G. (2000). Selection of special collections material for digitization. In A. R. Kenney, & O. Y. Rieger (Eds.). Moving theory into practice: digital imaging for libraries and *archives.) 18-19.*

International Internet Preservation Consortium (IIPC). (2014, April 09). Retrieved February 20, 2023, from Internet Memory Foundation: http://netpreserve.org/member-organizations/internet-memory-foundation

Istance, D. & Kools, M. (2013). Organisation of Economic Co-operation Development's work on technology and education (OECD): Innovative environments as an integrating framework. *European Journal of Education, 48*(1), 43-57. doi:10.1111/ejed.12017

Jain, P. (2014). Application of social media in marketing library and information services: a global perspective. *International Journal of Academic Research and Reflection,* 2 (2), 62-7.

UNIVERSITY of the WESTERN CAPE

https://etd.uwc.ac.za/

Jain, P. & Mnjama, N. (2016). *Managing knowledge resources and records in modern organzations.* Hershey: IGI Global.

Jin, X-L, Zhou, Z., Lee, M. K. O. & Cheung, C. M. K. (2012, August 9). Why seekers keep answering questions in online question answering communities: A theoretical and empirical investigation. *International Journal of Information Management,* 33, 93-104. Retrieved March 15, 2023, from www.elsevier.com/locate/ijinfomgt.

Johnson, L., Adams, B. S., Estrada, V. & Freeman, A. (2015). *Horizon report: 2015 higher education edition*. Austin: NMC Horizon Report. Retrieved October 16, 2022, from http://cdn.nmc.org/media/2015-nmc-horizon-report-HE-EN.pdf

Johnson, L., Levine, A. Smith, R. Stone, S. (2010). *The 2010 Horizon Report. New Media Consortium*. Austin: NMC Horizon Report. Retrieved October 14, 2022, from http://www.nmc.org

Kamatula, G. A., Mnkeni-Saurombe, N. & Mosweu, O. (2013). Role of Archives in the promotion of Documentary Heritage. *Journal of the Eastern and Southern Africa Regional of the International Council on Archives, 32,* 104-122.

Kasowitz, A. , Bennett, B. & Lankes, R. D. (2000). Digital Referencee Services: Papers based on the Virtual Reference Desk Conference (Summer 2000). *American library Association, Reference & User Services Quarterly, 39*(4), 355-363. Retrieved November 5, 2022, from https://www.jstor.org/stable/20863841

Katuu, S. (2012a). Enterprise Content Management (ECM) implementation in South Africa. *Records Management Journal*, *22*(1), 37-56.

Katuu, S. (2012b). "Enterprise Content Management and Digital Curation Applications - Maturity Model Connections". *Records Management Journal.* Retrieved February 20, 2023,from http://www.unesco.org/new/fileadmin/MULTIMEDIA/HO/CI/CI/pdf/mow/VCKatuu28D1130.pdf

Kenney, A. R. & Rieger, O. Y. (2000). *Moving Theory into Practice: Digital imaging for libraries and archives.* Mountain View, CA: Research Libraries Group.

Ketelaar, E. (2017). Archival turns and returns: Studies of the archive. In A. J. Gilliand, S. McKemmish, & A. J. Lau (Eds.), Research in the Archival Multiverse (pp. 228-268). Clayton, Victoria: Monash University Publishing.

Kettinger, W. J. & Lee, C. C. (2005). Zones of Tolerance: Alternative Scales for Measuring Information Systems Service Quality. *MIS Quarterly*, 29(4), 607-623.

UNIVERSITY of the WESTERN CAPE

https://etd.uwc.ac.za/

Khan, S. A., & Bhatti, R. (2012). Application of social media in marketing of library and information service: a case study from Parkistan. *Webology, 9*(1). Retrieved July 18, 2021, from www.webology.org/2012/v9n1a93.html

Krause, M. G. & Yakel, E. (2007). Interaction in Virtual Archives: The Polar Bear Expedition Digital Collection Next Generation Finding Aids. *The American Archivist, 70*, 282-314.

