

Exploring the value of academic libraries in the 21st century: a comparative study of two universities in Southern Africa

by

Them bani Malapela

Student Number: MLP THE002

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Supervisor: Professor Emerita Karin de Jager



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Declaration

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Dedication

I dedicate this thesis to my mum and to the Malapelas. Thanks very much for always being there for me.

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I would like to express my heartfelt gratitude to my supervisor, Emerita Professor Karin de Jager, for invaluable guidance and feedback throughout the study. I learnt a lot from you, Professor, in the course of both my Master's and Doctoral research, from proposal writing to conclusion. This research would not have been accomplished without your support.

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Abstract

The concept of providing evidence of the value or worth of an academic library service has concerned librarians for more than five decades. Discourse on the value of libraries was stimulated in the United States by budgets and resource allocations in higher education institutions. Performance measurement sought to assess and justify the services offered in terms of the needs of stakeholders: politicians, higher education administration, students and parents. This development challenged the long-held notion that the academic library was the heart of the university. To remain appreciated and funded, academic libraries were now required to provide empirical evidence that they added value for their stakeholders and supported the mandates of the institutions that house them.

This study explores and interrogates the value of academic libraries in the face of the changing demands of Higher Education – stakeholders and users – in two academic libraries in Southern Africa. The study sought to establish the extent to which the respective academic library services can be perceived to add value for their users. The study employed the comparative case study research methodology and used three research instruments – documentary analysis, interviews and questionnaires – to collect data in institutions in Zimbabwe (Institution A) and South Africa (Institution B). At the request of the institutions, their identities remain confidential.

Value like beauty, it lies in the eyes of the beholder, and economists, sociologists, psychologists and marketers all have a different concept of value. This study investigated value from the point of view of value-in-use, a theoretical approach introduced by Adam Smith in his original attempt to define economic value. This approach was refined in Library and Information Science literature by Saracevic and Kantor's (1997) theorising of the use-oriented value of library and information services. The data collected was subjected to a two-pronged analysis: the first was based on the research questions and the second was informed by an original theoretical framework. This framework enabled a taxonomy that produced a checklist for four elements of academic library value chosen for the study – student learning, student success, faculty teaching and researcher productivity.

The findings of the study indicate that both libraries were aligned with their institutional mission, vision and goals. While the libraries offered services that support the fulfilment of their institutional mandates, using the results of the four elements of value as a sample of all value elements, there was a need for them to design services that meet specific expected outcomes for both students and academics. The main conclusion was that academic libraries continue to contribute to the mission and strategic goals of the institutions that house them. To remain an asset to the university, libraries should demonstrate their value within their institutional context by strategically aligning with the institutional mandate and linking their outcomes to elements of value (such as student success, teaching and research productivity). Despite major environmental changes in Higher Education, both technological and economic, academic libraries are appreciated and used by both students and staff. Both user groups indicated that the academic library's closure would seriously harm both the researchers' work and the students' access to information. The "Taxonomy of Value in Academic Libraries", which was developed in this study, appears to be a necessary tool to assess elements of value in academic libraries and should be further developed.

Acronyms and Abbreviations

ACRL	The Association of College and Research Libraries
ALA	American Library Association
ARL	Association of Research Libraries
CARL	Canadian Association of Research Libraries
CGT	Constructivist Grounded Theory
CHELSA	The Committee of Higher Education Libraries of South Africa
HE	Higher Education
IFLA	International Federation of Library Associations and Institutions
ISO	The International Organisation for Standardisation
MMR	Mixed Methods Research
MOOCs	Massive Open Online Courses
QQML	Quantitative and Qualitative Methods for Libraries Conference
RDA	Resource Description and Access
R-I-R	Reasons-Interaction-Results (R-I-R) model
ROI	Return on Investment
TQM	Total Quality Management
ZIMCHE	The Zimbabwe Council for Higher Education

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Chapter 1

Introduction

The grounded study of the use of libraries, say, or of the transmission of information is impossible without an understanding of what underlies the act of using a library or of transmitting information. (Budd, 1995:305-306)

This chapter offers an introduction to the study and its central concern, the value of academic libraries in the 21st century. The chapter begins by outlining the background of the study and then describes the research problem, defining the study's objectives in terms of four questions guiding the research. The chapter also outlines the theoretical framework of the study and adumbrates its research methodology, touching upon how data was collected, analysed and presented. The chapter concludes with a chapter-by-chapter outline of the thesis as a whole.

1.1 Introduction

Over the centuries, various user groups, societies and institutions have created libraries as hubs for the concentration and distribution of unique and valuable resources. Libraries have contributed to communities through their collections, spaces and services. In the 21st century, however, the role of information is changing (Saracevic & Kantor, 1997a:528) and libraries face increasing competition from advances in technology (Town, 2011a:113). These advances have enabled competition from a wide range of information resources available through the internet, such as websites, online databases, web applications, blogs, and other secondary and tertiary sources of information. This scenario repeatedly raises the question of whether libraries will survive in a digital age. Der Weduwen and Pettegree (2021) assure readers that libraries will survive the digital

age because libraries are reshaped by each generation in its own image and for its own needs. The question of the survival of libraries often reappears when “new” technologies or formats proliferate, for example, the growth of e-books and online digital libraries. Today, libraries have adapted to their environments by broadening their services and offerings, including such services as digital collections, digital literacy skills, digital gateways, and other online services (Ikenwe & Udem, 2023).

To remain appreciated and funded, libraries are challenged to provide empirical evidence that they add value to their stakeholders (Town & Kyrillidou, 2013). Most libraries have transformed themselves from collection-centric to client-focused service centres, and library spaces have acquired a new emphasis. In the last two decades, library spaces have grown to be accepted as places for collaboration, networking, innovation and idea creation (Webster, 2019). The future survival of libraries hinges on innovative library services providing technology, tools, spaces and information that enable users to learn, test their skills, design and make things, including new knowledge and solutions. Any discussion of the value of academic libraries needs to embrace the changing technological landscape and consider the changes that institutions housing and funding libraries are experiencing. Libraries do not exist in a vacuum.

The Coronavirus pandemic beginning in 2019 (COVID-19) accelerated the uptake of digital technologies in various sectors worldwide. At one stage, lockdowns closed down all public services, including academic libraries. Libraries had consequently to adapt their services to the changed environment, providing online services for their house-bound clients. They also sought to meet the needs of isolated researchers, facilitate research in the field of COVID-19, and promote health awareness (Deol & Brar, 2021). Dube and Jacobs (2023) report that in South Africa, a mix

of technologies was applied to service delivery. These technologies ranged from traditional e-mail support to the use of Artificial Intelligence (AI) technology such as the BOTsa, a chatbot for delivering speedy responses to users' library-related inquiries (Dube & Jacobs, 2023:n.d.). Some libraries applied metaverse-related technologies, experimenting with blockchain technology in service areas such as digital preservation tracking, interlibrary loans and library user verifications (Jha, 2023; Anna, Harisanty & Ismail, 2023; Guo et al., 2023; Tella, Ajani & Ailaku, 2023).

The post-COVID-19 era is seeing an increase in libraries exploring the adoption of emerging technologies such as Metaverse, AI, and robotics. For example, the applications and implications of ChatGPT for libraries are currently a topical subject (Lund & Wang, 2023; Cox & Tzoc, 2023). ChatGPT (Chat Generative Pre-Trained Transformer) is an AI chatbot that uses natural language (or large language model) processing to create humanlike conversational speech. It was developed by OpenAI and launched on November 30, 2022. The language model can respond to questions and compose various kinds of written content, including articles, social media posts, essays, code and emails. Offering an alternative to searching the internet, ChatGPT has been trained on a large corpus of text, including news articles, books, websites, academic articles and other sources (Hughes, 2023).

One should note that, in addition, library clienteles are becoming more dynamic, new uses are being found for library spaces, and new ancillary services are being developed. These include digital finance, digital preservation and digital collections. For Igwe and Sulyman, such services point to the arrival of "smart libraries", institutions providing library services by relying on sophisticated machines that respond to users' requests without the intervention of librarians (Igwe & Sulyman, 2022:148). In higher education, four main strategies were employed by academic

libraries in supporting education and research during the pandemic: “creating new services and activities, developing previous services and activities, changing previous services and activities, and supporting research on COVID-19” (Rajabali, Akhshik & Rostami, 2022:290). COVID-19 accelerated the digitisation of library-based services and required libraries to adjust to both changing societal needs and the immediate needs of users.

In the context of these changes, three lines of discussion emerge as relevant to studying the value of libraries. The first is that *value* is not a simplistic concept to measure. It is consequently commonly discussed in economic terms (Dixon, Pickard & Robson, 2002). Yet library services are generally not sold (Matthews, 2013:164), and since libraries are social institutions, their value should be expressed in terms of their worth to their users (Tenopir, Fleming-May & Chrzastowski, 2012). Determining this worth, calculating how value is added by the work of library and information professionals, is therefore a highly complex matter. Most current literature on the value of libraries draws widely on concepts from outside library literature, from marketing, management, economics, sociology, impact assessment, evaluation studies and business logic (see Section 2.4 for extensive discussion of this). Many examples of these assimilated concepts can be seen in library and information science literature, often taking the form of service logic, customer value proposition, outcomes measurement, return on investment, and social construction (Dixon, Pickard & Robson, 2002; Grönroos, 2008; Kyriallidou, 2002; McIntosh, 2013; Osborne et al., 2022).

Secondly, the value that users seek from libraries must be demonstrated – value can be immediate and/or long-term (impact value). The immediate value can be measured quantitatively (for example, through transactional log analysis) or qualitatively (for example, through library feedback

questionnaire and forms), in demonstrating that a service has met the users' needs. Libraries have always collected transactional use statistics as evidence to inform collection development decisions, service planning and accountability reports. Markless and Streatfield (2006:13) have surveyed the enthusiasm for "evidence gathering" and "evaluating the impact" that arose in response to three emerging calls that they characterise as the accountability obsession, the value for money drive and the evidence-based working aspiration. Evidence gathering of this kind is not, however, sufficient to address current questions about value that seek justification for the very existence of libraries. However, qualitative techniques were used to demonstrate impact value in the University of Washington (UW) libraries, where they employed the critical incident technique to establish the library's impact on teaching, learning, and research. The study emphasized the inclusion of critical incident technique (CIT) questions provide valuable stories in users' own words describing the impact of the library's services. (Belanger, Faber & Oakleaf, 2018). Measuring impact value is the concern of this study, namely how academic libraries could demonstrate their value to students, academics and universities.

Thirdly, the value of the library should also be understood within broader societal demands. The library does something beyond itself and makes a social contribution (referred to as "transcendent value", a term initially coined by Town [2011b:114] and later cited by Matthews [2016:31-33]). Libraries are organisations that have a social contract with the societies that create them. The social nature of the library requires it to deliver services with social consequences² If the value

² This line of reasoning resonates also with the concept of *value-in-society* – "where a public service enables the expression and/or fulfillment of public/democratic values, the provision of public goods, and/or the indirect impacts of the service upon society" (Osborne et al., 2022:641).

measurement of libraries is not linked to stakeholder expectations, then the measures determined have no force or meaning (Matthews, 2016).

This study explored the value of academic libraries in Africa in the 21st century through a comparative case study of two academic libraries, one in Zimbabwe and one in South Africa. The study examined the respective roles of these libraries, their value to the institutions that fund them, and ultimately their contribution to their respective higher education (HE) sectors. In higher education, calls for academic libraries to justify their existence have increased over the years (Cox, 2020). Librarians have had to rethink their models and seek ways of demonstrating value to their stakeholders and to the communities they serve. Libraries and librarianship have at the same time been greatly affected by Information Communication Technologies (ICTs), the advent of the internet and Web 2.0 technologies, changing and unpredictable economic climates, the proliferation of social media, the transformational nature of digital technologies, and the growth of digital, web-based and networked information resources. The use of technology has become an essential part of libraries, transforming the consumption, processing and dissemination of knowledge and enabling libraries to work more efficiently (Cox, 2021).

1.2 Background of the study

In presenting the background to this study, two aspects are considered. The first is the background to the concept of value in the discourse on academic libraries, essentially building upon the introduction section, above. The second is the background of the institutions being studied, providing information relevant to understanding them as cases for study.

1.2.1 Conceptual background

Academic libraries exist to support the research, teaching and learning needs of the universities (or colleges) they serve. The function of the academic library is to support the institution that houses it, and this is reflected in its contents and the services it offers. The academic library is not an autonomous entity but is defined by and responds to the environment of which it is a part. The form and structure of academic libraries, the services they offer, the contents of their collections, and the purpose of their services are influenced by both internal and external factors. On the one hand, colleges and universities have their own distinctive and individual structures, cultures, and ways of responding to higher education systems and the outside world. On the other, the operating environments of academic libraries are in a constant state of change. The change drivers include the evolution of scholarly communication, changes and advances in technology, availability of funding and budgets, an increase in the general availability of electronic online information sources, and – most importantly – reforms in the higher education environment. Researchers have reviewed the services these libraries offer to students, researchers, and academics, the collections they hold, the professionals who work in them, the effects of new technologies on their services and the impact of social media (see, e.g., Allison, 2015; Brophy, 2006; Dempsey & Malpas, 2018; Gore, 2014; Lewis, 2016). As a result, academic libraries have been adapting their models, structures and collections increasing technology-oriented services, remodelling their spaces and supporting academics' desire for new and innovative courses.

At the same time, academic libraries are facing enormous pressures from their funders. Academic libraries have always been cost centres within the institutions that house them, as they depend mainly on revenues that come from their parent institutions (Dempsey & Malpas, 2018). A few

years ago, the global financial crisis resulted in budget cuts to universities in the United States of America (and elsewhere), and libraries were not spared (Wolinsky, 2009). Similarly, during a more recent financial crisis in Greece, academic librarians had to devise strategies to maintain services with reduced funding (Kostagiolas et al., 2016). In Australia, the COVID-19-related public health measures caused a significant reduction in the number of international students, creating a financial crisis that saw many tens of thousands of university staff losing their jobs and courses being cut (Parker, Martin-Sardesai & Guthrie, 2023).

In such times of crisis, library directors are faced with the challenge of running library services with less financial support but with increasing information needs on the part of students and academic staff (Jinendran Jain & Kumar Behera, 2023). Gone are the days when the existence of libraries was self-evident and beyond question (for example, the commonly held notion that libraries are important to their communities) (Vinjamuri, 2013). Libraries now need to justify their existence and their need for ongoing funding. An academic library thus needs to demonstrate how it contributes directly to the research, teaching and learning processes of the university. As explained above, the technological landscape of the post-pandemic world, especially with emerging technologies such as machine learning and artificial intelligence, demands a rethink of the value of academic libraries to their respective stakeholders. It is important to note that economic, cultural, societal, political and financial problems have had a similar impact on how libraries respond to their stakeholders (see Section 2.5.2 for example on economic and financial impacts).

This study investigated the response of two academic libraries to the demands of their stakeholders and sought to establish to what extent their behaviours and models are of value to the research

performance of their parent institutions. The literature shows that academic libraries are increasingly attempting to measure and justify their value to the stakeholders they serve, having recourse to performance evaluation metrics. These attempts, while providing some sense of self-worth, fall short of convincing university administrators that academic libraries help universities meet their expected outcomes. Two theoretical questions emerge from the discourse on the value of academic libraries that deserve further examination:

- i) Whether academic libraries contribute to the overarching goals of the institutions that house them; and,
- ii) How academic libraries add value to their stakeholders.

Quantifying the academic library service contribution and designing a service that meets the dynamic demands of changing environments are separate but complementary issues. This study explores these issues by investigating two institutional libraries (whose identities are kept confidential as requested).

1.2.2 Background to the institutions under study

The study examined two institutions from Southern Africa: institution A, located in Zimbabwe, and institution B, located in South Africa. The two institutions are academic libraries, both state-owned and affiliated with public universities, but from two separate higher educational environments. This study made use of a Taxonomy of Value of Academic Libraries (see Section 1.6.1 and Chapter Five of this thesis). Because the institutions are situated in different higher educational environments, applying such a standardising taxonomy of value enriched the validity of the study. The methods of data gathering were the same in each institution (see Section 1.7 below) and in both institutions, similar elements of academic library value were examined. The

responses of stakeholders in each case made a distinct and worthwhile contribution to the present study, offering a fuller and more complex result than if the study had been conducted at only one institution.

Both institutions award degrees from the undergraduate to doctoral level and both seek to increase their research outputs. Despite what they have in common, the institutions are located in different educational systems and are differently focused. The different research agendas of the two institutions had the potential to affect their stakeholders' perceptions of value and therefore the conclusions of this study. This construct diversity widened the range and extended the reach of the study. The implications of this were felt in the time taken for the research, as the same processes had to be followed at both institutions, and navigating ethical clearance in two cases was a lengthy process. However, the distinctiveness of each institution offered a methodological test for applying the taxonomy (see Section 1.6.1) to the respective institutions, thereby enabling unique perspectives on the elements of value examined.

1.2.3 Overview of the higher education landscape for academic libraries in South Africa and Zimbabwe

The South African government is keen on improving access and success through equity-based interventions for groups of students previously disadvantaged – poor students, women students, black students, and students with disabilities. South Africa has targets for increasing the participation rate in universities, which is expected to grow from 17.3 per cent in 2011 to 25 per cent of the relevant population by 2030 (National Planning Commission, 2011). The sector saw student protests in 2015-2019 that challenged perceived inequalities of access to education. The

COVID-19 pandemic further highlighted persistent systemic inequalities prevalent within South African higher education. Today South Africa boasts of 26 publicly funded universities, including the open distance learning institution, Unisa (University of South Africa). These universities can be grouped into three tiers (i) traditional universities, (ii) comprehensive universities, and (iii) universities of technology. The SA university chosen for the present study falls under (i) traditional universities, and compares well with the university in Zimbabwe. In SA, academic libraries are increasingly playing a pivotal role in promoting the mission of the universities that house them. The Committee of Higher Education Libraries of South Africa (CHELSA) recently noted that “the national research imperatives and the demand for more quality graduates have also influenced how academic and research libraries respond and align themselves to these institutional strategic imperatives” (CHELSA, 2021:14). Subsequent sections in this thesis will elaborate on the contribution of policy and institutional strategic alignment towards understanding the value of academic libraries to their institutions and HE in South Africa more generally.

Meanwhile, in Zimbabwe, the government plays a major role in academic institutions, by influencing policy, providing funding, establishing programmes, and determining curricula. According to the Zimbabwe Council for Higher Education (ZIMCHE 2021/22), which accredits universities and higher education institutions, there are 21 registered³ universities in Zimbabwe (14 state universities and 7 private universities). In 2021, the government of Zimbabwe introduced the Education 5.0 HE Policy, ostensibly geared towards problem-solving and value creation. This ambitious policy seeks to transform Zimbabwe’s state universities’ traditional tripartite mission of

³ ZIMCHE.2024. *Registered HEIs*. Available : <https://www.zimche.ac.zw/registered-heis/> [2024, August 5].

teaching, research, and community service by aligning the higher education sector with the national ambition of attaining middle-income status by the year 2030. HE in Zimbabwe is challenged not only to teach, research and serve the community, but also to innovate and industrialise Zimbabwe. Under Education 5.0, universities must aim for outcomes-focused national development activities that ensure problem-solving skills for value creation. Following the promulgation of the Education 5.0 policy, universities and their libraries have crafted action plans to implement this in their respective institutions. Section 6.2 and Section 7.2 of this study show the results of documentary analysis outlining the strategic alignments for Institution A and Institution B, respectively.

1.3 Research Problem

Academic libraries were established to provide for the informational needs of colleges or universities and support their respective mandates, and their value to their user constituencies has long been assumed. This study explores the value of academic libraries to two universities and their stakeholders. The concept of providing evidence of the value of a library service has concerned librarians for more than three decades, yet there has hitherto been no conclusive approach for determining and measuring the value of an academic library service. The increasing calls for accountability for public expenditure have renewed the demand for evidence to justify the existence and continued funding of libraries in general (Matthews, 2016). Academic libraries specifically are expected to demonstrate that their existence supports in measurable terms the activities of their parent institutions (Baker, 2019). Establishing and maintaining a library service is a huge cost to the universities and colleges they serve, and in times of crisis, their worth is apt to be questioned (Kostagiolas et al., 2016; Temoso & Myeki, 2023). Moreover, higher education

policymakers, parents and students have great expectations from universities. Academic libraries are challenged to demonstrate their contribution to realising these expectations through their commitment to the mission of the parent institutions. Yet two broad problematic themes emerge when one attempts to assess the value of academic libraries to their parent institutions and stakeholders. These are described in the following subsections.

1.3.1 Different value expectations exist among funders, university administrators, academic staff and students

Libraries rely mostly on revenue from their host institutions, and they are costly to maintain. As a result, academic libraries need to demonstrate their value and worth to the institutions that fund them. These institutions do not necessarily recognise the broader value of libraries (Cox 2018; Delaney & Bates, 2015). For example, studies by Murray and Ireland (2018) and Connaway, et al., (2017) analysed the perceptions of senior academic administrators. Among them were library administrators, who noted that while academic libraries were essential in “student retention and success, faculty research productivity, accreditation; campus overall doesn’t recognise the library’s potential” (Murray & Ireland, 2018:359). Regarding funders or institutional owners, there are few studies providing guidelines to measure value as they perceive it. Academic departments, on the other hand, aim to increase their research productivity, most importantly by publishing in high-impact journals. In this way, they prove their worth both to funders and in terms of the university’s mission. Academic units thus expect libraries to add value to their research productivity.

1.3.2 Value is a challenging concept to measure

Value like beauty is assigned meaning by the beholder, and may be inferred, observed or solicited (Andriessen, 2005:3; ISO 16439, 2014). Measurement of the value of a service is a concept more commonly dealt with in marketing and sales than in the library field. In marketing, the price a customer is willing to pay for a product or service is the standard metric for the measurement of value. In the library and information field, studies in performance measurement can be traced to James Gerould, F. Wilfrid Lancaster, and Duane Webster (Kyrillidou & Cook, 2008). Oakleaf study became a watershed study for the value of academic libraries. In the last decade, a few international instruments and frameworks have been published to help libraries adopt a holistic approach to the impact and quality assessment of various aspects of what they do (ISO 16439, 2014; ISO 11620, 2014, replaced by ISO 11620, 2023; Association of College & Research Libraries, 2018). These instruments and frameworks offer little more than a standardised terminology and fall short of helping academic libraries measure or demonstrate their value.

In the heart of the discourse of performance measurement in libraries is the *logic model* or the '*input, process, output model*' which is commonly referred to in libraries. The key elements of this model are (as explained by Markless & Streatfield, 2006:xv) :

- *Inputs* – the resources needed to sustain a service
- *Processes* – what is done with the inputs, for example how the library building is used – as a storage for books or as a reading space, etc.
- *Outputs* – the direct result on the service of combining inputs and processes.
- *Outcomes* - are how the participants are affected by their participation or interaction with a library service.

Fig. 1:1 below shows the logic model example (compare with Fig. 2.5 and Fig.2.7)

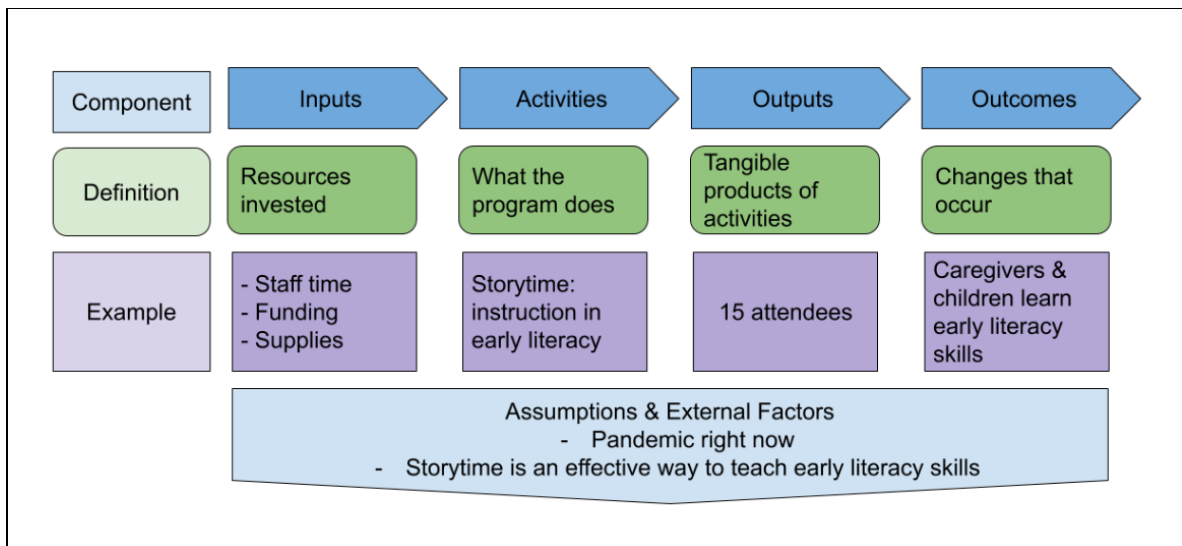


Fig. 1.1 An example of a logic model (Fox, 2020)

Section 2.3.1 of this thesis defines broadly these concepts, in addition ISO Standard: *Information and documentation: methods and procedures for assessing the impact of libraries* (ISO 16439(E):4.2). Brophy (2006:58) extends the logic model and adds outcomes – *Outcome based model* (see diagram Fig. 2:7). Many scholars agree that these models had many limitations, as they were ineffective in measuring or demonstrating the impact or value of a service to broader goals beyond (see Fig. 2:12 immediate needs - for example, Markless & Streatfield, 2006: xv, 23,53; Connaway & Powell, 2010 ; Oakleaf, 2018). The library should have an impact on users. In an academic library setting, the library must impact learning, teaching, research, and service. In this setting, the library value is its assurance that its service will advance the learning needs of students, research and teaching needs of the teaching and research staff and advance the goals of the institutions that house them.

This thesis concerns itself with how academic libraries could demonstrate their value to students and academics. The results of this study suggest that academic libraries could use the proposed

methodology to demonstrate the value of their services to their stakeholders and host institutions. The results offer a ground-breaking advance in understanding the concept of measuring the value of academic libraries. This study provides a means for library and information professionals to measure the value of a service that users do not evaluate in monetary terms.

1.4 Objectives of the study

The purpose of this study was to explore the value of academic libraries in the context of the changing demands of the higher education sector, their institutions and their users. The study sought to discover how academic libraries could demonstrate their value to students, academics and universities. The study closely examined the strategic direction and goals of the academic libraries at Institution A and Institution B, and – using selected elements of value that are important to students and academic staff – sought to ascertain how these libraries demonstrated their value to their institutions.

1.5 Research questions

The following are the research questions informing this study:

- 1.5.1 What institutional outcomes do the libraries expect for their respective universities and researchers, regardless of the changing needs of the research terrain?
- 1.5.2 To what extent do the mission statements of the universities demonstrate how their libraries should add value to their institutional goals and objectives?
- 1.5.3 What value do each library, and its services contribute to student learning and student success, faculty teaching and research productivity at their respective universities?

- 1.5.4 What similarities or differences exist in the perceptions of the value of academic libraries, and how do the libraries demonstrate their value at their respective institutions?

1.6 Overview of the theoretical framework

This study builds upon the concept of value-in-use and the theoretical framework initially introduced by Adam Smith (Smith, 1776:3) in his original attempt to define economic value. It draws upon the application of value-in-use in library and information science literature. When applying the value-in-use theoretical framework (often when exploring the “value of information”), researchers use the Reasons-Interaction-Results (R-I-R) model. The Reasons-Interaction-Results (R-I-R) model was used, for example, by Saracevic & Kantor (1997a:534) in a study of the value of information services. The R-I-R model states that a user has *Reasons* for demanding library and information services, the user *Interacts* with a service and because of that interaction obtains certain *Results*. Thus, if a user interacts with a library service and the service satisfactorily meets the user’s initial reasons or needs, the result can be interpreted in terms of the value of the service to the user.

Evaluating library and information services can be approached on three levels, social, institutional, and individual. This study concerns itself with the individual and institutional levels, and the intersection between the two. There have been debates on how to measure value at institutional and societal levels, in other words, how a service interaction can be mapped to societal outcomes. However, like the approach of Saracevic and Kantor, the central premise of this study is the assumption that value is related to use.

In this thesis, to map individual elements of value to institutional goals, a taxonomy of user values for library and information services was adopted. Saracevic and Kantor (1997:540) devised a Taxonomy of Value in Using Library and Information Services to establish what is regarded as value in library services. The taxonomy of value was important in identifying the individual elements of a service (or perceived outcomes) that constitute value. The absence of a recognised taxonomy or commonly perceived outcomes has led to diverse approaches to establishing value and inconclusive debate on the subject. In public libraries, for example, Rooney-Browne (2011) identified eleven potential outcomes as elements of social value – improved self-esteem, empowerment, improved life chances, employability, social networks, promoting civic values, sense of place, informed citizens, community engagement, social cohesion, and social, human, and intellectual capital. Huysmans and Oomes (2013) derived five domains of outcomes, while Vakkari and Serola (2012) established 22 elements organised into five main domains of outcomes. Within performance management in libraries, the importance of outcomes measurement has been stressed (Streatfield & Markless, 2012; 2019). However, the absence of commonly agreed outcomes has produced a diversity of discourse (Bertot & McClure, 2003:12; Thebridge & Dalton, 2003). To harness common approaches after the Oakleaf (2010) study, which defined common outcomes for academic libraries, and to map relevant outcomes to the institutions under study, this study created a taxonomy of value for *academic* libraries.

Value studies in the field of academic libraries are now informed by the “elements of value of academic libraries” identified by Oakleaf (2010:19), restated by ACRL (2017) and emphasised by Connaway, et al., 2017. These specific elements of value are student enrolment, student retention and graduation, student success, student achievement, student learning, student experience, faculty research productivity, faculty grants, faculty teaching and institutional reputation and prestige

(Oakleaf, 2010:19). Within each of the elements there are designated focus areas. This study implemented an abridged Saracevic and Kantor model to establish a *Taxonomy of Value of Academic Libraries*, informed by the Oakleaf study but with a specific focus on Southern Africa. The Taxonomy of Value of Academic Libraries focused on the specific elements of student learning and success, faculty teaching and researcher productivity. Another element of Saracevic and Kantor's (1997) value-in-use method was the "perceived value" approach. Perceived value comprises users' subjective valuation of the benefits of a given information service (Tsakonas & Papatheodoru, 2009:255). This study thus questioned users of academic libraries to determine their views of the value of services.

1.6.1 Taxonomy of value of academic libraries

Kostagiolas and Asonitis (2019) emphasise that traditional tools for value measurement do not provide a full answer to the demand for proof of worth. As noted by researchers in academic library literature, the need for in-discipline tools for measuring value has been steadily increasing (see Section 2.7 [last paragraph] on emerging tools of value). Furthermore, the adoption of a value-in-use framework (as explained in Section 1.6, above) demanded that parameters for measuring value be created and used as a checklist to extract from user feedback relevant elements of value.

In Saracevic and Kantor (1997a) and Oakleaf (2010:23), where the value-in-use theory was used, the studies established metrics (identified as a 'taxonomy' in Saracevic and Kantor [1997a]) for the measurement of value. Oakleaf (2010:26) reviewed the literature on academic libraries to establish recommendations for how academic libraries could move forward in demonstrating their value. These became potential outcomes for determining the value of the academic library. They

included indicators such as student enrolment, student retention, student success, student achievement, student engagement, faculty research productivity, faculty teaching and institutional quality. As indicated above, the Taxonomy of Value of Academic Libraries employed in this study focused on student learning and success, faculty teaching and researcher productivity. These were common elements of value that featured in the mission statements of both universities. While the taxonomy offers common approaches to measuring the academic library value, it will also need to be adjusted in application to specific institutions to reflect their unique interests, goals or needs. Chapter Five of this thesis presents the Taxonomy of Value of Academic Libraries, focusing on the elements important for the present study.

1.7 Overview of the research methodology

The study employed a comparative case study research methodology. Comparative case studies usually involve “analysis and synthesis of the similarities, differences and patterns across two or more cases that share a common focus or goal” (Goodrick, 2014:1; Hantrais, 2009). Comparative case studies often incorporate both qualitative and quantitative data. They are also very useful in understanding and explaining how context influences the success or failure of an intervention and how subsequent outcomes differ. In this study of two institutions or cases, document analysis was carried out on each institution’s mission statement, the library mission and strategic plans and other documents to establish the institutional focus of each library. The results were mapped to “elements of value of academic libraries” as identified by Oakleaf (2010). A literature search was conducted on all the elements of value but focused on specific aspects that fell under each of the four elements (student learning, student success, faculty teaching and researcher productivity). These were then used to create the Taxonomy of Value of Academic Libraries (see Chapter 5).

For the purposes of this study, in each respective case or institution, expected institutional outcomes were established from document analysis, and then users (research students and researchers) in each institution were asked about specific aspects of value – such as the importance and role of the library for researcher productivity. The results from all the methods were compiled and analysed to establish a value proposition for each case, and then the total results were compared. Therefore, the comparison was not “institution A compared to institution B using X parameters”, but “institution A measured to meet expected parameters X1 – (Result A)” compared to “institution B measured to meet expected parameters X2” (Result B). Result A was then compared to result B. In this way, the study measures the service delivery of each respective institution in relation to its user group’s expectations and then draws similarities and differences from the respective user groups’ responses. The three faculties that served as units of focus across the two universities were education, health sciences and business management.

It is acknowledged that the two selected institutions are from two different educational systems. Institution B is an example of a traditional university in Africa with a focus on basic, fundamental research, whereas the emerging research agenda of Institution A involves the conduct of applied research. The different research agendas of the two institutions have the potential to affect their respective stakeholders’ perceptions of value and expand or enrich the perceived components of academic library value in the study.

1.7.1 Research methods

The following research methods were used.

1.7.1.1 Document analysis. Background documents were sought, including university strategic plans, vision and mission statements and higher education reports. Document analysis has been defined as a form of qualitative research in which documents are interpreted by the researcher to give voice and meaning to an assessment topic (Bowen, 2009). The purpose of this method was to explore the institutional context, understand the focus of the academic library services and establish “the elements of value of academic libraries” that are common and applied to Institution A and Institution B. This was useful in establishing the value-in-use approach associated with the interaction of students and staff with university library services. The information found in this investigation was organised in terms of the central question of the research (Bowen, 2009:32). For a detailed discussion of this method, see Section 4.5.1, with results reported in Section 6.2 and Section 7.2 respectively. The research instrument is to be found in the Appendix 1.

1.7.1.2 Interviews. There are three fundamental types of research interviews: structured, semi-structured and unstructured. In this study, semi-structured interviews were conducted with researchers and lecturers (see Appendix 2 for a sample interview guide and Section 4.5.2 for detailed information).

1.7.1.3 Questionnaires. Questionnaires were administered to ascertain graduate students’ expectations of value from their respective libraries. The study sought the views and opinions of graduate students in the selected faculties. Two online surveys were distributed to graduate students on their expectations of academic library support for teaching, learning and research productivity.

1.7.2 Sampling. The study was carried out at two sites, Institution A and Institution B, in each of which three comparable disciplinary faculties were identified – Health Sciences,*⁴ Commerce or Business* and Education. The study employed probability sampling and, specifically, a simple random sampling approach (see Section 4.4.3.2 for more details on the sampling method).

1.7.3 Data Analysis. Data analysis refers to the process of extracting meaning and understanding from the collected data (Coghlan & Brydon-Miller, 2014). (Section 4.8 discussed data analysis procedures in-depth). This study employed both qualitative and quantitative methods, which meant that data analysis was performed in two phases. The first phase involved standard questionnaire analysis, the process of collating and interpreting the responses to each question. The second phase was to analyse the qualitative data gleaned from documentary evidence from both institution A and B. The ATLAS.ti tool was used to analyse these documents (see Section 4.8.4). According to the value-in-use theoretical framework of Saracevic and Kantor (1997a & 1997b), after data has been collected for the second phase of the analysis, coding using tags from the Taxonomy of Value in Academic Libraries commences (See Section 4.7 and Appendix 4 & 5).

1.7.4 Research scope. The research focused on two academic library user groups: graduate students and lecturers/researchers from the Faculties of Education, Health Sciences and Business Management/Commerce. There was an online questionnaire for graduate students and an online interview for lecturers/researchers (see Appendices 2 and 3). While the Oakleaf study (among others) recognises numerous elements of value (as

⁴ Actual names in each institution are phrased differently: the uniformity of nomenclature seeks to preserve the anonymity of the institutions being studied.

discussed above in Section 1.6), this research focused specifically on the elements of student learning, student success, faculty teaching, and researcher productivity.

1.8 Contributions of the study

This study adds to the literature on the value of libraries to their institutions and, ultimately, their national higher education systems. The literature search revealed very few works on the value of libraries in sub-Saharan Africa (further discussed in Chapter 2). The study contributes to academic librarians' and library administrators' concepts of value measurement in libraries and in justifying institutional support for libraries. Foundational work on theories of value published by this researcher (Malapela & De Jager, 2018) has received many citations, signalling the appetite for and the contribution of this work to the study of value in libraries and library and information science literature.

The libraries at Institution A and Institution B have mission statements that demonstrate their commitment to their stakeholders. This study sought to support these institutions and similar institutions to optimise their service delivery to their respective constituencies.

This research is important for the following reasons:

- 1.8.1 It suggests potential areas of value that academic libraries can further exploit to establish their value to the institutions they serve.
- 1.8.2 It proposes a methodology for measuring value in academic libraries using a Taxonomy of Value in Academic Libraries.

- 1.8.3 The results increase knowledge of how academic libraries can contribute value to the goals and mission of their parent institutions.
- 1.8.4 It contributes to the present understanding of library value in sub-Saharan Africa.
- 1.8.5 It challenges academic libraries to design services that add value and contribute to the goals of students, researchers and educational communities; and continually to seek innovative ways to serve their users and the institutions that established them.

1.9 Assumptions of the study

The study was influenced by the following methodological and theoretical assumptions:

- 1.9.1 **Methodological assumptions.** This study examined two libraries in their natural environment and hence engaged with the respective worlds of these service entities. A research paradigm has been characterised as a logical “framework for observation and understanding, which shapes both what we see and how we understand it” (Babbie 2016:31). This study proceeds within a pragmatist paradigm (see Section 4.4.1.5). It assumes the epistemological perspective that there are multiple realities, and that meaning is co-constructed through interpretation. The study accordingly employed mixed methods that assured access to an array of data sources and methods of analysis, to help promote the validity of the findings (see Section 4.4.2 for a discussion on research design).
- 1.9.2 **Theoretical assumptions.** In research on the value of libraries, there are typically two approaches: financial or economic value versus social value. The present study follows neither approach and uses the value-in-use theory as expounded by Saracevic and Kantor

(1997a), Saracevic and Kantor (1997b) and Oakleaf (2010:23).⁵ The study assumes that users of academic libraries do have post-transaction expectations of value, otherwise they would not be users. The study therefore subscribes to the notion that users interact with the service and derive worth or benefit as a result of interaction. This reasoning is the basis of the value-in-use theory.

1.10 Limitations of the study

There are both internal and external limitations to this research. The internal limitations include the fact that there are very few studies of the *value-in-use* framework in the library and information science literature (LIS), though some cognate work in marketing was identified (Kuzgun & Asugman, 2015; see also Chapter 2). Similarly, no common methodology in LIS was found to measure the value of academic libraries as defined by the objectives of this study. Another limitation attaches to the methodology of comparing institutions from two different educational systems. The methodology had to be shaped to curtail this structural opportunity for bias, and grounding the research methods on the theoretical framework and methodology did offset this limitation. This study was conducted during the pandemic period, and the researcher (who is living in Italy) contracted COVID-19 twice during the period of this study.

1.11 Delimitations of the study

The study focuses on the value-in-use of academic libraries and does not cover the economic or financial value of libraries. In a case study of two southern African academic libraries, the research

⁵ It is also referred to as the theory of use-oriented value of library and information services (Saracevic & Kantor, 1997a).

implemented the Saracevic and Kantor (1997a & b) model of the theory of use-oriented value in library and information services. The study sought to establish how these libraries demonstrate value to their respective institutions in terms of expected outcomes.

1.12 Ethical considerations

This study meets the ethical requirements of the University of Cape Town and the two institutions under study. Achieving this delayed the study by close to two years, as navigating each institutional ethics process took an unexpectedly long time (a full explanation is given in Section 4.7.3).

1.12.1 PhD research clearance. This indicates compliance with ethical considerations in research as prescribed by the University of Cape Town. According to Dich, McKee and Porter (2013), abiding by ethical standards prevents the fabrication and falsifying of data and is important for collaborative work because it fosters an environment of trust, accountability and mutual respect between the researcher and the subjects of research. Dealing with human subjects therefore requires a sensitive approach that guarantees voluntary participation and informed consent, and ensures that the subjects are fully informed about the procedures and expected use of the outputs of the research.

1.12.2 Research instruments. These were cleared by the University of Cape Town and the ethics committees of the two institutions under study.

1.12.3 Confidentiality and privacy. The instruments did not divulge the identities of the subjects and carried a cover note explaining the purpose of the research and how the subjects could opt out

of the research process. In the collation of data, every care was taken to anonymise all the items. The identity of the institutions selected for the study was anonymised at the request of one of the institutions.

1.12.4 Ethical clearances at research sites. This research was cleared by the two universities under study as well as by the University of Cape Town.

1.13 Organisation of the thesis

The thesis is made up of nine chapters, as follows:

Chapter One presents an introduction and background to the study. It explains the research problem and details the objectives of the study. A brief outline of the theoretical framework is also provided.

Chapter Two presents a critical review of the literature on the assessment of performance in libraries and within the context of the value and evaluation of academic libraries. The review explores several theoretical approaches that have been used to inform assessments of value in academic libraries, as well as some practical approaches to consider when studying the value of academic library services.

Chapter Three describes the value-in-use theoretical framework of the study, as proposed by Saracevic and Kantor (1997a), Saracevic and Kantor (1997b) and endorsed by Oakleaf (2010:23). The framework borrows heavily from Grounded Theory, as was evident in the

data analysis. When applying the value-in-use theoretical framework researchers use the Reasons-Interaction-Results (R-I-R) model. The model challenges academic libraries to demonstrate their value and establish potential outcomes for determining this.

Chapter Four presents the research methodology, describing the research paradigm, approaches, and methods employed in this study. The latter include document analysis, questionnaires and interviews conducted in Institutions A and B. The chapter also covers issues relating to population and sampling, and explains how the data collected was analysed. The comparative aspect of the analysis and issues of validity and reliability are also addressed in this chapter.

Chapter Five presents in summary the Taxonomy of Value in Academic Libraries used in the study. This chapter is divided into two major parts. The first part focuses on principles used in developing the Taxonomy of Value in Academic Libraries. The second part presents the actual Taxonomy of Value in Academic Libraries. The taxonomy covers the various categories of value defined in the course of the study: student learning and success, faculty teaching, and researcher productivity.

Chapter Six presents the analysis of and findings from data gathered at institution A. This chapter and its successor are similar in approach but present the results from each case separately. The results from the questionnaire are presented first, followed by the qualitative data from the interviews and documentary analysis. (The methods of and rationale for the data analysis are explained in Chapter Four)

Chapter Seven similarly presents the analysis of findings from data gathered at institution B, and follows the format described above.

Chapter Eight is devoted to discussion and comparative analysis of the results in relation to the objectives of the study. This chapter is essential to the explication of the comparative aspects of these two cases and establishes both convergent and divergent findings.

Chapter Nine offers a conclusion, and recommendations based on the findings in Chapters Six to Eight. These include recommendations for implementation at other institutions.

1.14 Chapter Summary

This first chapter lays the foundation for the study. It introduces the study, locates it within broader debates about the value of libraries, provides some background, and formulates the research problem, objectives, and questions. Thereafter, the methodology and theoretical framework are briefly described and explained. An overview of how the study is organised is provided. The next chapter reviews the literature on the value of academic libraries.

Chapter 2

Literature review

To ask why we need libraries at all, when there is so much information available elsewhere, is about as sensible as asking if roadmaps are necessary now that there are so very many roads. - Jon Bing, Professor of Information Technology Law, University of Oslo, Norway (Tchangalova, 2009.n.p).

2.1 Introduction

This chapter reviews publications on the value of academic libraries. For this purpose, an academic library is defined as a library associated with a degree-granting institution of higher education.

The chapter is organised into four sections. The first section surveys the higher education landscape – its evolution, demands, and impact on academic libraries. The second section reviews the literature on performance measurement and evaluation in libraries. The third section examines the concept of value in various fields, including that of library and information science. The final section considers current discussion and approaches to the question of the value of academic libraries.

2.1.1 Thematic areas of the literature review

The literature searches for this study were carried out on several and diverse sources from the internet, online databases, journal databases and other major sources of scholarly work. Various keywords were consulted both within and outside the field of library and information studies. The following keywords (and/or search strings), among others, were used: “elements of academic library value”, “libraries and researcher productivity”, “library assessment”, “library performance

measurement and metrics”, “student learning”, “student success”, “value of academic libraries”, “value of libraries to faculty teaching and research”, “value studies in libraries or academic libraries”, “academic libraries in the 21st century”.

Many authorities (examples include Afolabi, 1992; Kumar, 2005) offer guidance as to how to conduct a literature review. Kumar (2014) identifies four steps in conducting a literature review – “searching for existing literature in your area of study, reviewing the selected literature, developing a theoretical framework, and developing a conceptual framework” (2014:48). Kirby, Greaves and Reid (2006:110) advise adopting the following approach to a literature review: starting with handbooks, online databases, and research overviews, and using citation indexes and search engines, review the references, looking for patterns and frameworks in what is written about a topic.

In this study several electronic databases available through the University of Cape Town libraries were used, including Google Scholar, Web of Science, EBSCO, ProQuest, JSTOR, SCOPUS, and many others, covering a broad range of disciplines. After each search, relevant literature was collated, and a database of literature was created on a spreadsheet, where each article was recorded, and its approach summarised. In this way, similarities, differences and connections were identified. Creswell and Creswell (2018:74) suggest the creation of a “literature map” to show these associations. In total, for this study, more than 2,000 references were downloaded and analysed with the help of Mendeley Reference Manager tool, with linkages among them mapped onto a spreadsheet.

2.1.2 Importance of literature review

The literature review in a PhD thesis is important as it summarises and evaluates a body of writings directly related to one's research study (Mutula & Majinge, 2017:120). Reviewing literature relevant to the topic being studied provides the study with the necessary foundation for its construction. Creswell (2012) notes three ways in which literature is used in research: to refine a research idea (usually to produce a proposal), to conduct a critical literature review (which provides the context and theoretical framework for the research), and to locate the research findings within a wider body of knowledge. A good literature review should organise the information found and relate it to the objectives of the research and the research questions. Such a review develops a clear argument from what is published, indicating what is known and not known about the research topic (Wallace & Wray, 2011). In sum, this literature review aims to analytically evaluate and synthesise literature relating to the study, and provide a foundation for the study and the creation of new knowledge. The review is thematically organised by concept or subject. It comprises four sections, the first of which is devoted to the higher education landscape – its evolution, demands and impact on academic libraries.

SECTION A: HIGHER EDUCATION DEBATE AND ACADEMIC LIBRARIES IN THE 21st CENTURY

This section explores the transformational changes in higher education and the resultant expectations of the systems they subtend. Academic libraries are created to support the missions of the universities or colleges that house them.

2.2 Higher education debate, funding and effects on academic libraries

In the last decade, the world has seen a decline in higher education funding, and this caused something of a global crisis between 2013 and 2018 (*The Economist*, 2023a). Most countries were compelled by economic reform policies requiring governments to cut public budgets for higher education in favour of health and social security (Tilak, 2015). During this period, there was a significant fall in budgets even in advanced countries such as the United Kingdom, Australia and New Zealand (Herrmann, et al., 2023).

University administrators worry constantly about how to keep the universities running, how to attract and retain students and how to pay and maintain teaching and research staff (Ritzen, 2021). The three streams of funding available to public universities are direct funding from governments for research and funding for students, competitive funding (whether international or from national research foundations and other similar bodies), and funding from business or the private sector (Pruvot, Claeys-Kulik & Estermann, 2015; Ritzen, 2021:6). In both South Africa and Zimbabwe, public universities are funded by the state, through budgets allocated by the ministries of higher education (Hansard, 2011; Kariwo, 2008; Mpofu, Chimhenga & Mafa, 2013; Ntshoe & De Villiers, 2013; Pouris & Inglesi-Lotz, 2014). According to Stern and Szalontai (2006:3), in South Africa, funding higher education rests upon three pillars: “greater responsiveness of the higher education sector to the changing social environment; increased cooperation between the higher education sector, the state and civil society; and a policy of increased participation” (2006:3). Fig. 2.1, below, shows a breakdown of the government allocations in the funding framework (example from 2011/12).

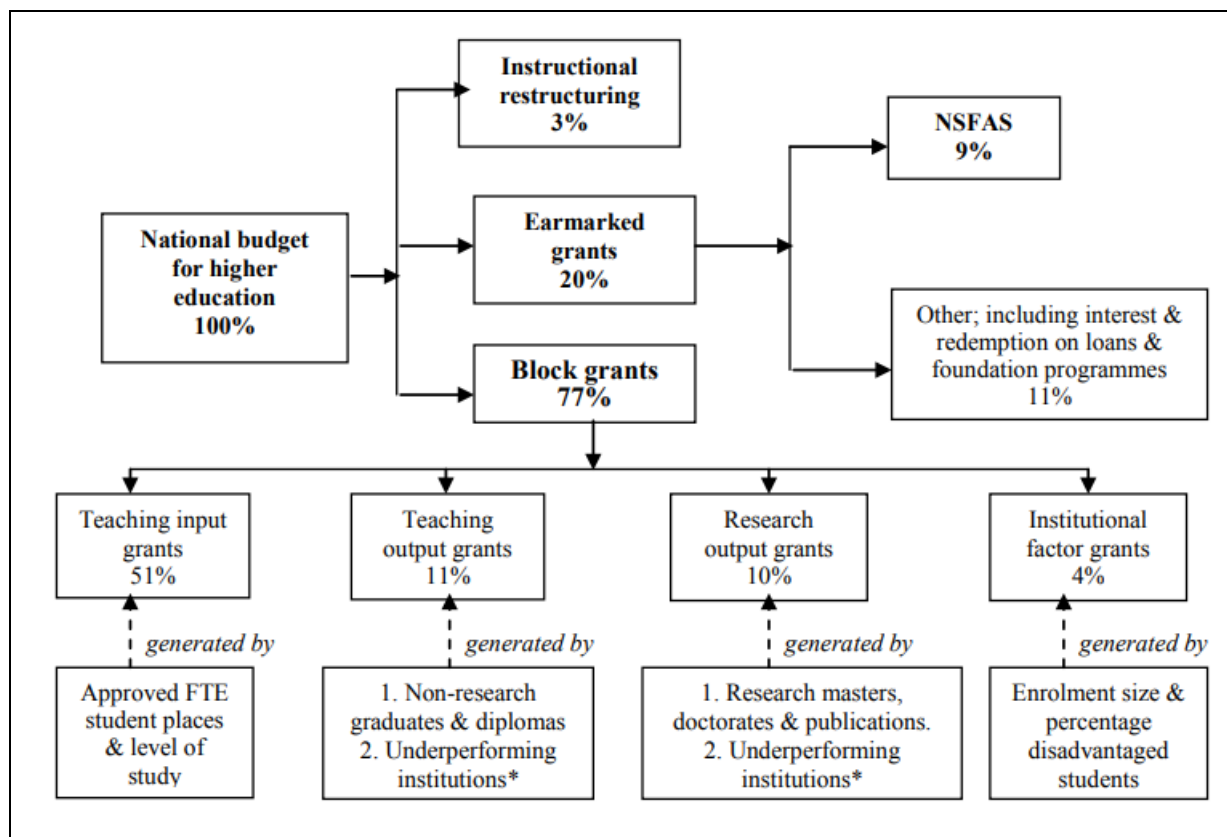


Fig. 2.1: Division of government budget for higher education into categories and subcategories in South Africa: 2011/12 (Ntshoe & de Villiers, 2014:74)

Universities in South Africa receive state funds in the form of block grants and earmarked grants. In Fig. 2.1, above, it can be seen that block grants comprise 77% of government funding and are used at the discretion of the respective university councils and management. Block grants are “intended for operational costs, including operational maintenance of assets related to university teaching, learning and research activities” (Ministry of Higher Education of South Africa, 2021:3). In calculating this grant for each university, the government focuses on four block grant categories – teaching input, teaching output, research output and institutional factors (Arumugam, 2019; Styger & Heymans, 2015).

Funding for public universities in the EU is governed by similar formulae. According to the European University Association (2021/2:3), 2012 was the worst year for universities as 14 out of 24 universities had their funding reduced to less than it was in 2008. Due to the financial crisis, most European countries transferred amounts from block grants to competitive schemes. European universities tend to have stable tuition fee policies, and most systems depend on domestic tuition. The COVID-19 pandemic had an impact on some universities in Europe.

The situation in the United States is comparable. The US has both public and private universities, the public ones being funded almost entirely by state and local governments (Forest & Kinser, 2002; Hiltonsmith & Draut, 2014). However, most higher education institutions in the US acquire additional money from other sources, including endowments, gifts, tuition and fees, athletics, and grants. Grants are a form of financial assistance given to organisations (and to individuals) to fund research and projects that contribute to the society or the public good. In 2021, American colleges and universities spent \$89 billion, according to the Higher Education Research and Development (HERD) Survey, published by the National Science Foundation (NSF) (National Science Foundation, 2021). The major sources of funding were federal government and agencies (54.8%), state and local governments (5.3%), institutional funds (25%), business or private sector (6.5%), non-profit organisations (6.2%) and other sources (3%). Besides the financial aid to support college students to pay for tuition, the federal government and local governments fund research and development through university laboratories and special departments (Cooley, 2015). These facts indicate the reliance of Higher Education on government funding, which – it is argued – obliges them to justify the services that they offer.

The global COVID-19 pandemic brought profound, world-wide disruption to higher education. Enrolment figures fell at the beginning of the pandemic, but rose again in 2022 and beyond (Burki, 2020; Marinoni, Van't Land & Jensen, 2020). Reviewing the state of higher education funding in the United States during the pandemic, Rosinger et al. (2022) note that higher education, as is generally the case in recessionary times, suffered disproportionately from budget cuts. A trend towards performance-based funding deepened the inequalities suffered by economically and racially marginalised people in the US, and this was likely to continue after the COVID-19 period. Harris, et al., (2021) has also contended that cuts in higher education disproportionately harm racially minoritised and low-income students and the institutions that serve them.

COVID-19 inevitably had an impact on the budgetary woes that academic libraries faced. In 2020 (at the peak of COVID-19), 628 library directors were surveyed (under the Ithaka S+R US Library Survey) and asked questions relating to management, budget allocations and cuts, personnel changes, and collection acquisitions during the pandemic (Frederick & Wolf-Eisenberg, 2020). The results showed that most libraries experienced budget cuts in that academic year and were uncertain about future and longer-term financial recovery. The cuts affected doctoral degree-offering public universities and spared the private baccalaureate college libraries. Radecki and Schonfeld (2021) have pointed out the various impacts on research support and libraries caused by COVID-19, while Tucker and Batagol (2022) have looked specifically at Australian HE. Paterson and Eva (2022) argue that COVID-19 presented an opportunity for librarians to question the meaning and value of their work and rethink how to communicate this to stakeholders.

Yet before the pandemic, another crisis engendered keen debate – the cost of higher education via student loans. In America, the appetite for education and degrees pushed many school leavers to

colleges and universities (Excellence v equity, 2015). As tuition costs rose, there were growing concerns about whether the degree obtained was worth the sum invested in it. In most cases, parents (and students) had to take loans to finance higher education, meaning that graduates leave colleges and universities with huge debts to pay. This situation is aptly depicted in the cartoon below (Fig 2.2).



Fig. 2.2: Cartoon on student debt in higher education(Copyright @ Adam Zygils)

Competition for placement in higher education continues in America, Europe, Japan, Korea, and China, driven by the belief that people with higher degrees have a better chance of landing one of the few jobs available on the market (a growing viewpoint to the contrary is the Gig economy growth; see Herrmann, et al., 2023; Zwysen & Piasna, 2023). According to Baum (2014:1), “as college prices rise and as examples of graduates struggling to find remunerative employment despite their credentials become more visible, both potential students and the public are

questioning the value of a college education”. Stakeholders are questioning the worth of degrees from universities (*The Economist*, 2023b; Emmons, Kent & Ricketts, 2019; Soon, Lim & Ismail, 2021). Universities are thus under pressure to meet the demands of these stakeholders.

2.2.1 The impact of funding on academic libraries

While the role of academic libraries in support of their institutions and respective higher education systems is widely acknowledged in the literature (Allen, 1982; Baum, 2014; Zhou, 2022), libraries are nevertheless not well funded (Boadi, 2006; Okojie, 2010; Simui & Kanyengo, 2004). Okojie (2010) established that governments provide about 90 per cent of the funds for university libraries in Africa. This funding is not adequate and is most often provided on an *ad hoc* basis. Inadequacy of funding has affected collection development activities in academic libraries (Yakubu, 2023:18). Adamu, Isah, and Adekunle (2023:297-302) therefore propose that academic libraries find alternative sources of funding, such as fundraising through social media, the provision of consultancy services and endowment funds. To justify appeals for funding, academic libraries should establish their worth, since “evidence shows that African libraries face unique challenges in collecting and utilising data for self-advocacy” (Lynch, et al., 2022:279).

Since academic library budgets do not adequately cover collection needs, two decades ago academic libraries in the US came together and licensed their journal content in the form of large bundles from major publishers (Hinchliffe, 2022:10). These bundles were referred to as “Big Deals” (Ball, 2004; Bergstrom et al., 2014; Frazier, 2005; Hinchliffe, 2020; Price, 2022). Likewise, in Southern Africa, the consortia model for subscribing to electronic journals has remained the key strategy amidst dwindling budgets (Chisita & Dick, 2018; Machimbidza & Mutula, 2020;

Ojedokun & Lumande, 2005). If academic libraries fail to provide requisite academic resources, their value to students, academic staff and universities will decline and their existence will be questioned.

According to the Council on Higher Education (2021:21), the investment in an academic library “constitutes the *value assigned to the role and place of the library* in promoting and enhancing learning, teaching and research within institutions” (emphasis mine). Yet given the huge costs of maintaining their services, universities remain underfunded. Webster and Moyo (2016) have examined the costs of maintaining a quality academic library that supports teaching, learning and research. These include infrastructure, communication and connectivity, human resources, digital collections and related subscriptions, library systems and securities, and library equipment. Despite the declining budgets, African governments are demanding that universities increase their enrolment numbers (see, for example, Council on Higher Education, 2016).

In an article on the future of budgets in academic libraries, Hinchliffe (2022) suggests that academic librarians should use funding cuts to promote awareness of the value and central role of academic libraries:

As a result of library collections budget cuts, researchers might spend more time seeking out access to articles and books that they need—for example, through interlibrary loan—which would take time away from other work and increase the time needed to complete a project. Students might need to pay for course materials that are no longer available through the library, which would add to the cost of their college education. And libraries might cancel scholarly society journal subscriptions, which would diminish support for scholarships, travel grants, and other programs funded by publishing revenues. (Hinchliffe, 2022:10-11)

Hinchliffe advises using these potential consequences to stress the value of libraries and advocate for increased budgets. Hinchliffe (2022), Cox (2023) and Seale and Mirza (2020) concur that academic librarians need to ensure that they are creating value for their institutions and that they

are communicating awareness of this value. Brundy (2015) notes that as academic libraries continue to operate in an environment of declining budgets and increasing costs, they need to innovate through the adoption of technology and other strategies.

2.2.2 Higher education overview in South Africa and Zimbabwe

The oldest institution of higher education in South Africa is the University of Cape Town, which was established in 1829. Today there are at least 26 public institutions of higher learning, including traditional universities, universities of technology, comprehensive universities and National Institutes (Council on Higher Education, 2016:6). The history and development of higher education in South Africa are detailed in the Council on Higher Education's 20-year report (2016:6-70). It is important to note that, historically, higher education institutions were designed to entrench the dominance of apartheid. Bunting (2006) notes that higher education institutions were designed for racially exclusive use, with 19 institutions designated for whites only, two for Coloureds, two for Indians and six for Africans. The democratic government of 1994 inherited a fragmented and imbalanced higher education system, in which for the past three decades transformation has been a continuous need (Council on Higher Education, 2016).

The South African National Development Plan (NDP) dictated that universities address the shortage of skills amid related issues such as low levels of employment, high poverty levels, illiteracy, poor healthcare, stagnant economic growth, and other social ills (National Planning Commission, 2011). University education generates new knowledge and universities produce research that leads to new commercial, technological, social, political and other innovations beneficial for national development (Pouris & Inglesi-Lotz, 2014). Sebola (2023) notes the human capital contribution of South African universities, but observes that this is greater in social sciences

and the humanities than in scientific professions. On the research front, the Department of Higher Education and Training (2021) reported an 8.06% average annual growth rate in research publication output from 2005 to 2019 from universities in South Africa.

South Africa has several pieces of legislation and policies to regulate and guide higher education in the country. The “Higher Education and Training: Policy Documents / Legislation” portal of the University of the Witwatersrand (University of the Witwatersrand, 2023) provides a comprehensive list of these policies, which include: *The Higher Education White Paper 3: A Programme for the Transformation of Higher Education* (1997); *The Higher Education Act* (1997); *The National Plan on Higher Education* (2001); *Transforming and Restructuring: A New Institutional Landscape for Higher Education* (2002); selected *Council on Higher Education Reports*;⁶ the *National Development Plan 2030 (NDP)*; the *White Paper for Post-School Education and Training* (2013), and the *Policy Framework for Internationalisation of Higher Education in South Africa* (Bozalek & Boughey, 2012; Chasi, 2021; Mzangwa, 2019; Mzangwa & Dede, 2019). These policies seek to address, among other concerns, higher education transformation, the alignment of higher education with national plans, the internationalisation of South African education, and access to higher education by previously disadvantaged communities (Leibowitz & Bozalek, 2014). However, the 20-year review of the sector published by the Council on Higher Education (2016) revealed that the outcomes of these policies have been difficult to monitor. The policy regime of HE was geared towards developing a post-school system that not only corrects historical imbalances, but also creates equity among those previously disadvantaged by race, gender, disability and socio-economic status. This study sought to align university aims with

⁶ See for example, “Towards a New Higher Education Landscape” in 2000, and “South African Higher Education in the First Decade of Democracy” in 2004.

national priorities, to establish the contribution of academic libraries and their worth to the institutions they serve.

Higher education in Zimbabwe started in the 1950s with the establishment of the University of Zimbabwe (then known as the University College of Rhodesia and Nyasaland). There are currently 24 registered universities, 14 public and 10 private universities. The public universities are owned by the state and are governed through councils established by Act of Parliament (for example, the National University of Science and Technology Act of 1990). The respective university councils enjoy executive authority on policymaking but delegate the day-to-day running of the institutions to the vice-chancellor and his management team (Shizha & Kariwo, 2011:125). The private universities are owned by various churches and are open to all (Kurasha, 2015). The late 1990s saw the expansion of universities in Zimbabwe, which was mainly a ripple effect created by heavy investment in primary and secondary education post-independence by the Zimbabwean Government (Majoni, 2014). The funding of universities by the state reflects a negative trajectory, with individuals left to pay for their education (Majoni, 2014:23). It is estimated that on average 80% of the budgetary support is from the government, 15% from fees and 5% from other sources (Gurira, 2014). Students in Zimbabwe receive loans and/or grants to fund their tuition fees by up to 75%. However, they must meet the other costs associated with their studies.

2.2.3 The central role of the academic library and its response to its stakeholders

Academic libraries have played a central role in the mandates of the institutions they support (Corrall, 1995; Shoham & Klain-Gabbay, 2019; Yu, 2017). In this context, the library is the heart of the learning community, providing a place for students, research scholars and faculty to do their research and advance their knowledge (Bhatt, 2010:51). Kim and Maloney (2023:31) note that the

most visible testament to the continuing central role of the academic library in the university is its physical transformation: “once great repositories of books and journals, campus libraries today are hubs of social learning and centres of educational enrichment. In these buildings, librarians collaborate with students and professors across the spectrum of learning and knowledge creation”. The academic library of today reflects the complexity of the modern university: it is a place of learning, collaborating, innovating and reading, as well as the technological hub of information access. The centrality of the academic library never used to be questioned, as witnessed by the adage: “The academic library is the heart of the university” (Leupp, 1924; Portwood, 1936; Richardson, 1916).

In recent times, Salisbury and Peseta (2023) have revisited this notion and challenged academic librarians to deliberate on the repositioning of the academic library in the institution, “as an expansion of the library’s value beyond the operational to the aspirational” (p. 283). The “repositioning” of the academic library discussion is widely emphasised in the current literature, with authors urging academic libraries to retain their centrality by proving their worth to their institutions (Alex-Nmecha & David-West, 2017; Anyanwu, Ogbonna & Nwaigwe, 2020; Cox, 2018; Cox, 2021; Fowler, 2016; Moropa et al., 2020; Rajan & Esmail, 2022).

Yet in a paper published in 2011, entitled “Academic library autopsy report, 2050”, it was predicted that the academic library would inevitably perish (Sullivan, 2011). This speculative article claimed that the academic library would be “largely neglected and forgotten by a world that once revered it as the heart of the university” (p.1). The following were itemised as the key factors in this demise: book collections became obsolete, library instruction was no longer necessary, information literacy was fully integrated into the curriculum, libraries and librarians were

subsumed by information-technology departments, and reference services disappeared. A few studies have concurred with this “2050 autopsy report” (Gayton, 2008; Hirsh, 2014; Zhiqiang, 2012). Yet the majority of studies optimistically envisage a bright future for academic libraries, despite the changing environments in which they operate (Durant & Horava, 2015; Meier, 2016; Pinfield, Cox & Rutter, 2017; Schulte, et al., 2018; Sennyey, Ross & Mills, 2009). Lewis (2007) has proposed a utopian futuristic model of the academic library, a digital library embedded into the teaching, learning, and research of the institution.

Academic libraries need to respond to the needs of their stakeholders. According to Oakleaf (2010), academic libraries can no longer exist in isolation because parent organisations are making new demands, students have renewed expectations, and various stakeholders continue to insist on value. Funders, university administrators, academic staff and students have different expectations from academic libraries, and the “perceptions of key stakeholders about what academic libraries actually do and can potentially offer to the institution are often inaccurate or incomplete” (Cox, 2023: n.p.). University administrators, while professing to value libraries (perhaps reminiscing about their usage during their own time as students) (Cox, 2023), actually neglect them (Fisher, 2015) or underestimate their contribution. For example, in one study, among 200 United States provosts surveyed in 2016, most perceived libraries as only “somewhat involved” when it came to student retention, student academic success, faculty research productivity, and accreditation (Cox, 2023; Murray & Ireland, 2018). Authors generally note the lack of “perceptions of academic library value by college and university provosts” (Oh, Harris & Wallis. 2020:259), although there are a few studies that demonstrate university administrators’ appreciation of the contribution of academic libraries (Cox, 2023; Gwyer, 2021; Robertson, 2015; Wong, 2020). In Gwyer (2021), for example, SCONUL commissioned interviews with 12 UK university senior managers. The

study established those senior managers believed libraries had a positive impact on student satisfaction and experience.

Libraries undoubtedly respond to the needs of academic staff and are generally considered to be of value to them (Heider, et al., 2012; Mikitish & Radford, 2013; Oakleaf, 2010; Yamaguchi & Richardson, 2018). Particular areas of support are in teaching, research outputs (Hollister & Schroeder, 2015), tenure and grant applications. Teaching staff appreciate the availability of teaching support materials in the library (Scoulas & De Groot, 2023; Tmava, 2023; Weng & Murray, 2020), one of the areas of potential value explored in the present study. Relatedly, Fagan et al. (2021) conducted an extensive literature review on the perceptions of academic libraries held by faculty and undergraduate students. Their review established that owing to the adoption of technologies, information literacy skills, and access to digital content, librarians and libraries were appreciated by their users.

2.2.4 Evolution of academic libraries in the 21st century

In Section 2.2.3, above, it was shown that higher education institutions are experiencing radical change due to a number of factors. The changes are driven by the call for greater accountability, increased internationalisation and stronger competition for scarce fiscal resources. Responding to these changes, universities prioritise student success, competitive research, and global reputation (Cox, 2018). Academic libraries are not immune to these changes. Libraries have always been early adopters of technologies into their processes and services, for example by incorporating “the technologies of typewriters during the 19th century or computers in the 20th century or cloud computing in the 21st century” (Urs, 2012:2). According to Elves (2015:54-56), the three drivers

for libraries' adopting technology and innovation are the need to adapt to a changing environment, the need to improve existing products and services, and the need to make use of new opportunities.

The 2020 book *Technology, Change and the Academic Library* (edited by Jeremy Atkinson) provides an in-depth literature review on the adoption of technologies in academic libraries. In that publication, Atkinson (2020) reviews the technological change has been impacting universities and university libraries in recent years. There are of course many studies on technology adoption in academic libraries (Husain & Nazim, 2015; Igbinovia & Okuonghae, 2021; Jain, 2013; Kumar, 2015; Mahmood & Richardson, 2013; Saleem, Shabana & Batcha, 2013; Sharma, 2009; Tait, Martzoukou & Reid, 2016;). They seem to share an underlying reasoning that ICTs, or new technologies generally, threaten to render academic libraries redundant (Dewan, 2012; Goetsch, 2008; Lewis, 2007). The same argument surfaced when the internet emerged, or when e-books first made an appearance (Everton, 2010; Herring, 2008; Herring, 2012; Moore, 2000). Yet, to paraphrase the famous words of Mark Twain,⁷ the death of the academic library has been exaggerated (Gayton, 2008; Hirsh, 2014). Rather than libraries being replaced by “ICTs or technology, the technology has moved into academic libraries” (McDonald, 2010:48).

Academic libraries have long adopted technology – such as e-books, e-journals, e-learning platforms, and repositories – and should continue to do so effectively to meet the needs of their stakeholders. Jain (2013) has provided a mapping of the changes from traditional academic library services to 21st century academic library services introduced by technology and the demands of

⁷ Twain, Mark. “The reports of my death are greatly exaggerated.” In: Bartlett, J. 1955. *Familiar quotations*. 13th ed. Boston: Little, Brown.

higher education. He initially lists the following as global evolutionary changes in higher education

(HE):

- Increased use and adoption of technology in HE
- Awareness of economic factors affecting education
- Increased student and faculty mobility
- Individualised, customisable, learner-centred approaches
- Strategic partnerships and alliances amongst various stakeholders in HE
- Emergence of non-formal and informal learning, driven by technology
- Increased reliance on frameworks, benchmarks and other asset-based approaches (Jain, 2013:135)

These have resulted in open distance learning, Massive Open Online Courses (MOOCs), self-paced e-learning platforms, mobile learning platforms, hybrid courses and virtual campuses. All these changes have affected academic libraries, their services, staff, and expected support to their respective parent institutions. Jain (2013:137) thereafter offered the following table reflecting perceived service changes in academic libraries.

Traditional Academic Libraries	21st Century Academic Libraries
Selection and acquisition of materials were from the publishers' catalogues	Selection is based on user demands and dealing with such issues as journal licensing and publisher big deals and offers for open access
Main collections included books and journals	Today they are institutional repositories, online databases, multi-media information resources
Librarians worked as collection specialists	Librarians work as faculty liaison
Management of information systems was limited to a four-walled physical library	In modern age, there are digital libraries, digital repositories and cloud information management systems
Information model was scarcity and limited access of information	There is an information explosion in both quantity and formats of information
Manual interlibrary loan system	Electronic library loan
High dependence on print resources	High dependence on e-resources and digital resources
Availability of resources only in library opening hours	Most services are available 24/7
A traditional reference desk service	24/7 online and virtual reference services
Traditional cataloguing	Resource Description and Access (RDA)
A library as a quiet reading place	Information/knowledge/digital commons to make learning a common enterprise
Library users had easily identified information needs	Library users have diverse information needs
Use of library budget mostly to buy books	To buy e-resources including hardware and software resources
Librarian mediated searching	Web-based searching
Preservation of mainly books serials and grey literature	Digital curation
Traditional library users had no other choice but to come to libraries	Diverse library users and assorted options to access information.
From MARC and circulation desk	To metadata and web information

Table 2.1: Traditional versus 21st-century academic libraries (Jain, 2013:135)

Over the last two decades, university libraries have been in a constant state of change, physical, structural and conceptual. They have been responding to fast-moving currents of technological innovation, and “emergent teaching and learning paradigms” (O Donnell & Anderson, 2022:232). The physical evolution of the academic library has been unfolding in front of everyone on campus. The typical academic library building is/was a colossal structure at the centre of the campus, a great repository of physical books and journal holdings (Kim & Malaney, 2023). The growth of digital collections opened library space as they evolved to meet the teaching and learning needs of

students and academic staff (Karasic, 2016). In a pre-COVID-19 literature review of the evolution of library spaces, Cox & Benson-Marshall (2021) suggested the following reasons for the growth in the use of library spaces:

- Growth in student numbers
- Students from minority or low-income groups need a space to work that:
 - Contains a variety of types of space,
 - Has a studious atmosphere,
 - Is clean, quiet, light, comfortable, welcoming, and safe,
 - Enables working alongside others and group work,
 - Is convenient. Libraries’ central locations make them walkable from where students might be engaging in other activities
- Departmental space was being reduced or used more intensively, meaning that students had to go to the library to find study space
- Librarians have shown considerable enterprise in shaping space to student needs, e.g. via user experience (UX) studies, albeit there is less evidence of value being placed in the services offered in the library, as opposed to the space (as a service) itself.

(Cox & Benson-Marshall, 2021:35)

They summarised the factors that have led to the change in usage of library space as follows (Fig. 2.3, below).

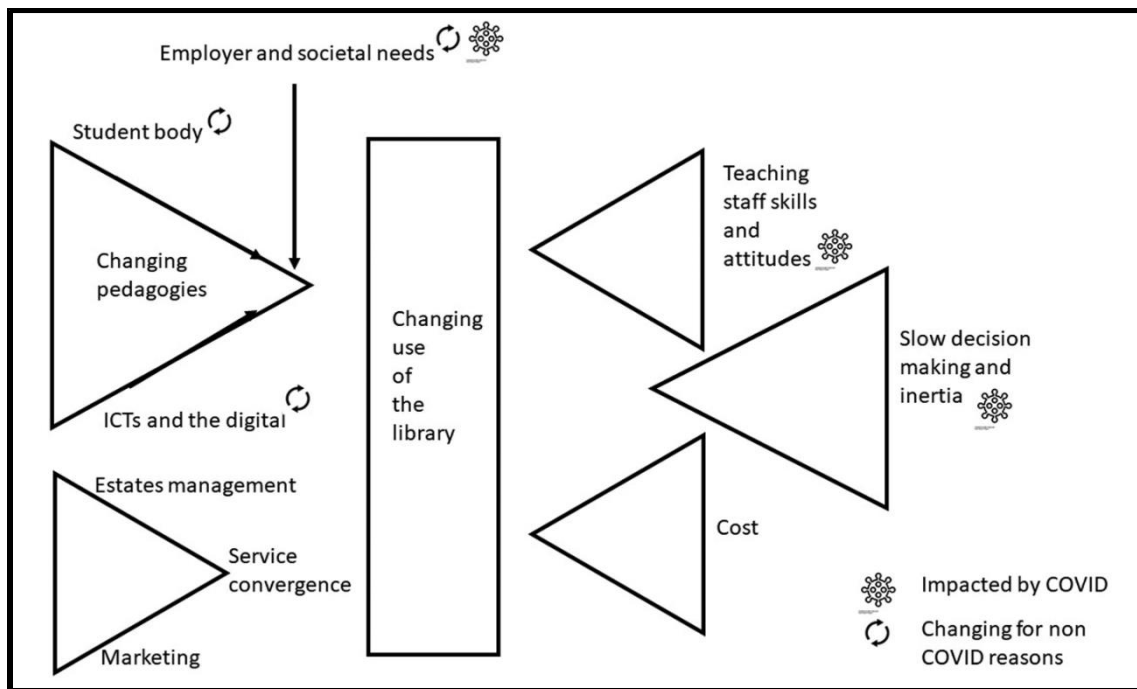


Fig. 2.3: A model of factors shaping changes in library use (Cox & Benson Marshall, 2021: 33)

Current studies show that the academic library has evolved into a hybrid affair that combines traditional collections with virtual or digital collections (Jinendran & Kumar, 2023). Academic libraries have reinvented themselves from being primarily knowledge repositories to being more about connecting learners and constructing knowledge. Academic libraries are now learning commons. Demas (2005) acknowledged this some time ago when he remarked: “we have reawakened to the fact that libraries are fundamentally about people – how they learn, how they use information, and how they participate in the life of a learning community” (Demas, 2005:25; see also Freeman, et al., 2005). Keating and Gabb (2005) have traced the evolution of library spaces from “information commons” – where libraries offer a space for students to have access to library facilities and computers (Library/IT hybrid) – to “learning commons”, a place that promotes participatory learning and facilitates co-construction of ideas from a variety of sources (Accardi, Cordova & Leeder, 2010; Holland, 2015). Most academic libraries have refurbished their facilities and created spaces that bring students together to work, study, and socialise (Appleton, Latimer & Christie, 2017). These spaces are fitted with comfortable furniture and offer access to networks and the internet. “The libraries of the 21st century continue to provide a welcoming common space that encourages exploration, creation and collaboration between students, teachers, and a broader community” (Holland, 2015:n.p.). Studies show that users continue to use library spaces even if they can access electronic collections online. For example, in the spring of 2022, a study conducted in the US asked 400 undergraduates about how they used their institutions’ libraries. The results indicated that students visited the library in person an average of 4.7 times, with 14.9% of them visiting more than 10 times. In those visits, students indicated the three most common library interactions were accessing digital resources (61.2%), using the physical library as a study space (47.8%), and conducting research for an assignment or project (43.8%) (Peet,

2022). While there is an inevitable ongoing shift to online or virtual access to library resources, this study suggests that the physical space is still important to students.

2.2.4.1 Impact of emerging technologies on academic libraries

As noted by McDonald (2010), technology has not ended academic libraries but instead moved into them. Information Communication Technologies (ICTs) have reformed how information is gathered, stored, organised, accessed, retrieved, and consumed the COVID-19 pandemic was a great accelerator for digital transformation, galvanising all sectors to increase their reliance on ICTs. Academic libraries also adopted an online mode and offered virtual services to housebound clients (De Groote & Scoulas, 2021; Garvey, 2021; Mbambo-Thata, 2021; Mehta & Wang, 2020). Most academic libraries had recourse to various aspects of technology to serve their clients, such as social media and social networking tools (Fasae, Adekoya & Adegbilero-Iwari, 2022), utilising the library website as a primary tool to access content, events and conferences, video conferencing and virtual assistants, and the promotion of open access resources (Chisita et al., 2022; De Groote & Scoulas, 2021; Kang et al., 2022). The pandemic offered “academic libraries an opportunity to develop and raise their value” (Sahil Madni & Ganie, 2023:13).

Section 2.2.4, above, shows how ICTs have revolutionised academic libraries, transforming them into dynamic centres of knowledge, innovation and collaboration. Notable areas of change for academic libraries as a result of adopting ICTs include the ability to offer access to a wider range of knowledge, streamlined internal processes and access to resources, the facilitating of e-learning and virtual remote education, broader digital collections, seamless information retrieval (Chew, Rahim & Vighnarajah, 2017; Gibson, Goddard & Gordon, 2009), enhanced information literacy, data repositories and data-driven decision making (Caffrey, et al., 2022).

Emerging technology is a term used to describe a new technology, “a new tool with promising potential” (Magruk, 2021:n.p.), possibly a development from existing technology (Winston & Strawn LLP, 2023). Emerging technologies include various digital technologies, augmented reality (AR), Internet of Things (IoT), nanotechnology, the Metaverse, biotechnology, robotics, blockchain technologies and artificial intelligence. Some of these technologies are finding a home in academic libraries (Gaikwad & Bilawar, 2023).

Some of the more significant emerging technologies in academic libraries are:

- *Augmented Reality* (AR) is an “interactive technology that superimposes digital information, such as videos or images, onto the physical world, enhancing the user experience and providing novel ways to engage with academic library resources” (Gaikwad & Bilawar, 2023:5). In academic libraries, AR offers an interactive experience for users to see and interact with virtual objects and information seamlessly, as if they were part of the real world. “Unlike virtual reality (VR), which creates an artificial environment, AR users experience a real-world environment with generated perceptual information overlaid on top of it” (Barman, 2023:n.p.). The potential of AR for libraries was explored by Baumgartner-Kiradi, Haberler, and Zeiller (2018). AR has been used in academic libraries for document tracking, inventory management, wayfinding, virtual tours, displays and exhibitions, search navigation and AR books (De Sarkar, 2023a; Vasilyeva, 2020). The University of Maryland Libraries in College Park, Maryland, USA, used AR to create interactive exhibits and displays; The University of California used AR for library tours; and The National Library of Korea in Seoul, South Korea, used AR for tours, exhibits and multimedia content (Barman, 2023).

Kharat, Nagarkar and Panage (2023) explored the application of Layar augmented reality in MBA libraries affiliated with Savitribai Phule Pune University (India). The purpose was to introduce the Layar augmented reality (AR) application to library users and to understand the user's satisfaction with the information services provided by the Layar application. This application helped the academic library to endow print collections with an augmented reality feel for users. Users who participated in this study were apparently satisfied with the Layar application (Kharat, Panage & Nagarkar, 2017). Dalili-Saleh, et al., (2022) offered a model for the use of augmented reality (AR) in the libraries of universities of medical sciences, maintaining that their model was essential for achieving fourth-generation libraries. A few other studies have predicted potential future applications of AR in libraries (De Sarkar, 2023b; Wani & Bhat, 2023).

- *Artificial Intelligence* (AI) is the simulation of human intelligence by machines and software (Boden, 1996). In essence, AI aims at creating machines that behave or act like humans. This technology is being applied in various sectors – for example, in medicine (Haleem, Javaid & Khan, 2019), education (Beck, Stern & Haugsjaa, 1996), business (Pallathadka et al., 2023), retail (Cao, 2021; Heins, 2022), agriculture (Eli-Chukwu, 2019), transportation (Abduljabbar et al., 2019), manufacturing (Li et al., 2019) and engineering (Pham & Pham, 1999). AI was first introduced into libraries in 1990 (Gaikwad & Bilawar, 2023), and has been used in academic libraries to improve the user experience, decision making and various other operations. Vijayakumar and Sheshadri (2019) have identified the following potential areas of usage in academic libraries: expert systems in library

services, natural language processing for the Online Public Access Catalogue (OPAC), a basis for machine learning systems in library services and robotic services.

Many academic libraries in the United States, Canada, Japan and elsewhere are applying AI to their operations (Hervieux & Wheatley, 2021; Huang, 2024; Gujral, Shivarama & Choukimath, 2019). Several associations and organisations are worried about the impacts of AI. In the library field, there are potential roles for AI in the future, but the International Federation of Library Associations and Institutions (IFLA) has published a statement on AI use in libraries warning about ethical concerns and various limitations of the technology (Bradley, 2022; FAIFE, 2020). Cox, Pinfield and Rutter (2019) studied perceptions of the potential impact of AI on academic libraries and librarians. They noted the ethical concerns and fears of librarians and proposed a paradigm shift to an “intelligent library” to harness the potential of AI for libraries. They also proposed that libraries re-establish their value in the process.

- *Blockchain technology* is a digital database or ledger that allows information sharing within a network. Blockchain differs from a typical database in the way it stores information (Di Pierro, 2017). This technology was first revealed by Satoshi Nakamoto in “Bitcoin: a peer-to-peer electronic cash system” (Nakamoto, 2008:2). In that paper, Nakamoto proposed the concept of blockchain to create a decentralised electronic cash system that operates on a purely peer-to-peer basis – a development that led to the Bitcoin digital currency (Shrimali & Patel, 2022). Academic libraries are using blockchain technology in many ways (Abid, 2021; Zhang, 2019; Zhang, Zhang & Li, 2022), including managing digital rights and permissions for library resources, “creating foolproof records of ownership, licensing, and

usage rights, and long-term archiving of digital materials” (Gaikwad & Bilawar, 2023:5), building metadata systems for libraries, connecting networks of libraries, and sharing partnerships across organisations (D’silva & Balasubramanian, 2022). Ogbara and Okwu (2023) have reviewed the application of blockchain technology by 21st-century libraries in enhancing library services such as collection development, circulation services, research, data management and storage. They claim that blockchain technology “gives us unprecedented capabilities to create and trade value in library organisations” (Ogbara & Okwu, 2023:1).

- *Internet of Things (IoT)* is a collective network of shared devices (sensors and actuators) that can “interact with each other and cooperate to achieve a digital representation of the physical world with little human involvement” (Atzori, Iera & Morabito, 2010:2787; see also Ystgaard et al., 2023). The term IoT was first proposed by Kevin Ashton in 1999 (Lueth, 2014), but has since been applied in the context of academic libraries (Asim and Arif, 2023; Liang, 2020; Norouzi, Ebaallah & Golmohammadi, 2023; Wójcik, 2016). The technology can be used to provide a virtual tour and orientation for newly registered users help create library guides from a patron favourite list and provide help in locating the resources. An IoT device can also “be used to automate routine tasks such as book check-in and check-out, inventory management, and cleaning schedules” (Gaikwad & Bilawar, 2023:6). Further applications have been listed by Liang (2020) and Asim and Arif (2023) in four categories: library software-related IoT, library building-related IoT, track and trace IoT, and smartphone-related IoT. The benefits of IoT to academic libraries include the following: “save time, enhanced performance and efficiency of the library, improve the quality of the services, ease collection accessibility, increased library services, improving

the visitor experience, reduced workload on library staff, save cost, increased positive image of the library, ease knowledge management, and control and self-reliance” (Asim & Arif, 2023: n.p). A recent study by Kumar (2023) established that students at Kurukshetra University Library strongly support the use of IoT to replace outdated library processes and services. Among the benefits highlighted by the students were remote learning support, time and cost savings, enhanced user experience and improved access to resources. The application of IoT in academic libraries attests to how emerging technologies can be assimilated, and it further underscores the importance for libraries to stay abreast of modern technological developments.

- *Metaverse* is a challenging concept to define. It might help to imagine the term “Metaverse” as synonymous with “cyberspace”. The term does not refer to a specific technology but a shift in how we approach technology (Ritterbusch & Teichmann, 2023:12368). The concept of Metaverse was first introduced in a sci-fiction novel entitled *Snow Crash* by the American writer Neal Stephenson in 1992. The term refers to a world where virtual and real-world activities intertwine and produce value (Ingole & Kumari, n.d.). One example of the Metaverse virtual space is Second Life, an online 3D multimedia platform that allows users to create an avatar for themselves and then interact with other users and user-created content within a multiplayer online virtual world. By 2007 there were more than 40 libraries in Second Life (Hill & Lee, 2009; Little, 2011; Ralph & Stahr, 2010). One study has evaluated the nature of a virtual library in Second Life and how it differs from library services in the real world. The study suggests that Second Life is just another “face” of the library (Parker, 2008).

Larkin (2023) encouraged academic librarians to explore the Metaverse as she predicted that it can yield new tools for research, communication and collaboration. There are recent cases of academic libraries using the Metaverse and/or 3D virtual libraries (Anna, Harisanty & Ismail, 2023). Adetayo, et al., (2023) have explored the idea of a Metaverse academic library in Nigeria, and whether users would use it. The results indicate that even if users had not used the Metaverse before, they were eager to use MAL for virtual academic research, library user education, accessing circulation services, reading serials and contacting reference librarians. The adoption and use of the Metaverse in academic libraries brings in new challenges – for example, the need for new technical skills on the part of users and staff to navigate this technology. There is some reference elsewhere in the literature to “metaliterary” skills (Tella, Ajani & Ailaku, 2023) and the rise of Metaverse Librarians (Chase, 2022; Daradkeh, 2023a; Daradkeh, 2023b).

The list of technologies reviewed above is not conclusive as there are many other emerging technologies on the academic library scene in the 21st century. Robotics is another technology that is slowly growing. In academic libraries robotics can “help manage library inventory, including circulation, shelf stocking, and materials handling, leading to better accuracy, efficiency, and fewer errors” (Gaikwad & Bilawar, 2023:5). De Sarker (2023) has explored how robots have been used to transform and improve library services; Calvert (2017) discusses how a robot did shelf reading and reported the results to humans; and Wójcik (2023) enumerates further areas of application of robots in libraries. The use of robots is generally not welcomed by library professional staff (Kalcheva, n.d.; Lin, Chiu & Lam, 2022; Wang, 2017). In a pilot study in one academic library, pet robots were introduced to patrons in the library. The results showed that participants reported

feeling less bored and less tired after their interactions with the robot support animals (Edwards et al., 2022).

Semantic web and linked data technologies have also impacted academic libraries. Berners-Lee, Hendler and Lassila (2001) described the semantic web as: “an extension of the current web in which information is given well-defined meaning, better enabling computers and people to work in cooperation”. Linked data is structured data that is interlinked with other data (Bizer, Heath & Berners-Lee, 2008; Ngomo et al., 2014). Most academic libraries have utilised semantic web and linked data technologies to publish catalogues and bibliographic data, linking them to other datasets and enhancing user search experience (Eller, 2022; Lampert & Southwick, 2013; Park & Kipp, 2019; Wu, 2023).

The global technological landscape is changing fast and affecting all social and economic sectors, including higher education. Academic libraries have been embracing these technologies in various ways for service delivery and user experience. Constant adjustments and persistent self-renovation by library professionals are needed to keep up with (or stay ahead of) these technological changes (Moruf & Dangani, 2020). Despite the changing environment, academic libraries seek to be relevant in supporting the institutions they serve. The transformed academic library is “outward facing, de-siloed, technology diffused, collaborative, and operated by an engaged staff who demonstrate leadership” (Michalak, 2012:413).

SECTION B: PERFORMANCE MEASUREMENT AND EVALUATION IN LIBRARIES

Having examined the macro-environmental issues affecting academic libraries in Section A, this section focuses on academic libraries' demonstration of their value and the contribution they are making to the patrons, communities and institutions that established them.

In the past 100 years, there have been dramatic changes in terms of how stakeholders view the role and mission of academic libraries. In the 19th century, the mission of libraries was primarily to serve as storehouses for books. In the 20th century, this changed, and the library was viewed more as facilitating the communication of social knowledge (Albelda, 2020; Holland, 2015; Shapiro, 1992). In the 21st century, because of technological change and the online availability of information, libraries are seen as centres for innovation, collaboration and knowledge exchange. This section of the literature review addresses the concept of value in academic libraries in the context of the literature on library performance measurement and library evaluation (see Fig. 2.3, below).