Kuppler T., Garnett T., Morehead T. (2014). Build the culture advantage: Deliver sustainable performance with clarity and speed. Sterling Heights, Michigan: Culture Advantage, LLC.

Kumar, R. (2014). Research Methodology: a step-by-step guide for beginners. (4th ed.) London: SAGE Publications.

Kwatsha, N. (2010). Factors affecting the implementation of electronic document and records management systems. *(Unpublished master's thesis)*.

Lankes, R. D. , Janes, J., Smith, L. C. & Finnera, C. M. (2004). *The Virtual Reference Experience: Integrating theory into practice.* New York: Neal-Schuman Publishers.

Lankton, N., McKnight, D. H., & Thatcher, J. B. (2014). Incorporating Trust-in-Technology into Expectation Disconfirmation Theory. *The Journal of Strategic Information Systems*, 23(2), 128-145.

Lavrakas, P. J. (2008) (Ed.). *Purposive sample. Enyclopeadia of Survey Research Methods.* Thousand Oaks, CA: SAGE Publicantions, Inc.

Lee, A. Davis, C., Miller, T. & Jung, Y. (2001). "Fostering Social Interaction in Online Spaces", In proceedings of Interact 2001: IFIP T. C. *13 International Conference on Human-Computer Interaction* (pp. 59-66). Amsterdam, The Netherlands: 10s Press, 2001.

Library of Congress. (2000). Digitizing the collection: American Memory. Retrieved February 10, 2023, from http://lcweb2.loc.gov/ammem/daghtml/dagtech.html

Lin, C. S. (2005). Integrating perceived plafulness into expectation-confirmation model for web portal context. *Information & Management, 42*(1), 683-693.

Littlejohn, A. Beetham, H. & McGill, L. (2012). Learning at the digital frontier: A review of digital literacies in theory and practice. *Journal of Computer Assisted Learning*. Retrieved January 11, 2023, from https://doi.org/10.1111;1365-2729.2011.00474.x

Lynch, C. (2003). Institutional infrastructure for scholarship in the digital age. *Portal Libraries and the Academy, 3*(2), 371-375.

https://etd.uwc.ac.za/

Maraso, A. (2003). "Digitization as a preservation practice: look before you leap". *Serials librarian, 45*(2), 27-37.

Marsh, J. & Marzan, J. (2015). *UX for beginners: A crash course in 100 short lessons.* Newton MA: O'Reilly Media.

Massad, N.; Heckman, R. & Crownston, K. (2006). Customer satisfaction with electronic service encounters. *International Journal of Electronic Commerce, 10*(4), 73-104.

Max Archive Services. (2014). *Digitisation and Archiving Services: Opening the Past for the Future*. Retrieved February 22, 2023, from Max Communications: www.maxcommunications.co.uk/podcasts.

McCausland, S. (2011). A future without mediation? Online access, archivists, and the future of archival research. *Australian Academic & Research Libraries, 42*(4), 309-319. Retrieved July 08, 2021, from https://doi.org/10.1080/00048623.2011.107222

McCausland, S. (2012, November 20). Archives and Manuscripts: a window into Australian writing, 1955-2011. *Australian Society of Archivists, Inc*., 40(3), 122-135. Retrieved February 8, 2023, from http://doi.org/10.1080/01576895.2012.748631.

Mia, C. & Charles, E. (Eds.). (2011). The Handbook of Internet Studies. *Wikipedia*, p.31. Retrieved February 20, 2023, from, en.wikipedia.org/wiki/special: Booksources.

Milligan, I. (2019). *History in the Age of Abundance. How the Web is transforming Historical Research.* Kingston and Montreal: McGill-Queen's Univesity Press.

Mills, A. (2015). User impact on selection, digitisation and development of digital special collections. *Review of Academic Librarianship, 21*, 160-169.

Morgan, T. & Bullen, M. (2013). Crossing Boundaries: Digital Learners and the Social and Academic Use of Technology in Higher Education. *13*. Retrieved September 29, 2022, from https://www.reseahgate.net/publication/303907548_Teaching_and_Learning_in _digital_worlds_strategies_and_isses_in _higher_education

Munetsi, N. (2011). Investigation into the state of digital records management in the provincial government of Eastern Cape: A case study of the Office of the Premier. *Unpublished master's thesis*.

Mutula, M & Ojedokun A. A (2008) “Digital Libraries” in information and Knowledge Management in the Digital Age: Concepts, Technologies and African Perspectives. (L. O. Aina, S. M. Mutula & Tiamiyu (Eds). Ibadan: Third World information Service

Nalumaga, R. E. & Byamugisha, H. (2021). The Handbook of Reseach on Library Response to the COVID-19 Pandemic. (*COVID-19 pandemic and virtual information services:*

https://etd.uwc.ac.za/

Experiences of frontline librarians and users in Makere University Library, Kampala, Uganda. Pennisylvania: IGI Global. Retrieved February 23, 2023, from https://doi.org/10.4018/978-1-7998-6449-3.ch006

National Archive and Records Service of South Africa. (1996). Retrieved August 13, 2021, from www.national.archive.gov.za

National Archives of UK Records Management. (2009). Retrieved July 11, 2021, from http://www.nationalarchives.gov.uk

Nelson, B., et al. (2005). Design-Based Research Strategies for Developing a Scientific Inquiry Curriculum in Multi-User Virtual Environment. *Educational Technology, 45*(1), 21-28. Retrieved February 1, 2023, from https://www.jstor.org/stable/44429185

"New York Times Company, Inc., v. (2001, March 28)". United States: Oyez. Retrieved March 14, 2023, from www.oyez.org/cases/2000/00-201. Accessed March 14, 2023.

Ngoepe, M. N. (2008). An exploration of records management trends in South African public sector: A case study of the Department of Provincial and Local Government (Unpublished thesis). Pretoria: University of South Africa.

Ngoepe, M. & Ngulube, P. (2011). "Assessing the extent to which the National Archives and Records Service of South Africa has fulfilled its mandate of taking the archives to the people" *Innovation: Journal of appropriate librarianship and information work in Southern Africa, 42*, 4-22.

Ngoepe, M. & Saurombe, A. (2016). "Provisions for managing and preserving record created in networked environments in the archival legislative frameworks of selected memberstates of the Southern African Deveopment Community". *Archives Manuscripts, 44*(1), 24-41.

Ngulube, P. (E+d.). (2020). *Handbook of Research on Connecting Research Methods for Information Science Research*. doi:10.4018/978-1-7998-1471-9

Nguyen, I. T., Swatman, P. M. C. & Fraunholz, B. (2007). "EDMS, ERMS, ECMS or EDRMS: Fighting through the Acronyms toward a Strategy for Effective Corporate Records Management". *Paper presented at the 18th Australasian Conference on Information Systems, 5-7 December 2007, Toowoomba available at.* Retrieved January 21, 2023, from http://aisel.aisnet.org/acis2007/122/

Nidor, J. J. (2007). Digitisation of library materials: A practical experience: A paper presented at the National Workshop on Digitizing of Library Materials: Process and Tools. 1-13.

https://etd.uwc.ac.za/

Nie, N. & Erbing, L. (2000). Internet and Society: A preliminary report. Stanford, CA: Stanford Institute for the Quantitative Study of Society. Retrieved February 4, 2023, from https:// www.ITandSociety.org

Novotny, E. (2004). "I don't think I click: a protocol analysis study of a library online catalog in the internet age". *College and Research Libraries*, 65(6), 525-537.