2.3 Library assessment and performance measurement

The advent of ICTs and an economy penetrated by technology in all its sectors have made it easy to access information on the web, including scholarly information. This has increased pressure on libraries continuously to adapt their services and justify their existence. Governments and host institutions are clamouring for accountability (Troll Covey, 2002). In response, library administrators have sought evidence to justify libraries' delivery of services, their budgets, and their very existence. There is therefore a "growing requirement for value and impact measurement" in academic and research libraries (Town, 2011a:111). Markless and Streatfield (2006) have

identified the following factors as fuelling the drive for impact and other performance measurements: the “growing focus on performance management in public institutions, the value for money drive and the growing call for evidence-based library and information management work” (2006:6).

Besides the internal library demands for performance measurement, academic libraries are public institutions which exist within a framework of service delivery. Measuring the performance of a library service is aligned with public service delivery standards and can be crucial to providing quality services (Brophy & Coulling, 1996; Karim, 2018). The attributes included in a typical academic library evaluation include performance, features, reliability, conformance, durability, currency, serviceability, aesthetics, usability, assurance, competence, courtesy, speed, variety of services offered and perceived quality (Brophy, 2004:30-36). Masrek, Khan and Doan (2022) have recently used some of these attributes to measure the performance satisfaction of an open-source library system.

The issue of performance measurement in library and information science is not new (Wallace & Van Fleet, 2012). According to Kyrillidou and Cook (2008), three scholars – James Gerould, F. Wilfrid Lancaster,⁸ and Duane Webster – contributed to a “common fabric in the development of assessment in libraries in the past century” (2008:888). Matthews (2017) enlarges “the notables” or professionals who have conducted research in this area and contributed to the current understanding of library evaluation and assessment. These are depicted in what he called the “Library Assessment Evaluation Tree” (Fig. 2.4, below).

⁸ See the following works: Lancaster (1977; 1988; 1993); Porta and Lancaster (1988).

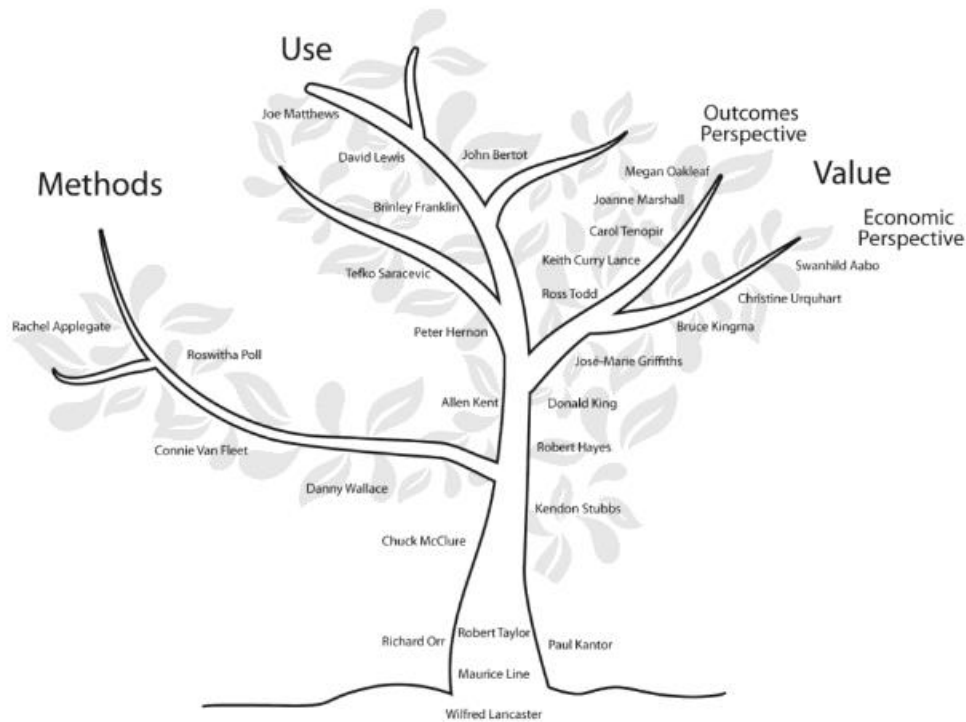


Fig 2.4: Library Assessment Evaluation Tree (Matthews, 2017: xxiv)

Besides mapping the different authors' contributions to library assessment, this tree also identifies the studies pertinent to the concept of 'value' within the literature. Academic libraries (like most libraries) have for some time been gathering data on the size and use of their collections, although it is only in the last 20 years that this data has been collected systematically (Hiller & Self, 2004). Such data has been used mainly for the purposes of in-service improvements and service design (library-centric) and external user experience (customer-centric) (Hernon & Altman, 2010; Juntunen et al., 2005; Kim, 2021; Matthews, 2017:5). The external focus was referred to by Oakleaf (2010:21) as the outward-looking focus of the library's "value on investment"(VOI). Libraries employed several research methods to collect this data, including observation, surveys, focus groups, interviews, balanced scorecards, and system-based statistics of access and resource use. Matthews (2017) proposed additional resources such as grounded theory, ethnographic methods and group interaction – and divided the methods into two camps – quantitative and

qualitative. In some cases, tailor-made tools are available for libraries to use. Some examples are LibQUAL+ (developed by the Association of Research Libraries (ARL), based on ServQUAL), the SCONUL Satisfaction Survey and Insync Surveys (Heath, 2011). Liebst and Feinmark (2016) reviewed the various surveys available for academic library assessments. They identified LibQUAL+™, Measuring the Impact of Networked Electronic Services (MINES®), SPEC kit on library assessment, Measuring Information Service Outcomes (MISO), and ACRLMetrics.

Currently, performance management and assessment are an essential part of every library. Behn (2003) notes that without assessing its performance, an academic library cannot be sure that its resources are benefitting its users, nor can it be sure that it is meeting the needs of society. Marshall (2007:10) claims that related areas such as library performance measurement, evidence-based library studies and valuation research can contribute to a better understanding of the value and impact of libraries. In the meantime, library measurement, evaluation and assessment skills have become part of librarians' core skills (Applegate, 2016; Askew & Theodore-Shusta, 2013; Fleming-May & Mays, 2015; Passonneau & Erickson, 2014). Askew and Theodore-Shusta (2013: 7-8) carried out a study to find out if librarians learn assessment in American Library Association (ALA) accredited LIS programmes. They discovered that while research methods courses and evaluation courses are prevalent, assessment is not emphasised in LIS curricula. Many professionals have been reported to be doing assessments with little guidance (Brannen, Cunningham & Mays, 2016), but assessment is an iterative process, so the tendency is for academic librarians to perfect it by doing it repeatedly (Oakleaf & Kaske, 2010:274).

The growing emphasis on performance management and assessment in the last two decades has also witnessed the growth of interest group conference(s) in library evaluation and performance

management. For example, the Library Assessment Conference (<http://libraryassessment.org>) was originally convened in 2006 by ARL and two member institutions, the University of Virginia and the University of Washington. This biennial conference brings together librarians interested in practical aspects of library assessment (Hiller, Kyriallidou & Oakleaf, 2014). A second example is the Library Performance Measurement Conference (LibPMC) (<https://libraryperformance.org/>), formerly the Northumbria Performance Measurement Conference, originally convened in 1997. Another related conference is the annual Quantitative and Qualitative Methods for Libraries Conference (QQML) that began in Greece in 2009. There are also other, more local conferences, such as the Southeastern Library Assessment Conference, and the Canadian Library Assessment Workshop hosted by the Canadian Association of Research Libraries (CARL) (Doucette, 2016; Liebst & Feinmark, 2016). Presentations at these conferences have contributed to the current understanding of library assessment, library evaluation, impact assessment and value impact.

Markless and Streatfield (2006:30) acknowledge that evaluation studies, impact studies and performance management borrow a lot from management and marketing literature. Yet the terms used in library assessment, such as outcomes, output, impact, value and benefit, have a variety of applications and meanings (Markless & Streatfield, 2006; Streatfield & Markless, 2019; Urquhart & Tuner, 2016). The conferences mentioned above have helped to establish common approaches to library assessment and performance measurement. Additionally, the literature on the assessment of academic and research libraries has been influenced by assessment studies in the higher education sector in the US, specifically the Commission on the Future of Higher Education (Hufford, 2013). For example, the reports, *Outcomes Assessment in Higher Education* (Hernon & Dugan, 2004) and *Revisiting Outcomes Assessment in Higher Education* (Hernon, Dugan & Schwartz, 2006) have influenced assessment activities to abandon the input-process-output

approach and move towards outcomes assessment. The historical development of the impact of HE reports and higher education assessment on library assessment is discussed by Kearns (2006) and Matthews (2015).

Despite such developments, there is still no universal terminology or approaches to both specific and broader aspects of library impact assessment. Doucette (2016) reported that in academic libraries there was no consensus on the motivators for library assessment projects nor an agreed definition of concepts such as value and goodness. In her content analysis of the studies on library assessment, the following motivations were established (mostly internal rather than based on outcomes for users). These are depicted in Table. 2.2, below.

Code for Motivator	Brief Definition
Develop Internal Expertise	Providing hands-on experience for librarians and staff to develop knowledge and interest in assessment
Contribute to Body of Research	Contributing to library literature to provide information/evidence for others; filling gaps in knowledge
Involve Users	Demonstrating user-centeredness of library by focusing on users, involving users directly in assessment for engagement purposes
Determine User Satisfaction	Measuring/determining users' perceptions and satisfaction with library
Measure Contribution of Library	Determining how the library or service of the library has contributed to users (goal is measuring versus proving)
Make Decisions (Current and Future)	Using data gathered as part of assessment to decide about a library service/resource (focus is on evidence versus anecdotes, making best use of library financial and human resources)
Improve the Library (Services/Resources/ Spaces)	Making an improvement to the library or a library role (e.g., student learning, spaces, services, collections); focus is on making something better for the users
Understand Users' Behaviours/Needs/ Knowledge	Developing greater understanding of users' knowledge, behaviours, and wants/needs; a further goal may or may not be present (i.e., why do the authors want to understand users?)
Advocacy and Justification	Providing information to help advocate for or justify funds/investment/expenditure, future projects/renovations, librarian/ staff time
Demands from Administration	Responding to demands from the university or library administration for assessment
Political/Economic Situation	Responding to local or broad political or economic factors
Accountability	Responding specifically to a demand for accountability; any use of the word stem accountab* in reference to libraries or institutions
Prove/Demonstrate Value of Library	Proving that the library makes positive contributions (e.g., to student learning, to faculty research); combination of proving/demonstrating/ showing + value/worth/impact/outcomes of the library (goal is proving versus measuring)

Table 2.2: Motivators for Library Assessment (Doucette, 2016:291)

There have been attempts to standardise terminologies and indicators in library performance measurement. The *ISO 16439. Information and documentation: methods and procedures for assessing the impact of libraries* was published in 2014. The standard describes a range of methods for assessing library impact (Creaser, 2018). The following section explores and explains some of the key terms used in the evaluation of library services.

2.3.1 Key concepts in the evaluation of library services

- *Assessment versus evaluation.* In the literature, these terms are used interchangeably to mean the same thing (Markless & Streatfield, 2006:xiii). The Joint Committee on Standards for Educational Evaluation (1994) offers a simple definition of evaluation that incorporates assessment: “evaluation is the systematic assessment of the worth or merit of an object” (p. 3). Stufflebeam and Shinkfield (2007) note that the root of evaluation is *value* and point out that evaluations involve value judgements. They add that “evaluations should be grounded in some defensible set of guiding principles or ideals and should determine the evaluand’s standing against these values” (2007:9).
- *Impact.* Markless and Streatfield (2006:xiv) define impact as any effect of the service (or of an event or initiative) on an individual or group. This effect can be positive or negative. “Impact can show itself in individual cases or through more generally discernible changes, such as *quality of life or educational or other outcomes*” (Markless & Streatfield,2006: xiv, emphasis theirs).

- *Outcomes*. Outcomes are the consequences of deploying services for the people who use them. An outcome is not what the service produced itself (an *output*) but a consequence of the use of the service.
- *Performance measurement*. Measuring performance involves systematically collecting data by observing and registering performance-related issues for some performance purpose (Van Dooren, Bouckaert & Halligan, 2010:6). This exercise informs decision making and is usually undertaken periodically.
- *Performance indicators*. A performance indicator is a measurable value that demonstrates that a service has achieved what it sought to do. A performance indicator focuses on a specific feature of a service and a range of indicators might be needed to evaluate complex services.
- *Input, process, output model*. This model originated in engineering sciences. A procedure is seen as comprising three parts – inputs, processes and outputs. *Inputs* are the resources needed for the service to function, *processes* mean what is done with the inputs, and *outputs* are the direct results of processed inputs (Markless & Streatfield, 2006).

These and other key terms in evaluation are succinctly defined in the *ISO 16439:2014. Information and documentation: methods and procedures for assessing the impact of libraries* (2014) (see below for detailed discussion). They include (ISO 16439(E):4.2):

- *input*: contribution of resources in support of a library (e.g., funding, staff, collections, space, equipment)

- *process*: set of interrelated or interacting activities which transforms inputs into outputs (e.g., cataloguing, lending, reference service)
- *output*: products of library processes (e.g., titles catalogued, loans, downloads from the electronic collection, reference questions answered)
- *outcome*: direct, pre-defined effect of the output related to goals and objectives of the library's planning (e.g., number of users, user satisfaction levels)
- *impact*: difference or change in an individual or group resulting from the contact with library services
- *value*: importance that stakeholders (funding institutions, politicians, the public, users, staff) attach to libraries and which is related to the perception of actual or potential benefit. (See SECTION C on value in libraries, below, for further discussion of this concept.)

2.3.2 Library performance measurement approaches or models

Malapela and De Jager (2018) distinguish three approaches to library performance measurement, which are based on (i) a systems-based model (ii) an outcomes-based model (OBE), and (iii) the management and strategic management sciences models. In Section 2.3.1, above, it was established that in the last ten years there has been a shift from the systems-based approach to outcomes-based approaches (Kyrillidou, 2002; Matthews, 2015, 2017; Savage, Piotrowski & Massengale, 2017).

Mitikish (2015) notes the importance of these approaches in the collection of data to paint a coherent image of a library's worth. Yet he observes that the "literature indicates that many

academic librarians do not use models in their assessment or evaluative activities” (p. 269). The models concerned can be described in the following terms:

- **Systems-based model.** This model appears in early or classic library and information science studies, which include Orr (1973), Cronin (1982), Baker and Lancaster (1991), Lancaster (1977; 1988; 1993), and Porta and Lancaster (1988). The systems-based model imagines the components of a library service to include inputs, processes, and outputs (ISO 16439[E]:4.2). Brophy (2006) presents this in the following diagram:

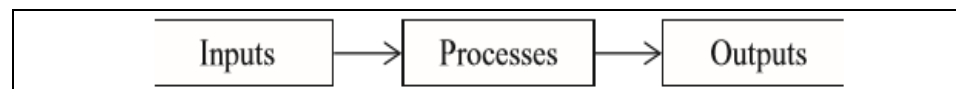


Fig. 2.5 Systems model (Brophy, 2006:8)

Inputs are the resources available to the system, including financial, staffing and material resources. Outputs are services that the system exports or gives out to its patrons. These range from transactions to hours the premises are accessible, and the availability, use and usability of the print and digital resources. During this earlier era, “libraries did not engage systematically in measuring quality or outcomes from a user perspective” (Kyrillidou, 2002:44).

Mikitish (2015:270) notes that studies based on this model tend to focus on a library’s efficiency or monetary value, such as return on investment (ROI) studies. A major criticism of systems models is that “although they can demonstrate correlations between inputs, processes, and outputs they often are not detailed enough to isolate the impact of library factors” (Mikitish, 2015:271). In most cases, the systems model is useful for internal library

or institutional performance but weak in measuring the library’s value beyond the institution. An interesting adaptation of this model by Orr (1973) involved distinguishing the quality of a service from the value of a service, where *quality* relates to the library’s capability to provide resources and services, and *value* relates to the library’s beneficial effects on its users and parent institution (Orr, 1973:320). This insight was not picked up in the literature until the year 2004, when higher education assessment required campus units to comply with assessment standards (Matthews, 2015). Orr’s version of the model is illustrated in Fig. 2.6, below.

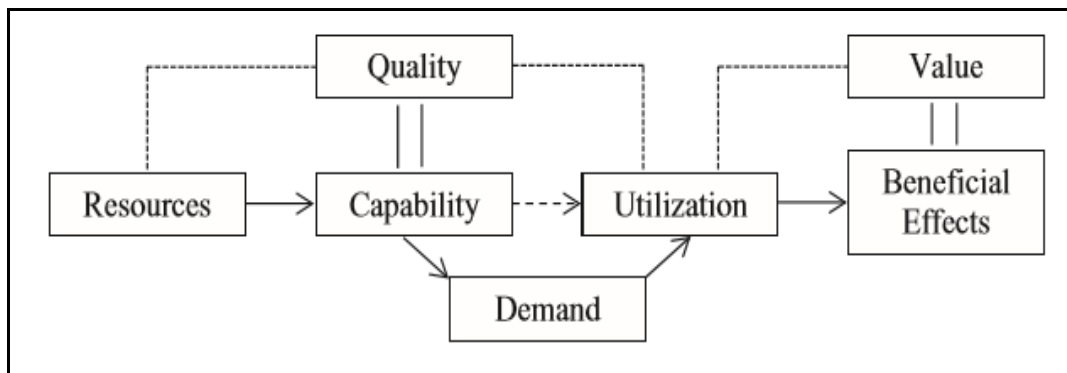


Fig. 2.6: Orr’s Systems Model, adapted from Richard Orr’s “Measuring the goodness” (1973) (Mitikish, 2015:272)

- **Outcomes-based model.** This model, sometimes called outcomes measurement or outcome-based evaluation (OBE), is a systematic way of establishing if a programme has achieved its goals (Wang, 2010). Hinderman (2005) explains: “Outcomes evaluation is the process of measuring the changes in a patron’s behaviour, skills, knowledge, perceptions, or attitudes that resulted from the patron’s exposure to a library’s services and programs, comparing those outcomes to the library’s goals and mission, and using that analysis to implement improvements in library services and programs” (Hinderman, 2005:1). Outcomes-based

evaluations have been popular with academic libraries and law libraries (Watson et al., 2023), although they have been used in public libraries too (Huysmans & Oomes, 2013:169; Vakkari & Sami, 2012). The model or an adaptation of it has been used by Fraser and McClure (2002), Rubin (2006) and Markless and Streatfield (2006:50). According to the ISO Standard (ISO 16439[E]:4.2), an outcome is a direct, pre-defined effect of the output in relation to the goals and objectives of the library's planning (e.g., number of users, user satisfaction levels). The outcomes-based model attempts to link the impact of a service to the broader goals of the user. Brophy (2006) portrays this model in the following diagram:

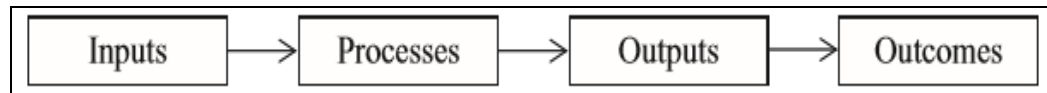


Fig. 2.7: Outcomes-based model (Brophy, 2006: n.p.)

This model is relatively easy to apply in quantitative projects, where the aggregated output – say 1000 products that X produced or bought – can be used to measure the achievement of outcomes. In the library setup, no amount of aggregation can measure the impact or achievement of outcomes (Markless & Streatfield, 2006:21). For example, if one is monitoring the impact of reading, no amount of monitoring book loans can tell if the borrowed items have been read (Markless & Streatfield, 2006:22). Hence, in service-oriented entities aggregated outputs are not usually the same as the outcomes.

The present study seeks to understand whether academic libraries services contribute to students' and lecturers' desired outcomes and are of value to the institutions that house the libraries. The aggregate outputs of student passing, for example, can tell an impact story at

an organisational level (Oakleaf 2011). Mikitish (2015:272) notes that most outcomes-based studies are broken into groups according to the types of outcomes in which higher education researchers are interested, such as retention, persistence, graduation and achievement. Moreover, learning-related outcomes for students include critical thinking, engagement and satisfaction with their educational experience. Outcomes relating to university faculty or researchers include teaching, productivity, institutional ranking and academic reading (Mikitish, 2015). Some ROI studies utilise this model.

The outcomes-based approach has been prominent in recent studies in library assessment and performance measurement. For example, Oakleaf (2010) suggested that academic library outcomes should be aligned with institutional outcomes in respect of the following: student learning, student enrolment, retention and graduation rates, success, achievement, engagement, faculty research productivity, teaching and overarching institutional quality. Prior to Oakleaf's study, Lindauer (1998) had suggested the following outcomes: learning outcomes and enabling instructional outputs, faculty/academic staff teaching effectiveness, scholarly productivity and professional development, institutional viability and vitality, and access to learning resources.

- **The management sciences models.** These encompass a suite of models borrowed from management sciences that include the balanced scorecard model and the total quality management approach. The *balanced scorecard* was introduced in 1992 by Robert Kaplan and David Norton (Kaplan & Norton, 1992). This is a strategic management measure that keeps track of routine activities and monitors their progress toward achieving key objectives. The characteristics that define a balanced scorecard include a focus on the

strategic agenda of an organisation, the selection of smaller data units to analyse, and a mix of financial and non-financial data (Kaplan & Norton, 2005). The balanced scorecard is a table with numbers recording features associated with an organisation and matched to the target value of each. In library and information science, the balanced scorecard has been used in strategic academic library management (Broady-Preston & Preston, 1999; Kettunen, 2007; Reid, 2011; Self, 2003), performance measurement (De La Mano & Creaser, 2016; Poll, 2001), and value studies (Broady-Preston & Lobo, 2011; Mengel & Lewis, 2012; Reid, 2011; Town, 2015; Town & Kyriilidou, 2013; Urquhart, 2018). An example of the balance scorecard model is presented in Fig. 2.8, below.

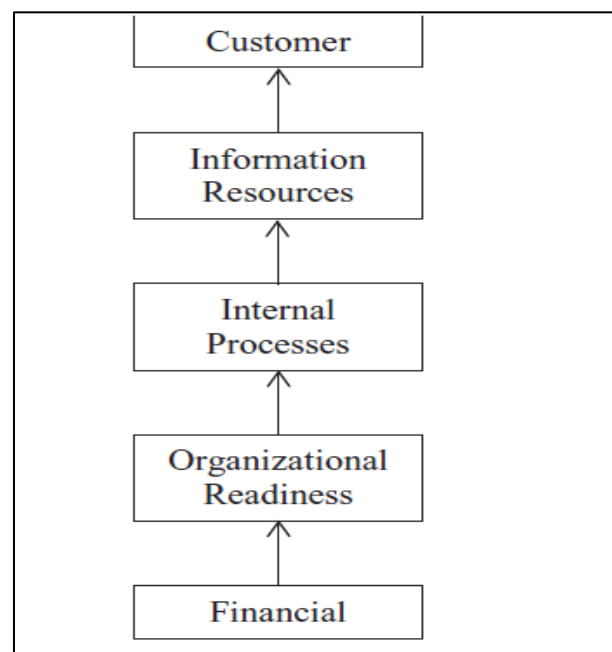


Fig. 2.8: Matthews's library balanced scorecard model (Matthews, 2007)

There are very few studies on the balanced scorecard model in the global south. Owusu-Ansah and Takyi (2017) focused on the use of the balanced scorecard as a performance management tool in academic library digital services at a large multi-campus university in

Ghana, while Kanungo (2017) reviewed the use of the balanced scorecard by libraries in India.

The *total quality management approach* hinges on what is known as gap theory. The customer gap is the difference between customer expectations and customer perceptions. According to Mikitish (2015:273), the service quality-based models used by libraries are informed by gap theory, which is based on identifying discrepancies between expectations and perceptions of a service. The SERVQUAL instrument was based on this model and developed to measure quality in the provision of services (Parasuraman, Zeithaml & Berry, 1988:12). The instrument has subsequently been used in many sectors, including library and information science (Kurnia et al., 2023; Ladhari, 2009; Mamta & Kumar, 2023). Commenting on this model, Mitikish (2015) observes that “because the minimum level of service is subtracted from the perceived level of service, a negative gap score indicates that the individual was not satisfied with the service and a positive gap score indicates that the individual was satisfied with the service” (p. 273). The limitations of SERVQUAL in library assessment have been documented by Yu et al. (2008:514). Two major drawbacks of the variant LibQUAL+ are that, to measure quality, it relies on a scale of numbers from 1 to 9, while human beings do not use numbers to evaluate things. Secondly, it assumes that all users’ opinions are equally important (Cabrerizo et al., 2017:1). However, LibQUAL+ has been modelled and implemented in various permutations in academic library environments (Atkinson & Walton, 2017).

Different countries’ libraries adopt different national quality measurement metrics and standards. Another example is *ISO 9001: quality management systems*, a comprehensive

quality standard that can be applied to any organisation in any sector. First developed in 1987, the current version was issued in 2015 (Sputore & Fitzgibbons, 2017). ISO 9001 has been applied by and to academic libraries (Düren, 2017; Kostagiolas & Kitsiou, 2008; Sivankalai & Yadav, 2012).

2.3.3 Support instruments in evaluating academic library services

As stated above, academic libraries (and libraries in general) have been collecting in-use statistics to measure the extent and success of their services. While this in-library use data is useful for implementing and monitoring library services, it is inadequate for measuring the value of a library service, or the extent to which it meets stakeholder needs (Oakleaf, 2010; Oakleaf, 2011). In recent times, the following works have been useful in guiding academic library assessment initiatives: (i) *Evaluating the impact of your library* (2nd Edition) by Markless and Streatfield (2012); (ii) the publications by Joseph Matthews, *The evaluation and measurement of library services* (2017) and *Library assessment in higher education* (2015); (iii) *ISO Standard 16439. Information and documentation: methods and procedures for assessing the impact of libraries*; and (iv) *The value of academic libraries: a comprehensive research review and report* (Oakleaf, 2010). As indicated in Section 2.3.2, current approaches to evaluating library services need to focus on outcomes while demonstrating the value of library services to their institutions. The publications cited here all offer support to those engaged in the task of measuring the value of academic libraries.

Evaluating the impact of your library by Markless and Streatfield (2012) provides a description and a step-by-step guide to help libraries in general carry out successful evaluation of their impact. The authors introduce a model in terms of which the librarian should define the purpose or mission of the evaluation, set out performance indicators, determine their scale of measurement, and decide

how to implement these and monitor the exercise. For each step, they explain in detail how evidence should be gathered. Markless and Streatfield's (2012) work has widely informed library evaluation and impact assessment studies over the past decade. For example, Smith, Tryon and Snyder (2015) adapted the information in Markless and Streatfield (2012) to develop an academic library assessment plan at Jerry Falwell Library at Liberty University, located in Lynchburg, Virginia, USA.

Another publication to support librarians carry out library evaluation and assessment programmes is a book entitled, *The evaluation and measurement of library services* by Joseph Matthews (2017). This book was designed to meet the growing evaluation and assessment skills needed by academic librarians to measure value of their service, to communicate to their various stakeholders the benefits their library offers and to make informed decisions.

The *ISO Standard 16439. Information and documentation: methods and procedures for assessing the impact of libraries* (2014) is another important resource. De Jager (2015) describes how ISO 16439 was used to measure the impact of the Lyon Declaration. Creaser (2018) has provided an in-depth review of the standard and its possible practical application, and De Jager (2017) has mapped the standard to academic library environments. The ISO standard can cater for the library impact of library services on individuals and/or society. ISO 16439 was also applied to an academic library to measure the services that it offers to non-traditional stakeholders of the university (Bahrudin, 2021; Cassella, 2017). In Cassella's study, the digital infrastructure of university was opened to some public libraries and local governments, fulfilling a societal role referred to as "the third mission of the university" (Cassella, 2017:9). The ISO 16439 describes three main ways of locating evidence of impact: by *inference* from data; *solicited* where users are

asked; and *observed* by looking at user interactions with a service (as well as *combined* methods). The standard defines the concepts of impact and “is intended as a tool for the evaluation of impact and value of all types of libraries” (Laitinen, 2015:322). ISO 16439 caters for the impact of all types of libraries on individuals, institutions and society.

The value of academic libraries: a comprehensive research review and report by Megan Oakleaf (Oakleaf, 2010) provides a grounding review of studying value in academic libraries. The report, commissioned by the Association of College and Research Libraries, responded to the demands placed on academic libraries by stakeholders. It provides librarians with a review of the literature on the value of libraries in an institutional context, suggests steps to be taken to demonstrate an academic library’s value, and proposes a research agenda for extending understanding of the value of academic libraries. The Oakleaf report provides a possible outcome that can be chosen by academic libraries that need to measure their value to their users and stakeholders. In 2012 Oakleaf published *Academic library value: the impact starter kit* as a practical tool to support academic libraries wanting to evaluate themselves. Reviewing the *starter kit*, Kliwer (2018:203) noted that the content was not fundamentally different from the original workbook.

The impact of the Oakleaf report on the academic library community has been immense. Becker and Goek (2020) note that establishing the value of academic libraries became a goal within the ACRL’s strategic plans in 2011. In 2012, ACRL received a grant from the Institute of Museum and Library Services (IMLS) under the umbrella of the Value of Academic Libraries (VAL) initiative, and assessment programmes were initiated until 2015. In 2017, ACRL published *Academic library impact: improving practice and essential areas to research*. The study emphasised the use of learning metrics (student learning and student success) to demonstrate value

(Connaway et al., 2017). The publication of the Oakleaf report thus rejuvenated library assessment and indicated areas for focus in the future, including outcomes-based approaches (Cox, 2021). In the past decade, academic libraries have collected data logically to prove their worth or value (Seale & Mirza, 2020:5).

SECTION C: THE CONCEPT OF VALUE AND VALUE IN ACADEMIC LIBRARIES

Having described the debate on library evaluation and performance measurement, this review will present some discussion of value, both generally and in library and information science in particular. Library literature is greatly influenced by studies and conceptual frameworks borrowed from other disciplines, and this applies specifically to the emerging understanding of value in academic libraries.

2.4 The definition of value

Value is not an easy concept to define, yet everyone has an idea of what it is. To quote some attempts to define it: “a measure of the relative worth of an item” (Burns, 2019:15); “the importance or worth of something for someone” (Cambridge Dictionary: n.p.); “the regard that something is held to deserve; the importance, worth, or usefulness of something” (Ilik & Gjorshoski, 2022:15-16). Value is a subjective concept, like beauty, and as the adage goes, “beauty is in the eye of the beholder”. In most cases, the definition of value depends on the standpoint of the person defining it. Thus economists, marketers, philosophers and others all have their own definitions of value. The current thinking on value in library and information science borrows from

other disciplines (Malapela & De Jager, 2018). The following sub-sections review the understanding of value in selected cognate fields.

2.4.1 Value in philosophy

In philosophy, axiology or value theory is the study of the nature of value and valuation, and of the kinds of things that are valuable (Rescher, 1969). In philosophical thought, value is “used as a catch-all tag to encompass all branches of moral, social and political philosophy and is accepted to include all ‘evaluative’ aspects” (*Stanford Encyclopedia of Philosophy*, 2015:23). Axiology is concerned with the classification of what things are good, and how good they are. Axiology distinguishes three dimensions of value – extrinsic value, systematic value, and intrinsic value (Schroeder, 2016).

2.4.2 Value in economics

In economics, value is linked to the price of a good or service. Economic value “is the value that a person places on an economic good based on the benefit that they derive from the good” (Banton, 2023:n.p.). For example, the economic value of an orange (or any fruit) is not determined by the object itself, but depends on the intention of the person appreciating the orange – what it would do for them or serve their attachment to it. The person’s appreciation is determinant of the economic value (Banton, 2023). Since the economic value is subjective and directly dependent on the person’s intentions, it cannot be directly measured. Some methods have been devised to try to quantify or estimate economic value. For example, willingness to pay: that is, the price a person is prepared to pay for a good or service quantifies the economic value of that good or service (Braidert, Hahsler & Reutterer, 2006). Willingness to pay (WTP) is regarded as the maximum

price a person is willing to pay for a good or service (Hanemann, 1991). This concept has been used in health and healthcare studies as a measure of the benefit of healthcare programmes, and to measure the value of health service (Lee, Austin & Pronovost, 2016).

Adam Smith, the founding father of economics, divided economic value into kinds – *value-in-use* and *value-in-exchange* (Smith, 1776:31). *Value-in-use* indicates the intrinsic worth or usefulness of a product or service, while *value-in-exchange* is the market price of a good or service. There is an interesting theoretical debate in economics regarding these concepts. For example, to neoclassical economists, the value of an object is the price it will fetch in a market, so if there is no market for an object it has no economic value. In classical economics, the economic value of an object is not dependent on the existence of a market but on the intrinsic worth of an object (IvyPanda, 2019). This means that the value of an object is independent of the market or its exchange value. Any discussion that seeks to justify an academic library’s value in financial terms reduces everything to exchange value (*value-in-exchange*), “although that exchange value has to be undergirded by use value” (Seale & Mirza, 2020:13). Academic libraries do not sell their services, nor do they refer to their patrons as “customers”, but they do have use-value (see Section 3.5). According to Oakleaf (2010), there are two kinds of study exploring value in academic libraries, those concerned with economic value and those focused on social impact value (see also Cram, 1999:11). These are explored below, in Section 2.5.

2.4.3 Value in marketing

In marketing, when customers evaluate a product or service, they weigh its perceived value against the asking price (Malapela & De Jager, 2018). To marketers, service is a perspective on value creation rather than merely a market offering. Two areas of focus are discernible in literature that

explains how marketers view value: one seemingly aligned with the economic view and the other with the philosophical view. With regard to the first, Gronroos (2008) contends that value is not created by the provider but by the customer as a by-product of interacting with a service. This view of customers as co-creators of value has raised the concept of service-dominant logic. Service-dominant logic contends that value for customers is not embedded in the products and services offered, that is, *value-in-exchange*, but emerges after customers use products and services and thus is essentially *value-in-use* (Gronroos, 2008; Vargo & Lusch, 2004). Vargo and Morgan (2005) note that on the subject of value creation, economics and business economics literature focuses on the notion of *value-in-exchange*. Service-dominant logic implies that when using services offered by a firm together with other resources, customers create value for themselves in their everyday practices. Services are thus considered to have *value-in-use*, while goods have *value-in-exchange*. This thesis addresses the services offered by academic libraries and, as will be seen in the next chapter, uses the concept of value-in-use as a principal theoretical foundation.

The second marketers' path toward explaining value was first formulated by Almquist, Senior and Bloch (2016). The authors sought to understand what customers defined or understood as value in a product. The authors then identified 30 elements constitutive of value and classified them as meeting one of four kinds of needs – functional, emotional, life changing and social impact. This model has its conceptual roots in the psychologist Abraham Maslow's "hierarchy of needs", extending his insights by focusing on people as consumers (Almquist, Senior & Bloch, 2016:47-48). The diagram below (Fig. 2.9) depicts selected elements in the four-tier pyramid of value.

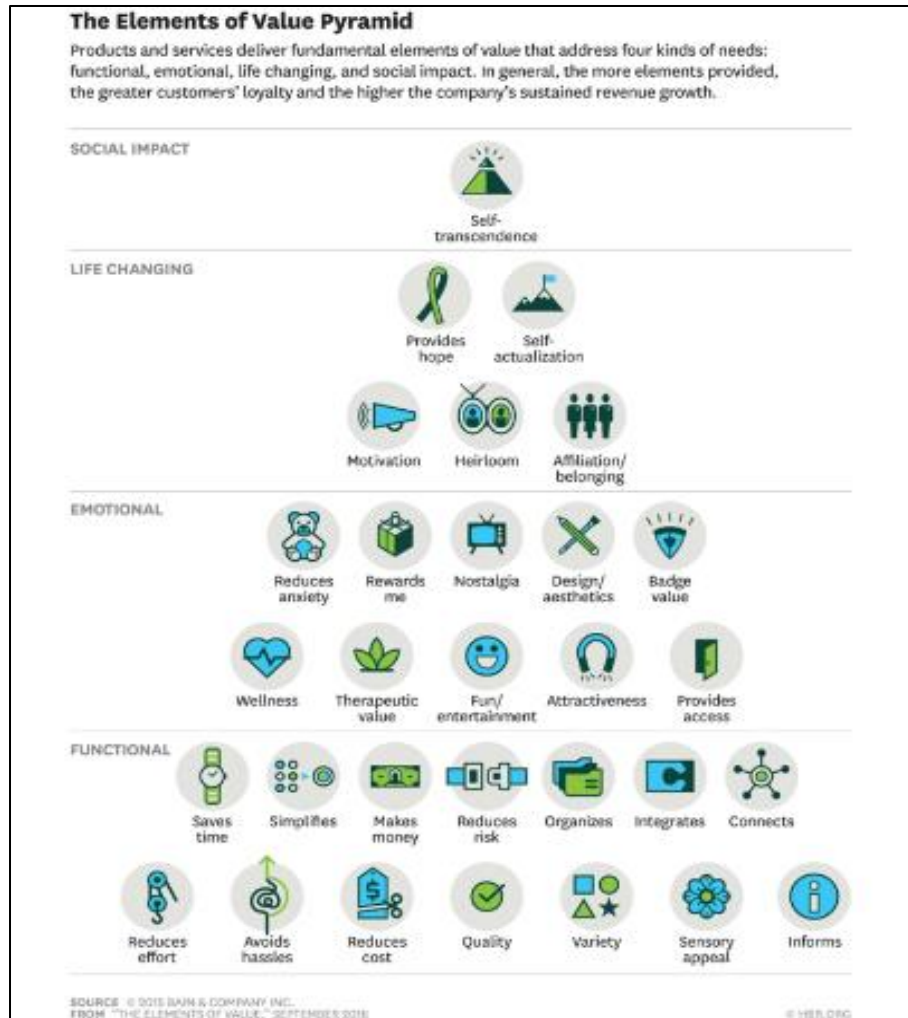


Fig. 2.9: The Elements of Value Pyramid (Almquist, Senior & Bloch, 2016:51)

Similarly, this study seeks to evaluate the worth of academic libraries by focusing on the stakeholders they serve, and borrows Almquist, Senior and Bloch's (2016:47-48) approach to identifying the elements/outcomes of value expected by stakeholders. These elements were identified by Oakleaf (2010) as students' enrolment, student retention and graduation, student success, student achievement, student learning, faculty research publications, faculty grants, faculty teaching and institutional reputation and prestige (Oakleaf, 2010:19).

2.4.4 Value in sociology

In sociology, a value is considered an ideal or principle that determines what is correct, desirable, or morally proper (Bell, 2013). Sociologists normally refer to value in the plural – values, which are defined as “society’s shared beliefs about what is good or bad and how people should act” (Ethics Unwrapped, 2023:n.p.; see also Hitlin, 2008; Hitlin & Piliavin, 2004; Kendall, 2011). This differs from the concept of values explored in this thesis. In library and information science, the sociological approach to value is visible in the context of the ‘Core Values of Librarianship’, a set of beliefs shared by members of the profession, as codified by the American Library Association. The specific values identified were access, confidentiality/privacy, democracy, diversity, education and lifelong learning, intellectual freedom, preservation, the public good, professionalism, service, social responsibility and sustainability (American Library Association, 2006:n.p.). These have been explored by Preer (2008), Jacobs and Berg (2011), Kendrick and Leaver (2011), Gorman (2015), Seale (2016), Hudson (2017) and Nims (2023).

Nims (2023) studied academic libraries at the state of Michigan’s public and private universities and listed their values as extracted from their mission statements. The study revealed over 54 stated values among the 24 academic libraries. They compared these values with the ALA’s Core Values of Librarianship and concluded that these values guide how academic librarians behave, constitute a basis for creating a community and provide an opportunity to create unique institutions. Similar approaches have been followed elsewhere (Allison, 2019; Elwick, 2020; Nous, 2015; Robertson, 2020; Salisbury & Griffis, 2014; Wadas, 2017).

This thesis examined the mission statements of the selected academic libraries (as part of the document analysis) within the framework of establishing their commitment to and alignment with their institutional outcomes (see Sections 4.5.1 and 2.7, below). What emerged was that “values studies” in academic library literature focus on ethical concerns – notably, implementation of the ALA Core Values in Librarianship – and are distinct from the study of value in library performance and library assessment literature. A single study focuses on both value and values (Young, 2022). Young observes that “library assessment practitioners face dual pressures to demonstrate library value and adhere to library values” (p.2). He examines library value and values through the lens of practical or applied ethics. Using the coding approach of constructivist grounded theory, Young establishes a new framework for ethical library assessment that he dubs the “Values-Sensitive Library Assessment Toolkit”.

2.5 Value in library and information science, with a focus on academic libraries

Value in academic libraries is influenced to some extent by views in economics and other fields but is codified in the ISO 16439 standard. ISO 16439(E):4.2 defines value in the context of library evaluation as the “importance that stakeholders (funding institutions, politicians, the public, users, staff) attach to libraries and which is related to the perception of actual or potential benefit”. Oakleaf (2010) has characterised value in libraries as either economic or social impact value, echoing’s Cram (1999) conceptualisation of value in two broad themes – economic value and social value. “The first group (economic value) has scholars who state that the value of libraries can be measured financially, even if library services do not operate in the profit mode. They argue that since the inputs to the library service are financial, the outputs can be expressed financially” (Malapela & De Jager, 2018: 776). Cram’s analysis is illustrated in Figure 2.10, below.

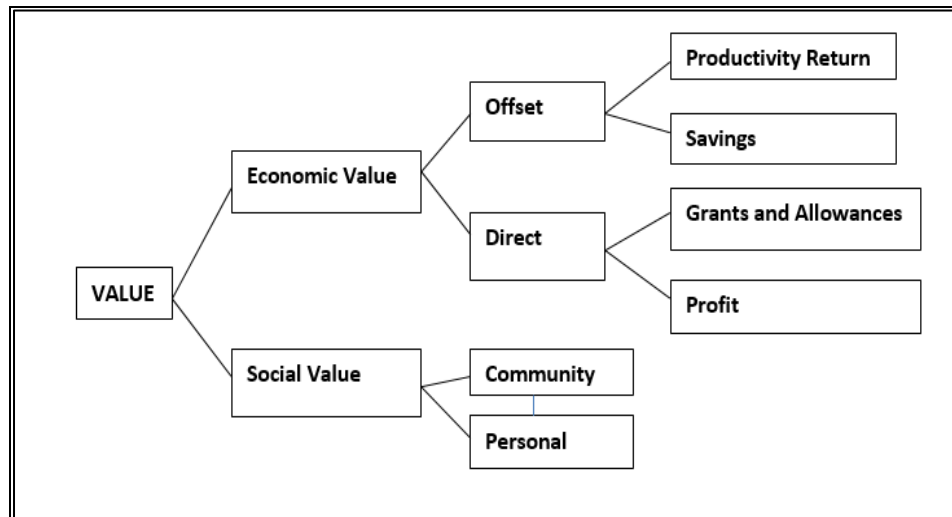


Fig. 2.10 Aspects of value (Cram, 1999:13)

A search of the literature shows that these two broad themes (social value and economic value) have dominated value studies in libraries, with most studies pursuing one kind or the other. Economic value studies apply quantitative methods while social value studies use qualitative methods. Quantitative methods used include Return on Investment (ROI) or Cost Benefit Analysis (CBA), Contingent Valuation (CV) and Input-Output Models (IOMs), while qualitative methods typically involve Social Auditing, Social Impact Audit and Ethnography. There are a few studies employing a mixed methods approach (for example, Stejskal, Hájek & Řehák, 2019; Town, 2015b).

2.5.1 Value studies in libraries

As suggested above, library literature is divided between economic value studies and social impact studies. This division is uneven, in the sense that when the needs of management stakeholders are being addressed, there is a clear bias in favour of financial value. It seems for these stakeholders librarians need to demonstrate that their services are worth the investment. It is assumed that these

stakeholders are only, or most, interested in the economic measure of value, hence the studies use the calculus of ROI or CBA analysis (see Lamont, 2015; Oakleaf, 2010:22-23). On the other hand, social impact proponents argue that libraries generate outcomes with societal benefit and have a social capital value (Huysmans & Oomes, 2013; Rooney-Browne, 2009b; Town, 2015; Walker et al., 2011). An obvious problem continues to lurk: the value attaching to the outcomes of libraries is intangible and seemingly intrinsic, which means that any attempt to measure it is inherently problematic (Bryson, Usherwood & Streatfield, 2002; Dukart, 2007:49; Rooney-Browne, 2011). Nevertheless, the ‘economic/financial’ and ‘social value/impact’ groupings will be used because of their practical utility. Suffice it to state that libraries have no inherent objective value. Value is assigned to them according to the user’s perception of actual or potential benefit. Libraries create value by leveraging their inputs, adding value and creating benefits (Cram, 1999: 1-2). If managed well, a library’s products and services should lead to the production of value for its users.

2.5.2 Economic or financial value studies

Economic measures of value have been applied to libraries. The following three-pronged assumptions informed expectations regarding the contribution of public libraries to the national economy in the UK (Arts Council England, 2014:2).

1. as economic actors in their own right (economic impact)
2. as institutions that facilitate the creation of economic value in the adjacent area and local economy (place-based economic development)
3. as organisations that deliver a wide range of services, most of which are valued by both users and non-users when set against their cost of provision (benefit-cost/total economic value approaches).