Ocholla, D. N. & Ocholla, L. (2020). Readiness of academic libraries in South Africato Research, teaching and learning support in the Fourth Industrial Revolution. *Library Management, 41*(6/7), 355-368. Retrieved January 22, 2023, from https://doi.org/10.1108/LM-04-2020-0067

OECD (2013, February 17). Technology and Education: innovative learning environments as an integrating framework. Paris: WILEY. Retrieved March 14, from https://doi.org/10.1111/ejed.12017.

Oliver, R. (1977). "Effect of expectation and disconfirmation on past exposure product evaluation: An alternative interpretation. *Journal of Applied Psychology, 62*(4), 480-486. doi:10.1037/0021-9010.62.4.480

Oliver, R. (1980). A cognitive model of the antecedents and consequences of satisfaction decisions. *Journal of Marketing Research, 17*(4), 460-469. doi:101177/002224378001700405

O'Reilly, T. (2008). *What is Web 2.0: Design ptterns and business models forthe next generation of software.* Retrieved April 10, 2020, from http://www.oreillynet.com/pub/a/orilley/timnews/2005/09/30/what-is-web-2.0.html?page=1

Owens, T. (2014). What do you mean by 'archives'? Genres of Usage for Digital Preservers. *Library of Congress*. Retrieved January 14, 2023, from https://shsulibraryguides.org/find_archives

Owolabi, K. A., Okorie, N. C. , Yemi,-Peters, O. E. Oyetola, S. O. , Bello, T. O. & Oladokum, B. D. (2022). "Readiness of academic librarian towards the use of robotic technologies in Nigerian University libraries". *Library Management, 43*(3/4), 296-305. doi:10.1108/LM-11-2021-0104

Patel, D. Steve, R. Scott, B. & Freeman, H. (2013, September 30). The virtual university: The Internet and resource-based learning. London: Routledge. Retrieved February 23, 2023, from https://doi.org/10.4324/9781315042022

UNIVERSITY of the
WESTERN CAPE

https://etd.uwc.ac.za/

Pates, D. & Sumner, N. (2016). E-learning spaces and digital university. *The International Journal of Information and Learning Technology, 33*(3), 159-171. doi:10.1108/IJILT-10-2015-0028

Patra, N. K. (2014). *Progressive trends in electronic resource management in libraries.* United States of America: Information Science Reference. 10.4018/978-1-4666-4761-9.ch007

Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). Thousand Oaks, CA: SAGE.

Pea, R. D. (2002). 'Learning Science through Collaborative Visualization over the Internet'. *Paper presented at Nobel Foundation Virtual Museums Symposium*, May 26-29. Stockholm.

Pearce-Moses, R. (2005). Glossary of archival and records terminology. Society of American Archivists. Retrieved February 12, 2023, from http://www2archivists/org.glossary/term/m/migrated-archives

Persaud, A. (2001). "The Knowledge Gap". *Forein Affairs*, *80*(2), 107-117.

Pietrabissa, G. M. (2015). Facebook Use as Access Facilitator for Consulting Psychology. *Austr. Psychology, 50*, 299-303. doi:10.1111/ap.12139

Posner, E. & O'Toole, J. M. (2003). *Archives in the Ancient World* (Reprint ed.). Chicago, IL: Society of American Archivists.

Premkumar, G. & Bhattacherjee, A. (2008). Explaining Information Technology Usage: A Test of Competing Models. *Omega*, 36(1), 64-75.

Prensky, M. (2012). What ISN'T Technology Good Art? Empathy for One Thing! *Educt. Technol., 52*(64).

Promotion of Access to Information Act (PAIA) 2 of 2000. (2000).

Pugh, M. J. (2005). *Providing reference service for archives and manuscripts* (3rd ed.). Chicago: Society of American Archivists.

Pugh, M. J. (2017, September) *Information journeys in digital archives.* EngD thesis, University of York, Department of Computer Science.

Pullukattu, L. (2017, December). Prison City: Redesigning Pollsmoor Prison. Masters in Landscape Architecture (Unpublished Dissertation). Cape Town: UCT School of Architecture, Planning and Geomatics.

Raita, E & Oulasvirta, A. (2011). Too good to be bad: Favourable product expectations boost subjective usability ratings. *Interating with computers, 23*, 367-371.

UNIVERSITY of the
WESTERN CAPE

https://etd.uwc.ac.za/

Rantakokko, S. (2022). Creating a model for Developing and Evaluating Technical Instructions that use External Reality. *Technical Communication, 69*, 24-39.

Reynolds, J. H. (2003). "Bootstrapping a self-compiling computer from machine X to machine Y". CCSC: Eastern Conference. *Journal of Computing Sciences in Colleges, 19*(2), 175-181.

Rikowsky, R. (2011). *Digitisation perspectives.* Rotterdam: Sense Publication.

Ritchie, J., Lewis, J. & Elam, G. (2003). *Qualitative Research Practice: A guide for Social Science Students and Researchers.* London: SAGE Publications.

Rodrigues, A. D. (2012). Archival Information Sources and Services. Study guide for AIS 301. Pretoria: UNISA.

Rosenthal, D. (1999). *Internet: Brave new world: The report on the invisible risks: Technology Assessment.* Zurich: Orell Fuessli.

Rowe, J. (2016). "Are you ready to create records that last?" Preparing users to transfer records to a digital repository for permanent preservation. *Journal of the South African Society of Archivists, 49*.

Sadik, A. (2003). Directions for future research in on-line distance education. *Turkish Online Journal of Distance Education, 4*(4). Retrieved November 22, 2021, from http://tojde.anadolu.edu.tr/tojde12/articles/sadik.htm

Sahoo, J. (2004). "Preservation of Library materials: some preventative measures". *OHRJ, 1*(47), 105-114.

Saini, O. P. (2018). Understanding the role of institutional repository in digital preventation inacademic libraries: A review of literature. *Library Philosophy and Practice, 7*(1), 1-14.

Saladino, V. A. (2020). The Psychological and Social Impact of COVID-19: The new Perspectives of Well-Being. *Frontiers in Psychology, 11*. Retrieved October, 8, 2022, from www.frontiersin.org

Samoelian, M. (2009). Embracing Web 2.0: Archives and the newest generation of Web applications. *American Archivist, 42*(1), 42-71.

Schwab, K. (2017). *The Fourth Industrial Revolution.* New York: Crown Business

Schwarz, C. (2011). "Understanding the role of Expectation Disconfirmation Theory on IT outsourcing success". *LSU Doctoral Dissertations. 3282*. https://digitalcommons.lsu.edu/gradschool_dissertations/3282

https://etd.uwc.ac.za/

Schwarz, C., Schwarz, A., & Black, W. C. (2014). Examining the Impact of Multicollinearity in Discovering Higher-Order Factor Models. *Communications of the Association for Information Systems*, 34(1), 1191-1208.

Schwanen, T., Kwan, M. P., & Ren, F. (2013). The Internet and the Gender Division of Household Labour. *The Geographical Journal, 180*(1), 52-64.

Schwier, R. A. (2007). *A typology of catalysts, emphases and elements of virtual learning communities. In R. Luppicini, Trends in distance education: A focus on communities of learning.* (R. Luppicini, Ed.) Greewich, CT: Information Age Publishing.

Senturk, B. (2012). The concept user satisfaction in archival institutions. *Library Management, 33*(1/2), 66-72.

Shank, G. (2002). *Qualitative research: A personal skills approach.* New Jersey: Merril Prentice Hall.

Shields, R. (2002). *The Virtual.* London: Routledge. Retrieved from http://doi..org/10.4324/9780203987186

Singh, U. & Naidu, G. H. S. (2015). Web 2.0 Applications in library. *School of Library and Information Science, 15.*

Sitts, M. K. (Ed.). (2000). *Handbook for digital projects: A management tool for preservation and access.* Andover, MA: Northeast Document Conservation Center.