All of these assumptions require empirical testing based on the collection of primary data, which renders them both bespoke and relatively expensive (Ashley & Niblett, 2014). Meanwhile, Missingham (2005) carried out an in-depth review of the international literature on libraries and

economic value over the ten-year period of 1995 to 2005. The initial wave of studies in the field focused on justifying libraries as worthwhile investments and demonstrating that investing in a library provided a financial return for the funding organisations. The problem identified was that of establishing a dollar figure for the contribution of the library. Most of the studies on the economic value of libraries focused on the return on investment and contingent valuation aspects. Ko and Shim (2011) provided a more recent critical review of the economic valuation of public libraries and emphasised the need for a methodologically consistent approach to the task of valuation. Some of the post-Missingham studies are presented in Table 2.4, below.

2.5.3 Measuring the economic value of libraries

Before presenting the literature on measuring the economic value of libraries, it is imperative to highlight the issue raised above of value measurement in libraries. Libraries' social and economic benefits are, by definition, intangible. Yáñez (2014:13) consequently argues that it is not possible to calculate libraries' economic value using conventional market-based supply and demand criteria. It remains a challenge to find a methodology capable of estimating the economic contribution of libraries, to stakeholders or to society as a whole.

Type of library	Measurement Approach	Reference
Public Libraries	Contingent Valuation	Aerni & King, 2006; Chung 2008; Faulkner & Kaufman, 2018; Hider, 2008; Kang, 2016; Pyo, 2006; Stejskal, Hájek & Řehák, 2019
	Return on Investment (ROI)	Aabo, 2009; Griffiths & King, 2013; Kaufman & Walter, 2008; Kelly, Hamasu & Jones, 2012; Ko et al., 2012; Matthews, 2011; McIntosh, 2013; Tenopir, 2010; Jarrett & Kuipers, 2012
	Cost and Benefit Analysis (CBA)	Elliott, 2007; Saxena & McDougall, 2012
	Mixed-Methods	Stejskal & Hájek, 2015
	Other methods	Linhartová & Stejskal, 2017 (Economic Index/Delphi Survey)
Academic Libraries	Contingent Valuation	Satterley & Woellhaf, 2020; Seifouri, et al., 2018; Ziaei & Biranvand, 2020
	Return on Investment (ROI)	Clarke, et al., 2022; Condrony, Gao & Komos, 2018; King & Tenopir, 2011; Kingma & McClure, 2015; Tenopir, Mays, & Kaufman, 2010; Tetteh, & Nyantakyi-Baah, 2019; Pandey & Kumar, 2022; Shimray & Ramaiah, 2015; Singh & Pandita, 2019; Tenopir, Mays & Kaufman, 2010.
	Cost and Benefit Analysis	Tabacaru & Hartnett, 2017
	Other measurements	Missingham, 2021 (using Sustainable Development Goals)

Table 2.3: Selected studies on the economic value of libraries, 2006-2023.

Imholz and Arns (2007) give an account of the economic valuation methodologies used in library valuation, mentioning Return on Investment (ROI), Cost Benefit Analysis (CBA) and Contingent Valuation (CV). They note that the methods used focus either on direct benefits or on indirect benefits. Explaining the latter, Aabø, (2007:15) comments: “Cost/benefit analysis, contingent valuation and secondary economic impact analysis are methods that are used. The latter uses formulas and algorithms for assessing the secondary economic impacts of industries, such as library employees living locally and spending their wages in local businesses in the community thus contributing to the local economy; the diverse library expenditures, etc.” (2007:15).

In the following paragraphs, the approaches used are reviewed.

- **Cost (and) Benefit Analysis (CBA)** is also sometimes called *Benefit Cost Analysis* (BCA) and can be described as the *market pricing* (MP) of comparable assets (Yáñez, 2014:19). It is one of the ways of evaluating a service or a product. Kim (2011:113) defines CBA as a method that quantifies public goods in monetary terms, where benefits are the positive consequences of a policy and costs the negative consequences. In Cost Benefit Analysis, libraries assign a cost or purchase price to a library service or collection item and compare this amount to the value of that service or item to library patrons and their community (Imholz & Arns, 2007:45).

To monetise the library services under review, the method uses the price of alternative services. The prices selected as reference values should fully reflect the average price of alternative services. Additionally, according to Kim (2011), costs can be determined by market prices, actual payments or investments, depending on the accessibility of information. Kelly, Hamasu and Jones (2012) maintain that the monetary value of goods and services identified as either costs or benefits must be determined before one can conduct ROI or CBA. They list the valuation methods as (i) contingent valuation, (ii) consumer surplus, (iii) opportunity costs, and (iv) actual cost (Kelly, Hamasu & Jones, 2012:663).

The resulting “benefit-to cost ratio” in CBA measures the benefits against the investments made: if the ratio is greater than one, then the library service is more beneficial than the costs invested, indicating an increase in value. According to Imholz and Arns (2007:46),

most CBA studies focus on direct benefits to the users and indirect benefits to the community. They also noted that cost/benefit analysis requires consistent measurements to be used within comparisons. The method is relatively uncomplicated to implement and can also be used to measure individual library processes.

In library studies, Holt and Elliott (2002) used the CBA approach to estimate the dollar value of services offered by public libraries. These libraries included the St. Louis Public Library, the Baltimore County Public Library, the Birmingham Public Library, the Phoenix Public Library, and the King County Library in Seattle (see also Holt & Elliott, 2003). Since then, many public libraries have implemented this approach. There is, however, little evidence of the application of CBA to academic libraries. In the literature, CBA is associated with Return on Investment (e.g. Kim, 2011) and, in some cases, with Contingent Valuation (e.g. Yáñez, 2014)

- **Contingent Valuation** – The Contingent Valuation method is used to estimate the value of a non-market good by questioning consumers about their preferences. There are two types of estimates – willingness-to-pay (WTP) and willingness-to-accept (WTA). Fugitt and Wilcox (1999) offer an elaborate discussion of this method as applied in public service decision-making, but the method has also been applied to public libraries (Aabø, 2007; Aerni & King, 2006; McIntosh, 2013; Missingham, 2005; Sakalaki & Kazi, 2007).

Stejskal and Hájek (2015) summarise the procedure for applying this method: “in the Contingent Valuation questionnaire, a description of the evaluated good is provided to the respondents, together with the expected change of its quantity or quality and the financial

impact of this change. In this hypothetical market, the respondents express either their willingness to pay (WTP) the maximum price of the public good, or their willingness to accept (WTA) compensation for not being able to consume this good” (Stejskal & Hájek, 2015:147). This method is prone to biases through potential errors “in measurement, for example ‘yea-saying’ (acquiescence) bias, protest answer bias, non-meaningful budget restrictions; inaccurate definitions of the evaluated good (information bias); non-acceptance of the proposed scenario; market size; and the ‘warm glow’ effect” (Stejskal & Hájek, 2015:147; see also Chung, 2008).

- **Return on Investment (ROI)** – This method is used to show, from a financial perspective, that invested funds are yielding a return or benefit. It is generally calculated as a ratio between net return and investment. Tenopir (2013:272) defines ROI as “a quantitative measure expressed as a ratio of the value returned to the institution for each monetary unit invested in the library. In other words, for every amount of money spent on the library, the university receives ‘X’ amount in return”. The formula for the ROI as applied in libraries was explained by Kelly, Hamasu and Jones (2012:658). An example is reproduced below.

$$\left(\frac{\text{value of benefits} - \text{total costs to produce benefits}}{\text{total cost to produce benefits}} \right) \times 100 = \text{ROI}\%$$

$$\left(\frac{670,000 - 100,000}{100,000} \right) = 5.7 \times 100 = 570\%$$

When expressed as a ratio the calculation is simpler:

$$\left(\frac{\text{value of benefits}}{\text{total cost to produce benefits}} \right) = \text{B:C}$$

$$\left(\frac{670,000}{100,000} \right) = 67:1$$

Fig. 2.11: Formula for ROI in libraries (Kelly, Hamasu & Jones, 2012:658)

The return is usually counted and expressed in hard currency. For example, in Florida in 2004, Florida’s public libraries’ ROI was \$6.54 for every \$1.00 invested, and for the British Library it was £4.40 for every £1.00 invested (Stejskal & Hájek, 2015:148); while for Norwegian libraries, the ROI was expressed by the ratio 4:1 (Aabø, 2005; De Jager, 2017). In the literature, CBA and the ROI are sometimes used interchangeably. They are, after all, similar concepts, both use ratios between costs (value in exchange, market price, actual payment, investment) and benefits (value in use, willing payment, return, gains, profit) and both have a monetary focus (Kim, 2011:113). To provide a clear distinction between the two, the following diagram has been compiled.

Characteristics	Cost-benefit analysis	Return-on-investment
<i>Area developed</i>	Public policy	Finance
<i>Positive consequence</i>	Benefit produced	Return gained
	Estimated in dollar value	Counted, observed in dollar value
<i>Negative consequence</i>	Cost	Investment
	Spent for benefit production	Loaned for profit
	Produced as a side effect	
<i>When being applied</i>	Before decision making	After or during a project
<i>Considered positive consequence</i>	Gross benefit	Net return

Table. 2.4: Differences between cost-benefit analysis (CBA) and return on investment (ROI)

The Table above makes the similarities very clear. The ratio of CBA is between gross benefit and unit cost, while ROI is the ratio between net return and unit investment. The strengths and weaknesses of ROI are well documented by Matthews (2008), who points

out that calculating the value for indirect benefits is problematic; that ROI cannot be easily compared across libraries; and that large-scale surveys are usually necessary (Matthews, 2008). Although few studies have focused on the generic value of the academic library, there is an emerging literature featuring ROI in the analysis of some aspects of the library. These studies focus on correlating library services with student success, retention, and faculty research and teaching (Kelly, Hamasu & Jones, 2012:660), and include Oakleaf (2010), Tenopir (2010), Tenopir, Mays and Kaufman, (2010) and Tenopir et al. (2010). In Tenopir (2010) for example, the ROI was used to establish the research capabilities of university libraries in eight countries, in terms of helping the research grants process to succeed by providing access to high-quality materials to cite. The ratio was estimated to be between just under 1:1 for a humanities/social science-based teaching institution to over 15:1 for a scientific research university system (Tenopir, 2010).

- **Other economic approaches.** In addition to the above, certain other approaches to determining the economic value of libraries have been utilised sporadically. These include the following.
 - i. *Consumer Surplus* – This approach seeks to establish value that consumers place on a good or a service that is more than what they must pay for to get it. An example is that the library user perceives the value of being a member of the library as worth more than the cost of subscription to the service (Rooney-Browne, 2011:9).
 - ii. *Input-Output Models (IOMS)* – This is listed as a model to help communities derive benefits such as acquiring jobs or opening and running successful businesses, which would be the *indirect benefits* of using a library. Such outputs are measured by using mathematical software models such as the Regional Input-Output Modelling

System II. Imholz and Arns (2007:47) note that these mathematical models can indicate secondary economic benefits and future forecasts (referred to as “ripple or multiplier effects”) (Kamer, 2005) through mathematical algorithms.

- iii. *Non-Use Benefits* – There is a school of thought among economists maintaining that individuals who make no use of a public good such as a library might derive value or satisfaction from its mere existence (Matthews, 2008:107). In Saxena and McDougall (2012), it was established that non-users “receive significant benefits from public library services and often value them as much as users” (p.368). Other names for Non-Use Benefits are ‘existence value’, ‘bequest value’, ‘vicarious consumption’, ‘prestige value’, ‘education value’, and ‘option value’. Non-Use Benefits are grouped into two camps, the first comprising the likely benefit a user might enjoy in the future, and the second, the benefits that others might enjoy now and in the future. The major problem with non-use benefits is the near-impossibility of quantifying them. Non-users might be willing to pay for a service (willingness-to-pay) for the enjoyment of others. Related to the non-use value is the legacy value, in the sense that “individuals and communities also value maintaining public libraries so that future generations might benefit from their existence” (Saxena & McDougall, 2012:368). Kiilu and Otike (2016) conducted a literature review on the non-use of academic libraries by undergraduate students, although this was only to get their opinions on not using the library. I found only one study where non-use was employed to measure the value of a library – in Norway (Aabø & Strand, 2004).
- iv. *Wellbeing Valuation* – This approach looks at the impact of a range of factors on subjective well-being (SWB). It relies on income data analysis and focuses on the effect on SWB of a change in income alongside the effect of a library intervention

(or expected benefit from that intervention). “If we want to value library engagement, we can now look for the impact on subjective well-being that particular activities have and compare that to the impact from income” (Pateman, 2015:1). This approach informs the study entitled, *The health and wellbeing benefits of public libraries* (Fujiwara, Lawton & Mourato, 2015).

In exploring the economic value of libraries, it was noted that all the approaches fare well in measuring the direct impact of libraries, but fail in accounting for their indirect benefits or societal value.

Lamont (2015) offers the following caveats on using economic value approaches to libraries.

1. concepts of return and investment can include many variables, thus the definitions must be expressed and used consistently.
2. Because libraries are complex, economic valuations may be better suited to specific library services, activities or to departmental units within the library
3. Contingency Valuation asks respondents to place a value on a service, yet most people have never thought about library services in terms of money
4. The value of the library’s services and collections is dependent upon the individual experiences of the stakeholders and will vary over time. (Lamont, 2015:72-73)

2.5.4 Social impact/value⁹ of libraries

The second arm of value studies is constituted by social impact studies, which are premised on the notion that library use brings outcomes to a user that are more valuable than immediate use. To better contextualise this discussion, I refer to Town’s (2016) foundational paper. Town observes that the library is a social construct, and one that generates a social capital value. In discussing the latter, Town adds a new (to this review) dimension of value: ‘transcendent benefit’. A transcendent benefit is delivered by libraries in a context in which the library is an actor or agent beyond the immediate transactional system level (Town, 2016). A transcendent benefit is defined as “one in

⁹ Reasons for the interchangeable use of these terms are given by Debono (2002:83); Briggs, Guldberg & Sivaciyan (1996); Norman (1997) and Oakleaf (2010).

which the value can be judged beyond immediate needs and demands, through contribution to less concrete aspects of institutional or societal intent” (Town & Kyrillidou, 2013). In summary, the point is that libraries have an impact beyond the confines of their walls, conferring benefits referred to elsewhere in this review as ‘indirect benefits’ and ‘long-term benefits’. These are illustrated by Abbott (1994:19), in the diagram reproduced below as Fig. 2.9.

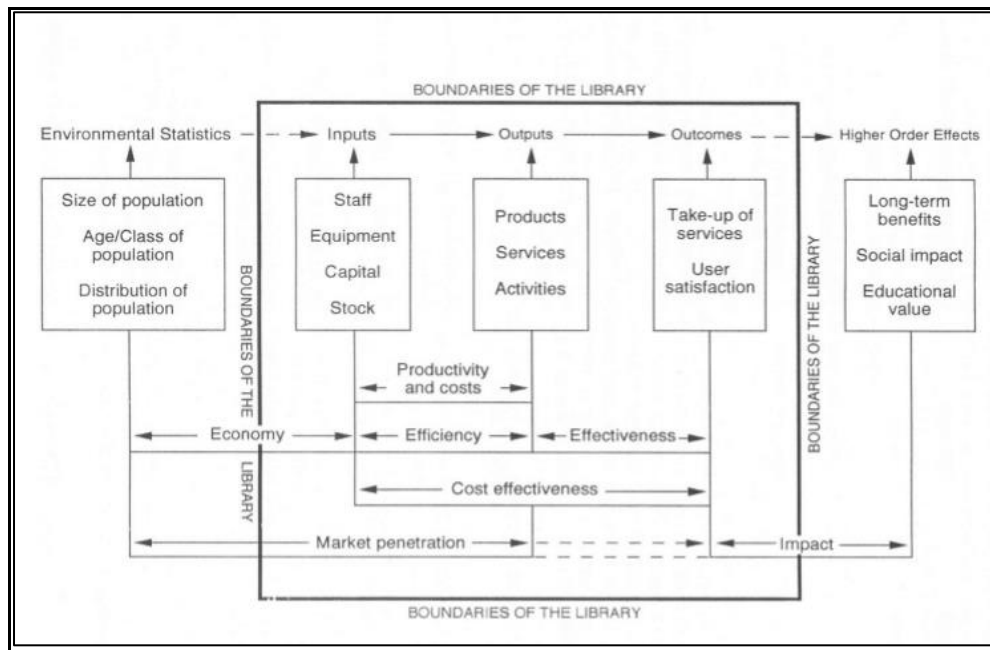


Fig. 2.12: Boundaries of the library (Abbott, 1994:19)

In the diagram shown above, it can be seen that some services are internal and some are external. The square box marking the ‘boundaries of the library’ shows the inputs, processes and outputs, leading ultimately beyond the box to ‘higher order effects’ that include social impact and other long-term benefits.

Libraries confer on users a transcendent benefit that is indirect and of a long-term nature. Town (2016:32-34) provides three theoretical anchors for the putative social impact of libraries. These are: library as a social contract, library as a social capital, and the library as an organism. The

notion of the library as a social contract rest on social contract theory, which suggests that features of reality are socially constructed. According to Town (2016:32), “the social nature of a library requires measurement to encompass actions that deliver social consequence”. The notion of the library as a source of social capital assumes that libraries are collective social assets, and that social capital is a public good worth building, managing and measuring (Town, 2016:33). The last theoretical anchor, based on Ranganathan’s fifth law of library science (Ranganathan, 1931), is that “a library is a growing organism”. The premise is that libraries do not exist in isolation and that their vision reflects the changing environments in which they operate. In his attention to these approaches, Town drives home the point that societal impact and societal contribution are key to measuring the value of libraries and justifying their existence.

The landscape of social benefits or value that libraries contribute has been suggested by Rooney-Browne (2009). These benefits, effectively service outcomes of libraries, are summarised in Fig.2:10, below.



Fig. 2:13. Measuring the social value of public libraries: potential outcomes and impacts (Rooney-Browne, 2009)

While there have been various attempts to measure the social value of libraries, mostly public libraries, these have not been as clearly defined or as satisfactory as economic value approaches (Debono, 2002). What appears to dominate the discussion of social impact assessments is the *outcomes-based approach* (see Section 2.3.2 on ‘Outcomes-based models’; Poll, 2003), where outcomes are emphasised without any clear explanation of how libraries are supposed to measure them. Paterman (2015) re-stated this dilemma when observing: “Creating meaningful impact and outcome measures can be challenging and it is often difficult to distinguish between cause and effect. For example, what, if any, is the relationship between library use, equality, happiness and well-being?” (Paterman, 2015:1). He noted nevertheless that library surveys and questionnaires can be used to measure the library’s “contribution” to the achievement of outcomes rather than direct “attribution”.

Poll (2003) identifies the following methods to measure the societal or indirect benefits of libraries: (i) interviews, (ii) questionnaires, (iii) surveys, and (iv) focus groups. These are reaffirmed by Huysmans and Oomes (2012), who performed a scoping study to measure the societal value of the public library and suggested a methodology for such measurement. In the absence of a standardised scale for the measurement of social values, they attempted to come up with a prototype while leaning on the outcomes approach. A quantitative approach to assessing the social value of academic libraries was tried by Yáñez (2014:87). In this study utilising a questionnaire, users were asked how they thought the library contributed to external social values not linked to their academic endeavours. These social values included (i) finding information about hobbies, (ii) learning a foreign language, (iii) developing business ideas, (iv) getting help in finding a job, and (v) helping to improve professional skills (among many others). A holistic approach to the social value of academic libraries is something of a gap in the literature. On the other hand, there is constant mention of the relationship between library values and institutional outputs.

2.5.5 Measuring the social impact or value of libraries

The following approaches to measuring the social value of libraries are highlighted by Malapela and De Jager (2018):

- *Social auditing* (also called “social accounting audit” by Brophy, 2007:80). This is a method drawn from public sector management that seeks to investigate the effects of policies on the public. Rooney-Browne (2011a) notes that this method (which he terms social impact auditing) was used by Linley and Usherwood (1998; see also Bryson, Usherwood & Streatfield, 2002). The study attempted to measure the intangible benefits

conferred by a library. There is no evidence of social (impact) auditing having been used in recent years. Noh (2020) reviewed the evaluation of library social values and did not list social auditing as a method used.

- *Ethnography*. Similarly, ethnographic methods have rarely been used to measure the social impact of libraries. The only mention is by Rooney-Browne (2011a:18), who cites Bryant and Charma's (2007) discovery of a few ethnographically based approaches to value measurement.
- *Social return on investment (SROI)*. SROI is a form of stakeholder-driven evaluation blended with cost-benefit analysis tailored to social purposes (Toms et al., 2023). SROI places a monetary value on the social impact or benefit of an activity and then compares it with the cost incurred in creating that benefit (see the discussion of ROI in Section 2.5.2, above). SROI is based on the outcomes-based model of inputs, processes, outputs and outcomes. Lamont and Nielsen (2015) applied a SROI approach to the assessment of a library's digital collections, including both quantitative and qualitative research methods. Similarly, De Leon (2021) employed a social return on investment model in an impact assessment of the Paranaque City Public Library in the Philippines. The SROI was used to understand the factors that can create an institution's social value – for each stakeholder. White (2023) recently used SROI to measure the social value accruing from a library building project.
- *Outcome-based evaluation*. This seeks to measure the impact of services. Malapela and De Jager (2018) established that the approach has been used in museums through the generic social outcomes (GSO) framework developed by the Museums, Libraries and Archives Council in the United Kingdom. The GSO has been used by public libraries in Calderdale

and North Lincolnshire and has proven useful in providing evidence of how public libraries contribute to diverse agendas and demonstrate their value to the community (Rankin, 2012).

Halpin et al. (2015) report on the outcomes of a workshop that was held to gather the opinions of stakeholders concerning key aspects of the value and social benefits of libraries. The workshop participants suggested ways of measuring the social value of a public library. A summary of their responses is given in Table 2.5, below.

Measuring economic value	
Cost of time and effort	challenges the perception that the public library is a ‘free’ service, measuring time and effort expended by users
Contingent valuation (CV)	measures the value of both use and non-use
Cost benefit analysis (CBA)	enables quantifiable values such as cost and purchase price to be applied to library use
Consumer surplus	measures the value that consumers place on the consumption of goods or services in excess of what they pay for them
Input & Output Models (IOMs)	provide a method for evaluating indirect benefits
Library Use Valuation Calculator	has been used by a number of US libraries and some in the UK as a way for libraries to let patrons calculate how much their use of the library means to them
Measuring social and cultural value – using qualitative research methods	
Generic social outcomes (GSO) and Generic learning outcomes (GLO)	outcomes/impact – the impact of the outputs on individual users and communities (e.g., improved self-esteem, pleasure from reading, enhanced aspirations, and better life chances)
Anecdotal evidence	the ability to capture anecdotal/soundbite/narrative evidence and powerful storytelling
Mixed methods research	where the researcher draws inferences using both qualitative and quantitative approaches or methods
The Public Library Quality Improvement Matrix (PLQIM)	a quality assurance tool developed by the Scottish Library and Information Council (SLIC) for public libraries in Scotland

Table. 2.5: Summary of potential ways of measuring the value of library services (Halpin et al., 2015:39)

Stenstrom, Cole and Hanson (2019) carried out a literature review to establish a framework for assessing the value of public libraries. Their research resulted in three themes: support for personal development, support for vulnerable populations, and support for community development. They used this framework studying the value of California’s Public Libraries (CPL) (Cole & Stenström,

2021). They established that CPL deliver value for individuals, families, groups, communities, and society. They further concluded that value is delivered through a unique combination of resources, people, and spaces.

Academic libraries are by nature neither business-oriented nor facilities for the general public, and neither the literature on the economic value nor on the social value of libraries seems entirely appropriate. The environment that academic libraries operate in has greatly changed, in respect of higher education demands relating to impact assessment, the technological landscape, the library's role in student learning and success, and digital libraries (Conrad, 2019). The following section isolates and assesses value studies, focusing on academic libraries in this changed and changing environment.

2.6 Value studies in academic libraries

Most of the concepts and approaches reviewed above apply to libraries in general, unless otherwise indicated. As seen in Table 2.4, above, value studies are more mature in the realm of public libraries than in the more specialised field of academic libraries. The study of value in academic libraries post-2010 has been influenced by the work of the Association of College and Research Libraries (ACRL) that culminated in the report, *The Value of Academic Libraries: A Comprehensive Research Review and Report* (Oakleaf, 2010). The impetus for this work came from the call for American academic libraries to demonstrate value to their stakeholders. The report aptly restated this: “the approach – beginning to identify areas of library value from the perspectives of stakeholders’ perceptions of most valued effects of the library, and then exploring the root causes of these effects as a way to identify the value impact the library has for them” (Oakleaf, 2010:27). The *raison d'être* of this approach is that marketing the academic library's

value in terms of “the root causes” of the value perceived by stakeholders’ should serve to supply justificatory reasons for the existence of academic libraries.

Since the publication of the Oakleaf report, most studies in academic library value align themselves with its findings or at least refer to the study (Jeal, 2014; Matthews, 2011). The approach taken by Oakleaf report hinged on the insight of Kaufman and Watstein (2008:227) that academic libraries cannot demonstrate institutional value until they define outcomes relevant to their founding institutions and then measure to what degree they attain them (See also Hess, 2015, and Jeal, 2014). It is thus necessary to define a set of institutional values and then measure how the libraries meet these (See outcomes-based model in Section 2.3.2, above).

Since the Oakleaf report, there have been studies focusing on specific outcomes at selected institutions. This review will canvass some of this literature. The ten outcomes identified below also constituted a future research agenda, with each outcome having potential surrogates as well as potential areas of correlation. The VAL or Oakleaf report focus areas are shown in Fig. 2.14, below.

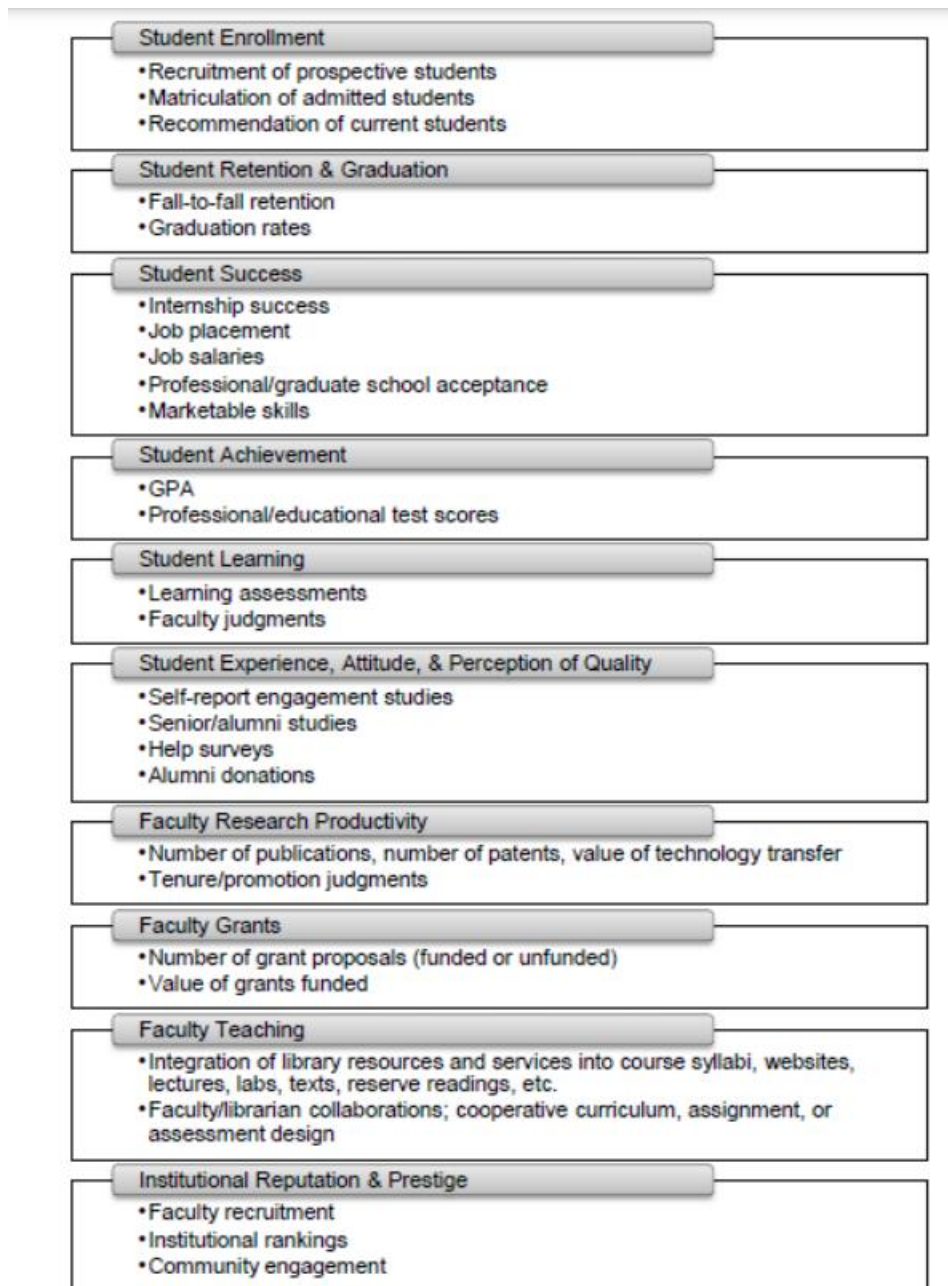


Fig. 2.14: VAL Report Focus (Oakleaf, 2010:19)

SECTION D: CURRENT APPROACHES TO THE QUESTION OF THE VALUE OF ACADEMIC LIBRARIES

This final section presents emerging approaches to understanding the value of academic libraries.

2.7 Emerging research trends on value in academic library literature

Five major research trends can be discerned in the literature on value in academic libraries between 2011 and 2023. A first group of studies focused on data collection from institutional data sources including library systems (Matthews, 2012) to support statements of value to stakeholders. One example was the Library Lube Project in Australia, a library system-based tool that collected data relating to students' use of the library. The system demonstrated a strong relationship between student library usage and academic performance. This information enabled the University of Wollongong (UOW) to demonstrate value to clients and stakeholders (Cox & Jantti, 2012). The Library Lube Project model was replicated at the University of Huddersfield (UK), Kennesaw State University (USA), University of Minnesota (USA), and Florida State University (USA) (Klein, Kinsley & Brooks, 2019). Similar data-focused research aimed at assisting the demonstration of value includes Stone and Ramsden (2013), Jantti (2016), Grieves (2018) and Burke, MacIntyre & Stone (2018).

A second group of studies continued to focus on established approaches to the assessment of value in libraries. Economic value studies focused on return on investment, cost-benefit analysis and alignment with sustainable development goals (see Table 2.2, above, for discussion of these approaches). There were fewer studies focusing on contingent valuation approaches. Social impact studies adopted an outcomes-based approach to academic libraries (Atkinson, 2017; Falcone, 2016).

A third group of studies focused on the alignment of the library's role with the core mission and values of the institution, thus allowing "institutional missions to guide library assessment" (Oakleaf, 2010:30). Kaplan and Norton (1996) argue that "libraries ... are able to demonstrate

value by linking their activities to the organisation's value statements" (p.73). This emphasises that any study of value should be contingent on an institutional framework. There have been many studies since 2010 that do stress alignment with institutional outcomes (see Atkinson & Walton, 2017; Cox, 2021; Jeal, 2014; Oakleaf, 2010). In this study, the institutional mission of the universities and their library mission statements were studied to establish their alignment with demands currently being made on the universities by higher education.

In the Oakleaf study, academic libraries were challenged to communicate their alignment with institutional missions and express their value in institutional terms (Oakleaf, 2010:30). A fourth group of studies is concerned with the importance of communicating library value to stakeholders (Snelson, 2006). The studies include Brown and Malenfant (2012), Salisbury and Griffis (2014), Saunders (2016), Connaway, et al., (2017), Harland (2017), Murray and Ireland (2018), Salisbury and Peasley (2018), Walter (2018), and Cox (2021). These studies all emphasise the importance for library directors of having a strategy for communicating the value of the library to stakeholders. According to Albert (2014:634), the last "piece of the assessment puzzle involves communicating and engaging with stakeholders" and providing evidence of the contribution of their services to their stakeholders' success.

A fifth group of studies focuses on the elements of value identified by Oakleaf (2010) in her "research agenda" for academic library value. These elements are student enrolment, student retention and graduation rates, student success, student achievement, student learning, student engagement, faculty research productivity, faculty grants, faculty teaching, service and overarching institutional quality. In these areas, "hundreds of scholarly artefacts" have emerged, offering various examples of how academic libraries have proven their value (Seale & Mirza,

2020:6). Oakleaf (2010) and the first group of studies post-2010 inaugurated a movement of data collection and analysis within academic libraries aimed at informing assessments of their value in terms of the elements identified by Oakleaf. “Academic libraries have unceasingly over the past decade looked for empirical proof, objective data, and quantifiable evidence to logically and rationally prove their value” (Seale & Mirza, 2020:5).

This trend was accompanied by the emergence of tools specifically designed to support the study of value. These include the *Derived taxonomy of service value for university libraries* (Huttenlock, 1995), which was used by Saracevic and Kantor (1997a; 1997b). In turn, Saracevic and Kantor’s derived taxonomy of library services was used by Shim (2008) to understand library users’ reasons for using services (see Section 3.5, below). A second tool is Oakleaf’s *Value of academic libraries toolkit* (2010b). The *Value of academic libraries toolkit* provides academic librarians with access to articles, websites, best practices and assessment tools at one convenient location on the ACRL website. A third tool is the “Library Cube”(see first paragraph, Section 2.7, and Klein, Kinsley & Brooks, 2019). A fourth tool is the *value scorecard* (2013), a tool that “helps measure and prioritise work based on its value through every stage of the product development lifecycle” (Gligorea, 2018:n.p.). The value scorecard was recommended for use in academic libraries by Town and Kyrillidou (2013) and Town (2015; 2018). A fifth tool is the *Theoretical framework and practical toolkit for ethical library assessment* (Young, 2022), also referred to as the *Values-sensitive library assessment toolkit* (Young, 2022b). In line with the literature and emerging practices in academic libraries, this study adapted the *Derived taxonomy of service value for university libraries* and developed the *Taxonomy of value in academic libraries*” (see Chapter 5).

2.7.1 Academic libraries and student enrolment

Higher education policymakers are interested in student enrolment as it provides a basis for understanding the higher education sector and its contribution to the nation's economic growth and competitiveness. Student enrolment figures are also important for the planning and financing of higher education and universities (Laderman et al., 2023:8). In South Africa, the Higher Education Management System is an information management system that allows the Department of Higher Education and Training to collect enrolment statistics (amongst other student-related data). In Zimbabwe, the Council for Higher Education (ZIMCHE) and the National Statistics Agency collect student-related data for all higher education institutions. Oakleaf (2010) included under the rubric of student enrolment the recruitment of prospective students, the matriculation levels of admitted students and the recommendations of current students. In these areas, the library was challenged to contribute to student enrolment. The role of the academic library in student enrolment, and specifically in respect of the surrogates mentioned in Oakleaf (2010), has not been fully explored in the last 13 years. Studies tend rather to emphasise student success, leaving something of a gap in our awareness of how academic libraries demonstrate value in influencing student enrolment.

2.7.2 Academic libraries and student learning

In 2010, librarians were challenged to establish “systematic, coherent, and connected evidence to establish the role of libraries in student learning” (Oakleaf, 2010:117), over and above their obvious role in promoting information literacy. Traditionally, academic libraries (and other types of libraries) have provided learning materials for their patrons. Oakleaf (2010) identified learning

assessments and faculty judgments as surrogates of student learning. In a recent review, Goss (2022) examined the evaluation of student learning outcomes (SLO) in Higher Education and academic libraries. The study identified links between the student learning outcomes and issues such as students' skills competence, continuous improvement and retention. Meanwhile, Blummer and Kenton (2018) examined the literature on student learning outcomes and academic libraries and established the following emerging themes: outcomes assessment of library skills instruction, tools for assessing students' achievement of learning outcomes, institutional accreditation and student learning outcomes, academic libraries' impact on student learning outcomes, and the creation of learning outcomes. Blummer and Kenton (2018) encouraged librarians to incorporate student learning outcomes in library instruction and to collaborate with faculty in pursuing the emerging themes identified. Other noteworthy studies in student learning and academic libraries include Kuh and Gonyea (2015), Brown and Malenfant (2017) and Conrad, et al. (2022). Oakleaf (2018) has more recently emphasised the need for academic libraries to demonstrate and increase their impact on student learning. She highlights data problems present in existing approaches in library value correlation research. For academic libraries to contribute evidence of value in student learning, she recommends integrating library data with institutional data via learning analytics initiatives. Since 2010, with the context of academic library value, the select of the following studies have proliferated on academic libraries and student learning (Soria, Fransen, & Nackerud, 2013; Soria, Fransen, & Nackerud, 2014; Odeh, 2012; Bowles-Terry, 2012; Cox & Jantti, 2012; Emmons & Wilkinson, 2011; Jantti & Cox 2013; Stone & Ramsden, 2013).

2.7.3 Academic libraries and student success

Student success is a measure of “how students are improving graduation rates and ensuring that more students get degrees in record time” (California State University, 2023:n.p.). Student success

has also more elaborately been characterised as “academic achievement, engagement in educationally purposeful activities, satisfaction, acquisition of desired knowledge, skills and competencies, persistence, attainment of educational outcomes, and post-college performance” (Kuh et al., 2006:5). Oakleaf (2010:109) offers a broader picture (social) of student success as a concept used to “denote student ability to do well in internships, secure job placement, earn salaries, gain acceptance to graduate school, or obtain marketable skills”. This Oakleaf’s definition of success is described by Beilin (2016) as prefiguring students’ future success in the world of work and therefore represents a neoliberal perspective (Gregory & Higgins, 2018; Seale & Mirza, 2020). Through the Connecting Libraries and Learning Analytics for Student Success (CLLASS) proposal (Syracuse University, 2018:1) noted that student success is measured in broader metrics like attendance, engagement, persistence/retention, completion/graduation, course or cumulative grades, and other surrogates for student learning. These metrics are far away from student-centric self-actualization measurements, in the following sections, academic or student success will be explored, and the Oakleaf’s (2018b) example of how academic libraries can contribute to student success (through the example of the LIILA report).

Meanwhile, Stroh (2023) confirms that the literature surrounding student success is inconsistent in defining success and cautions against an application that negatively impacts on students’ experiences in higher education. York, Gibson and Rankin (2015:8) summarise the concept of academic success in the following figure:

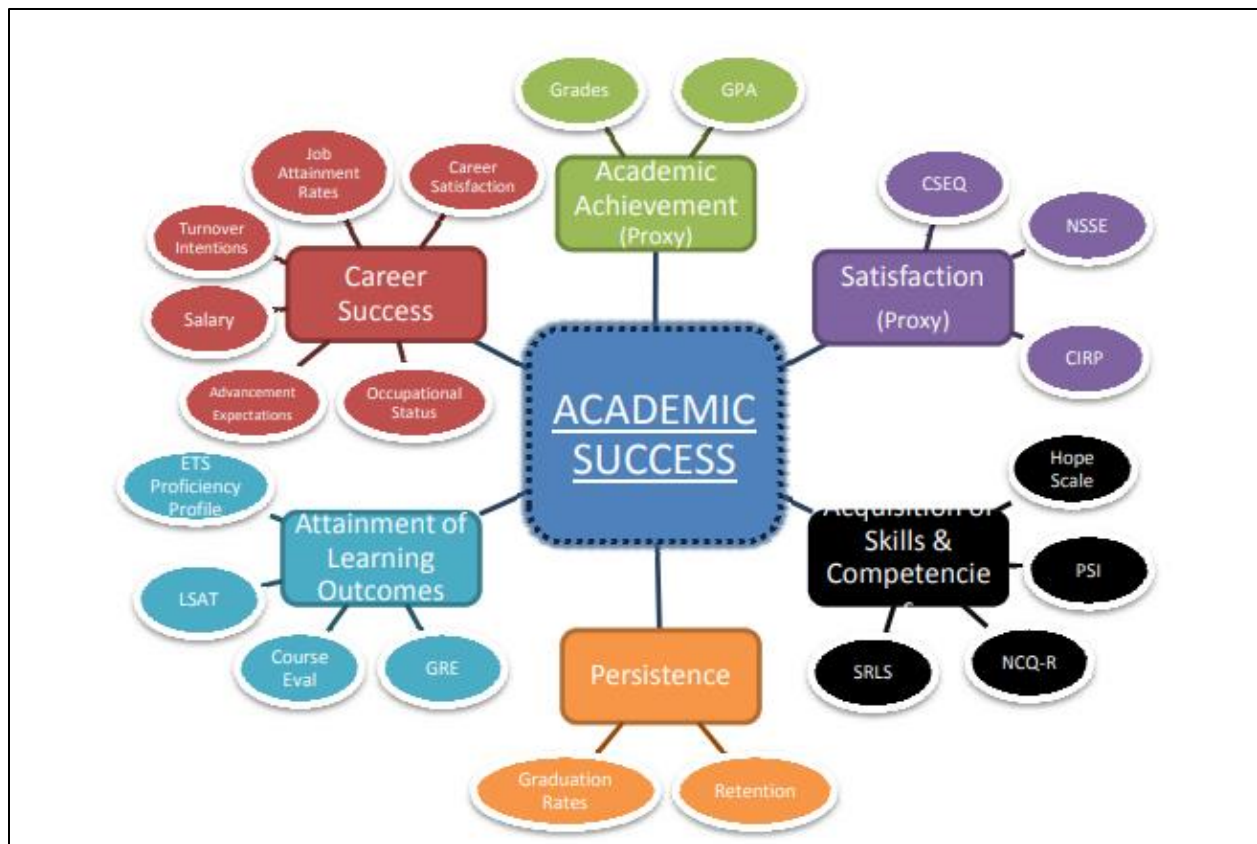


Fig. 2.15: Operationalised model of academic success (York, Gibson & Rankin, 2015:8)

However, it seems that Oakleaf and follow-up ACRL studies build upon the surrogates of success identified by Oakleaf (secure job placement, earn decent salaries, gain acceptance to graduate school or obtain marketable skills). For example, the ACRL ran a programme (with over 200 projects) under the theme *Assessment in action: academic libraries and student success* from April 2015 to June 2016. The programme established positive connections between the library and aspects of student learning and success in five areas. These were: students benefit from library instruction in their initial course work; library use increases student success; collaborative academic programmes and services involving the library enhance student learning; information literacy instruction strengthens general education outcomes; and library research consultation boosts student learning (Association of College & Research Libraries, 2017a). Another follow-up

study by ACRL in 2017, *Academic library impact: improving practice and essential areas to research*, further investigated how “libraries can increase student learning and success and effectively communicate their value to higher education stakeholders” (Association of College and Research Libraries, 2017b:5, 6). This report suggests 12 questions to guide further research on the impact of academic libraries on student success. These include: How do library resources and programmes (e.g., courses, events, etc.) impact indicators of student success? What effects do libraries have on success outcomes for different types of students, and how can library administrators and staff supplement the data collected by other university departments (e.g., tutoring and writing centres) to document student learning and success?

In 2018, Oakleaf (2018b) explored deeper the contribution of academic libraries to student success through collecting and analysing of student usage data associated with student learning. This was done through the context of the IMLS¹⁰-funded Library Integration in Institutional Learning Analytics (LIILA) project. Librarians are aware of student behaviours that are linked to academic achievement are using including surveys, tests, performance assessments, ethnographies, and correlation studies, to contribute insights into institutional learning analytics (Oakleaf, et al., 2019). Through such integration to the learning analytics, academic libraries contribute to support student learning and success.

Literature in the field of higher education suggests that student success is concerned with the measurement of grades, retention statistics or qualification completion rates (Alahan & Düşteğör, 2020; Finn & Rock, 1997; Hamoud, Hashim & Awadh, 2018). In higher education, student success

¹⁰ Institute of Museums and Library Services (IMLS). Available: <https://www.ims.gov/grants/available/national-leadership-grants-libraries> [2024 August 3].

is often used as a metric for an institution's performance. Low success rates are observed in under-represented groups and among minorities (Bradley et al., 2008; Kahu & Nelson, 2018; Wood & Harper, 2023). A unique study examining why students chose to remain at a university revealed that most students had considered leaving without completing their studies. The reasons they offered included family commitments, financial strain, time management, expected study load, and work commitments (Nieuwoudt & Pedler, 2023).

In LIS several papers have focused on the impact of libraries on student success in tandem with another attribute, such as student achievement (Thorpe, et al., 2016; Braddlee & Patrick, 2016; e Rodrigues & Mandrekar, 2020; Emmons & Wilkinson, 2011; Rowe, et al., 2021; Thorpe, et al., 2016). These studies provide a comprehensive review of the impact of academic libraries on student success. They suggest that academic libraries contribute to student success by providing access to resources, supporting research and scholarship, and promoting information literacy. The studies also highlight the importance of library instruction in promoting student success and argue that library instruction has a positive impact on student learning outcomes, including critical thinking, research skills and information literacy. Overall, these studies seem to favour the narrower, more strictly academic approach to the topic. All of them stress that since student success is important for higher education administrators and host institutions, academic libraries need to demonstrate their contributions in this area.