Smith, A. (2000). *Make your digital imaging program successful: Involve the stakeholders. In A. R. Kenney & O.Y. Riger. Moving theory into practice: Digital imaging for libraries and archives.* (A.R.Kenny & O.Y. Rieger, Eds.) Mountain View, CA: Research Libraries Group.

Society of American Archivists. (2005). Glossary of archival and records terminology. Retrieved May 26, 2019, from http://www2.archivists.org/glossary/terms/m/migrated-archives

Spante, M., et al. (2018). Digital competence and digital literacy in higher education research: systematic review. *Cogent Education,* 5(1), 2018. Retrieved February 21, 2023, from https://doi.org/10.1080/2331186x.2018.1519143.

State of Archives: An analysis of South Africa's national archival system. (2015). *Archival Platform*. Retrieved April 4, 2020, from www.archivalplatform.org/news/entry/executive/summary/

Straw, J. (2003). Expecting the stars, getting the moon: Paper presented at the Virtual Reference Desk Conference. *San Antonio, TX*.

UNIVERSITY of the WESTERN CAPE

https://etd.uwc.ac.za/

Szekely, I. (2015). *The four paradigms of Archival History and the challenges of the future. Management and participation in the public sphere.* (M. Mervio, Ed.) Hershey, Penn: IGI-Global.

Szekely, I. (2017). "Do Archives have a future in the Digital Age?". *Journal of Contemporary Archival Studies, 4*(1), 1-16. Retrieved November 11, 2022, from https://elischolar.library.yale.edu/jcas/vol4/iss2/1.

Tella, A. (2020). "Robots are coming to the libraries: are librarians ready to accomodate them? *Library Hi Tech News, 37*(8), 13-17.

Tenopir, C. &. Ennis, L. (2002). "A decade of digital reference: 1999-2001". *Reference & User Services Quartely, 41*(3), 264-273. Retrieved February 9, 2023, from http://www.learntechlib.org/p/95425/

Tsvuura, G. & Ngulube, P. (2021, July 19). 'A framework for the digitisation of records and archives at selected State Universities in Zimbabwe". *South African Journal of Information Management (SAJIM)*, 23(1). Retrieved February 20, 2023, from https://doi.org/10.4102/sajim.v23i1.1312

Ukubeyinje, S. E. (2019). The roles of librarians and libraries campagn as a strategy for the attainment of sustainable development goals in Nigeria. *International Journal of Research and Innovation in Social Science, 3*(4), 270-274.

UNESCO (2005). The Convention on the Diversity of Cultural Expressions. Albani: UNESCO

UNESCO (2006). Cultural heritage and local development: a guide for African local governments. Paris: UNESCO

UNESCO (2021). *Managing low-cost digitization projects in least developed countries and small island developing states*: a manual. Paris: UNESCO

Van der Walt, T. B. (2015). *Introduction to records management and archival studies (RMA 301 A).* Pretoria: UNISA.

Van Deursen, A. J. (2014). The digital divide shifts to differences in usage. *New media & Society, 16*(3), 507-526. Retrieved March, 4, 2023, from https://doi.org/10.1177/1461444813487959

Van Dijk, J. A. (2005). *The deepening divide: Inequality in the information society.* Thousand Oaks, CA: SAGE Publications.

Van Vuren, J. A. (Ed.). (2012). *Academic Libraries: Reflecting on crisis, the Fourth Industrial Revolution and the way forward.* Johannesburg: UJ Press.

https://etd.uwc.ac.za/

Venkatesh, V. & Goyal, S. (2010). Expectation disconfirmation and technology adoption: Polynomial modeling and response surface analysis. *MIS Quarterly, 34*, 281-303.

Waithaka, M. W. (2013). Internet use among university students in Kenya: a case study of the Universityof Nairobi. *Doctoral dissertation, University of Nairobi*. Retrieved November 11, 2022, from http://etd.in

Walker, A. (2015). *Project Management in Construction.* Oxford: WILEY Blackwell.

Wamukoya, J. (2012). "The Role of Records Keeping and Open Government Data Initiatives in Fostering a Critical Development of Open and Public Services in Sub Sahan Africa". Mousaion, *30*(2), 117-127.

Wellman, B. & Haythornwaite, C. (2002). *The Internet in everyday life: An introduction.* Malden, MA: Blackwell Publishers.

Wirth, W. (2019). New knowledge gap caused by the internet? A discussion of relevant findings and concepts. *Medien Journal, 23*(3), 3-19 Retrieved February 2, 2023, from https://doi.org/10.24989/medien

Wright, T. & Benoit III, E. (2019). Technology use in designing curriculum for archivist: Utilizing andragogical approaches in designing digital learning environments for archives professional development. *Journal of Preservation, Digital Technology and Culture*. Retrieved October, 12, 2021, from https://doi.org/10.1515/pdtc-2019-0005

Yakel, E. & Torres, D. A. (2003). Encoded archival description: Are finding aids boundary spanners or barriers for users? *Journal of Archival Organisation, 2*(1-2), 63-77.

Yakel, E. (2006, July 1). "Inviting the user into the virtual archives". *OCLC System and Services: International digital library perspectives, 22*(3), pp.159-163.

Yale, E. (2015). *The History of Archives: The state of the discipline* (Vol. 18). Johns Hopkins University Press. doi:10.1353/bh.2015.0007

Yeo, G. (2010). "Nothing is the same as something else": Significant properties and notions of identity and originality. *Archival Science, 10*(2), 85-116.

Yin, R. (2003). *Case study research: design and methods (3rd ed.).* Thousand Oaks, California: Sage Publications.

Yin, R. (2009) *Case Study Research: Design and Methods* (fourth ed.). Thousand Oaks, CA: Sage Publications.

Zarindast, A., Sharma, A. & Wood, J. (2021). Application of text mining in smart lightining literature: an analysis of existing literature and a research agenda. *Intenational Journal*

https://etd.uwc.ac.za/

of Information Management Data Insights, 1(2), 1-12. Retrieved August 11, 2021, from https://doi.org/10.1016/j.jjimei.2021.100032

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Appendices

Appendix 1: UWC Ethics Certificate

UNIVERSITY of the WESTERN CAPE

24 November 2020

Ms NA Maleki
Library and Information Science
Faculty of Arts and Humanities

Ethics Reference Number: HS19/9/8

Project Title: User perspectives on the provision of virtual archives in the Western Cape Archives and Records Services.

Approval Period: 24 November 2020 – 24 November 2023

I hereby certify that the Humanities and Social Science Research Ethics Committee of the University of the Western Cape approved the methodology and ethics of the above-mentioned research project.

Any amendments, extension or other modifications to the protocol must be submitted to the Ethics Committee for approval.

UNIVERSITY of the
WESTERN CAPE

Please remember to submit a progress report by 30 November each year for the duration of the project.

The permission to conduct the study must be submitted to HSSREC for record-keeping purposes.

The Committee must be informed of any serious adverse event and/or termination of the study.

Ms Patricia Josias
Research Ethics Committee Officer
University of the Western Cape

Director: Research Development

University of the Western Cape

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HSSREC Registration Number: *HSSREC-130416-049*

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13 November 2019

MS NA Maleki
Library and Information Science
Faculty of Arts

Ethics Reference Number: HS19*/9/8*

Project Title: User perspectives on the provision of virtual archives in the Western Cape Archives and Records Service.

Approval Period: 11 November 2019 – 11 November 2020

I hereby certify that the Humanities and Social Science Research Ethics Committee of the University of the Western Cape approved the methodology and ethics of the above-mentioned research project.

Any amendments, extension or other modifications to the protocol must be submitted to the Ethics Committee for approval.