In summary, the question of student success and the value of academic libraries is focused on the role of the library in information literacy skills programmes and library instruction (Blacke et al., 2017), library spaces (Spencer & Watstein, 2017; Godfrey, et al., 2017), documented practices

from the field (Brown & Malenfant, 2015), reference services (Miller, et al., 2018; Renirie, 2017), library collections and information provision.

2.7.4 Academic libraries and student achievement

Student achievement refers to “the extent to which a learner has attained their short or long-term educational goals” (HopHat, 2023). Academic libraries are not just physical spaces; they are essential partners in student success, fostering learning, research, and achievement. In Oakleaf (2010), commentary on student achievement refers to Grade Point Averages (GPA) and professional/educational test scores. Sterner (2021) has reviewed the literature on the impact of academic libraries on grade point averages and established a positive correlation, though it was allowed that correlation does not necessarily prove causation. Other studies confirm that academic libraries contribute positively to student achievement by fostering information literacy, providing resources and influencing GPA. Their role extends beyond physical spaces, shaping the educational journey of countless learners (Allison, 2015; Gaha, Hinnefeld & Pellegrino, 2018; LeMaistre, Shi & Thanki, 2018; Soria, Fransen & Nackerud, 2014; Thorpe, et al., 2016). However, using the GPA as a measure of student achievement has limitations arising, from (among others) GPA differences across subject areas.

2.7.5 Academic libraries and student retention and graduation

Student retention and graduation rate studies focus on students persisting with their studies until set departure or graduation. Oakleaf (2010) offers the following as surrogates for library impact on student retention and graduation: fall-to-fall retention, graduation rates, transfer rates and certification of completion. An ACRL study established the correlation between student retention

and the use of academic library resources, services and facilities (Association of College & Research Libraries, 2016). Post-2010, there have been several studies on the influence of libraries on student retention (Castillo-Manzano et al., 2020; Haddow, 2013; Hubbard & Loos, 2013; Mezick, 2015; Robison, Fawley & Marshall, 2018; Soria, Fransen & Nackerud, 2013). These studies confirm that students who use academic library resources such as books (De Jager, 1997; Wong & Webb, 2011), electronic resources (Cox & Jantti, 2012), library reading spaces, and library instruction (Wright, 2019) had better rates of completion. Similarly, students who make general use of academic libraries graduate in the minimum time (Crawford, 2015; Soria, Fransen & Nackerud, 2017).

2.7.6 Academic libraries and student engagement

The term student engagement is also prominent in higher education discourse as an indicator of institutional success. Rather like student success (as discussed in Section 2.7.3), the concept of engagement has been in the literature for many years and its meaning has been evolving (Kuh, 2009). Kuh defines student engagement as “the time and effort students devote to activities that are empirically linked to desired outcomes of college and what institutions do to induce students to participate in these activities” (Kuh, 2009:683). Other definitions have been proposed by Coates (2007:122), Fletcher (2007) and Axelson and Flick (2010:38). A model that includes all six of the dimensions of student engagement identified is reproduced below as Fig. 2:16.

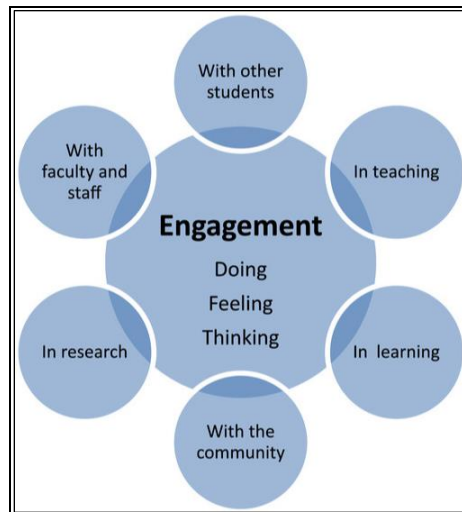


Fig. 2:16: A model of student engagement (adapted from Burns et al., 2004; Groccia, 2018, and Groccia and Hunter, 2021)

Student engagement has been found to be important for student retention, achievement, academic performance and learning (Gunuc & Kuzu, 2015). In LIS, academic libraries have strived to be proactive in student engagement and foregrounded it as a fundamental aim of their work (Appleton, 2020). Some recent studies that emphasise different aspects of how academic libraries are prioritising student engagement include Matizirofa et al. (2021), Evener and Chase (2022), Hamid, Ambikapathy and Zanuddin (2022), and Jackson, Moreno and Scoulas (2023). The emerging approach in these studies concerns how libraries continue to prioritise engagement post-COVID; Hamid, Ambikapathy and Zanuddin (2022) focused specifically on how libraries are using gamification (and other technologies) to promote student engagement. Student engagement was included by Oakleaf (2010:121) as an element of value and by the Association of College and Research Libraries (2017b). The surrogates to measure student engagement included self-report engagement studies, senior/alumni surveys, help surveys and alumni membership, donations, or endowments.

2.7.7 Academic libraries and faculty research productivity

Faculties or academic units within universities and research institutions are core clients of libraries. In the Oakleaf (2010) report, faculty research productivity was listed as an element of value and the following questions were posed: “How do librarians serve faculty who are preparing publications, presentations, or patent applications? How do librarians help faculty prepare their tenure and promotion packages?” (p.129). The identified surrogates for measuring value impact for academic libraries are number of publications, number of patents, number of research-generated products, value of technology transfer, and tenure or promotion judgments.

Academic libraries have a strong history of faculty collaborations in the provision of resources to support teaching and research (Bourg, Coleman & Erway, 2009; Gadhavi & Vyas, 2022). The literature shows that academic libraries that engage with academic staff often focus on specific resources needed by the units, their information-seeking habits, or partnerships with librarians that benefit students (e.g., Bauder & Emanuel, 2012; Borgman et al., 2005; Easter, Bailey, & Klages, 2014; Ellis, 1993; Gil, 2016; Hoppenfeld & Smith, 2014; Meho & Tibbo, 2003; Rowlands & Nicholas, 2008; Rupp-Serrano & Robbins, 2013; Shen, 2007). Rawls (2015) noted a correlation between generously funded academic libraries and high research productivity at institutions, and emphasised subscription to electronic databases as a priority for improving productivity. This perspective is shared by De Groote, et al., (2020 & 2022).

There are very few studies in LIS pointing to faculty productivity being influenced by the academic library. I found a paper by Fernández-Marcial, Costa and González-Solar (2016) that examined the contribution of the academic library to university output. This study examined the connection between top universities and the apparent contribution of their library services. The top universities

and their library webpages were examined and cross-referenced to a checklist where relevant services that support research were identified. Libraries with better services supporting research, including wider collections, were characteristic of universities with higher research productivity and better institutional rankings.

2.7.8 Academic libraries and faculty grants

Academic libraries have also been challenged to contribute to successful faculty grant applications to enhance their value to the institution (Oakleaf, 2010). This addition was supported by Kaufman (2008). Libraries are perceived to be capable of supporting academic units to prepare their grant applications. The surrogates of measuring value for the faculty grant applications were numbers of grant proposals and numbers of grants funded (Oakleaf, 2010:132). A few studies have been carried out in this area since 2010. Otter, Wright and King (2017) surveyed information specialists working for the National Institute for Health Research's Research Design Service to understand their contribution to grant applications from researchers. The survey established that information specialists did indeed support grant applications – by verifying that the proposed research has not already been performed, by searching the literature to provide background for the project, and by advising on or writing systematic review methods. The study also established that librarians participate by writing sections of the application, conducting reviews, and becoming a co-applicant. Librarians, therefore, are well placed to support grant writing and contribute to efficiencies in the submission process. Librarians are reported to have participated in the grant process preparation, for example by assisting in the grant application development stage (Karasmanis & Murphy, 2014), by being co-investigators in the proposed research (an example from the University of British Columbia, cited by Janke & Rush, [2014], and at the University of Utah by Ziegenfuss & Furse [2016], and co-authors of the research results, Borrego & Pinfield [

2020]. To be usefully involved in the grant application process, librarians need to possess the opposite skills (Kraus, 2015).

2.7.9 Academic libraries and faculty teaching

Teaching is a core function of many academic institutions. This is another area where academic libraries can demonstrate their value to their parent institutions. Librarians contribute to academic units' teaching in several ways – through library instruction, guest lectures, online tutorials, Library Guides, core course materials, textbook collections and input to curriculum design. Oakleaf (2010) listed the following surrogates to determine the value of the academic library's contribution to faculty teaching: “integration of library resources and services into course syllabi, course websites, lectures, labs, texts, reserve readings, co-curricular activities, etc.; faculty/librarian or student affairs professional/librarian instructional collaborations; cooperative curriculum, assignment, project, or assessment design; and resources on the scholarship of teaching and learning” (Oakleaf, 2010:134). Collaboration between librarians and teaching staff in academic units is strongly encouraged (Mounce, 2010). Librarians partnered with teaching units at Griffiths University in Australia and resolved to use the collaboration to demonstrate the value of the library in the areas of student success and student retention, through using data visualisation and infographics (Yamaguchi & Richardson, 2018).

Librarians perceive themselves to have a role in supporting teaching and learning, yet one study found that the faculty or academic units do not value librarians very highly and do not envisage this role for them (Klain & Shoham, 2019). While faculty believe that libraries play an important role in teaching, faculty members appeared to expect more from the library in the area of research support (p. 723). A recent perception study of teaching staff showed their appreciation for library

materials, library instruction and assistance from subject librarians (Scoulas & De Groot, 2023). The possible contribution of academic libraries to teaching has not yet fully emerged in the literature.

2.8 Value of academic libraries: a wrap-up

Value studies in LIS fall within the broader area of library assessment, performance measurement and management. The preceding literature review has touched on these fields in describing research on various aspects of value in libraries. The review was guided by the framework introduced by Oakleaf (2010) and built upon by ACRL. Each element of value identified by Oakleaf (2010) has attracted a steadily growing corpus of research, though elements aligned with the interests of students have received more attention than others.

Libraries respond to changes in their environment. These include demands from their funders, assessment requirements from higher education bodies, changes in digital technologies and ICTs, how scholarly information is published, and the impact of the COVID-19 pandemic. Libraries are costly to maintain, and administrators are questioning their value. Besides the external demands, libraries are motivated internally – by the need to improve service quality, collect data for management processes, etc. – to collect data for future justification. Libraries seek to meet the needs of their stakeholders and help them achieve their desired outcomes: students want success and graduation, and academic staff expect support for their teaching and research endeavours. The reasons for library assessment most cited in the literature include the necessity for a persistent service ethic focusing on users, having to respond to quality assurance exercises in higher education, and being expected to demonstrate the returns on the economic investment in academic

libraries. Doucette (2016) insisted on a more precise definition of the goals of and reasons for any assessment programme. Any examination of value (or any of its elements) in an academic library must be aligned with institutional outcomes and user outcomes, and seek to demonstrate the worth of investment in academic libraries.

2.9 Chapter summary

This chapter has provided an overview of the literature relating to value studies in academic libraries, including the demands from higher education and the evolution of performance measurement in library and information science. The chapter reviewed the literature in four interlinked sections. Section A reviewed the higher education landscape – its evolution, demands, and impact on academic libraries. Section B focused on performance measurement and evaluation in libraries. Section C examined the concept of value in various fields, including library and information science. Section D concluded the chapter by discussing current work and approaches in research on the value of academic libraries. The next chapter presents the study's theoretical framework.

Chapter 3

Theoretical Framework

... the value of a [library] service must ultimately be judged in terms of the beneficial effects accruing from its use. (Orr, 1973:318)

3.1 Introduction

Any research that attempts to explore the value of a library service finds itself in need of a conceptual framework.¹¹ The previous chapter described the approaches that studies of value in academic library services have taken so far. In this context, three salient aspects of the enquiry have emerged so far. First, the specific disciplinary understanding of value should be established from the outset – for example, value in economics, business, marketing, social welfare or philosophy. Secondly, an appropriate theoretical apparatus for structuring, informing and guiding the study should be declared. Thirdly (and related to the foregoing), a conceptual paradigm consistent with the chosen theoretical apparatus should be selected to frame the research design (Creswell, 2009; Grant & Osanloo, 2014; Lederman & Lederman, 2015). In more pragmatic terms, a theoretical framework “is very useful to investigate the chosen object of analysis” (Stokes, 2013:14). This chapter describes the theoretical framework chosen for this study.

¹¹ I use the term as defined by McGaghie, Bordage and Shea (2001). A conceptual framework represents the researcher’s synthesis of literature on how to explain a phenomenon. The concept of value has been of particular interest to me for a long time, and my earlier thoughts on theories concerning value for academic libraries were published in Malapela and De Jager (2018).

After a careful review of the various theorisations of value in libraries, for the theoretical framework of the present study I chose the *Theory of use-oriented value of information and information services*, developed by Tefko Saracevic and Paul Kantor in 1997 (Saracevic & Kantor, 1997a:528; 1997b). It is also referred to as *value-in-use* by Oakleaf (2010:23). The framework is explained in depth in three papers, (i) "Studying the value of library and information services: Part I. Establishing a theoretical framework" (Saracevic & Kantor, 1997a), (ii) "Studying the value of library and information services: Part II. Methodology and taxonomy" (Saracevic & Kantor, 1997b) and (iii) *Derived taxonomy of value in using library and information services: a manual for encoding of responses* (Huttenlock, et al., 1995). The *Theory of use-oriented value of information and information services* was acknowledged by Kantor, Saracevic & D'Esposito-Wachtmann (1995) to rely heavily on Grounded Theory (GT) (Strauss & Corbin, 1990), and an examination of how the *Theory of use-oriented value* (or *value-in-use*) is implemented in actual research reveals the rigour and methodological procedures of Grounded Theory. In the works cited above, Grounded Theory (GT) coding approaches were used in analysing the data collected, with no goal of establishing a theory. For this reason and to ensure that the present study is securely theorised, Section 3.3 of this chapter will explain Grounded Theory.

This chapter is structured in four parts: the first part (Section 3.2) chronicles the various theoretical discourses and frameworks that have informed the study of the concept of value and of value in libraries. The second part (Section 3.3 to Section 3.4) explains grounded theory as the foundation for the theoretical framework chosen for this study, and the third part (Section 3.5) explains the chosen theoretical framework, the *Theory of use-oriented value of information and information services* (or *value-in-use*). The fourth and last part (Section 3.6) examines the application of the chosen theory in the present study and how this is influenced by Grounded Theory.

3.2 Towards a Theoretical Framework for studying value in academic libraries

Attempts to find a theoretical and conceptual framework for the idea of value date to the days of Aristotle (384-322 BC). Aristotle held that the origin of value could be traced to a need, and that without such a need, there would be no exchange of goods and commodities. Aristotle loosely defined external goods as desirables such as wealth, honour, political power, and even one's friends (essentially intangibles), to which people assigned value. Halim remarks that Aristotle's theory is "in a sense a theory of value – that is, of how value is to be correctly assigned to different kinds of things by a person with perfected practical reason, as well as perfected appetitive and emotional tendencies" (Halim, 2012:3). Yet the concept of value continues to challenge philosophers and other scholars today. Fields of study especially invested in notions of value are philosophy, economics and marketing. These approaches were explained in detail in Section 2.4, above, but are summarised below as they relate to the theoretical framework.

3.2.1 Theoretical approaches to value in philosophy

In philosophy, the theory of value, or axiology, deals with the nature of value and valuation. It is common for philosophers to classify value into the following sub-categories – (i) intrinsic value, (ii) extrinsic value, (iii) inherent value, and (iv) contributory value (*Stanford Encyclopedia of Philosophy*, 2015). Philosophers use 'value theory' to address questions arising in the fields of moral, social and political philosophy (Debreu, 1972). Value theory seeks to understand how, why, and to what level people value things (for example, an idea or an object). The approach is centred on the individual and would not be appropriate for the present study. 'Value theory' has been applied in the study of 'values in' libraries, which is a different concept from the 'value of' library services. Values or Core Values are a set of beliefs or aspirations that the American Library

Association sought to establish as common goals for academic library service delivery (Oakleaf, 2011; Berg & Jacobs, 2016:459-467). The present study focuses on the value of academic library services to their users and institutions that fund them.

3.2.2 Theoretical approaches to value in economics

Economists consider economic value as the worth of something that contributes to wealth. One of the founders of economics, Adam Smith, distinguished two kinds of value: “The word *value* is to be observed into two different meanings, and sometimes expresses the utility of some particular object and sometimes the power of purchasing other goods which the possession of the objects conveys. The one may be called ‘*value in use*’; the other is ‘*value in exchange*’” (Smith, 1776a: n.p.). *Value in exchange* thus reflects a good’s exchange value as measured by the prices of commodities within the market economy. Examples of analyses that depend on the value in exchange theory or ‘theory of prices’ include Cost (and) Benefit Analysis (CBA), Return on Investment (RoI) and Contingent Valuation (CV). In library and information science, several studies have used economic approaches to establish the value of academic and other types of libraries (see Section 2:11 for a detailed discussion of these).

3.2.3 Theoretical approaches to value in marketing

In marketing, service and value are intertwined concepts (Babin & James, 2010). According to Peter Drucker (one of the founding fathers of marketing), the concept of marketing hinges on the creation of value for customers (Uslay, Morgan & Sheth, 2008). Hence, marketers consider that value is achieved when a customer gets all he or she wants from the purchase of a product or service (Babin & James, 2010:472). In recent years, marketers have also come to accept that customers create value through using products or services (Grönroos, 2011). In other words, to

marketers, value is what clients get from a service less what they give for that service (Value = Get – Give). The resultant theoretical framework crafted by marketers to examine value (value obtained from a service) is called *service logic*. This logic has been applied to academic libraries to study and assess their relevance to their users: notable studies include Grönroos (2011), Islam, Agarwal and Ikeda (2015) and Urquhart (2015). The service logic framework does not, however, suffice for this study, as it approaches value from an individual user perspective and hinges on the marketing concept. But academic libraries are not commercial organisations, and the current study looks at the value of academic libraries in terms of the functions and needs of their institutions.

3.2.4 Theoretical approaches to value in sociology

Sociologists argue that the behaviour of individuals is shaped by the society to which they belong. In sociology ‘values’ are typically expressed as statements of what is considered good or bad (see, e.g., Joas, 2001; Inglehart, et al., 2004). Values are the beliefs that we have about what is important, both to society as a whole and to us as individuals. These beliefs can be implicit or explicit and are useful in determining what is wrong or right, or what is good or bad. Values can also be positive or negative, dominant or variant, innate or acquired. Boudon (2017) lists the following characteristics of values:

- Values are general ideas shared by people
- Values are motivated by public welfare
- Values are normative in nature
- Values are related to emotions and sentiments
- Values are relatively permanent
- Values are the basis for the choices of things
- Values are typically a matter of faith and belief
- Values bring cohesiveness to society
- Values have a hierarchy of order

- Values tend to be abstract and cognitive.

Sociologists seem to have several methods of measuring ‘values’, the most prominent being the Rokeach Value Survey (RVS), which is a values classification instrument designed by social psychologist Milton Rokeach (Hiller & Goworek, 2023). The survey asks people to rank a list of 18 terminal values and 18 instrumental values in order of importance.

In library and information science, value is an abstract concept assigned meaning by the beholder, and may be inferred, observed or solicited. ISO 16439:4.2 defines value in relation to library evaluation as the “importance that stakeholders (funding institutions, politicians, the public, users, staff) attach to libraries and which is related to the perception of actual or potential benefit”. Meanwhile, “values” studies are studies that focus on a set of attributes considered important that define or guide professional practice. For example, the American Library Association (ALA) has identified the ‘core values of librarianship’ as comprising access, confidentiality/privacy, democracy, diversity, education and lifelong learning, intellectual freedom, preservation, the public good, professionalism, service, social responsibility, and sustainability (Berg & Jacobs, 2016; Gregory & Higgins, 2017; Koizumi & Larsen, 2023).

In library and information sciences, the Rokeach Value Survey (RVS) was used by Yerkey (1980) to survey a nationwide sample of library school students, faculty, and directors of large public libraries, asking them to rank a set of values in order of their importance as guiding principles in their lives. The results showed a marked emphasis on values relating to self-fulfilment and freedom, and a low emphasis on comfort, pleasure and security. These findings were used to understand how individual values were influencing the librarians’ attitudes and decision-making.

Since then, the following select studies have adopted the “values” approaches in LIS – Miller (2007), Morris (2015), Mousavizadeh (2005), VanScoy (2012), and Young (2022). In sum, the sociological approach and its paradigm of “values” is deemed insufficient for assessing the value of academic libraries.

3.3 Grounded Theory

The theoretical framework chosen for the present study relies on Grounded Theory. Grounded theory (GT) was originally developed by two sociologists, Barney Glaser and Anselm Strauss, who jointly published *Discovery of grounded theory: strategies for qualitative research* in 1967. The researchers were unhappy with the prevalent theories in sociological research at that time and argued that researchers needed a method that allowed them to move from data to theory (rather than the other way around) so that new theories could be discovered (Glaser & Strauss, 1967; Glaser 1978; Strauss & Corbin, 1990).

The authors continued to perfect their methodology and published further works. Glaser focused on the Grounded Theory process and explained theoretical coding and theoretical sampling. Glaser’s work is often referred to as Classic Grounded Theory. Meanwhile, Straus worked with Juliet Corbin to refine the original theory, shifting away from the idea of the natural emergence of theory. The latter two designed an analytical coding framework for generating theories from data systematically. This led to Glaser and Strauss differing in opinion, with each proposing different ways in which Grounded Theory ought to be practised. (The two schools of thought are contrasted in Table 3.1, below.) In the 1990s, a revision of the Grounded Theory approach was led by Kathy

Charmaz, a former student of Strauss and Glaser, which came to be known as Constructivist Grounded theory (see Section 3.3.2, below, for a detailed description). These three approaches today form the collective understanding of the Grounded Theory approach.

3.3.1 Basic Principles of Grounded Theory

Simply expressed, Grounded Theory seeks to construct theories about issues emanating from people's lives. It does so through inductive data categorisation, collection and analysis, when the "researcher has no preconceived ideas to prove or disprove" (Mills, Bonnes & Francis, 2006:26). Important issues should emerge from the data collected. Grounded theory has become a popular approach to analysing data, involving the progressive identification and interpretation of categories of meaning emerging from data (Strauss & Corbin, 1998b). In essence, one can say that Grounded Theory's process of data category identification is a *method*, and its product is a *theory*. Grounded Theory is therefore the end product of the research process. Mansourian (2006:387) notes that "the general goal of Grounded Theory research is to construct theories in order to understand the phenomenon/phenomena under study".

The role of the researcher in Grounded Theory is to analyse the data through the constant comparison of data with data (collected through a variety of methods); these comparisons work progressively until they can be translated into codes and categories. This back-and-forth analysis of data gathered and continuous interplay between analysis and data collection enables the identification of patterns and hence the creation of theory. Rather than having a hypothesis to test, researchers using Grounded Theory must have research questions to address. To answer these, they develop a new theory based on the evidence emanating from the collected data (Mansourian, 2006).

Strauss and Corbin (1998b) recommend that to identify, refine and integrate categories in Grounded Theory, researchers use several strategies. These are constant comparative analysis, theoretical sampling, and theoretical coding (Strauss & Corbin, 1998a:70). The principal elements in Grounded Theory are briefly described below (Strauss & Corbin, 1998a):

- 1) Categories – These are the result of grouping together events, processes or occurrences that share central features or characteristics. They are also called descriptive labels or concepts (Strauss & Corbin, 1990:61) – for example ‘anxiety’, ‘anger’ and ‘pity’ can be grouped under the heading of emotions.
- 2) Coding – This is the process by which categories are identified. Coding is descriptive, enabling the researcher to identify higher-level categories that systematically integrate low-level categories into meaningful units. The labels should be grounded in the data, i.e., developed from the data, reflecting the words or phrases actually used by the participants in the study (to avoid bias in the research process). According to Strauss and Corbin, “theoretical coding involves the application of a coding paradigm to the data. A coding paradigm sensitises the researcher to ways in which categories may be linked with one another” (1998:70).
- 3) Constant Comparative Analysis – This is a process whereby the researcher ensures that the coding process maintains its momentum by moving back and forth over the data, identifying similarities amongst categories. The goal is to allow data analysis to link and integrate categories and capture the emerging theory.
- 4) Theoretical sampling – This means the collection of further data in the light of categories that have emerged in the earlier stages of data analysis.

3.3.2 Grounded Theory approaches

As mentioned above, the two fathers of Grounded Theory, Glaser and Strauss (1967), parted ways and continued to develop the theory separately, thus giving birth to what are known as the Glaserian and Straussian Schools of Grounded Theory (Stern, 1994). Both versions are still referred to as Grounded Theory although other versions are emerging (e.g. the constructivist version of Charmaz, 2006). The table below compares the Glaserian and Straussian Schools of Grounded Theory.

GLASERIAN	STRAUSSIAN
Beginning with general wonderment (an empty mind)	Having a general idea of where to begin
Emerging theory, with neutral questions	Forcing the theory, with structured questions
Development of a conceptual theory	Conceptual description (description of situations)
Theoretical sensitivity (the ability to perceive variables and relationships) comes from immersion in the data	Theoretical sensitivity comes from methods and tools
The theory is grounded in the data	The theory is interpreted by an observer
The credibility of the theory, or verification, is derived from its grounding in the data	The credibility of the theory comes from the rigour of the method
A basic social process should be identified	Basic social processes need not be identified
The researcher is passive, exhibiting disciplined restraint	The researcher is active
Data reveals the theory	Data is structured to reveal the theory
Coding is less rigorous, a constant comparison of incident to incident, with neutral questions and categories and properties evolving. Take care not to 'over-conceptualise', identify key points	Coding is more rigorous and defined by technique. The nature of making comparisons varies with the coding technique. Labels are carefully crafted at the time. Codes are derived from micro-analysis, which consists of word-by-word analysis of the data
Two coding phases or types, simple (fracture the data then conceptually group it) and substantive (open or selective, to produce categories and properties)	Three types of coding, open (identifying, naming, categorising, and describing phenomena), axial (the process of relating codes to each other) and selective (choosing a core category and relating other categories to that)
Regarded by some as the only 'true' Grounded Theory	Regarded by some as a form of qualitative data analysis (QDA)

Table. 3.1: Comparison of the Glaserian and Straussian Grounded Theory approaches (Jones & Alony, 2011:5)

Constructivist Grounded Theory (CGT) is an emerging approach pioneered by Kathy Charmaz. She argues that neither data nor theories are ‘discovered’; rather, theories are constructed from or through the researchers’ past and present experiences. The researcher seeks to understand a social phenomenon and construct theories through participants’ experiences – in the process relying on iterative data collection and analysis. Morse, et al., (2016) addressed the evolution of Grounded Theory over the past several years, incorporating Charmaz’s (2000, 2005) Constructivist Grounded Theory and Clarke’s (2003, 2005) situational analysis.

After reviewing the variants of Grounded Theory, Heath and Cowley (2004:141) suggest that prudent researchers need not debate the relative merits of the two approaches but should rather select the method that best suits their cognitive style. The theory chosen for this study is the *Theory of use-oriented value of information and information services*, and it is a version of Glaserian Grounded Theory. It is beyond this study to evaluate its precise alignment with Grounded Theory, but it does demonstrate how taxonomy can lend itself to the Grounded Theory methods of analysing data. Precedence exists in library and information science: Grounded Theory and Ranganathan’s construction of faceted classification have been compared and similarities in approach recognised (Star, 1998).

3.3.3 Merits and de-merits of Grounded Theory

3.3.3.1 Merits: Grounded Theory is renowned for its capacity to interpret complex phenomena, its ability to be used by different types of researchers, and its capacity to generate new theories (Jones & Alony, 2011). Grounded Theory excels in studying topics of a social nature, and the present study is concerned with the social rather than the economic value of libraries (see Chapter

Two). In library and information science, Ellis (1987) was one of the first researchers to employ Grounded Theory. He has been followed by a few others (Mansourian, 2006).

3.3.3.2 Demerits: The most widely cited criticisms of Grounded Theory stem from its positivist epistemology that tends to sideline the question of flexibility (Strauss & Corbin, 1998b). The initial purpose of Grounded Theory was to allow new theories to emerge from data (induction) under the observation of the researcher. Critics argue that all observations are made from determinate perspectives, meaning that any categories “discovered” are in reality imposed. Meanwhile, Dey (1999:66) argues that “categories can never capture the essence of a concept in its entirety”. For Mansourian (2006:397), these reservations mean that first-time researchers wishing to use Grounded Theory must address some taxing questions: How to be receptive to the data? How to avoid the effects of any preconceived ideas? How to code the data properly? When to start and when to stop analysis?

3.4 Using Grounded Theory

According to Jones and Alony (2011:101), the process of using Grounded Theory encompasses an acknowledgement of the researcher’s bias, the selection of a data collection site, the data collection process, the process of coding and analysis and the compilation of the results. The elements noted in Section 3.3.1, above – coding, constant comparative analysis and theoretical coding – are employed in three stages: (i) open coding, (ii) selective coding, and (iii) theoretical coding. These processes are discussed in full in Chapter Four.

3.5 The theory of the use-oriented value of information and information services

This study builds upon Adam Smith's (1776:3) original identification of value-in-use and subsequent applications of the concept in library and information science literature. A *value-in-use* framework was developed as the *Theory of use-oriented value of information and information services* by Tefko Saracevic and Paul Kantor in 1997 (Saracevic & Kantor, 1997a:528). As established in Section 3.3 of this chapter, the *Theory of use-oriented value of information and information services* framework relies on the Grounded Theory approach. It can be used to measure two phenomena: (i) the value of information and (ii) the value of information services.

3.5.1 Value of Information

The approach used when studying the **value of information** was called the “*Acquisition-Cognition-Application*” or A-C-A model in the *Theory of use-oriented value of information and information services* by Saracevic and Kantor (1997b:543). This model is concerned with how information is valuable from the users' viewpoint (Grad, Tang & Shaughnessy, 2015:186). This approach has been applied in studies on the value of information in health libraries (Bartlett & Marshall, 2013; Grad, Tang & Shaughnessy, 2015, Musoke, 2010; Pluye, et al., 2013). The focus of the present study is, however, on the value of information services.

3.5.2 Value of information services

Saracevic and Kantor (1997b) propose that a *Reasons-Interaction-Results* or R-I-R model be used to measure the value of information services. To properly implement this framework, the *Derived taxonomy of value in using library and information services* (Huttenlock, et al., 1995) was developed to pre-capture the R-I-R of interacting with a service. The authors' rationale was that

the value of information services is derived from when users interact with a service and get results out of it. Fig. 3.1, below, shows the constellation of the elements in practice.

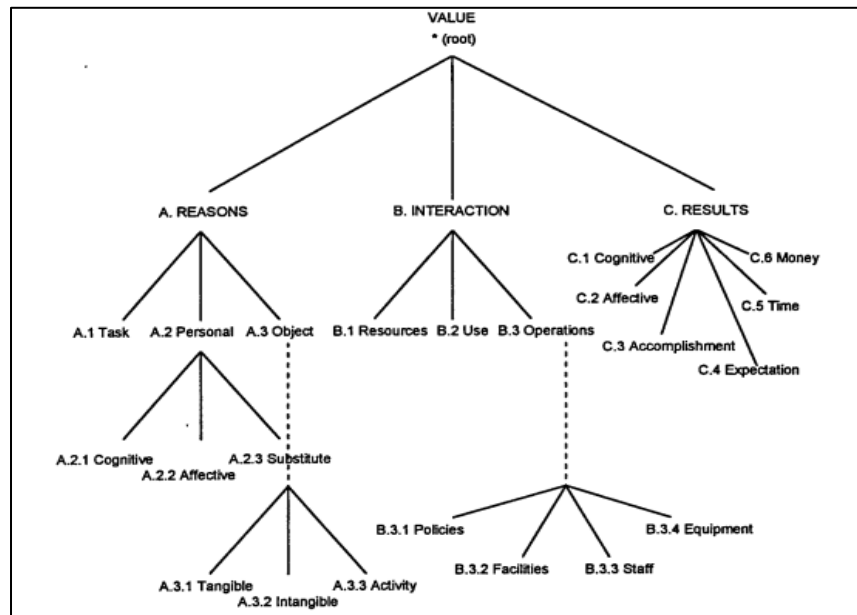


Fig. 3.1: A sample of the tree-like structure of the Derived Taxonomy (Saracevic & Kantor, 1997b:562)

3.5.2.1 Reasons (Category A, in the diagram above) – In this section the causes, motives, and rationale of users’ use of library services are considered, in other words, the question of what they want to get from the service. **Reasons** are divided into the categories of (i) tasks, (ii) personal reasons (iii) need to obtain information. The guidelines for services to be included in this area were developed from the following questions: (1) what are the users doing that prompted the use of the service? (2) What were the users working on or wanting to work on? (3) What problems brought them to the service? The tasks would include research, class assignments, project proposals, etc. See Fig. 3.2, below.

A. REASONS for using a library or information service	
<u>A.1 For a TASK</u>	
A.1.1	Research
1.2	Dissertation/thesis
1.3	Project work
1.4	Professional and other occupational work
1.5	Paper, report, article - writing, starting
1.6	Book - writing, starting
1.7	Bibliography, references, citations, sources - compiling, checking
1.8	Class assignment, requirement for grade or degree
1.9	Exam, test, comprehensive
1.10	Teaching, instruction - preparation, gathering materials
1.11	Presentation, oral report
1.12	Proposal for grant, funding
1.13	Job search, job application, interview for job, employment
1.14	Review, assessment, appraisal, evaluation of a book, proposal, application and other objects, materials
1.15	Planning for some activity, work
1.16	Delegated work - doing it for or helping somebody else
<u>A.2 For PERSONAL reasons</u>	
<u>A.2.1 Cognitive reasons</u>	
A.2.1.1	Learning something, confirming something
2.1.2	Staying current, catching up with an area, topic
2.1.3	Orienting oneself to the library, resources, services, equipment; learning how to use them
<u>A.2.2 Affective reasons</u>	
A.2.2.1	Relaxing, pleasure, recreation, leisure, curiosity
2.2.2	Reducing stress, worry
<u>A.2.3 Reasons for substitute choice</u>	
A.2.3.1	Using this library service instead of other choices - other information resources, services people

Fig. 3.2: Reasons (categories 1 and 2) (Saracevic & Kantor, 1997b:563)

3.5.2.2 Interaction (category B in Fig. 3.4) – This covers the assessment by users of the qualities of various aspects of the library services. Three parameters were given to help users assess or evaluate their encounters with the library while seeking and using a service. These are (i) availability and accessibility of resources or services, (ii) use of the resources, and (iii) operations and environment (this covers the user’s experience in relation to the working performance and environment of the service). See Fig. 3.3, below, which depicts interaction.

<u>B. INTERACTION with a library service</u>	
<u>B.1 RESOURCES, SERVICES</u>	
B.1.1	Availability of desired materials, item(s) - degree of
1.2	Completeness of given resource, service - degree of
1.3	Currency, timeliness - degree of
1.4	Accessibility, ability to use a given resource, service - degree of
<u>B.2 USE of resources, services</u>	
B.2.1	Convenience in using the resource or service - degree of
2.2	Effort required in using it; ease of use - degree of
2.3	Frustration in using it - degree of
2.4	User performance - degree of perceived ability
2.5	Effort in getting from one resource or service to a complementary or subsequent one - degree of
<u>B.3 OPERATIONS AND ENVIRONMENT</u>	
<u>B.3.1 Policies, procedures</u>	
B.3.1.1	Clear - degree of
3.1.2	Conducive for ease, convenience, effectiveness of access, use - degree of
3.1.3	Requirements upon users, fairness, reasonableness - degree of
<u>B.3.2 Facilities, organization</u>	
B.3.2.1	Space - degree of adequacy
3.2.2	Physical layout, design, and organization - degree of quality
3.2.3	Adequacy, quality of intellectual organization of resources, materials, services - degree of
3.2.4	Comfort, ambience of facilities - degree of quality
<u>B.3.3 Staff performance</u>	
B.3.3.1	Knowledgeability, expertise - degree of
3.3.2	Helpfulness, empathy, sensitivity - degree of
3.3.3	Efficiency - degree of
<u>B.3.4 Equipment performance</u>	
B.3.4.1	Technical functioning - degree of
3.4.2	Availability and clearness of instructions, guides, documentation
3.4.3	User friendliness, ease of use - degree of
3.4.4	Difficulty in operating equipment - degree of

Fig. 3.3: Interaction with a library service (Saracevic & Kantor, 1997b:564)

3.5.2.3 Results (Category C from Fig. 3.2) – Results involve users’ assessment of the outcomes of their use of the service. The guiding questions were, what did a user get out of the service? What did a user accomplish? Were their expectations met? How does the service rate in terms of time and money? Fig. 3.4 below depicts the results consequent on an interaction with the service.

C. RESULTS of using a library services

C.1 COGNITIVE results

- C.1.1 Learning something, stretching knowledge
- 1.2 Reinforcing knowledge
- 1.3 Changing viewpoint, outlook, perspective
- 1.4 Getting ideas, perspective, conceptualization how to proceed
- 1.5 Serendipity - getting ideas about different, tangential things
- 1.6 Getting no new ideas; did not learn anything

C.2 AFFECTIVE results

- C.2.1 Sense of accomplishment, satisfaction, success - degree of
- 2.2 Sense of failure - degree of
- 2.3 Sense of confidence, reliability, trust - degree of
- 2.4 Sense of comfort, good feeling, happiness - degree of
- 2.5 Sense of frustration, stress - degree of

C.3 ACCOMPLISHMENTS in relation to task(s)

- C.3.1 Contribution to accomplishing or proceeding with task at hand; facilitation of or help with work; - degree of
- 3.2 Fulfilling assignment - degree of
- 3.3 Providing access to people or other sources of information
- 3.4 Providing for a next step, task, information seeking activity - degree of

C.4 Meeting EXPECTATIONS

- C.4.1 Getting, obtaining what needed, sought, expected, requested - degree of
- 4.2 Getting too much
- 4.3 Getting nothing
- 4.4 Confidence in sources or certain about what gotten - degree of
- 4.5 Exceeding expectations, getting additions to what expected
- 4.6 If not gotten what expected, degree of hurt; seeking of substitute action

C.5 TIME aspects

- C.5.1 Saving time as a result of using the service - amount, comparison
- 5.2 Wasting, losing time in using the service - amount, comparison
- 5.3 Waiting time to access the service - amount
- 5.4 Speed, quickness of service - comparison
- 5.5 Time it takes to figure out or use the service - amount
- 5.6 Time available or allocated for use of the service - degree of sufficiency

C.6 MONEY estimates

- C.6.1 Estimate of a dollar value of results obtained from a given service, or of information obtained
- 6.2 Estimate of the amount of money saved because of use of the service
- 6.3 Estimate of the cost (dollar value spent) in using the service, or the actual amount spent
- 6.4 Estimate of what may be spent on a substitute service or activity for similar results
- 6.5 Estimate of dollar value lost in cases where service was not available or the use was not successful

Fig. 3.4: RESULTS of using a library service (Saracevic & Kantor, 1997b:564)

3.5.3 Data collection methods

Saracevic and Kantor (1997b:545) identified the methods used to collect data as observation and analysis of users' assessments of value. Interviews and questionnaires were the instruments used. Before conducting the interviews, they pre-tested their instruments in two focus groups to evaluate the appropriateness of the questions and perhaps modify them. This thesis also used interviews and questionnaires to collect the data, which is to be analysed using Grounded Theory concepts. Chapter Four describes data collection and analysis in the study.

3.6 Issues relating to application of the theory in studying the value of library services

To assist in the implementation of the theory explained in Section 3.5, Saracevic and Kantor (1997b) offered supporting guidelines. A closer look at these guidelines confirms their reliance on aspects of Grounded Theory. In Section 3.3.1 it was noted that the key elements of Grounded Theory are (i) establishing categories, (ii) coding¹² and (iii) making constant comparisons.

3.6.1 Establishing categories

In Saracevic and Kantor (1997a), the categories of the study were determined by the focus of their study, and they selected 18 services common to the five libraries they studied. In this study, certain elements of academic library value were established as the categories. The entire spectrum of elements of value comprises student enrolment, student retention and graduation, student success, student achievement, student learning, student experience, faculty research productivity, faculty grants, faculty teaching and institutional reputation and prestige (Oakleaf, 2010:19). The Saracevic

¹² The Glaserian Grounded Theory method uses three levels of coding – open coding, selective coding and theoretical coding.

and Kantor model was replicated through application of the *Taxonomy of value of academic libraries* to categories whose choice was prompted by the findings of literature. The categories or aspects that were examined were student learning and success, faculty teaching and researcher productivity.

3.6.2 Coding of Responses

Concerning the coding of the responses, the *Derived taxonomy of value in using library and information services: a manual for encoding of responses* was selected as a guide (Huttenlock et al., 1995). In cases where users provided open-ended responses, the manual could provide appropriate codes. Furthermore, the manual contains rules and examples for encoding in each category (the authors acknowledge that the manual can be used as it is or modified for application in other studies, and this study used the categories of its taxonomy). Fig. 3.5, below, offers examples of coded users' responses juxtaposed within the taxonomy.

Class A. Reasons	Class B. Interaction	Class C. Results
I wanted to do several searches for papers that I need to do for classes this semester. [A.1.5]	Well, the fact that I could access it at home ... you can do it at your leisure [B.2.1]	it made me realize that I shouldn't go into this project at that stage. [C.1.3]
It is my second time here and I have no clue where anything is. [A.2.1.3]	I couldn't figure out how to use the machine. [B.3.4.4]	It worked! I mean I found the book. It was on the system. [C.2.1]
I am doing a research project and it beats looking up in paper form. [A.1.1; A.3.3.3]	It was easy for me to just say "I need these two newspapers..." and I got them. [B.2.2; C.4.1]	...Invest a lot of time down there to find the articles and use the machine. [C.5.5]
I come here to work. [A.1.4]	I got what I needed with minimal hassle. [B.1.5]	It didn't have any kind of impact. [C.1.6]
I was having trouble in locating a book to start my research on a certain paper that I am starting. [A.3.1.1; A.1.1; A.1.5]	I waited two hours and was unable to have access to viewing the tape ... they did not have enough machines. [B.1.4]	By doing the search ourselves, we found that the name was already being used and that saved us from making a costly error. (from using a patent service) [C.6.2]
Various questions have come up in our patient care here, and people did enough reading or research to find out that there were articles on these topics and I sent the information to Ms [...] and she sent us back the articles, so it was to further our education on patient care. [A.1.1; A.2.1.1; A.3.1.1]	All I got is one book really. The person behind the desk told me exactly where it was. The fact that the library doesn't have enough resources on my subject is really not her fault. [B.1.2; B.3.3.2; C.4.1]	There are so many sources to use inside the [electronic services] ... it made me look into other things that I wasn't even thinking of using. [C.1.5]

Table 3.2: Examples of users' responses (direct quotes) in relation to specific categories (Saracevic & Kantor, 1997b:564)

3.7 Chapter Summary

This chapter has described the theoretical approach that informs the design of this study. In the foregoing paragraphs, both Grounded Theory and the *Theory of use-oriented value of information services* were explained. The next chapter explains how the theoretical framework informed the overall research design and approach and details the methodology of the study, notably, describing how the data was collected and analysed. The chapter is thus divided into three parts, (i) the

methodology used in the study; (ii) the methods of collecting the data – what instruments and how they were used; and (iii) the data analysis procedures employed.

Chapter 4

Research Methodology

...there is no true understanding without a certain range of comparison; provided, of course, that comparison is based upon differing and, at the same time, related realities. (Bloch,1949:35)

4.1 Introduction

The previous chapter presented the theoretical framework of this study. This chapter describes the research methodology, including the underlying paradigms, research instruments, form of sampling and process of data analysis. The chapter is presented in three parts: the first explains the comparative case study research methodology, while the second focuses on the research design, chosen methods and research instruments. The sampling process and population size are then addressed. The third part of the chapter describes the data analysis procedures. Finally, apposite ethical considerations are discussed.

4.2 The comparative case study research methodology

The study employed a comparative case study research methodology. According to Bartlett and Vavrus (2017:5), comparative case studies attend simultaneously to macro, meso and micro dimensions of case-based research. In earlier times, there was little agreement in the social sciences on whether the comparative case study method should be considered a separate sub-field (such as comparative education or politics or law) or a methodology (see for example, Hantrais, 2009:5-9). However, the comparative case study has grown to be accepted as a methodology that can “best help understand social phenomena in relation to a contrasting case” (Gash, 2011:2) and nowadays

it is used across multiple disciplines and fields (Bartlett & Vavrus, 2017). In library and information science, comparative case studies were initially associated primarily with the study of comparative librarianship (one example is Simsova, 1974) but are now deployed more widely in the LIS field (e.g., Mortezaie & Naghshineh, 2002; Reid-Smith, 2009).

According to Goodrick (2014:4), “comparative case studies involve the analysis and synthesis of the similarities, differences and patterns across two or more cases that share a common focus or goal”. This study sought to analyse in depth the value propositions of the identified libraries within their contexts and compare their outputs (how they serve their respective institutions’ declared missions and goals). Comparative case studies include both qualitative and quantitative data and usually collect data through the methods of observation, fieldwork visits, interviews, questionnaires and document analysis.

Yin (2014) notes that strategies used in data collection in a single case study are straightforward, yet – while they remain the same in comparative case studies – the latter require more extensive conceptual, analytic, and synthesising work. Goodrick (2014:6) observes that “[c]omparative case studies ... tend to be time- and resource-intensive due to the iterations between propositions, evidence collection and synthesis”. Indeed, as explained in the previous chapter, this study required extensive coding, analysis and synthesising of the data collected (see Section 4.7, below, on data analysis).