Please remember to submit a progress report in good time for annual renewal. The Committee must be informed of any serious adverse event and/or termination of the study.

Ms Patricia Josias
Research Ethics Committee
Officer University of the Western Cape

HSSREC REGISTRATION NUMBER - 130416-049

FROM HOPE TO ACTION THROUGH KNOWLEDGE

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Appendix 2: WCARS Approval

WESTERN CAPE ARCHIVES AND RECORDS SERVICE

e-mail: Nolundi.Maleki@westerncape.gov.za
tel: +27 21 483-0414
fax: +27 21 483-0444
72 Roeland Street, Cape Town, 8000
Our reference: SP N Maleki
Enquiries: N Maleki

Ms N Dingayo
Director of Western Cape Provincial Archives
Department of Cultural Affairs and Sport

REQUESTING APPROVAL TO APPLY FOR THE PERMISSION TO FACILITATE RESEARCH AT THE WESTERN CAPE ARCHIVES AND RECORDS SERVICE IN RELATION TO THE STUDY OF MASTER'S DEGREE IN LIBRARY AND INFORMATION SCIENCE (MLIS): MS. N. MALEKI

UNIVERSITY of the
WESTERN CAPE

1. **PURPOSE**

The purpose of this submission is to request approval to apply for the permission of facilitating the research and completion of ethics application form and consent form to archival users of the Western Cape Archives and Records Service in relation to the study of master's degrees in library and Information Science (MLIS) at the University of the Western Cape in the Faculty of Arts.

2. **BACKGROUND AND MOTIVATION**

2.1 As a librarian who is responsible for coordinating daily activities in a library in the Western Cape Archives Services, I saw that it is of utmost important to further my studies at a higher

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level; to ensure a high quality of library services, supervising daily operations, recruiting, and training staff, assisting patrons, finding ways to improve library facilities.

2.2 The purpose of studying will enable me to equip, develop and empower in the application of Library and Information Services trends and to gain knowledge into a dynamic leadership in transforming, developing, and sustaining Library and Information Services.

3. RECOMMENDATION

It is recommended that approval be granted for Ms N. Maleki to apply for the permission of facilitating the research to staff and archival users and completion of ethics application form and consent form to archival users and archivists of the Western Cape Archives and Records Service within her studies in the master's degree programmed in Library and Information Science (MLIS).

18/09/2020

MS N MALEKI **DATE**

LIBRARIAN

UNIVERSITY of the
WESTERN CAPE

The contents of the submission are supported and recommended/ not supported and not recommended:

18/09/2020

MS A MDAWE **DATE**

ASSISTANT DIRECTOR

https://etd.uwc.ac.za/

The contents of the submission are supported and recommended / not supported and not recommended:

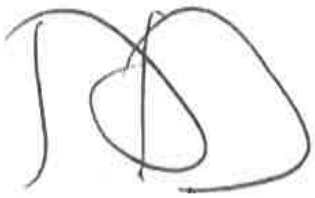
21/09/2020

MS C NGOBO **DATE**

DEPUTY DIRECTOR

The contents of the submission are approved / not approved / approved on the following conditions:

Request for researcher to staff is supported and approved. However, I cannot approve request for archival users as they are private individuals who are visiting the WCARS for their research purposes. You are welcome to approach them on your private capacity as a researcher.



UNIVERSITY of the
WESTERN CAPE

05/10/2020

MS N DINGAYO **DATE**

DIRECTOR PROVINCIAL ARCHIVES

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Appendix 3: Editing Certificate

https://etd.uwc.ac.za/

Fran Saunders

academic and business writing solutions

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To whom it may concern

This is to certify that I edited the following thesis

by Nolundi Maleki:

User Perspectives on the Provision of Virtual Archives in the Western Cape Archives and Records Service

The student was also made aware of sections which required further work.

Fran Saunders

11 April 2023

UNIVERSITY of the
WESTERN CAPE

https://etd.uwc.ac.za/