Goodrick goes on to point out that “[c]omparative case studies are particularly useful for *understanding and explaining* how *context influences the success* of an intervention and how better to tailor the intervention to the specific context to achieve intended *outcomes*” (Goodrick, 2014:1,

emphasis added). In this study, the intention was to understand how the use of the academic library, (and/or its services) contributes to the intended outcomes of the institutions under study, thereby establishing the value of the libraries to their institutions. As noted above, the *context* of the cases under study was very important for the investigation.

4.2.1 The logic of comparison

The main goal of the comparative case study is the comparison itself (Ragin, 1987:1), the comparative analyses of cases. Yet it would appear that ‘comparison’ means different things to different people. Kaarbo and Beasley (1999:380) claim that comparability depends on the theoretical basis of the study, and go on to say:

Cases do not have to be comparable on dimensions that do not (or are assumed not to) impinge on the relationship under investigation. Just as experimentalists are generally not concerned about (or at least tolerate) differing weather conditions on the multiple days that an experiment takes place (a problem not corrected by random assignment of subjects to groups), comparative case study researchers should not be concerned about irrelevant differences in their cases. (Kaarbo & Beasley, 1999:380)

Kaarbo and Beasley caution that “cases should not be chosen for comparability on non-theoretically derived properties” (1999:380). This view is divergent from the long-held position that similarities in aspects such as geographic location or history were sufficient (Diesing, 1971; Lijphart, 1971; Przeworski & Teune, 1970). It seems that more recent studies have adopted Kaarbo and Beasley’s (1999) recommendation in the choice of cases and comparisons.

This thesis adopted the comparative case study (CCS) heuristic proposed by Bartlet and Vavrus (2017:4). In this approach, the CCS engages two logics of comparison: first, the *compare-and-contrast logic*, and second, the *tracing across* sites or scales. According to Bartlet and Vavrus (2017:4), the CCS approach should be heuristic, meaning that it should be a method that comes

from experience and is aimed at problem-solving or interpretation. They thus propose that CCS should show *how much can be achieved through comparison*, following Ragin's (1987) recommendation that a case be conceptualised using theoretical constructs ("trace the phenomenon of interest in a study across sites and scales"). The study adopted this model of the heuristic approach to the comparative case study proposed by Bartlet and Vavrus (2017:4), and "traced the phenomenon of interest" (the value of academic libraries) across Institutions A and B.

We have noted Oakleaf's (2010:11) observation that, to demonstrate their value, libraries need to map their contribution to the goals of the institutions they serve. In this study, expected institutional outcomes were established for each case under study and thereafter matched to the library mission statement or mandate. The findings for each case were then compared.

The faculty structures of the two respective universities were studied, and the faculties that seemed to be most comparable in the two institutions were chosen for study. Table 4.1, below, shows the structure of the population for this study – combined institutions A and B – and the mappings of the comparative, respective faculties in each institution.

Institution A	Population	Relative Frequency	Institution B	Population	Relative Frequency
Health Sciences	P^1	$a\%$	Faculty of Health and Wellness Sciences	$P1^1$	$a^1\%$
Faculty of Commerce	P^2	$b\%$	Faculty of Business and Management Sciences	$P1^2$	$b^1\%$
Faculty of Education	P^3	$c\%$	Faculty of Education	$P1^3$	$c^1\%$
Total Population A	$\Sigma (P^{123})$	100% $(a+b+c)$	Total Population B	$\Sigma (P1^{123})$	100% $(a^1+b^1+c^1)$

Table 4.1: Comparison of faculties in the two universities

Regarding the case selection, this study adopted the approach suggested by Kaarbo and Beasley, (1999:380) and endorsed by Bartlet and Vavrus (2017:4). The following extract is repeated from Chapter 1, Section 1.2, above.

Both institutions award degrees from the undergraduate to doctoral level and both seek to increase their research outputs. Despite what they have in common, the institutions are located in different educational systems and are differently focused. The different research agendas of the two institutions had the potential to affect their stakeholders' perceptions of value and therefore the conclusions of this study. This construct diversity widened the range and extended the reach of the study. ... However, the distinctiveness of each institution offered a methodological test for applying the taxonomy (see Section 1.6.1) to the respective institutions, thereby enabling unique perspectives on the elements of value examined.

The final section of this chapter will discuss the data analysis and presentation of the data gathered through the comparative case study method. The next part of this chapter focuses on data-gathering issues.

4.3 Research questions

The following are the research questions for this study:

- 4.3.1 What institutional outcomes do the libraries expect for their respective universities and researchers, regardless of the changing needs of the research terrain?
- 4.3.2 To what extent do the mission statements of the respective universities demonstrate how these libraries should add value to their institutional goals and objectives?
- 4.3.3 What value does each library and its services contribute to student learning and student success, faculty teaching and researcher productivity at the respective universities?
- 4.3.4 What comparative similarities or differences exist in the perceptions of value of academic libraries and how do the libraries demonstrate their value at the two institutions?

4.4 Research approaches and paradigms

There are three broad aspects that a researcher should establish at the outset of their research: (a) a broad *philosophical paradigm or worldview* to locate the study in (i.e., the philosophical assumptions that the researcher brings to the study); (b) the procedures of enquiry or *research designs* (Creswell & Creswell, 2018:40); and (c) the specific *research methods* that will be used to collect, analyse and interpret the data. These three aspects are depicted in Fig 4.1, below:

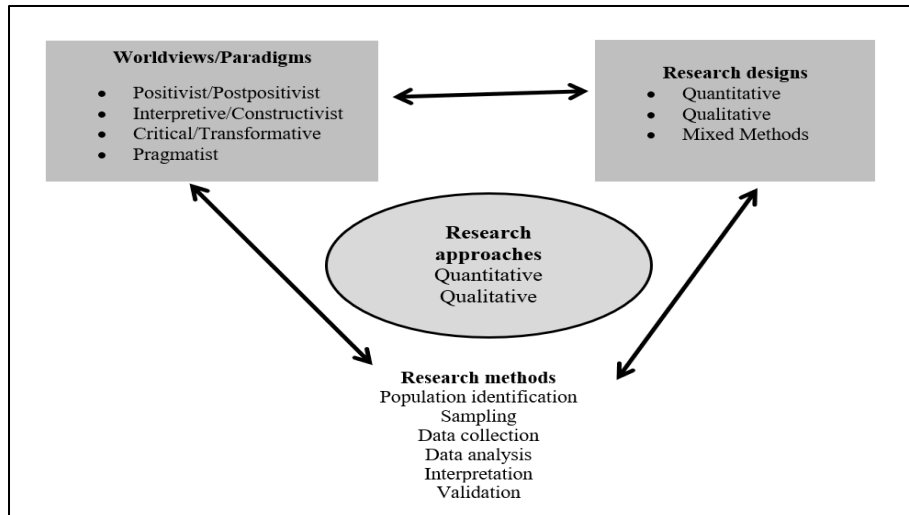


Fig. 4.1: A framework for research: the interconnection of worldviews, design and research methods (Creswell & Creswell, 2018:43)

4.4.1 Philosophical worldviews

There seems to be no consensus in the literature about the nomenclature here. Creswell (2014) uses the following synonymously, ‘paradigms’, ‘epistemologies’, ‘ontologies’ and ‘broadly conceived research methodologies’. The researcher’s philosophical orientation in the world, complemented by previous research, influences their choice of approach in their research. The paradigm serves as a framework for observation and understanding, and influences what is seen and how the research problem is addressed. The four research paradigms that are widely identified in the literature are the post-positivist, constructivist, transformative, and pragmatist (Creswell, 2014; Creswell & Creswell, 2018; Mittwede, 2012). Researchers differ in how many paradigms exists (see Guba & Lincoln [1994] and Lincoln, Lynham, & Guba [2005] for an elaborate discussion) and in some cases propose more than four paradigms. Mertens (2023:7-9) and Creswell (2014) settle for the following paradigms labels - post-positivist, constructivist, transformative, and pragmatist. To identify a paradigm, Guba and Lincoln (2005) proposed four basic belief systems characterized by the following questions that help define a paradigm,

- “1. The axiological question asks, “What is the nature of ethics?”.
2. The ontological question asks, “What is the nature of reality?”.
3. The epistemological question asks, “What is the nature of knowledge and the relationship between the knower and the would-be known?”
4. The methodological question asks, “How can the knower go about obtaining the desired knowledge and understandings?” (Mertens, 2023:5)

The table 4.2 below provides an answer to each of these questions, helping define each paradigm.

Basic belief associated with major paradigm				
Basic Belief	Postpositivism	Constructivism	Transformative	Pragmatic
Axiology (nature of ethical behaviour)	Respect privacy; Informed consent; minimize harm (beneficence); justice/equal opportunity	Balanced representation of views; raise participants’ awareness; community rapport	Respect for cultural norms; beneficence is defined in terms of the promotion of human rights and increase in social justice; reciprocity	Gain knowledge in pursuit of desired ends as influenced by the researcher’s values and politics
Ontology (nature of reality)	One reality; knowable within a specified level of probability	Multiple, socially constructed realities	Rejects cultural relativism; recognizes that various version of reality are based on social positioning; conscious recognition of consequences of privileging versions of reality	Asserts that there is single reality and that all individuals have their own unique interpretation of reality
Epistemology (nature of knowledge; relation between knower and would-be known)	Objectivity is important; the researcher manipulates and observes in a dispassionate, objective manner	Interactive link between researcher and participants; values are made explicit; created findings	Interactive link between researchers and participants; knowledge is socially and historically situated; need to address issues of power and trust	Relationships in research are determined by what the researcher deems as appropriate to that particular study
Methodology (approach to systematic inquiry)	Quantitative (primarily). interventionist; decontextualized	Qualitative (primarily); hermeneutical; dialectical; contextual factors are described	Qualitative (dialogic), but quantitative and mixed methods can be used; contextual and historical factors are described, especially as they relate to oppression	Match methods to specific questions and purposes of research; mixed methods can be used as researcher works back and forth between various approaches.

Table 4.2. Basic beliefs associated with major paradigm

Source: Adapted from Guba & Lincoln (1994, 2005) and Morgan (2007).

4.4.1.1 Postpositivism Paradigm

This paradigm is based on rationalistic and empiricist philosophy that originates from early scholars – Aristotle, Francis Bacon, John Locke, Comte and Immanuel Kant, and others – who grew from *positivism* to its successor *postpositivism*. The positivism seeks to transfer the methods of natural sciences to social sciences and to identify casual relationships in social sciences – i.e. if A, then B. The underlying assumption is the belief that “the social world can be studied in the same way as the natural world” (Mertens, 2023:10). Positivists claim that the scientific knowledge is objective and only scientific knowledge is valid, certain and accurate (Crotty, 1998:29). The major failing of the positivists approach is its focus on empirical, objective data and falls short when applied to human behaviour. For example, human experience has aspects that cannot observed such as feelings or thinking but are still important. The postpositivist scholar came to reject this narrow view of positivists.

The postpositivist scholars believe that it is no longer possible to study the natural world from a mechanistic viewpoint and no longer possible to prove a hypothesis - as it could never be certain that an alternative explanation did not exist in the variables (Batool, 2020:n.p). Axiology of this paradigm is indicated in Table 4.2 above. The *Ontology* of the postpositivism is belief in social reality, it exists like natural reality, acknowledging existing imperfections because of the researcher’s human limitations (critical realism) (Maxwell & Mittapalli, 2010). The (ii) *epistemology* of the postpositivism paradigm – the investigator and investigated are not independent of each other but objectivity can be seen. The postpositivism scholars accepted (for example, Reichardt & Rallis, 1994) that theories, hypothesis and background knowledge held by the investigator do influence what is observed. In terms of (iii) *methodologies*, the postpositivists

recognised the need for hypothesis testing with the emphasis on context, applying quantitative and qualitative methods (referred to as quasi-experimental methods by Mertens, 2023:15) – although quantitative methods tend to be predominantly used.

4.4.1.2 Constructivist Paradigm

The constructivist paradigm states that reality is a construct of our minds, and it is subjective. The paradigm grew out of the philosophy of Edmund Husserl's phenomenology and Wilhelm Dilthey's and other German philosophers' study of hermeneutics (Mertens, 2023:16). The basic assumption of the constructivist paradigm is that knowledge is socially constructed by the people active in the research process and research should attempt to understand the lived experience of their participants. As stated above, in Table 4.2 the *Ontology* of this paradigm – reality is socially constructed; that is, the reality is made by people in social ways, or in other terms it is a product of mutual understanding. For example, the concepts of sexuality, disability and feminism are socially constructed and mean different things to different people. In essence, knowledge is co-constructed. Regarding the *epistemological* approach the constructivist opt for a personal, interactive mode of data collection and emphasizes the confirmability - as opposed to objectivity emphasized in postpositivist paradigm (Guba & Lincoln, 1994). The methodological approach for constructivist paradigm is qualitative methods such as interviews, observations, and document reviews. Eichelberger (1989) describes the methodological approach of a constructivist researcher as follows:

“They want to know what meaning people attribute to activities... and how that related to their behavior. These researchers are much clearer about the fact that they are constructing

the “reality” on the basis of the interpretations of data with the help of the participants who provided the data in the study”. (p.9)

In this type of approach, the research questions keep evolving and changing as the study progresses, and most importantly the researcher needs to provide information about the backgrounds of the participants and the context of their environments. See Table 4.2 above for the *Axiology* of this paradigm

4.4.1.3 Transformative paradigm

This paradigm is a reaction to the short comings of postpositivist and constructivist paradigms – as articulated by feminist, people of color, indigenous people, people with disabilities amongst many advocates of social justice. The transformative paradigm places emphasis on the political, social and economic factors in research by confronting oppression at whatever levels it occurs (Reason, 1994). This paradigm is less concerned with methodological choices but is more concerned with how stakeholder are in involved in the evaluation and with empowering groups. The researcher serves as a facilitator to the decisions made by the stakeholders in the research process. *Ontology* – the transformative paradigm recognizes multiple versions of what is perceived to be reality, while stressing factors of inclusivity – social, political, cultural, economic, ethnic, gender and disability lenses – in the construction of that reality. The transformative paradigm’s *epistemological assumption* is that the relationship between the researcher and the participants is interactive and include research participants voices; involves a consciousness of cultural complexities of the participants; and research should not harm or further marginalize any group of participants (Mertens, 2023). Transformative researchers keep evolving in their methodologies and

are pluralistic in approach – a common theme is the inclusion of diverse voices from the marginalized. *Research methodologies* are mostly qualitative approach, use mixed methods, and mostly participatory (Creswell & Creswell, 2018).

4.4.1.4 Pragmatic paradigm

Pragmatic paradigm was identified by Tashakkori and Teddlie (2003) as one of the paradigms that provides an underlying philosophical framework for mixed methods research. Early pragmatists are Charles Sanders Peirce, John Dewey, Gorge Herbet Mead, William James and Arthur F Bentley. These researchers rejected the scientific notion that social science inquiry was able to understand the real world solely through a single scientific method (Mertens, 2023:35). The understanding of pragmatism as a paradigm have shifted throughout centuries. The *axiology* of this paradigm is depicted in Table 4.2 above, and the ethical goal of research is to gain knowledge in the pursuit of desired ends (Morgan, 2007). Pragmatists avoid the use of concepts such as truth and reality – they avoid the all-or-nothing barrier between mutual understanding; and rather treat issues of intersubjectivity as a key element of social life (Mertens, 2023:36). Simply stated pragmatists believe that something is true only insofar as it works. Therefore, the *ontology* of this paradigm asserts that there is single reality and that all individuals have their own unique interpretation of reality (see Table 4.2 above and Guba & Lincoln, 1994, 2005). The *epistemological* focus of pragmatism – the relationships in research are determined by what the researcher deems as appropriate to that particular study (for example, “if it achieves its purpose” – Maxcy, 2003: 158). Tashakkori and Teddlie (1998) rephrased it this way, the researcher is free to “study what interests you and is of value to you, study it in the different ways that you deem appropriate, and utilize the results in ways that can bring about positive consequences within your value system” (p.30). *Methodology*. Qualitative and or quantitative methods are used with the

pragmatic paradigm, based on the purpose of the research. Pragmatism allows the researchers to choose the methods or a combination of methods that work best in answering their research questions (Wilkinson & Dokter, 2023).

4.4.1.5 Research Paradigm for this study

In this study – as indicated in the research problem, the research objectives and the theoretical framework – the study sought *to explore* the concept of value in academic libraries, *to discover* how to demonstrate value and *to examine* closely in each case how value is portrayed to meet institutional and stakeholder expectations (see Sections 1.4 and 1.5 in Chapter 1, above). The fact that it employs both quantitative and qualitative methodologies suggests that this project is best characterised as proceeding according to a pragmatist agenda. The study used mixed research methods, and the choice of the method was guided by the research questions as explained below in Table 4.5 and as supported by Wilkinson and Dokter (2023) in the selection of methods. This study is focused on results and pragmatism and its designed is better placed to support the methodology chosen and the instruments employed. As mentioned in Section 4.4.4.4 above, John Dewey’s pragmatic in his theory of knowledge stressed that how accurate knowledge is not the only consideration. He argued that impact is a central concern, what knowledge will do and who it will help (knowledge and Impact in a cyclical loop) (see, Riga, 2020). The central focus of this thesis is measuring impact or the value of academic libraries to individual and institutional stakeholders. This paradigm does offer that conceptual, theoretical and methodological rigor it so proposes.

4.4.2 Research design

Research design is the framework of research methods and techniques chosen by a researcher to conduct a study (Abbott & McKinney, 2013:13). The theoretical framework chosen for this study allows for a variety of data-gathering methods informed by corresponding research approaches. Creswell (2014:3) and Creswell and Creswell (2018:41) list three broad approaches to research: quantitative, qualitative and mixed methods research. These can be viewed as three points in a continuum with mixed methods research being in the middle. Leavy (2018:3) added two further approaches to these: arts-based research and community-based participatory research.

Quantitative research is a research approach that focuses on quantification in the collection and analysis of data. It is characterised by a deductive logic that seeks to prove, disprove, or lend credence to existing theories.

Qualitative approaches, on the other hand, are characterised by inductive logic, aimed at generating meaning (Leavy, 2014). This type of approach seeks to explore and deepen insights into real-world problems or social phenomena. Rather than focusing on numerical data points, this approach seeks to gather participants' experiences, behaviours, and perceptions (Tenny, Brannan & Brannan, 2022).

Mixed Methods Research (MMR) “involves the collection or analysis of both quantitative and/or qualitative data in a single study in which the data are collected concurrently or sequentially, are given a priority, and involve the integration of the data at one or more stages in the process of research” (Creswell, et al., 2003:165). Creswell and Creswell (2018) note that because of its ability

to integrate both qualitative and quantitative data, MMR results in a comprehensive understanding of the research phenomenon. The explanatory capacity of the methodological pluralism of MMR is widely emphasised in the literature (Creamer, 2018; Creswell & Clark, 2018; Ngulube, 2022). Although researchers have mixed methods in research for many years, MMR has emerged as a distinct methodology in the recent past. Mixed methods research has been used in many fields. In library and information science within Southern Africa, Ngulube (2009) has emerged as a leading researcher and advocate for MMR (e.g., Ngulube, 2010; Ngulube, 2015; Ngulube & Ukwoma, 2021).

The characteristics of MMR are described in detail by Ngulube (2022) and Creswell and Creswell (2018). However, Creswell (2014: 15-16; see also Creswell & Creswell, 2018) identifies three primary types of mixed methods approaches used in social and health sciences.

- *Convergent parallel mixed methods* – the researcher conducts quantitative and qualitative research phases at the same time, then integrates the information in the interpretation of the overall results. This approach was used in this study, with all the data collection methods being employed at the same time.
- *Explanatory sequential mixed methods* – the researcher first carries out quantitative research, analyses the results and then builds on the results to explain them in more detail using qualitative research.
- *Exploratory sequential mixed methods* – the researcher first begins with a qualitative research phase and explores the views of participants. The data are then analysed, and the information is used to build into a second, quantitative phase.

The two other approaches mentioned are (Leavy, 2018:3):

Arts-based research (ABR) entails adapting the tenets of the creative arts to social research. This approach is used to address complex and subtle interactions and is useful for research projects that aim to describe, explore, discover, provoke, and unsettle.

Community-based participatory research (CBPR) involves collective, reflective and systematic inquiry where the researcher and community stakeholders engage as equal partners in the research process. The approach seeks to equalise the power between the researcher and the researched and focuses on research that is aimed at multiplying practices and situations.

4.4.3 Population of the study

A research population is generally a large collection of individuals or objects that are the focus of a scientific inquiry (Babbie, 2016). The population for this study was made up of graduate students, lecturers and researchers at the two case study sites. Table 4.2b below shows the distribution of population in Institution A and B.

Institution A			Institution B		
Faculty	Graduate students	Academic Staff	Faculty	Graduate students	Academic staff
Health Sciences	102	74	Faculty of Health & Wellness	140	56
Faculty of Commerce	189	75	Faculty of Business & Mgt	205	89
Faculty of Education	45	90	Faculty of Education	89	78
Total	336	239		354	223

Table 4.2b: Distribution of graduate students and academic in the respective faculties in Institution A and Institution B

(Source: Registrars of the respective universities, citation embargoed)

4.4.3.1 The sample size

While in purposive sampling the size of the sample is not prescribed, generally speaking, the larger the sample size the better (Mason, 2002:121). The enrolment data for postgraduate students was obtained and the data for the selected faculties in Institution A and Institution B was collected (2023)¹³. To establish a representative sample, the researcher used the Raosoft software tool¹⁴ to calculate the sample size. For Institution A, the sample size for a population of graduate students of 336, with a margin of error of 5%, a confidence level of 95% against a response distribution of 50%, the sample size was 180 graduate students. Using the same parameters for Institution B with a population of 354, the corresponding sample size was 185 graduate students across 3 faculties. Meanwhile, the same tool and same metrics were used to calculate the same size for the academic staff, for institution A with a sample of 148 and for Institution B with a sample of 142.

4.4.3.2 Sampling, techniques and procedures

Sampling means selecting a group from the target population from which one is going to collect data. Kumar (2014:382) defines a sample as “a subgroup of the population within the research enquiry selected to represent the study population”. Researchers use two major sampling techniques – probability sampling (also called random sampling) and non-probability sampling. A probability-based sample “is one in which the respondents are selected using some sort of probabilistic mechanism, where every member of the population frame could be selected into the sample” (Fricker, 2008). When random sampling is used, each element of the population has an

¹³ In order to conceal the identity of the institutions this reference of data source is embargoed as it reveals the names of the institutions.

¹⁴ Raosoft Software. <http://www.raosoft.com/samplesize.html> [28 September 2023]. This tool was used to calculate the recommended sample sizes.

equal chance of being selected. With nonprobability sampling, there is no way of estimating the probability of the element's being included in a sample. Fig. 4.2 below provides an overview of the sampling types used in scientific studies.

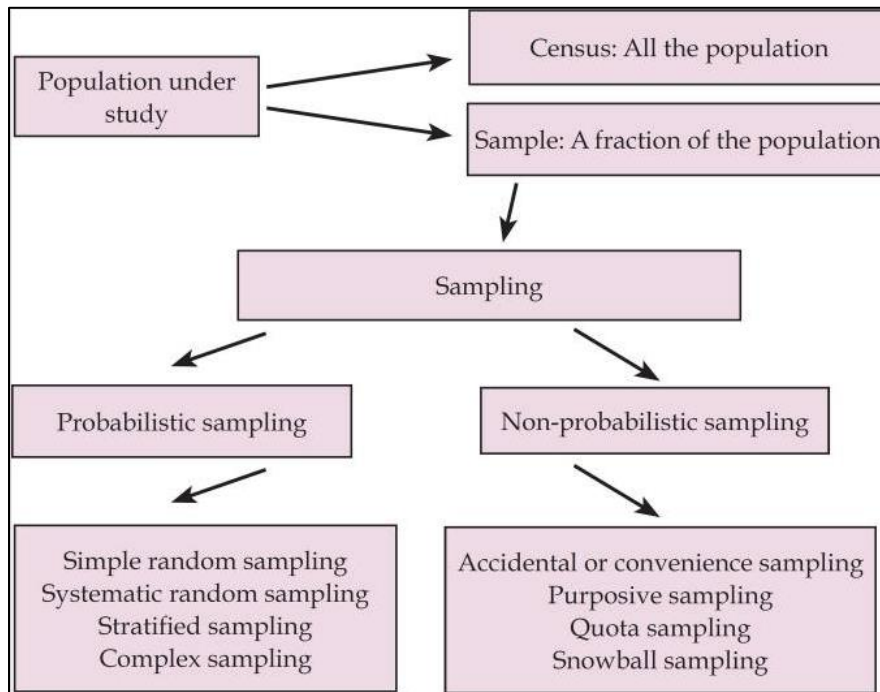


Fig.4.2: Sampling types used in scientific studies (Martínez-Mesa, et al.,2016)

This study employed simple random sampling. There are four steps involved in random sampling, and these are – Step 1. Defining the population; Step 2. Constructing a list ; Drawing a sample and Step 4. Contacting members of a sample. The population must be defined, to which the study will generalize the results – Section 4.4.3 above discussed the population of this study. Before the sample can be chosen randomly, there is need to have the complete list of the population from which to select from. The third step is drawing the sample, see discussion on Section 4.4.3.1. and lastly contacting the members of the sample. Fricker (2008) provides further guidance in sampling in web and e-mail surveys. The following types of internet-based surveys related to probability sampling were provided. These are shown in Table 4.3 below

Probability-based Sampling Method	Web	E-mail
Surveys using a list-based sampling frame	✓	✓
Surveys using non-list-based random sampling	✓	✓
Internet (pop-up) surveys	✓	
Mixed-mode surveys with Internet-based option	✓	✓
Pre-recruited panel surveys	✓	✓

Table 4.3 Types of internet-based survey associated with probability-based sampling (adapted Fricker, 2008: 202)

Surveys using a list-based sampling frame are conducted as one would for a traditional survey using a frame. Simple random sampling in this case requires contact information – and the survey can be sent via e-mail. In this study, Institutional A provided a contract list of e-mail address for both post graduate students and lectures. Surveys using non-list-based random sampling allow for the selection of a probability-based sample without the need to actually enumerate a sampling frame. In the traditional surveys this was achieved through the random digit dialling (RDD), mainly in telephone surveys. In internet-based surveys using the non-list based random sampling is acknowledged to be challenging to implement (see Jakob, Arens, J. & Zerback, 2005), except intercept surveys. Intercept surveys are the web-based surveys that are pop-up surveys that frequently use systematic sampling for every 0th visitor to a website or page (Fricker, 2008: 203). A potential issue with non-list based random sampling is non-response.

The sample chosen for this study consisted of lecturers and graduate students in three comparable faculties in the two institutions under the study. This study sought to understand those differences and similarities, both within each case and across the institutions. Two separate ethical clearances were sought in each respective institutions and these are discussed in Section 4.7 below. In institutional A, e-mailing list of students and lecturers were availed to the researcher. While in institution B, mailing list for lecturers were granted and while for the students were not. The ICT centre sent the SurveyMonkey link to the sample of the students. In both institutions, the study therefore used the list-based sampling frame for student and lecturers. The SurveyMonkey™ online tool was used to distribute the questionnaire – the tool provided the versatility of handling mailing list above and handling ethical consent. To generate the random samples in the list-based sampling frame, the researcher used the random number generator function (RAND function) in the Excel spreadsheet. Appendix two and three of this report, provides the samples of both the interview guide and the questionnaire that were sent out, indicating the cover letter that details how individuals could participate the study.

Internet-based surveys, while now more widely used, offer some challenges to the researcher. The most notable is, ‘How to enhance the response rate?’. In list-based sampling frame, where an online e-mail or survey tool such as SurveyMonkey is used, reminders can be sent out. However, in web-based or in single mailing list where the researcher has no access to individual e-mail addresses, reminders are not easy to send out. Fincham (2008) noted that response rates to “email surveys are highly variable and traditionally in the range of 25%–30%, especially without follow-up reminders or reinforcements”(p.1). The reasons less response rate include competing demands, privacy concerns and survey fatigue. In Sections 6.4.1 and 7.4.1 it can be seen that the response rate of the participants received rendered the sample smaller than anticipated. The poor completion rate of

online surveys (including the difficulty of establishing a valid sample frame online (Couper, 2000), has been recognised in the literature as a challenge (Bethlehem, 2008; Davern, 2013; Vaske, 2008). As noted by Menon and Muraleedharan (2020) even with above noted interventions to internet-based surveys, e-mail-based surveys are still prone to low response rates. The literature acknowledges disadvantages to probability sampling method. These include, probability sampling is time consuming, requires effort and resources to implement properly (Fricker, 2008; Martínez-Mesa, et al., 2016; Menon & Muraleedharan, 2020) and higher complexity compared to non-probability sampling.

4.4.4 Research methods

The third element of the framework for research illustrated in Fig. 4.1, above, consists of the specific research methods chosen for data collection, analysis and interpretation. The research methods do not exist independently but are informed by the other elements depicted in Fig. 4.1, and rely heavily on the research objectives, the research questions, and the chosen theoretical framework(s). Creswell (2014:19) adds “audience” as an integral determinant of the approach to be used. Table 4.4, below, summarises the characteristics of instruments used in quantitative methods, mixed methods and qualitative methods.

Quantitative Methods	Mixed Methods	Qualitative Methods
Pre-determined	Both predetermined and emerging methods	Emerging methods
Instrument-based questions	Both open- and closed-ended questions	Open-ended questions
Performance data, attitude data, observational data, and census data	Multiple forms of data drawing on all possibilities	Interview data, observation data, document data, and audiovisual data
Statistical analysis	Statistical and text analysis	Text and image analysis
Statistical interpretation	Across databases interpretation	Themes and patterns interpretation

Table 4.4: Quantitative, mixed, and qualitative methods (Creswell, 2014:17)

As explained in Section 4.2, this study employed the comparative case study research methodology, in which mixed research methods were employed at each site, as described in Section 4.3. Convergent parallel mixed methods were used. This involved collecting and analysing qualitative and quantitative data to understand the phenomenon under study and answer the research questions. Data was collected through three research instruments. Table 4.5, below, depicts the correlation between the research questions and the research methods used.

Research Question	Research Method
RQ1. What institutional outcomes do the libraries of the respective universities expect for their universities and researchers, regardless of the changing needs of the research terrain?	1.Documentary analysis (Qualitative method)
RQ2. To what extent do the mission statements of the respective universities demonstrate how these libraries should add value to their institutional goals and objectives?	2.Documentary analysis (Qualitative method)
RQ3. What value does each library, and its services contribute to student learning and student success, faculty teaching and researcher productivity at their respective universities?	3.Questionnaire to Graduate Students (Quantitative method) 4. Interviews with Researchers (Qualitative method)
RQ4. What comparative similarities or differences exist in the perceptions of value of academic libraries and how do the libraries demonstrate their value at the two institutions?	Comparative analysis of the results of the preceding questions RQ1, 2 &3.

Table 4.5: Distribution of research questions against the research methods used

4.5 Research instruments

Research or data collection instruments are tools that researchers use to collect data. Research instruments can be classified into two broad types – researcher-completed instruments and subject-completed instruments. The choice of instruments is determined by the research methodology chosen, the study’s research questions and the location of research (Hudelson, 1994). Depending on the research type, common methods of data collection include interviews, questionnaires, document review, observation, or a combination of different methods.

4.5.1 Document analysis

Document analysis is a form of qualitative research in which documents are interpreted by the researcher to give voice and meaning to an assessment topic (Bowen, 2009). It is a systematic procedure in which documents are reviewed or evaluated, and data is examined and interpreted to extract meaning. Document analysis is not a haphazard approach to examining records but involves coding content into themes, with a rubric used to grade the documents. The documents consulted during this research are considered secondary sources because they were originally created for another purpose. Therefore, Bowen (2009:33) and O’Leary (2014) suggest an eight-step approach to be followed in document or textual analysis (2014):

1. Gather relevant texts.
2. Develop an organisation and management scheme.
3. Make copies of the originals for annotation.
4. Assess authenticity of documents.
5. Explore documents’ agenda, biases.
6. Explore background information (e.g., tone, style, purpose).
7. Ask questions about the document (e.g., who produced it? Why? When? Type of data?).
8. Explore content.

Bowen (2009) and O’Leary (2014) advise that the researcher should be aware beforehand of why they are analysing the data. This should offset bias and help render the approach to the data objective. In this study, the background documents that were sought included (i) higher education reports in South Africa and Zimbabwe, (ii) university strategic plans, vision and mission statements and higher education reports from the universities under study; and (iii) library strategic plans and vision and mission statements from the academic libraries under study. The purpose of this method was to explore their content and understand the self-professed focus of the academic library services. The goal was to establish “the elements of value of academic libraries” that apply to both institutions under study. This exercise was useful in establishing the value-in-use derived by students and staff from the university libraries. The information found in this exploration was

then organised according to “what is related to the central question of the research” (Bowen, 2009:32).

A document analysis checklist was prepared and detailed information about what was needed was set down and sent both for ethics committee approval and to the institutions under study. The document analysis checklist for this study mapped two research questions (RQ1 and RQ2) (as depicted in Table 4.5, above) onto a list of required evidence from reports, strategy plans and other documents from the two libraries under study.

- Under Research Question 1 (RQ1): What institutional outcomes do the libraries of the universities expect for their universities and researchers, regardless of the changing needs of the research terrain? The following classes of evidence were sought in secondary documents in Institution A and Institution B: national mandate governing the institution, institutional mandate, library mandate and service(s) targeted at researchers and students. Examples of the latter might include evidence of library services offered as a commitment to student learning and student success, faculty teaching and researcher productivity.
- For Research Question 2 (RQ2): To what extent do the mission statements of the universities demonstrate how their libraries should add value to their institutional goals and objectives? The following pieces of evidence were sought: alignment of the library mission with the institutional mission; the commitment of a library strategic plan and work plan (including library reports) to student learning and student success, faculty teaching and researcher productivity; evidence of services being aligned with these elements of value.

- For Research Question 3 (RQ3): What value does each library, and its services contribute to student learning and student success, faculty teaching and researcher productivity at their respective universities? Evidence sought under RQ3 was sought from the mapping of library services onto the identified elements of value. The other instruments – interviews and questionnaires – will examine through the R-I-R (Reasons-Interaction-Results) approach if, in these four identified areas, the users (students and lecturers) do indeed derive value from the library. Also to be included are any published reports on this issue. The sample documentary analysis checklist is available in Appendix 1 of this thesis.

Document analysis is important as a research method not only for the study but also for its theoretical framework. The use of documents is an integral aspect of the grounded theory framework, and Glaser and Strauss (1967) note that an entire study can be conducted solely with documents. However, in many studies, as is true for the present one, document analysis is a complementary data collection procedure that supports triangulation and theory building. As will be seen in the aspects of coding in the data analysis section, documents play a very important role as sources of information.

4.5.2 Interviews

The interview is the most common data collection method in qualitative research. An interview is a purposeful discussion between two or more people (Kahn & Cannell, 1957). Interview takes various forms, for example, Saunders, Lewis and Thornhill (2009) depict these forms as shown in Fig. 4.3 below.

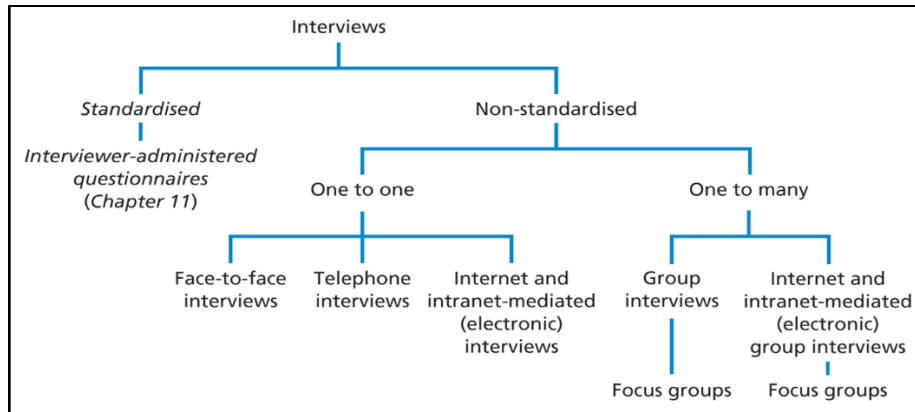


Fig. 4.3: Forms of interviews (Saunders, Lewis & Thornhill, 2009)

Interviews are typically unstructured, semi-structured or structured. Structured interviews use questionnaires based on a predetermined and standardized identical set of questions and usually close-ended. The questions can be multiple choice or dichotomous – asking participants to answer “yes” or “no” to each question. Structured interviews are best suited when there is a clear understanding of the topic being researched and when there is a time or large sample size constraints (Saunders, Lewis & Thornhill, 2009). While unstructured interviews are informal and are used to explore in depth area in which the researcher is interested – they are also termed in-depth interviews. In most cases, unstructured interviews are usually qualitative in nature and are a useful exploratory tool as they are informal and flexible (Klenke, 2016).

This study employed semi-structured interviews. The characteristics of the semi-structured interviews include that (i) the interviewer and respondents engage in a formal interview; and (ii) the interviewer develops and uses an ‘interview guide’, although s/he is at liberty to move at will among questions and topics as the situation requires (Cohen & Crabtree, 2006).

In this study an interview guide was prepared, comprising questions aligned with the research objectives. The interview guide was also submitted for ethical clearance. The value of the interview

guide is that it helps the researcher focus on topics needed to be covered in the interview (Bird, 2016), furnishing “a clear set of instructions for interviewers ... [with the capability of providing] reliable, comparable qualitative data” (Cohen & Crabtree, 2006:1). The focus of this research was on the respondents’ perceptions of the following elements of value – student learning and success, faculty teaching and researcher productivity. The interview was for the lecturers and/or researchers in the three selected faculties in two institutions (both in institution A and B) as indicated in Table. 4:5 above. The interview guide focused on two elements of value, faculty teaching and researcher productivity. The goal of the interview was to understand the role of the university library in supporting the lecturers’ and/or academic staff’s teaching, research and publishing activities. The questions related to teaching were focused on the availability of core teaching materials in the library, the minimum citation requirements that the teaching staff request from students, and the involvement of the university libraries in curriculum development or course content design. The questions on research productivity requested the contribution of the library to academics’ publications, including the support provided by librarians.

Since the researcher was not physically able to be in two locations at the same time and was living in Europe, the interviews were conducted online and distributed via the SurveyMonkey tool.¹⁵ There was a cover letter explaining the research, and the respondents were offered the researcher’s contact details should they wish to ask questions. The researchers were also offered the option of requesting a Zoom call at a time convenient to them¹⁶. Amri, Angelakis and Logan (2021:*passim*)

¹⁵ The online link of the SurveyMonkey is also available on request – it is not shared here to avoid the identification of the specific institutions under study. The texts of the questionnaire and interviews are available in the Appendices 2 and 3 of this report.

¹⁶ The cover letter contained an RSVP form for a zoom interview, see Appendix 2 or the form here <https://docs.google.com/forms/d/1rWctKTwTK9abIYhQUlskrMr55jCkCreaB4dCBnuhACY/edit>

note that e-mailing interviews, which is also called “e-interviewing”, “electronic interviewing”, and “asynchronous computer-mediated communication”, has great potential for researchers.

The respondents received the interview by e-mail and were offered a period in which to respond, with the distribution tool offering reminders about the deadline. During the COVID-19 pandemic, this method proved also to be safe and effective. One of the advantages of the method for this study was the ability to conduct multiple interviews simultaneously both in two institutions and within the chosen faculties in the institutions (see Section 4.6 on data collection procedures).

4.5.3 Questionnaires

A questionnaire is a structured set of questions designed to gather specific information from a group of individuals (Saunders, Lewis and Thornhill (2009). Questionnaires offer a cost-efficient and effective way to get feedback from the intended audience. According to Brancato, et al., (2006:3), any questionnaire should be based on the relevant literature and informed by the study’s objectives; the resultant questions should be translated into observable variables. Questionnaires fall into two broad categories – descriptive and analytical questionnaire. Salaria (2012) defines a descriptive questionnaire as “ as a tool used in descriptive survey research to gather information about prevailing conditions, practices, beliefs, or trends for interpretation and analysis” (p.2). Whereas an analytical questionnaire is a tool used to gather detailed information for in-depth analysis and evaluation (Van der Reyden, Wilson & White, 2017). In the analytical one are used in theory building and theory testing research. Questionnaires can also be classified as quantitative or qualitative, or both, depending on the nature of the questions. Since this study employs mixed methods, the survey included both structured and unstructured questions. The questionnaire was distributed to graduate students in the chosen faculties and focused on the elements of academic

library value – student learning and student success. Total questionnaires sent to graduate students in Institution A were 180 and 185 for Institution B – in both cases the questionnaire was distributed via the SurveyMonkey™ tool specific to the sample size¹⁷.

As was the case with the interview guide, the questionnaire was developed and distributed through the online SurveyMonkey tool. In the section 4.4.3.2, under sampling the distribution of the question was explained. The questionnaire consisted of 24 questions organised into two sections. The first section focused on the user and their interaction with the academic library service (student learning), and the second, the contribution of the academic library service to student learning and success. One questionnaire was developed for use at both institutions in the study, and this was useful as a comparative measure for the results obtained. The sample questionnaire and cover letter are available in Appendix 3 of this report.

4.6 Validity and reliability

The *validity* of research findings refers to the extent to which the research results provide an accurate description of the phenomena they purport to represent. The test of validity in research focuses on three aspects: the first, ‘the validity of measurement’, concerns the question of whether a research instrument, for example a questionnaire, measures what it purports to measure (Bryman, 2004). The second aspect is ‘the validity of explanation’ or internal validity, which focuses on whether the explanation derived from the research is consonant with the chosen context or subjects

¹⁷ With the total target population, as shown in Table 4.2b, the researcher first generated the random sample through using the random number generator function (RAND function) in the Excel spreadsheet. Thereafter, questionnaire was then sent to the target sample lists (through the SurveyMonkey™ tool). In institution A, access to student data was easily granted (within the frameworks of the ethics clearance), however, institution B in South Africa, ethical clearance mandated the ICT Dept to support the researcher - to ensure compliance with the Protection of Personal Information Act (POPI Act).

under study. The third is ‘the validity of generalisation’ or external validity, which asks whether the conclusions drawn from a particular study can be generalised or extended to other subjects and populations (Vumop, 2006). In this study, the research instruments were designed according to precepts gleaned from the literature and shaped by the theoretical model. The instruments were tested and, as regards the validity of explanation, the data analysis procedures are detailed in Section 4.8.

The *reliability* of a study refers to the reproducibility of the findings (Anderson, 2010:4). There are three recognised ways of testing reliability: test-retest, alternate form and internal consistency. Test-retest reliability is when the same instrument is administered twice over a period to a group of individuals. The results are then compared to evaluate the test for stability over time. Alternate-form reliability is when an individual participating in the research is given two different versions of the same test at different times. Similarly, the scores are then compared. For internal consistency, similar items in a test are compared to determine that the research instrument is measuring the concept it is supposed to be measuring. For example, this could be done by including two different questions that measure the same concept – a similar response to both questions can help determine internal consistency (Moskal & Leydens, 2000; Revicki, 2014).

The research tools and instruments discussed above were designed to ensure that they measure the intended variables of the study. The literature review revealed how the concept of value has been construed in academic libraries. The research agenda set by the Association of College and Research Libraries established gaps and future areas for research. In the present study, the researcher secured *content validity* by ensuring that in each instrument, the questions were grounded in both the library science and research methods literature. Furthermore, the questions

were aligned with the research questions and objectives described in Chapter One. The study benefited from the rigorous UCT Ethics Clearance procedure that examined all the tools for the study and cleared them for data collection. To ensure *validity of measurement*, the instruments were tested to confirm that they were collecting the data needed. Lastly, the study also sought to meet the criteria for *validity of generalisation* by checking that the conclusions drawn from the chosen sample could be generalised in the universities under study. This was achieved by adhering to proper sampling procedures to ensure that the sample size was appropriate. The use of a grounded theory framework, especially the rigorous coding and comparison of data associated with it, also helped to secure validity of generalisation.

4.6.1 Triangulation

Triangulation is defined as the combination of two or more methodological means to study the same phenomenon, for example, theoretical perspectives, data sources, investigators or methods of analysis (Olsen, 2004). Triangulation thus involves using more than one source of data or method of collection to confirm the validity, credibility or authenticity of the research data collected. In this study, three methods were chosen – observation, interviews and questionnaires – and all three were used in each case. In fact, five types of triangulations have been distinguished: methodological triangulation, investigator triangulation, theoretical triangulation, analysis triangulation and data triangulation (Bowen, 2009). This study used methodological triangulation (which can be either ‘within-method’ or ‘between-method’), playing methods off against each other to maximise the validity of the research. The study used observation and interviews which are qualitative in nature, while quantification was achieved by the questionnaire.

The specific triangulation used was the ‘within-method’, which involved the use of multiple methods within the same paradigm for data collection and analysis. The theoretical framework of this study requires a good corpus of data to be collected for coding and analysis. Using triangulation not only assures a holistic picture of the case but maximises the data collected and seeks completeness by including different points of view. Using document analysis, interviews and questionnaires enabled the researcher to obtain the requisite data about the cases from different vantage points.

4.7 Data collection procedures

This section describes how the data was collected in both cases. After all the clearances were obtained, the data was assembled during a period of three months when the instruments were simultaneously distributed to each institution. The questionnaire and interview were both deployed online to their respective audiences. There were slight differences in the process of data collection between the institutions. In Institution A, after ethical clearances, faculty registrars were helpful in granting access to student and lecturer mailing lists. In Institution B, there was an additional layer of clearance required to collect data from the lecturers, and yet another clearance from the ICT centre for the students.

4.7.1 Data Collection : Interviews

As discussed in Section 4.5.2 an interview guide was prepared – and can be reviewed in Appendix two. The interview guide was online and created through the subscription version of the SurveyMonkey™ tool, which allows for the sending to mailing lists. Section 4.4.3.2 explained how the sampling procedures. In both institutions, mailing list of lecturers were provided as part

of the population, and as discussed a sample was drawn. The respondents were given an opportunity to either complete the interview online via the SurveyMonkey™ platform or they could book an interview through a Google online form. At the institution A, all responses were through the completion of the SurveyMonkey™ online. While in institution B, four respondents chose a verbal zoom interview. Each zoom interview lasted about 20 minutes, and the questions were the same as the one in the interview guide, participant allowed recording only for transcribing purposes. The analyses of the interviews (completed online or via zoom) were analysed as one set there was no discrimination of the online completion via SurveyMonkey™ or face-to-face via zoom platform. At the Institution B, the required a further clearance from their respective head of faculty before they could participate.

4.7.2 Data Collection : Questionnaire

Similarly, the questionnaire for graduate students was the same for both institutions. Two separate online questionnaires – one for Institution A and the other for Institution B. This was to allow separate collection of data at each respective institution. Section 4.4.3.2 explained how the sampling procedures were applied in this study for both institutions. The questionnaire is available in appendix three of this report. The questionnaire was administered through SurveyMonkey™ and users completed directly on the platform through the link provided. For Institution A, Assistant Registrar of each faculty were provided access to needed mailing lists of graduate students, while for Institution B, they process was a bit strict and was part of the Ethical clearance process. The University ICTs was mandated to provide access to the graduate students' list without providing individual e-mails of students. The SurveyMonkey™ was used for the preliminary analysis of the questionnaire in both institutions.

4.7.3 Ethical considerations and related issues

Modern research demands that researchers pay attention to ethical issues, especially when working with human subjects. Jelsma and Clow (2005) outline several ethical issues relating to research. They summarise the ethical principles involved in undertaking research on human subjects, deriving from the Nuremberg Code of 1949, the Belmont Report of 1979 and the Helsinki Declaration of 2000. The principles include the provisions that the research participants should remain anonymous, that the number of participants included in the research should be of sufficient size to generalise the results (See Section 4.4.3.2 on sampling issues relating to this study) and that the consent of the participants should be sought and granted.

Additionally, this research was conducted under the auspices of the University of Cape Town, which supports research ethics through university-wide and faculty-specific policies, senate-level committees, and faculty-level research ethics committees (RECs). This research involved human subjects, and in line with the set guidelines, the research instruments were reviewed first by the supervisor, then the department, and then referred to the faculty research committee for clearance. Since the data had to be collected in two institutions, the research had to be cleared in those institutions as well.

4.7.2 Approval to carry out the study

Approval to carry out the study was granted by the University of Cape Town REC and approval was also received from the two institutions where data was to be collected. The study suffered an unfortunate setback with respect to the institution in South Africa, which withdrew its previously granted ethical clearance. This was the result of a lack of clarification on the use of gatekeepers

(in the application this was implied rather than expressly stated). Due to this situation, the study lost 12 months (from the first application to the institution's ethics committee to the first attempt to collect data). The lesson learnt from this experience is that in submitting a request for ethical clearance it is most important to express in minute detail how – by whom and from whom and where the data will be collected – especially for researchers who are operating from outside the institutions and the country.

In consultation with the academic supervisor and the department, it was decided to make a new application to another institution in South Africa. The new institution approved the application, but this also took time, and the researcher had to renew clearance from the institution in Zimbabwe. Eventually, both institutions consented (both their respective librarians and Ethics Committees) to the study being conducted, with the names of the institutions anonymised. Ethical clearance therefore had to be obtained from three universities: the University of Cape Town, Institution A (Zimbabwe) and Institution B (South Africa). The approval letters are available on request; because they contain identifying information, they have not been appended to this report.

4.7.3 Protecting privacy and confidentiality

The researcher informed the respondents about the purpose of the research and its objectives, asked for their informed participation, and provided the necessary information on how to quit the process if they so wished. In the case of the questionnaire, these necessary messages were made available for the respondents to consent to. The research instruments (see Appendices) had a cover letter regarding consent to participate in the study, and the SurveyMonkey tool was configured to protect the privacy of the participants. The anonymity of the research participants and the confidentiality of their responses were protected, and where the responses contained identifying pieces of

information (such as the name of the institution or personal information), these were anonymised. There was a statement confirming that the research was for educational purposes.

4.7.4 Informed consent

The cover letter, the introduction to the questionnaire and the interview guide provided the participants with all the information about the study that they might need. The contact details of the researcher and his supervisor were provided to enable the participants to ask questions during the research process. With all these measures, the respondents' participation was deemed to be informed and their prior consent obtained.

4.7.5 Research data management

The study conforms with the UCT Research Data Management regulations, and no data collected for this research will be published on any platform. It will be stored according to the guidelines detailed in the data management regulations. The research data management plans for the study were submitted to UCT for clearance at the outset of the study and in the subsequent years at the time of registration.

4.8 Data analysis procedures

Data analysis refers to the process of extracting meaning and understanding from the collected data (Coghlan & Brydon-Miller, 2014). The research approach and the chosen theoretical foundation have a bearing on how data is analysed. Data analysis implies that the researcher will interrogate or interpret data sets involving the following processes: seeking out agreement and disagreement in the data, developing visualisations of the data, hypothesising and speculating to

develop understanding and interpretation, distilling, explaining to summarise key findings and triangulating evidence from different sources (Rowley, 2014).

In this study, quantitative data was collected through the questionnaire, and tools of analysis such as graphs, tables and charts were used to present, describe and examine the relationships and trends in the data. The results were analysed and synthesised in accordance with procedures informing the theoretical framework of the study. Thus, the qualitative data obtained through the interviews was analysed and the responses were coded with taxonomic tags, as explained below.

4.8.1 Coding procedures

Coding and codes are frequently used in the process of data analysis. Codes refer to concepts identified through explicit criteria (Benaquisto, 2008:3). Codes can be developed prior to data collection or may emerge inductively during the coding process. Two aspects of coding were emphasised in this research: first, the use of simple codes to analyse the responses from the interviews. These were codes developed from the *Taxonomy of value in academic libraries* (see Appendix 6). Secondly, the kind of coding emphasised in the grounded theory approach was employed. The use of ATLAS.ti software made possible the automatic coding of the responses received. Some theoretical aspects of coding are explained in the next paragraph.

Strauss and Corbin (1998) maintain that the grounded theory technique involves three stages: *open coding*, in which data is categorised into units; *axial coding*, in which the relationships between categories are identified, and *selective coding*, where the core categories are supposed to produce a theory. Another important method for analysing data is the *constant comparison method*. According to Glaser and Strauss (1967), this involves a series of steps: collecting the data from

the field, identifying key issues that will be the focus of categories, documenting the categories to describe existing issues and constantly looking for new incidences, and working with the data to capture social processes and relationships. In this study, an online questionnaire and interview guide were distributed, and Survey Monkey capabilities were used to analyse closed-ended questions. The open-ended questions were analysed by focusing on one question or variable at a time. This enabled the collected data to be understood within the context of the responses.

Once the data had been analysed and coded using the Grounded Theory approach (as detailed below in Section 4.7.2), the taxonomy presented in the previous chapter was used to encode the responses at a theoretical level (Glaser & Strauss, 1967). Following the requirements of Kantor and Saracevic (1997b), a checklist was provided for coding the responses. Encoding rules were required since multiple coders or researchers were involved. To achieve consistency and reliability the coding had carefully to observe the wording of the respondents and apply the codes from the taxonomy that corresponded with the answers supplied. Fig 4.4, below, exemplifies the coding process.

<p>Class A. Reasons for using a library or information service.</p> <p>A.1 For the task or project</p> <p><u>A.1.1 Research</u></p> <p>RULE: Look for the word research, researching etc. verbatim</p> <p>EXAMPLES: "...doing research for a project ...doing a research paper for my class. I'm researching the individuals."</p>
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Fig 4.4: Example of coding using the taxonomy (Saracevic & Kantor, 1997b:554)

The theoretical framework provided guidelines on how to encode using the taxonomy; for instance, it encouraged the inclusion of respondents' verbatim responses in the coding and presentation of the data. The present study adopted the same principle of seeking matching synonyms or terms in the taxonomy. The following guidelines for generally good practice, as proposed by Huttenlock et al. (1995:30), were followed in this case:

- Read through each answer before encoding the response. Assign a code (s) that most represents the response.
- When two concepts emerge in the response code them accordingly regarding their importance by the respondent.
- When encoding responses, it is important to pay attention to the actual text and not to search for implied concepts or “reading between the lines”.
- When unrelated information is provided in the response(s), ignore, and focus on the parts applicable to the question.
- If a response does not fit into any appropriate category, a N/A is used rather than fitting the response to a category based on assumptions. (Huttenlock et al., 1995:30)

4.8.2 Impact of the grounded theory approach on data analysis

The Glaserian Grounded Theory method uses various levels of coding, as explained above and in the previous chapter (see Section 3.6.2). In each case, when the data was received it was coded following the prescribed process of open coding. This involved systematic reading and considering every comment made by each participant to note similarities (and differences) between concepts. Then these concepts were coded according to their meaning and relevance to the study. Throughout the open coding, a process of *constant comparison* (Glaser & Strauss, 1967:106) took place – a simultaneous and concurrent process of coding and analysis.

4.8.3 Using ATLAS.ti coding functionalities

To support the process of coding explained above, the ATLAS.ti software tool was used (a subscription-based version) because of the functionalities it offers. ATLAS.ti is qualitative data analysis (QDA) software that has proven to be a valuable tool for researchers conducting Grounded

Theory coding and analysis (Hwang, 2008). The software provides a range of features and functions that support the systematic coding and organisation of qualitative data:

- *Data Management*: ATLAS.ti allows one to import and manage various types of qualitative data, such as text documents, interview transcripts, audio recordings, images and video.
- *Efficient Coding*: The software capabilities enable the creation and application of codes to segments of text or other data sources. One can also create a coding system that reflects emerging categories and concepts, which is fundamental in Grounded Theory.
- *Hierarchical Coding*: ATLAS.ti supports hierarchical coding, which facilitates the capturing of complexity in the data and the relationships between different codes and concepts. In this study, the *Taxonomy* was the source of codes. The *Taxonomy* is already organised hierarchically, and when applied in ATLAS.ti, it became the code book for coding and analysing the data collected.
- *Querying Data*: ATLAS.ti provides powerful search and query capabilities. This allowed the researcher to drill further into the data collected and examine relationships within and among the data.

The tool also provides functions relating to visualisations and the comparing of codes, memos and captured data. In essence, the ATLAS.ti program streamlined the coding process and enhanced the procedures prescribed for the Grounded Theory coding process.

4.8.4 Coding using ATLAS.ti

ATLAS.ti was used to operationalise the coding categories that are in the *Taxonomy of value in academic libraries*, as discussed in Chapter Five of this report. The *Taxonomy* could be interpreted as a coding frame for the study, a coding frame being something that “gives shape to the list of codes, which can inductively emerge from the data or be deductively applied from existing theory”

(ATLAS.ti, 2023:n.p.). The study focused on two user groups – postgrad students and teaching staff – and focused on four thematic areas. The student-linked thematic areas were student learning and student success, while the academic staff-linked thematic areas were faculty teaching and research productivity. The *Taxonomy of value in academic libraries* provides the following codes under these themes (which were used as the codes hierarchy within the ATLAS.ti application).

4.8.4.1 Student-related codes

The *Taxonomy of value in academic libraries* provides for the following hierarchies.

A.10 to facilitate Student Success A.10.1 Support student internship success A.10.2 Support student job placement A.10.3 Support career development A.10.4 Attainment of marketable skills

Fig. 4.5: Taxonomy excerpt for student success

Regarding student success, additional codes derived from recent literature (see Section 2.7.3, above) were added. These included secure *job placement*, *career skills* and *skills development*.

A.8 to support Student Learning A.8.1 Information Literacy Programmes A.8.2 Learning Assessments

Fig. 4.6: Taxonomy excerpt for student learning

In addition to the above codes, recent literature (Section 2.7.3, above) suggested the inclusion of additional codes, *learning materials* and *learning outcomes*. These two were added to the above hierarchies in ATLAS.ti.

4.8.4.2 Academic staff-related codes

The related hierarchies from the *Taxonomy of value in academic libraries* are shown below.

A.2 to increase Faculty Research Productivity
A.2.1 Publications preparation supported
A.2.2 Reports supported
A.2.3 Conference papers supported
A.2.4 Patents applications supported
A.2.5 Support to faculty research visibility
A.2.6 Library research centres/service for faculty

Fig. 4.7: Taxonomy excerpt for faculty research productivity

In addition to the codes listed in Fig. 4.5, the latest literature adds also (see Section 2.7.7, above), *number of publications, number of patents, and tenure and promotion judgements*. With regard to teaching (Fig. 4.6, below), recent literature (see Section 2.7.9) adds *library instruction, online tutorials, and library guides*.

A.3 for Faculty Teaching
A.3.1 Integrated library resources into courses and lectures
A.3.2 Course reserve collections
A.3.3 Faculty/Library collaborations on courses
A.3.4 Librarians guest lectures in faculty courses
A.3.5 Faculty/Library campus-wide teaching and learning support

Fig. 4.8: Taxonomy excerpt for faculty teaching

These four sets of codes were applied to the data from each institution. ATLAS.ti allows for synonyms, and these were utilised for concepts similar to the codes to ensure maximum coding of the results received. A close examination of the above explanation would indicate that the coding approach used is deductive coding, with the *Taxonomy of value in academic libraries* being the code book. The value of using it is that the taxonomy provides the requisite categories and codes in advance.

4.9 Data presentation

After the data collection was completed, the data was processed and analysed to answer the research questions. Section 4.8, above, describes how the data was analysed, including how ATLAS.ti supported the coding procedures. In respect of the questionnaire, data was presented in graphs and charts as generated by the Survey Monkey tool and in juxtaposition with the research questions. The quantitative data gathered from interviews and documentary analysis was thematically coded (also using the *Taxonomy of value in academic libraries*) according to the research questions and to the theory of the use-oriented value of information and information services that was explained in Section 3.5 of this document.

Research Instrument	Data Collected in the two institutions	Presentation Type	Thematic Focus
Document Analysis	<ul style="list-style-type: none"> • Documents Set-1: Institution A <hr/> • Documents Set -2 Institution B <hr/> • Mostly Qualitative Data (and some numerical facts) 	<ul style="list-style-type: none"> • Qualitative data, narrative (aligned to RQ1) 	<ul style="list-style-type: none"> • Academic libraries and support to institutional goals <hr/> • Mission statement and value addition
Questionnaire <i>(Questionnaire + SurveyMonkey Dataset)</i>	<ul style="list-style-type: none"> • Institution A Questionnaire for Graduate Students <hr/> • Institution B Questionnaire for Graduate Students <hr/> • Mixed Qualitative & Quantitative Data 	<ul style="list-style-type: none"> • Qualitative Data, <i>narrative</i> around the themes • Quantitative Data <i>visualised (graphs, charts)</i> with narrative to explain emerging story 	<ul style="list-style-type: none"> • Academic libraries + student learning. • Academic libraries + student success.
Interview <i>(Interview Guide + SurveyMonkey Dataset)</i>	<ul style="list-style-type: none"> • Institution A – Interview Guide for Lecturers/ Academic Staff <hr/> • Institution B – Interview Guide for Lecturers/Academic Staff <hr/> • Mostly Qualitative Data 	<ul style="list-style-type: none"> • Qualitative Data, narrative around the themes 	<ul style="list-style-type: none"> • Academic library + faculty teaching • Academic library + research productivity

Table 4.6: Data presentation model/schema

The results of each case (or institution) in the categories depicted in Table 4.6 are presented in Chapters 6 and 7. The presentation follows the order of, first, the document analysis findings, then the interview findings, and lastly the survey results. Since MRM were used, there is a mixture in the presentation of the data: narrative for the qualitative data and graphs for the quantitative data. Both chapters conclude with discussion that aligns the findings with the Reasons, Interaction and Results (R-I-R) approach. The R-I-R approach makes it possible to establish the impact of library services on the users. A sample of the presentation was provided in the theoretical framework in Table 3.2, above.

4.10 Chapter Summary

This chapter has presented the comparative case study research methodology and described how it was used to collect the data for the study. It is explained how this methodology and the chosen instruments, guided by the theoretical framework, facilitated the data collection, analysis, and presentation. The impact of the theoretical framework is seen in the data analysis and presentation. Though both quantitative and qualitative methods were used, this study is predominantly qualitative and relies in the data analysis and presentation on the notion of the use-oriented value of information and information services and the rigour of grounded theory. The last part of the chapter describes this analysis and presentation.

Chapter 5

Taxonomy of value in academic libraries

The true beginning of scientific activity consists rather in describing phenomena and then in proceeding to group, classify and correlate them. – Sigmund Freud (Freud,1915:156)

5.1 Introduction

As recounted in Chapters Two and Three, Adam Smith's (1723-1790) attempt to define the concept of value led to his distinguishing *value-in-exchange* from *value-in-use* and establishing a basis for the development of modern economic understanding. Chapter Three of this report explains the theoretical framework, the *Theory of use-oriented value of information and information services* developed by Tefko Saracevic and Paul Kantor in 1997 (Saracevic & Kantor, 1997a & b). In studying the value of information services through this lens, researchers were encouraged to use or adapt the taxonomy for their own purposes. This chapter presents the *Taxonomy of value in academic libraries*, modelled on the work by Saracevic and Kantor (1997a & b) and informed by the emerging literature on the value of academic libraries (discussed in Chapter Two).

This chapter is divided into two major parts. The first part (Section 5.2) focuses on *principles* used in the development of the *Taxonomy of value in academic libraries*. The second part (Section 5.4) presents the actual *Taxonomy of value in academic libraries*, focusing only on the categories of value that are defined in the present study's scope and objectives (see Chapter 1, Section 1:11). These are student learning and success, faculty teaching and researcher productivity. The contribution of the taxonomy to the present study is explained in Chapters Three and Four.

5.2 Adaptation of the principles, theory, and literature to create the present taxonomy

This argument follows the basic theoretical principles applied in the creation of taxonomies by Bailey (1994) in his groundbreaking study, *Typologies and taxonomies: An introduction to classification techniques*. These principles were also used by Saracevic and Kantor (1997b) when they created the *Derived taxonomy of value in using library and information services* (or just the *Derived taxonomy*). The *Derived taxonomy* is a faceted structure with three major classes, each with subclasses and then specific categories. As seen in Section 3.5.2, these major classes comprise (A) Reason, (B) Interaction and (C) Results.

The principles expounded by Bailey (1994) that influenced the creation of the *Taxonomy of value in academic libraries* include the following:

- A taxonomy should begin empirically, rather than conceptually, with the goal of classifying cases according to their measured similarity on observed variables.
- Classes formed must be both *exhaustive* and *mutually exclusive*. This implies that each object to be classified must be in one appropriate class (exhaustive) and not belong to two classes (mutual exclusivity).
- The taxonomy should serve as a descriptive tool that allows the researcher to provide an exhaustive and definitive array of types.
- The taxonomy should also reduce complexity allowing the researcher to condense huge masses of data about populations or concepts into smaller data types.
- Similarities and differences should be easily identifiable. (Bailey,1994:3-5)

In developing the *Derived taxonomy*, Saracevic and Kantor (1997b:561) insisted that the taxonomy should speak to its audience – library professionals, institutional administrators, library users and other researchers. They endeavoured to meet the needs of all the members of these groups in the taxonomy. For example, to ensure that the taxonomy was meaningful to institutional administrators, they included those aspects of value that bear on institutional responsibilities and

goals. Institutional concerns were included in the facets of the taxonomy that focus on (A) Reasons for using the library information service.

The following principles (informed by the theoretical framework) guided the process of designing the *Derived taxonomy*:

- i. Users interact with a library service, that is, use or attempt to use a library service, for a given *reason or reasons*.
- ii. As an outcome of the interaction, users obtain responses or *results*, be they positive or negative.
- iii. Users evaluate or assess the interaction and the responses or results in relation to their reason(s) for using the library service(s). (Kantor, Saracevic & D'Esposito-Watchman, 1995:37-8)

While in the *Derived taxonomy*, users' reasons were extracted from users' responses to questionnaires and interviews, in the present study the reasons for using academic libraries were derived from Oakleaf (2010), ACRL (2017) and recent literature on the value of academic libraries (as discussed in Chapter 2).

5.3 The contribution of academic literature on value to the development of the taxonomy

Fortunately, this study was undertaken after the emergence of a corpus of literature and a constructive debate on value studies in academic libraries. The Oakleaf (2010) report summarised the known literature on value in academic libraries at the time, and the literature search for this study has added the subsequent evolution of research (see Section D of the literature review). The major output from the literature review was the recognition of core elements of value in academic

libraries. These specific elements of value (as noted by Oakleaf) are student enrolment, student retention and graduation, student success, student achievement, student learning, student experience, faculty research productivity, faculty grants, faculty teaching, and institutional reputation and prestige (Oakleaf, 2010:19).

For each element of value, Oakleaf (2010) listed several parameters or “surrogates” (to be regarded as hallmarks or indicators). For example, student enrolment had the following parameters or surrogates of value: (i) recruitment of prospective students, (ii) matriculation of admitted students, and (iii) recommendation of current students. The essential guiding question for this surrogate was formulated as: *How does the library contribute to student enrolment?* In 2017, the Association of College and Research Libraries (ACRL) published results that followed Oakleaf’s call for action-oriented research on academic libraries. The findings of the ACRL action-oriented research produced more descriptions to supplement the 10 surrogates identified by Oakleaf. Meanwhile, other complementary literature has emerged, further enriching our understanding of value in academic libraries. Combining the work of Oakleaf (2010), ACRL’s action-oriented research agenda and published works on specific surrogates, the literature on which the *Taxonomy of value in academic libraries* is based is distributed in the list of References, below (but available as a corpus on request).

5.4 Structure of the *Taxonomy of value in academic libraries*

The *Taxonomy of value in academic libraries* (or the checklist for measuring academic library value) is a faceted classification with levels and subdivisions. Since it is influenced by value-in-

use, it has three major classes or facets: *Reasons, Interactions and Results*, under which fall various subclasses and specific categories (see Fig. 3 in Chapter 3 for a diagrammatic view). For example,

A. REASONS for academic library use (General Classes)

A.1 To obtain Faculty **Grants** (Sub-Classes)

A.1.1 increased **number of Grant proposals** funded (Specific categories)

In essence, the A class (Reasons) has sub-classes that are its members; sub-classes can have other (specific) subclasses, as in the above example.

5.4.1 Non-exclusivity. Top-level classes – *Reasons, Interaction* and *Results* – are regarded as mutually exclusive. However, the rest of the structure does not imply mutual exclusivity between categories. The *Reasons* class consists of the 10 core surrogates of value in academic libraries as established by Oakleaf (2010). However, even after a decade of research, the findings regarding the use of academic library services are still tentative with respect to specific ‘reasons’ for using library services. For example, faculty use the library to increase research productivity, yet the outcomes of using the academic library’s collection and services are not explicitly tied to research productivity (Brown & Tucker, 2013).

5.4.2 Adaption from derived taxonomy. The basic structure and concepts were adopted from the *Derived taxonomy of value in using library and information services*. Yet since the present taxonomy is specific to academic libraries, some broader classes and concepts did not apply and were dropped.

5.5 Contents of the *Taxonomy of value in academic libraries*

In this presentation of the taxonomy, initially (Section 5.5.1) the major classes and subclasses of the taxonomy structure (*Reasons-Interaction-Results*) are described. Then, the whole taxonomy is presented (Section 5.5.2), detailing the general classes, sub-classes and specific categories.

5.5.1 Major classes and subclasses: description

5.5.1.1 Class A: Reasons – This class details the motives, causes and purposes that drive one to use an academic library service. Why do users use the service? In other words, what do they want to get from the service? In academic libraries, *the Reasons* were established by Oakleaf (2010).

The Sub-classes are shown below, with relevant guiding questions: -

A1. To obtain Faculty Grants: How does the library contribute to faculty grant proposals and funding? Do faculty members see the library’s contribution to the preparation of grant proposals, funded and unfunded? What is the total value (financial) of the grants when the library contributes (directly or indirectly) to their preparation and submission?

A2. To increase Faculty research productivity: How does the library contribute to faculty research productivity? How do librarians serve faculty who are preparing publications, presentations, or patent applications? How do librarians help faculty prepare their tenure and promotion packages?

A3. For Faculty teaching: How does the library contribute to faculty teaching? Does the library collaborate with faculty on curriculum, assignment, and assessment design? In what other ways does the academic library contribute to faculty teaching?

A4. To support Institutional reputation and prestige*¹⁸

A5. For Student achievement*

A6. Improve Student enrolment*

A7. Enhance Student experience*

A8. To support Student learning - How does the library contribute to student learning? Is there an impact on the part of information literacy instruction and assessment on student learning? What is the role of the academic library in student learning? How do academic libraries’ services contribute to student learning?

A9. To support Student retention and graduation *

A10. To facilitate Student success - How does the library contribute to student success? As a result of library use, are students doing well in internships, securing job

¹⁸ *Classes A4, A5, A6 and A9 are noted (and discussed in Chapter 2). But they are explored no further.

placements, earning salaries, gaining acceptance to graduate/professional schools, or obtaining marketable skills? Are there linkages between academic libraries and student success?

A11. Personal Reasons – What private, individual reasons might there be for using an academic library service? There are three possible categories of such reasons, (i) cognitive reasons, (ii) affective reasons, (iii) reasons for substitute choice. (Excerpt, *Taxonomy of value in academic libraries.*)

5.5.1.2 Class B. Interaction – This class covers the assessment by users of the qualities of the various aspects of service they experienced. The class portrays the users' encounters with the academic library service, and how the user evaluates those encounters.

The interaction has been divided into the following subclasses:

B1. Use of library services – Covers aspects related to the non-collection aspects of the academic library service. This includes human interaction, ease of accessibility of electronic services. Can the library service be obtained timeously? How convenient is it to use the service?

B2. Use of library resources – Covers all aspects related to equipment and resources for accessing information in the academic library. These include library computer laboratories, online library catalogues, library websites, and on-site photocopying and printing facilities. Can library users access these resources when needed? What effort is needed or how easy are they to use?

B3. Use of library spaces – Covers all aspects related to the environment within the library. Are adequate, well-lit, well-resourced reading spaces available? Are there collaborative working spaces? Do students have access to library seminar rooms for informal presentations? Are there researcher commons facilities? Is there enough equipment to make library spaces conducive for reading and research?

B4. Use of library collections – Covers availability, accessibility, and quality of the given materials. Are the library print and electronic collections adequate to support students, faculty, and researchers? How current, timely, or complete is a given resource? (Except, *Taxonomy of value in academic libraries.*)

5.5.1.3 Class C. Results – This class covers users' outcomes after using the academic library services. In other words, did the interaction satisfy the expected need?

(Reason for the library service) What did the user get out of the service? Did the interaction contribute to the specific objective of using the library service? Were the expectations met?

5.5.2 Taxonomy of value in academic libraries

Taxonomy of value in academic libraries

Overview of the General Taxonomy classes

A. **REASONS** for using an academic library (Oakleaf, 2010)

- A.1 To get **faculty grants**
- A.2 To increase **faculty research productivity**
- A.3 For **faculty teaching**
- A.4 To support **institutional reputation and prestige**
- A.5 To support **student achievement**
- A.6 To improve **student enrolment**
- A.7 To enhance **student experience**
- A.8 To support **student learning**
- A.9 To support **student retention and graduation**
- A.10 To facilitate **student success**
- A.11 For **personal** reasons

B. **INTERACTION** with an academic library (Huttenlock et al., 1995)

- B.1 Use of **library services**
- B.2 Use of **library resources**
- B.3 Use of **library spaces**
- B.4 Use of **library collections**
- B.5 Use of **library equipment**

C. **RESULTS** of using an academic library service (Oakleaf, 2010; Oakleaf & Kyrillidou, 2016)

- C.1 **Student-specific** outcomes
- C2. **Personal** outcomes
- C.2 **Faculty-specific** outcomes
- C.3 **Institutional-related** outcomes

Fig. 5.1: Overview of the General Taxonomy classes

2.0 Overview of class and sub-classes in CLASS A

A. REASONS for using an academic library (Oakleaf, 2010; Oakleaf & Kyriallidou, 2016)

- A.1 to get **Faculty Grants**
 - A.1.1 Grant proposal supported
 - A.1.2 Value of grants funded
- A.2 to increase **Faculty Research Productivity**
 - A.2.1 Publications preparation supported
 - A.2.2 Reports supported
 - A.2.3 Conference papers supported
 - A.2.4 Patents applications supported
 - A.2.5 Support to faculty research visibility
 - A.2.6 Library research centres/services for faculty
- A.3 for **Faculty Teaching**
 - A.3.1 Integrated library resources into courses and lectures
 - A.3.2 Course reserve collections
 - A.3.3 Faculty/Library collaborations on courses
 - A.3.4 Librarians guest lectures in faculty courses
 - A.3.5 Faculty/Library campus-wide teaching and learning support
- A.4 to support **Institutional Reputation and Prestige**
 - A.4.1 Supports faculty recruitment
 - A.4.2 Contribute to institutional rankings
 - A.4.3 contribute to community engagements
- A.5 to support **Student Achievement**
 - A.5.1 Attainment of GPA
 - A.5.2 Support educational (professional bodies) test scores
- A.6 to improve **Student Enrolment**
 - A.6.1 Support recruitment of prospective students
 - A.6.2 Promote matriculation of admitted students
 - A.6.2 Recommendation of current students
- A.7 to enhance **Student Experience**
 - A.7.1 Self-report engagement studies
 - A.7.2 Help surveys
 - A.7.3 Alumni donations and studies
- A.8 to support **Student Learning**
 - A.8.1 Information literacy programmes
 - A.8.2 Learning assessments
- A.9 to support **Student Retention and Graduation**
 - A.9.1 Semester-Semester retention
 - A.9.2 Graduation rates
- A.10 to facilitate **Student Success**
 - A.10.1 Support student internship success
 - A.10.2 Support student job placement
 - A.10.3 Support career development
 - A.10.4 Attainment of marketable skills
- A.11 for **Personal** reasons (Huttenlock, Dawson, Saracevic and Kanto, 1995)
 - A.11.1 Cognitive reasons
 - A.11.2 Affective reasons
 - A.12.3 Reasons for substitute choices

Fig. 5.2: Overview of class and sub-classes in CLASS A

3.0 Overview of class and sub-classes in CLASS B

B. INTERACTION with the academic library

B.1 Use of **library services**

- B.1.1 Availability and accessibility of the library services – degree of
- B.1.2 Convenient of the services offered – degree of
- B.1.3 Helpfulness of the services offered – degree of
- B.1.4 Staff (knowledgeable, expertise, efficiency etc.) – degree of

B.2 Use of **library resources**

- B.2.1 Convenience in using the resource – degree of
- B.2.2 Effort required in using it – degree of
- B.2.3 Can users access with ease the resources – degree of
- B.2.4 User performance – degree of perceived ability

B.3 Use of **library spaces**

- B.3.1 Space – degree of adequacy
- B.3.2 Physical layout, design, and organisation – degree of quality
- B.3.3 Space for collaborative learning/working spaces – degree of quality
- B.3.4 Comfort, ambience of facilities, well resourced – degree of quality

B.4 Use of **library collections**

- B.4.1 Meet user needs – degree of adequacy
- B.4.2 Currency, timeliness – degree of
- B.4.3 Accessibility - degree of

B.5 Use of **library equipment**

- B.5.1 Technical functioning – degree of
- B.5.2 Availability and clearness of instructions, guides and documentation
- B.5.3 User friendliness, ease of use – degree of
- B.5.4 Difficulty in operating equipment – degree of

Fig. 5.3: Overview of class and sub-classes in CLASS B

4.0 Overview of the class and sub-classes in CLASS C

C. RESULTS of using an academic library service

C.1 Student-specific outcomes

- C.1.1 Recruited for a job
- C.1.2 Enrolled for a degree, or course
- C.1.3 Retained in the present degree or course
- C.1.4 Completing studies in record time
- C.1.5 Graduating
- C.1.6 Learning (outcomes) (Hernon, Dugan and Schwartz, 2009)
 - C.1.6.1 Civic engagement
 - C.1.6.2 Conflict mediation
 - C.1.6.3 Creative thinking
 - C.1.6.4 Critical thinking
 - C.1.6.5 Ethical reasoning
 - C.1.6.6 Global citizenry
 - C.1.6.7 Leadership skills
 - C.1.6.8 Literacy (including information literate)
- C.1.7 Achievement of tests, exams and GPA
- C.1.8 Increasing engagement and class participation
- C.1.9 Finding employment
- C.1.10 Improved earnings and entrepreneurship skills
- C.1.11 Alumni participation and lifelong learning

C.2. Personal outcomes

C.2.1 Cognitive results

- C.2.1.1 Learning something, stretching knowledge
- C.2.1.2 Reinforcing knowledge
- C.2.1.3 Changing viewpoint, outlook, perspective
- C.2.1.4 Getting ideas, perspective, conceptualization how to proceed
- C.2.1.5 Serendipity – getting ideas about different, tangential things
- C.2.1.6 Did not learn anything

C.2.2 Affective results

- C.2.2.1 Sense of accomplishment, satisfaction, success – degree of
- C.2.2.2 Sense of failure – degree of
- C.2.2.3 Sense of confidence, reliability – degree of
- C.2.2.4 Sense of comfort, good feeling, happiness – degree of
- C.2.2.5 Sense of frustration, stress – degree of

C.2 Faculty-specific outcomes

- C.2.1 Recruitment
- C.2.3 Tenure and promotion
- C.3.3 Improved teaching
- C.3.4 Improved research productivity
- C.3.5 More grants received
- C.3.6 Innovation and entrepreneurship

C.3 Institutional-related outcomes

- C.3.1 Institutional prestige and brand recognition
- C.3.2 Accreditation and program review
- C.3.3 Diversity and inclusion
- C.3.4 Internationalisation
- C.3.5 Efficiencies

Fig. 5.4: Overview of the class and sub-classes in CLASS C

5.6 Chapter Summary

This chapter has presented the *Taxonomy of value in academic libraries*, modelled on the *Derived taxonomy of value in using library and information services* (Huttenlock et al., 1995) and informed by emerging literature on academic library value from Oakleaf (2010) to the present. Since 2010, the Association of College and Research Libraries (ACRL) has set out an action-oriented research agenda on the value of academic libraries, to which there has been a slow but useful response (see the last section of Chapter Two). This literature has influenced the Reasons and Results classes in the *Taxonomy of value in academic libraries* presented above. The *Taxonomy* as a whole is crafted from ideas presented in the literature reviewed in Chapter Two.

There are two questions that have not been fully answered in the literature: (i) what are the definitive outcomes that accrue to users when they use academic libraries? (in other words, can libraries claim with certainty that their use contributes to the said outcomes?); and (ii) how do academic libraries align themselves with the overall success of their institutional mandates? In the literature review and where possible, available evidence has been assembled. But the Results arm of the *Taxonomy of value in academic libraries* does not necessarily imply the results are entirely a consequence of the Reasons for academic library use. As has been mentioned previously, the *Taxonomy of value in academic libraries* has not been tested and is only used as a coding source for data collected in this study. It is hoped that its publication will allow scholars in the field to test it and further develop it, especially regarding the aspects that are not the focus of this study.

Chapter 6

Data analysis and presentation of results from Institution A

Higher education is confronting challenges, like the economy is, about the need for a higher number of more adequately trained, more highly adequately trained, more highly educated citizenry.

– Margaret Spellings (n.d.)

6.1 Introduction

This chapter presents the findings from the data collected at institution A. The research instruments used to collect data were document analysis, interviews and questionnaires. The purpose of this study was to explore the value of academic libraries in the face of the changing demands of Higher Education, their institutions and users. The study sought to discover how academic libraries demonstrated their value to their constituencies of students, academic staff and universities.

This chapter presents the results of the research mapped to each user group within Institution A (and Institution B in the following chapter). The results are grouped into three sections: first, the results from the document analysis, second, the results from the interviews and third, the results from the questionnaire. The chapter concludes by summarising the findings and presenting them within the R-I-R framework.

SECTION A: DOCUMENT ANALYSIS RESULTS

6.2 Results of the document analysis

There were two objectives for document analysis in this study. The first research question was: *what institutional outcomes do the university libraries expect for their universities and researchers, regardless of the changing needs of the research terrain?* The second was, *to what extent do the mission statements of the universities demonstrate how their libraries should add value to their institutional goals and objectives?* Appendix One provides a detailed description of the parameters for data collection and the specific data sought for the document analysis. As indicated in the literature review, mission statements have been useful in uncovering the associations between expectations of library services and the goals of institutions (see Allison, 2019; Nous, 2015; Salisbury & Griffiths, 2014; Wadas, 2017). Mission statements have a variety of uses, “including defining the purpose of the institution, communicating with its stakeholders, shaping its strategic planning process, providing a realistic snapshot of its everyday work, and outlining its future goals or objectives (among many others)” (Baker, 2019:35). For present purposes, the mission statements were examined to demonstrate how academic libraries should add value to their students, academics, and universities.

6.2.1 National mandates for universities in Zimbabwe

As indicated in the documentary analysis checklist, the higher education priorities for each country were established to ascertain the mandate that each university was expected to fulfil. For institution A, relevant national legislation and HE policy documents, vision and mission statements, and the library mission statements and mandates were collected and analysed. Appendix Four of this report provides a narrative of the content examination and primary coding and analysis performed on

these records. Coding and analysis made use of ATLAS.ti (see Section 4.8.3). Full details of this process for Institution A are set out in Appendix Four.

6.2.1.1 Higher Education priorities as gleaned from the documents analysed

The national policy documents consulted included the *Transitional stabilization programme (TSP)* (2017-2020) (Reforms Agenda), the *National development strategy 1* (2021-2023), and the *Education 5.0 – Doctrine for the modernization and industrialization of Zimbabwe through education, science & technology to achieve vision 2030*. The coding of these reports, using the taxonomy of value, indicated a prioritisation of teaching (A.3), learning (A.8) and research. For example, the priority areas explicitly announced in the *Education 5.0* policy document are teaching, research, community service, innovation and industrialisation. Other documents also frequently mention the related concept of *learning*. Table A4.2 in the Appendix provides an extract from this coding and review.

6.2.1.2 Institution A: Strategic alliances identified in the documents analysed

The second set of documents analysed were from the university that houses institutional library A. Institution A has a strategic plan for 2019 to 2025, duly aligned with the *Education 5.0 – Doctrine for the modernization and industrialization of Zimbabwe through education, science & technology to achieve Vision 2030*. For example, the preamble of Institution A’s *Strategic plan 2019-2025* states that “the plan, while [it] builds upon past strategic documents and achievements ... also seeks to operationalise the Government of Zimbabwe *Education 5.0* model” (*Institution A*¹⁹ *strategic plan 2019-2025*:4). The finding was that the Institution A’s strategic thrust was aligned with the higher education *5.0* model in the key areas of teaching, research, community service, innovation

¹⁹ Another embargoed reference.

and industrialisation. Table A4.3 in Appendix Four provides the full results of analysing these documents.

6.2.1.3 University library in Institution A: document analysis results

The university library vision and mission statement, strategic plans and reports were similarly analysed to understand the library's contribution to the institutional goals, and to identify the value that the library has for students and researchers in the areas of student learning and student success, faculty teaching and researcher productivity.

Contribution of the university library to the institutional mandate

From the university library's mission statement and strategic plan, it appeared that the library was making a strong contribution to the university's missions and goals (see Table A6.4 in Appendix 4).

Contribution of the university library to students and researchers

The university library strategic plan and published reviews of its services were analysed, focusing on student learning, student success, faculty teaching and faculty research productivity. The coding from the taxonomy was used to identify the contributions that the university library services were making in the interests of students and researchers. The result of this analysis is shown in Table A6.5 in the Appendix. In summary, the results show:

- *Research Productivity* – the library has some services to support research. These include maintaining researcher profiles and a dedicated faculty librarian focusing on “Scholarly Communications” as entry-level support for research and publishing.
- *Teaching* – the library does support teaching.

- *Student learning* – the library offers information literacy skills in direct support of student learning.
- *Student success* – there was no evidence to show the role of the library in this area.

SECTION B: RESULTS FROM THE INTERVIEWS

6.3 Results of the interviews

The interviews targeted the lecturing staff in three academic units, as discussed in Section 4.5.2, above. This Section of the chapter will present analysis of the interview responses in terms of key thematic areas.

6.3.1 Basic information

The following are the basic facts about the interview participants:

Participation

There was a low participation rate among the lecturing staff at Institution A. From a sample target of 148 lecturers, 82 participated (representing 55%) in the online interview (and of these, two chose a Zoom call). Those who participated completed all the questions.

Affiliation within Institution A

The participants were asked to indicate the faculty to which they were affiliated – business, education or health/medicine. Fig. 6.1. below, shows the collective responses from Institution A.

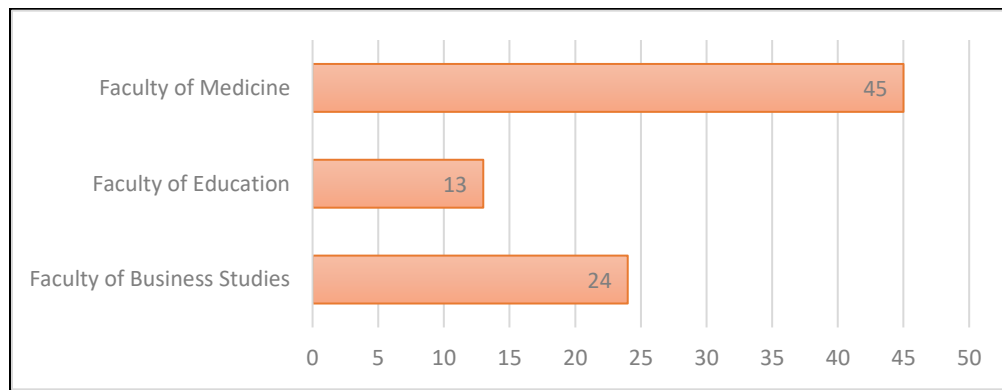


Fig. 6.1: Lecturers/academic staff by faculty affiliations

The affiliation of participants was not used as a data analysis metric in this case. The collective dataset of all the respondents' interactions with academic library services and resources was deemed more valuable for this study. The faculty of medicine/health in institution A had a larger participation in interviews with 45 staff participating.

Teaching responsibilities

Lecturers were asked to state the number of classes they taught in a year. The answers ranged from five classes to 15 classes.

6.3.2 Access to library services

The first set of questions focused on access to library services by the academic staff.

Frequency of accessing library services

The lecturing staff indicated that they did not frequently access library services, with only 17 lectures indicating a recent visit. About half of the respondents (more than 50%) have not accessed

the library for at least a month. Only 30 out of 82 respondents indicated accessing the library service between Yesterday and 1 week.

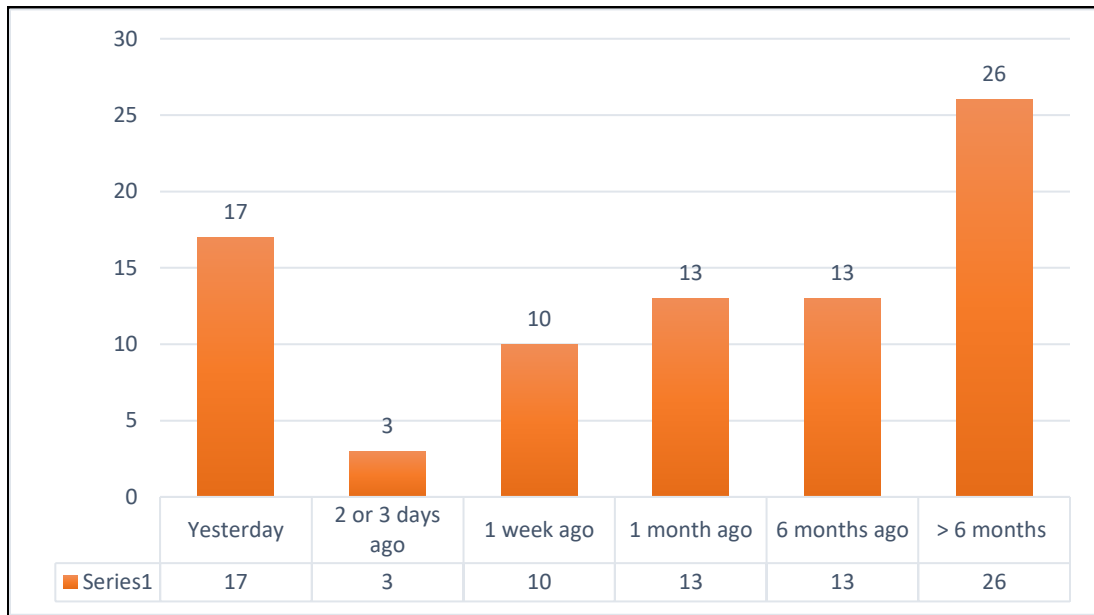


Fig. 6.2: Frequency of academic staff’s accessing library services

Location when accessing library services

The respondents were given a set of choices indicating where they accessed library services, and they were asked to rank them. Respondents could indicate more than one choice, their choices are reflected in Fig. 6.3, below. The respondents who accessed from home were many than other choices and represented 75% followed by access in the faculty office at 35%. The frequency of access is seen in Fig. 6.3, below.

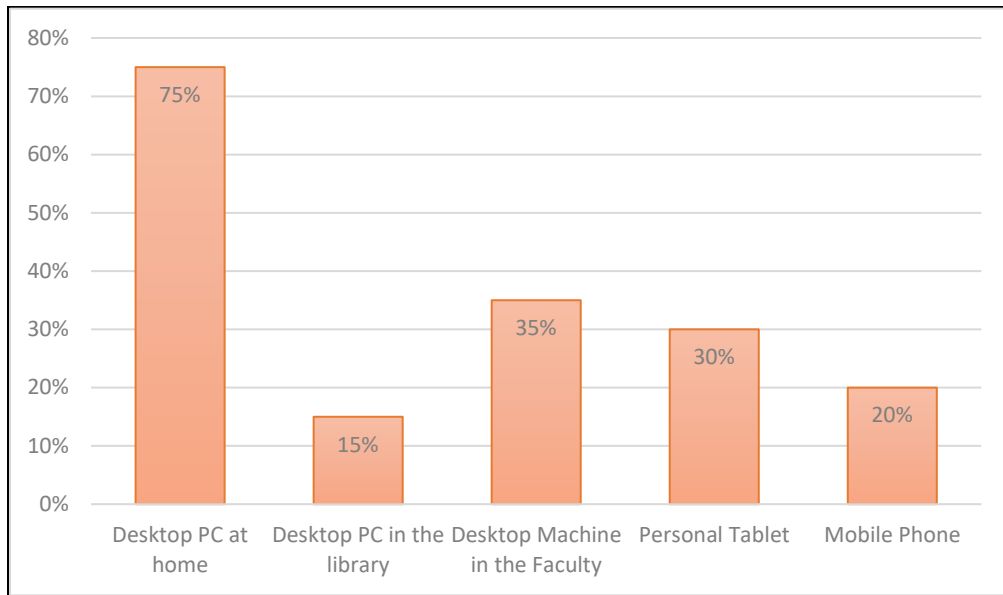


Fig.6.3: Respondents' location when accessing library services

In order to corroborate responses to the physical access questions, an additional question was posed requesting respondents to indicate the frequency of their accessing library websites or online platforms. The response indicated that 6 respondents access the online platforms Once a week, 31 indicating Once or Twice a week and 9 Everyday, that they had online access once or twice a week, representing 56% of the respondents do use the library websites or online platforms.

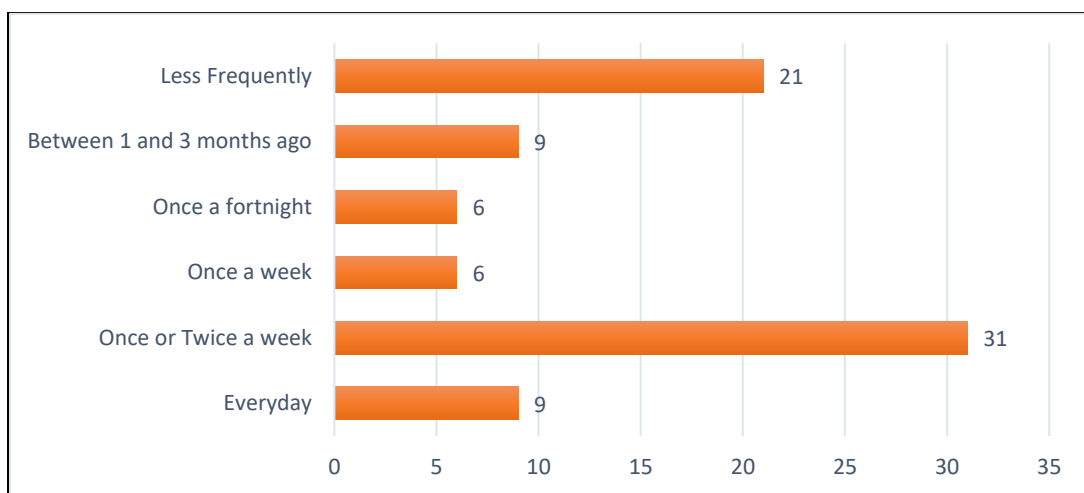


Fig. 6.4: Frequency of access to the library websites or online platforms

6.3.3 Information resources for teaching and learning

The respondents were asked where else besides the library they found information they needed for their classes. The answers to this open-ended question were varied, with the majority of responses indicating the internet and Google. The Tag cloud in Fig. 6.5, below, shows by word size the distribution of responses.

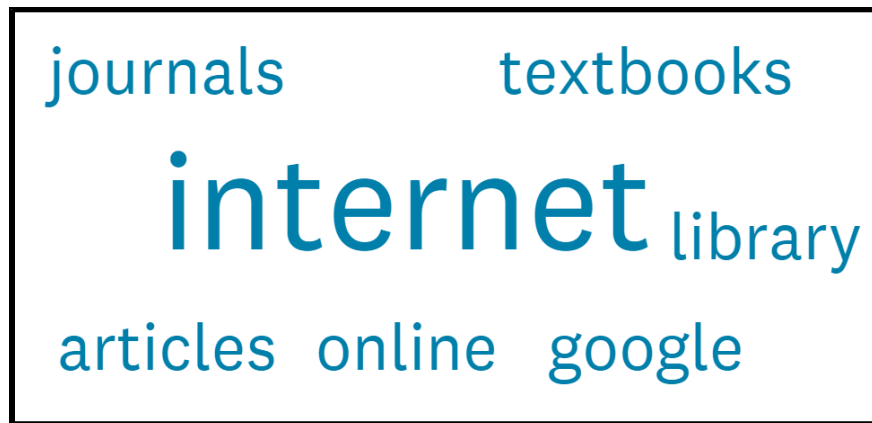


Fig. 6.5: Alternative information sources for teaching

The specific incidence of choices was internet (37%), Google (16%), library (11%), with journals, articles, online and textbooks all at 11%. There were other specific resources mentioned by respondents from the faculty of medicine, such as PubMed, HINARI, Cochrane, “free paediatrics journals which we receive in Zimbabwe”, and the NHI website. It is also noteworthy that most users still indicated the “library” despite being asked for alternative sources, perhaps showing their continuing reliance on and trust in their academic library.

Students citing relevant resources

To a specific question asking whether their students were required to cite relevant resources, 74 out of 82 of the respondents replied YES.

6.3.4 Library and student learning

Teaching staff members were asked about the involvement of the library in student learning, design of the curriculum or the creation of new course outlines. Most of the lecturers indicated that the library was not involved in curriculum design but somewhat in student learning – through learning materials provision. Some of their elaborations on their responses are cited below:

- *“No, they always only request lecturers to submit details of core readers for each course”*
- *“The library is involved to a lesser extent in student learning, not involved in curriculum or creation of course outlines”*
- *“Not sure about design of curriculum and creation of new course outlines”*
- *“No, this is the sole role of the academic staff. However, library staff are supportive in identifying relevant resources they have in stock and call for ordering of current texts and run workshops advising of links to use for accessing needed information”*
- *“Student learning yes, but design of curriculum needs to be done better”*
- *“Library helps with the literature search. trains students on how to use the library and methods for accessing latest literature, etc, ZOTERO”*
- *“Rarely do they participate, theirs is to provide the references and other resources that we request”.*

Regular academic units and library contacts

The follow-up question asked about the relationship between the academic unit (or faculty) and the library, and queried the nature of contacts between the two. Most of the respondents claimed there was no contact, except one or two who indicated a seminar held by the library (“No. However there was a recent course on how to use HINARI” and “no, we don’t hold such meetings. we usually through the faculty request that certain materials are procured by our library”). However, some respondents indicated knowledge of formal interaction platforms available, including the availability of faculty librarians: “We have a faculty librarian who is very helpful when one is searching for research articles”; faculty-librarian meetings: “There is a library committee in the Dept of Paediatrics which is supposed to play this role”, and “Not as much, but yes on faculty boards”. These responses indicated that there were established, calendared meetings between the

library and teaching units, which could be further exploited by both parties for the purposes of collaboration.

Materials on reserve or reading lists

The lecturing staff were asked if they placed materials essential for students on reserve for easy access in the library. Most of the respondents indicated YES, with some qualifying their responses as follows:

- “*Yes. We request for certain core books to be placed on reserve*”
- “*Yes, there is a reserve section where students have easy access to material on reserve*”
- “*Yes, but mostly online*”
- “*Yes, they are available, those on reserve are usually the books on high demand and are in limited quantity*”
- “*Yes, these special books are in great demand*”
- “*Yes, there is a very large reserve section in both the main library and faculty library*”.

Integration of library resources with course manuals

The follow-up question requested respondents to indicate if manual materials that were available in the university library were integrated into courses and 75 out of 82 (representing 91%) respondents answered YES, although there were a few (9%) who indicated NO. Some of the reasons for saying No included, “*Not really. Information on what is available in the library is not routinely shared. So, in most cases, I am not sure what is available and what is not*”; “*This is done separately by the library staff*”.

6.3.5 Library services to support staff publishing

The third research question sought to understand the contribution of the university library to research productivity or academic staff publishing. The interview guide had six sub-questions related to publishing (see Appendix 2).

Nature of publishing

The respondents were asked to indicate the distribution of their published research outputs in journals and elsewhere. Their responses are shown below.

Research Output	Response
Academic Journals	96 %
Book Chapters	70 %
Books	44 %
Patents/and other	0%

Table. 6.1: Research outputs at Institution A

Table 6.1 shows that academic staff at Institution A publish more academic journal articles than any other research outputs.

Role of the university library in publication

The respondents were asked to comment on the role of the university library in their publishing. In response, they indicated that the library supported them in their publishing journeys by accessing the materials they needed to review the literature, indicating in which journals to publish (or helping with accreditation data), providing reference management tools (such as Zotero), and supporting reference searches. Below are selected verbatim responses,

- *“Assisted with literature search during the process of conducting research”*
- *“Assisting in access to research materials”*
- *“Direct the journals to publish with”*
- *“Pointing to Research grants information”*
- *“Giving accredited and recommended journals”*

- *“Most literature search done on library website”*
- *“The librarians are always ready to help with accessing the articles”*
- *“The library provides reference materials thus facilitating my completion of papers for publication”*
- *“Citations needed in papers submitted”.*

Librarians’ role in publication

A specific question was posed to ascertain whether librarians had a role in the publication of respondents’ work. Most of the respondents said NO. A few respondents indicated a reason to support their response, for example: “No, besides assisting with research articles”; “No, only personal support from librarians to use library facilities better”; and “No, their role ended in identifying latest publications and databases needed”.

Contribution of the library to your tenure, promotion judgments and research grant decisions

The respondents were also asked about the contribution of the university library to their tenure, promotion and research grant-related decisions. All respondents answered NO to the question; there was no recorded contribution of the library to academic staff obtaining tenure, promotion, or research grants. This appears to present opportunities for librarians at Institution A to explore such service.

6.3.6 Perception of the value of the academic library service

The interview concluded with a direct question about the value of the academic library. The respondents were asked what they thought would happen if the academic library in their university were to shut down, and how it might affect their work and that of their students. All the respondents indicated that this would have a very negative impact on teaching and learning at the university.

These are some of their verbatim responses:

- *“A lot, because students depend on the library for studying and accessing reference readings material”*
- *“We may be unable to access journal articles and current books”*
- *“Students would be negatively affected”*
- *“In a great way, most of our students depend on the library from the books and journals that they access to using the library computers”*
- *“Very much affected”*
- *“They would depend some free journals on internet, though would miss high impact and some referred journals which are critical for them to produce high quality work”*
- *“The university will close. Library is a critical part of the learning”*
- *“Not sure about students, but my work may not be affected a lot”*
- *“Physical library - minimal effect Electronic library - detrimental effect”*
- *“Since an academic library is an essential part of a higher learning institution, therefore absence this service would be a disaster”*
- *“We will have no references to get information from so, it is a very essential service to us”.*

These responses indicate the views of academic staff regarding the importance and value of library services for their students and for the teaching role of academic units.

SECTION B: RESULTS FROM THE QUESTIONNAIRE

6.4 Results of the Questionnaire

The questionnaire was distributed to graduate students in the three selected academic units at Institution A. The findings are presented in the following paragraphs.

6.4.1 Basic information about the respondents

The following are the basic details about respondents requested in the questionnaire. There were 123 graduate students participating in this survey, representing a 68% participation rate against a target sample size of 180 (See Section 4.4.3.1 above on the discussion on the sample size).

Participants by age group

The age groups of the respondents are depicted in the graph below. Most of the participants were in the age range of 30-44 years, and the average years for postgraduate students was 34.5. The highest participation by age group was age range 30-44 years (58 respondents or 47%), followed by range 45-60 years (47 respondents or 38%), the other groups are shown in Fig.6.6 below.

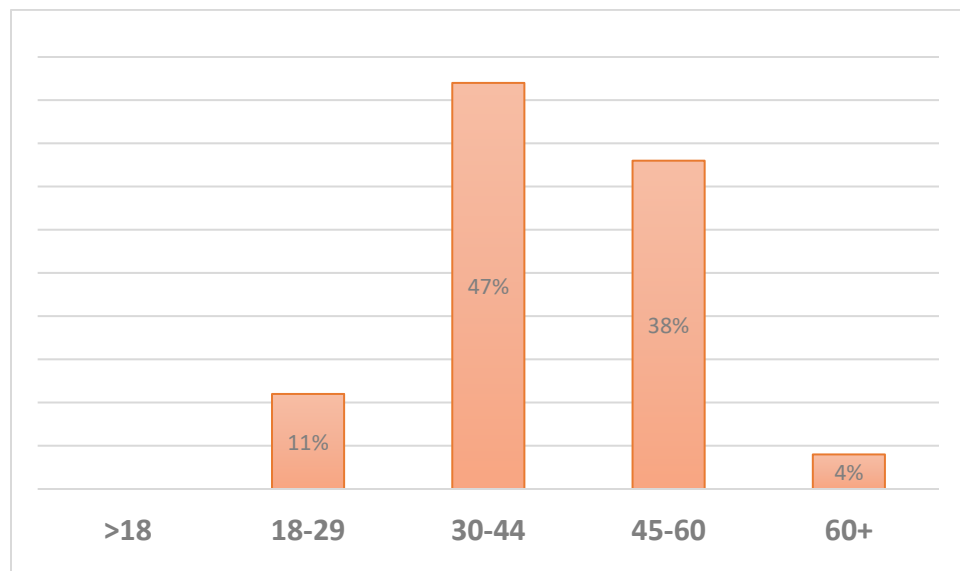


Fig. 6.6: Participants by age group

6.4.2 Access to the library service

Visit to the library

The graduate students were asked if they continued to visit the library (or use library services), to which 78 % (96 respondents) responded that they did and 22% (27 respondents) said NO. They were asked about the frequency of their visits, and those who chose to provide further details clarified their responses as shown in Fig. 6.7, below.

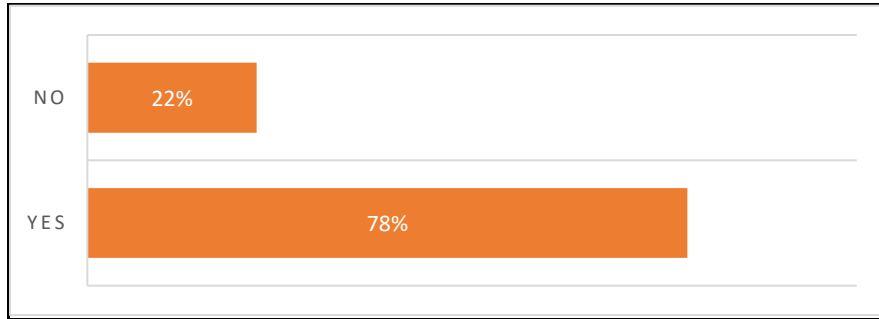


Fig. 6.7: Visiting the library (physical or online services)

From the five options shown in Fig 6.7b, below – yesterday, two or three days ago, one week, one month and six months – the most popular choice was “1 week ago” with 65 respondents (representing 53% of the questions’ response), followed by 1 month ago with 19 responses (or 15%). Adding together “yesterday” and “2 or 3 days ago” gives 32 respondents (or 26%), which is far less than “less than one week ago” at 53%. This means that only some 21% (1 month ago and 6 months ago at 19 and 7 responses respectively) do not visit more often than monthly.

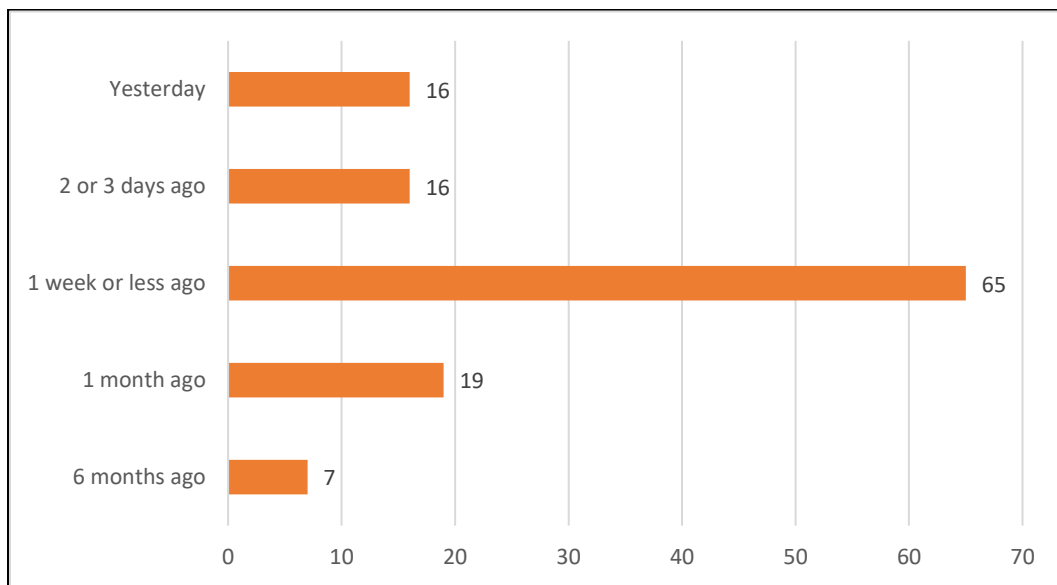


Fig. 6.7b: Frequency of the visits

A follow-up question was posed as to why they did not use the service more often. The reasons given included:

- *“Most of the articles and literature I need are available on Research4life”*
- *“I just don’t want to”*
- *“I do use these, only not in recent months”*
- *“Because I can access most of what I need online”*
- *“It’s time-consuming when you need information urgently”*
- *“I use Google Scholar and online journals for access to free articles”*
- *“I access all requisite material online elsewhere”*
- *“My research is highly dependent on academic papers which can be found online”*
- *“Prefer electronic sources which are usually not available in the library”*
- *“Using other resources provided by research supervisors”*
- *“Difficult to access while I am not on campus.”*

These responses show that users have alternative online sources of academic information (see Fig. 6.14, below) that obviate the need to visit the library. This issue was further interrogated in the questions that followed.

Access to the library website or online portals

The respondents were asked about their use of the library online portals and web services, and they were given free options to indicate choices. A percentage of 80% (98 respondents) confirmed their use of the library online portal, while 20% (25 respondents) did not. They were then asked how they accessed the library portals. As can be seen in Table 6.2, most of the students access the resources from their personal tablet or laptop (48% or 59 respondents), followed by their personal laptops at home (38% or 47 respondents). A sizable number of students indicated that they accessed the library portals on mobile telephones (31% or 38 respondents). This indicates that mobile-based services are frequently used at Institution A. The statistics indicate a high degree of private access.

Location of Access	Result
Desktop PC or Laptop at home	38 %
Desktop PC or Laptop in the library	10 %
Desktop PC in the faculty	10 %
Personal Tablet or Laptop	48 %
Mobile Telephone	31 %
Other (Please Specify)	3 %

Table. 6.2: Access by location or device

A graphical view of these statistics is presented in Fig. 6.8, below.

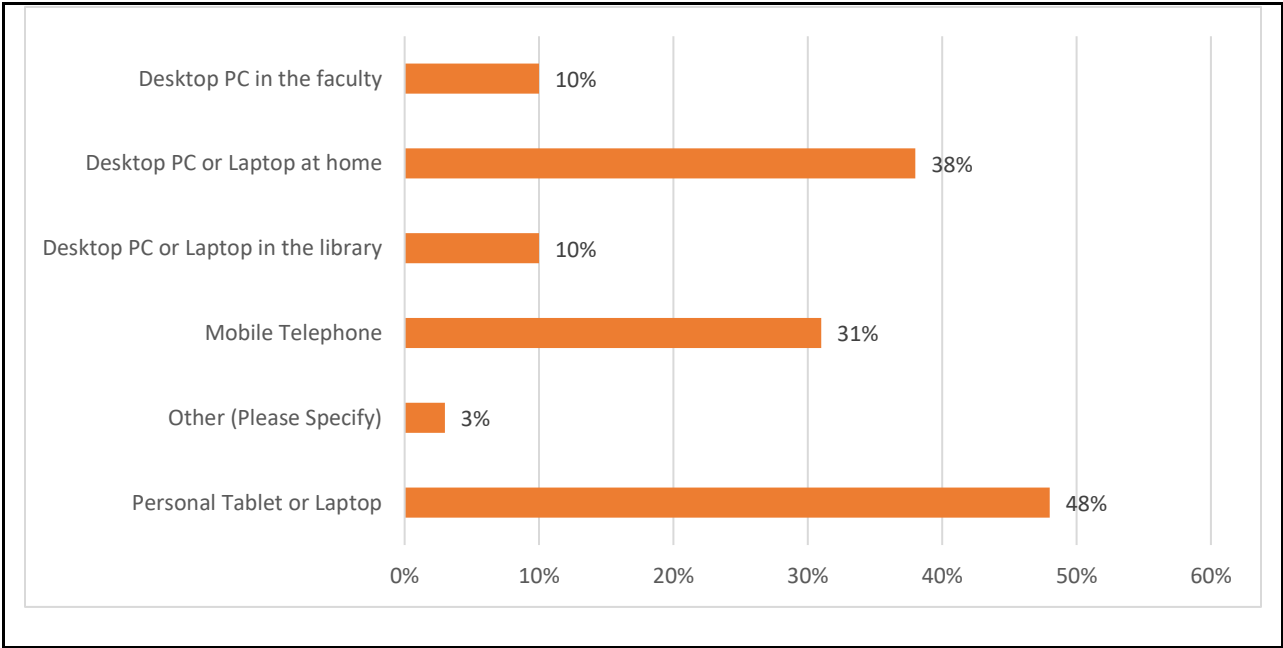


Fig. 6.8: Access by location or device

Frequency of access to library website or portals

A clarifying question sought to establish the frequency of accessing the online portals. The question was answered by 102 respondents and their frequency is depicted in Fig. 6.9, below.

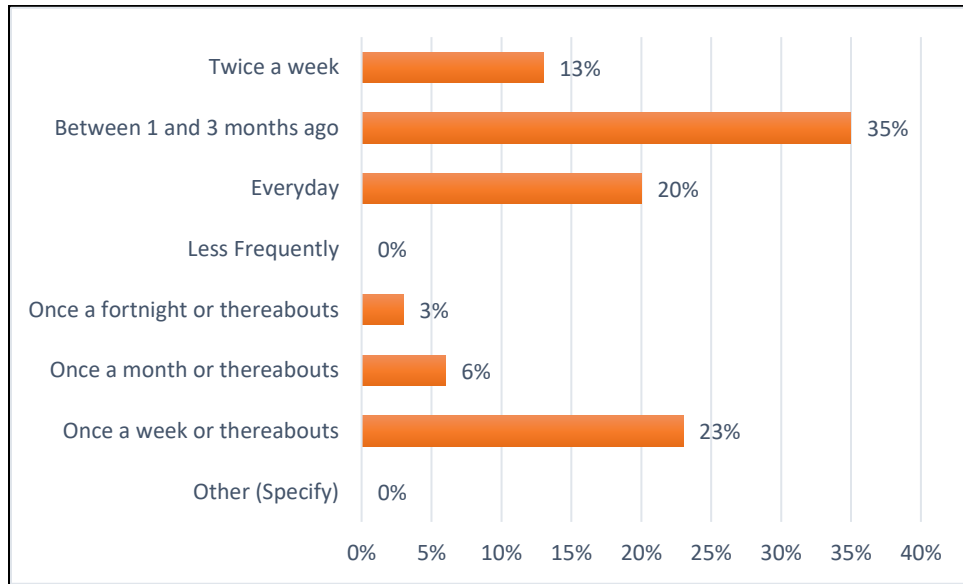


Fig. 6.9: Frequency of access to online portals or website

The largest response in Fig.6. 9 was less frequent (Between 1 and 3 months ago) at 35% (about 36 respondents), followed by “Once a week or thereabouts” at 23% (or 23 respondents). These figures indicate a high percentage of infrequent access to the library website and its portals among graduate students at Institution A.

6.4.3 REASONS for using the library service

The respondents were asked to give their three most important reasons for using the library service.

Table. 6:3: depicts the results of their choices.

REASONS for using the library services	Responses
Availability of computers or electronic resources	57%
Availability of specific materials or information	77%
Convenient location	22%
Comfortable surroundings	14%
Group study space	12%
Hours of operation	20%
Helpfulness of the library staff	22%
A place to meet with friends	6%
Quiet place for study	60%
Other (specify)	9%

Table. 6:3:Reasons for using the library services

The top three reasons for using the library were availability of specific materials or information (77%), quiet space for study (60%), and availability of computers and/or electronic resources (57%). At institution A, respondents valued materials and library space above other reasons for using a library service. Less appreciated considerations included convenient location, collaboration spaces (group study space and a place to meet friends) and the helpfulness of librarians.

6.4.4 Frequency of requested/selected services used in the last 12 months

The respondents were asked to indicate how often they had used certain library services in the last 12 months. Table 6.4 collates the respondents’ answers to this question.

SERVICE REQUESTED	VERY OFTEN	OFTEN	OCCASIONALLY	NEVER
Used the library as a quiet place to read or study materials you brought yourself	28	21	53	21
Asked a librarian or staff member for help in finding the information you want	4	25	42	52
Read assigned material other than textbooks in the library	10	50	29	34
Used the library resources to compile a bibliography for assignment or research work	36	22	31	34
Used a library computer to do research	10	18	32	63
Accessed the library Wi-Fi and library network for information access purposes	59	24	21	17

Table. 6.4: Services used in the last 12 months

In the above table, it can be seen that the three services claimed to have been used most often requested in the previous 12 months were “The use of the library as a quiet place to study” (28 responses in the Very Often category) , “Used the library resources to compile a bibliography for assignment or research work” (36 responses in the Very Often category) , and “Accessed the library Wi-Fi or network” (59 responses in the Very Often category). Service usage rated below 10% were computer services, reading other materials, and seeking help from librarians. It seems that at Institution A, users were highly focused on self-directed study.

Specific library services used in the past 12 months

A follow-up question asked the users to identify and rank the services they had used in the past 12 months. Fig. 6.10, below, portrays the responses given.

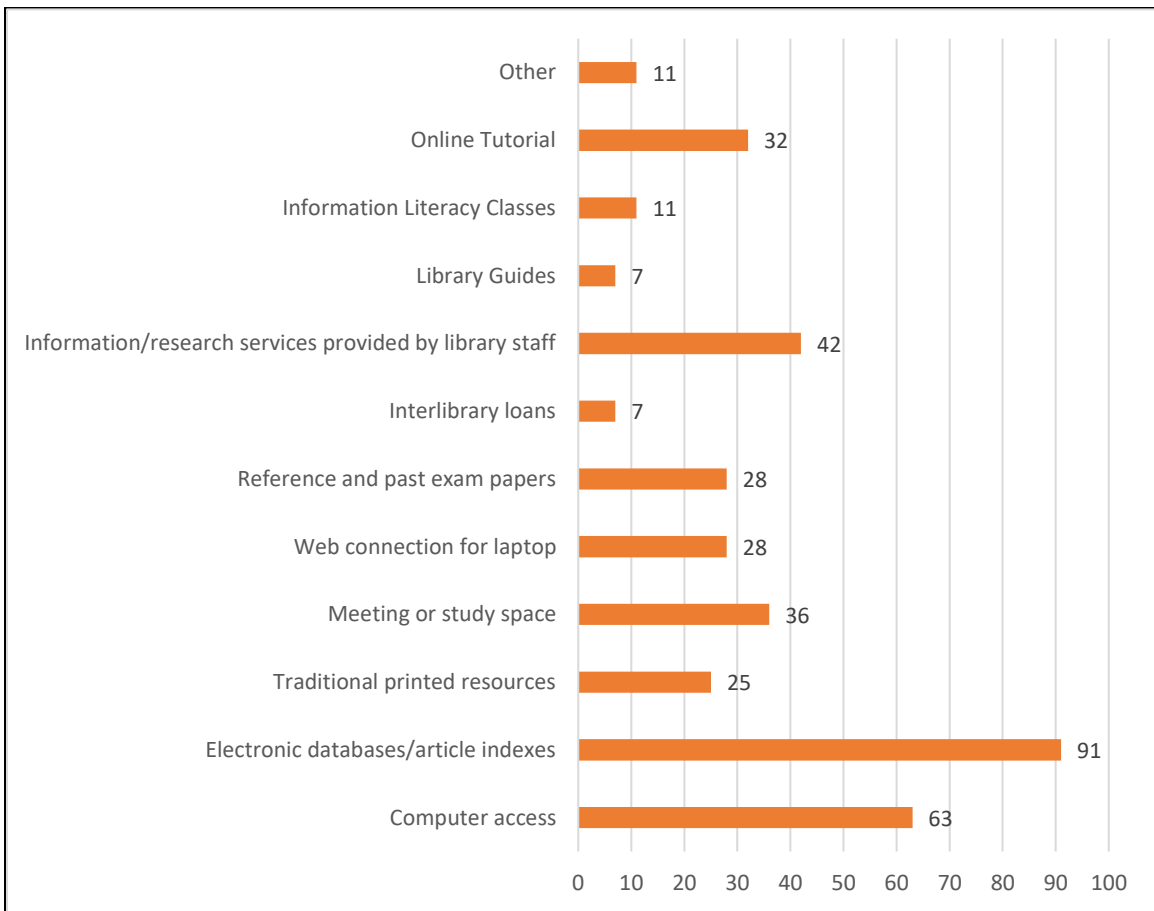


Fig. 6.10: Specific library services used in the previous 12 months

The most popular service identified by the users was the ‘Electronic databases/article indexes’ (91 responses or 74%), followed by ‘computer access’ (63 responses or 51%) and ‘information/research services provided by library staff’ (42 responses or 34%). ‘Meeting or study places’ and ‘online tutorial services’ were the next most popular resources at 36 and 32 responses, respectively

(See Fig.6.12 for study spaces comparison). These responses indicated that respondents were most interested in resources (journals and computer access) to facilitate learning.

Helpfulness of library staff

The survey asked respondents to describe the helpfulness of library staff in terms of their needs. Most likely needs were provided on a scale (with an option for respondents to include additional areas). The staff were helpful in ‘finding the needed resources’ for the respondents. The staff were helpful in ‘supporting students to find books, journals and web resources’ (71 responses or 58 %), ‘use of online/electronic journals’ (91 responses or 74%) and ‘citing sources’ appropriate for assignments and research (61 responses or 49%). The full range of responses is tallied in Fig. 6.11, below.

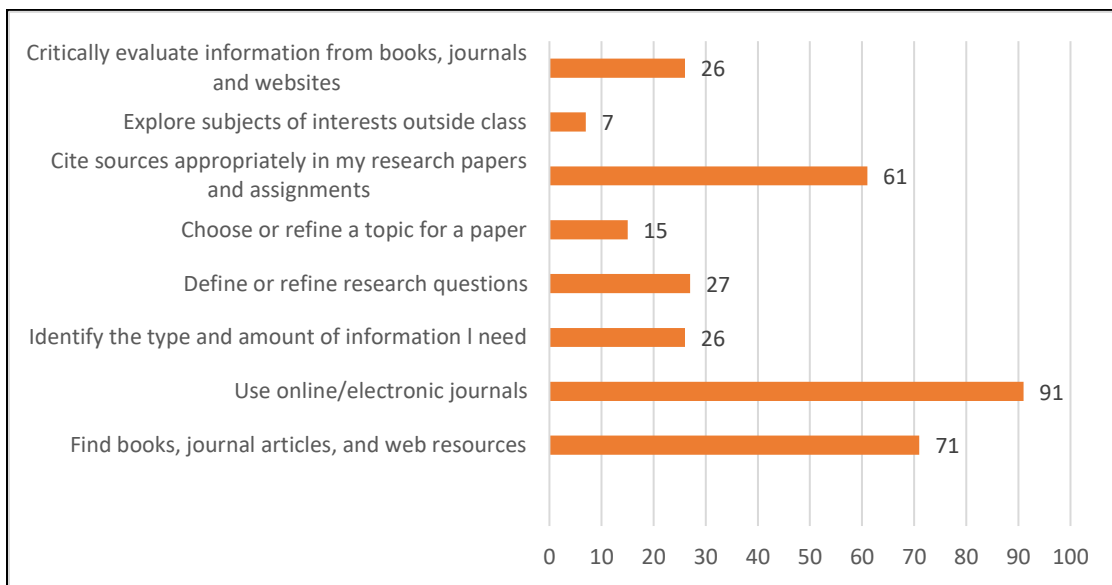


Fig. 6.11: Helpfulness of staff in identified areas

Services that need improvement

A follow-up question provided a list of services and asked respondents to indicate which ones they thought needed improvement. This question allows respondents to indicate the service of choice that they would like the library to improve, at the same time indicating their appreciation of or need for that service. The services listed were access to the library wireless network, access to physical collections, access to online databases, more library computers, library opening hours, library staff support to students, silent study areas and collaborative learning spaces. These were to be ranked on a tripartite scale – ‘service is great’, ‘needs minor attention’ and ‘needs to be improved’. Fig. 6.12, below, shows the aggregated individual responses.

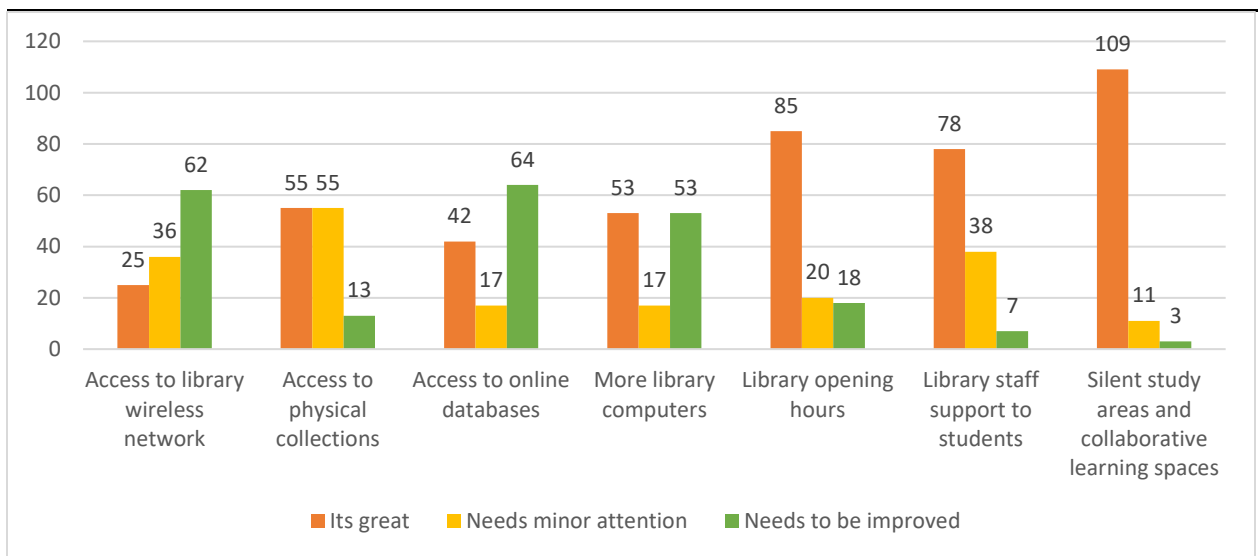


Fig. 6.12: Graduate student evaluation of services that need improvement

The three services deemed most to require improvement were: access to the library wireless network (62 responses or 50%), access to online databases (64 responses or 52%) and more library computers (53 responses or 43%). The rest of the services were rated positively by the participants. The library study spaces were the top ranked as the best with 109 respondents (86%) indicating it is a great service

Alternative sources of information

Students were also asked to say where else they found information for academic purposes. Fig. 6.13 shows that Google and Google Scholar are the top alternative sources of information.

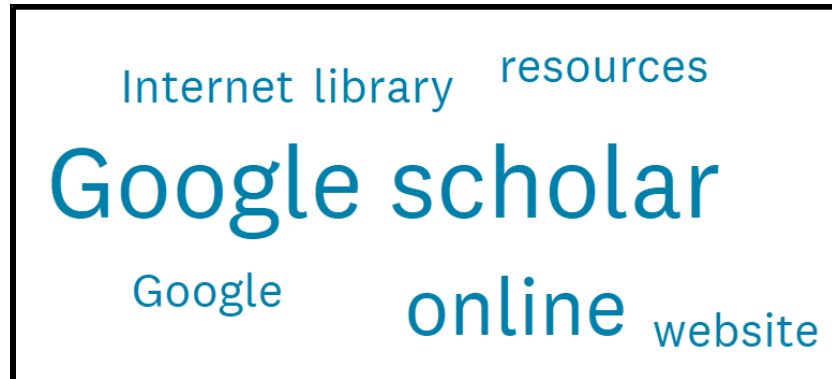


Fig. 6.13: Alternative sources of information

The responses indicated in the word cloud in Fig. 6.13 are those with more than 8% (answers of more than 9 respondents) of votes from the respondents. Among the less frequent citations were the ResearchGate website, ChatGPT or using AI, and the databases HINARI and NCBI.

6.5 The academic library and student learning

The role of the academic library in student learning was one of the areas of investigation in this study. Three questions focused on the contribution of the library to student learning, student participation in library instruction programmes, and, specifically, the role of library instruction programmes in student learning. The respondents were asked to provide feedback about whether library services were making a difference to their learning. Students were asked if they had participated in library instruction programmes or taken information literacy skills courses. 95

students (representing 77%) indicated that they had participated in such programmes, thereby setting a good foundation for the subsequent questions.

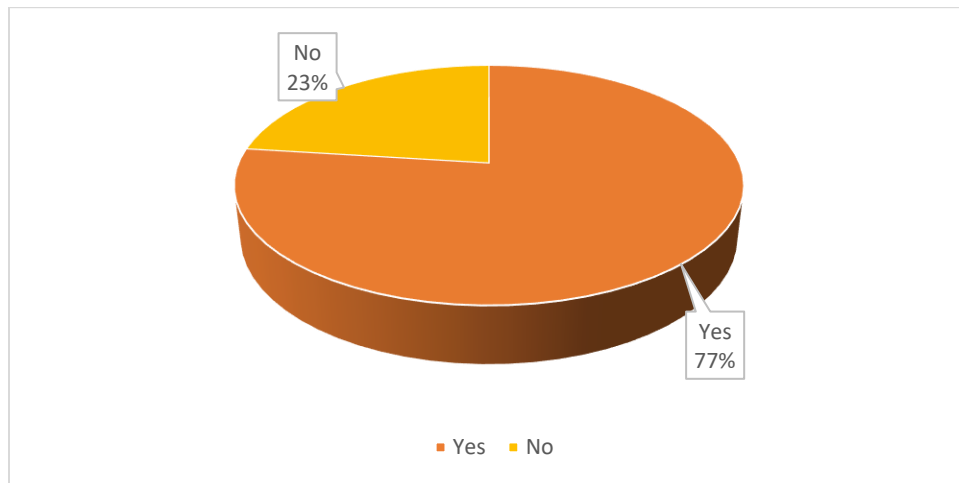


Fig. 6.14: Participation in library instruction programmes

The respondents who chose the ‘yes’ option were asked to expand upon their choice by ranking the importance of library instruction programmes for their learning processes. Their feedback is noted in Fig.6.15, below.

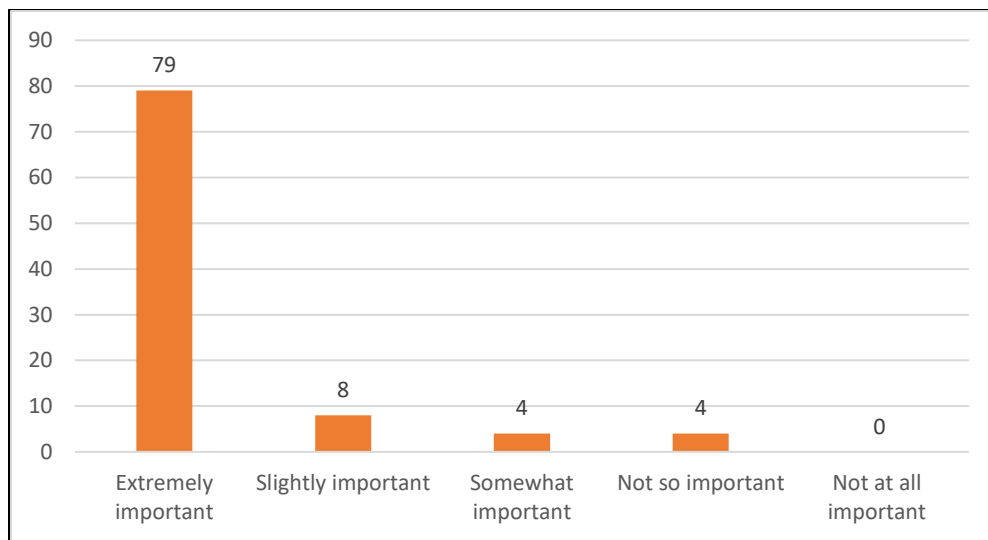


Fig. 6.15: Students' view of library instruction programmes

The responses show that students keenly appreciate library instruction programmes, with 79 students (representing 83%) indicating that the programmes were extremely important.

6.5.1 Contribution of the library to student learning

The following learning outcomes were provided for students to indicate the contribution of the library to their achievements: achieving good graduation grades, timeously completing assignments, successfully completing each year or academic year and continuous lifelong learning. Participants were asked to rank the contribution of the academic library to the various learning outcomes.

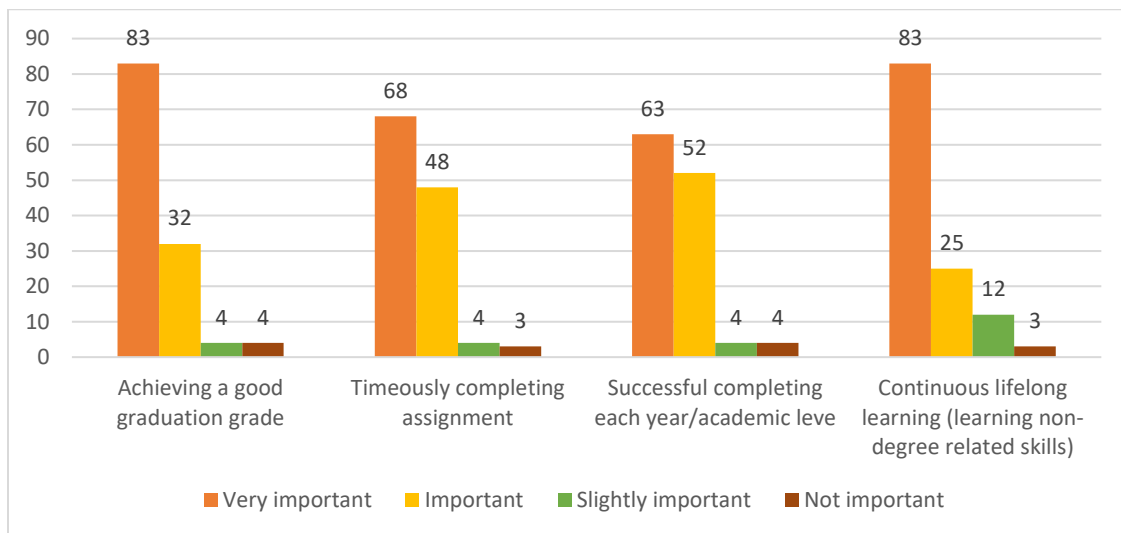


Fig. 6.16: Contribution of the library to student learning

Fig. 6.16, shows the respondents' views on how the library contributed to their learning, notably in the promotion of lifelong learning (83 respondents or 67%) and achieving a good graduation grade (83 respondents or 67%). These responses affirm the role of the library in student learning, confirming observations noted in the literature on the contribution of libraries to student learning. Students also indicated highly rated timeous completing of assignments (68 respondents or 54%) and successful completion of each year (63 respondents or 51%).

6.5.2 The difference the library or its services make to study or learning at the University

The respondents were asked for specific examples of how the library or its services made a difference to their learning at the university. Most of the students (53% of the respondents) could cite an example of library services that had made a difference in their studies. Among those who answered YES, examples given including the following:

- *“Assignments were much easier in terms of completing them because information was searched in a logical way, and it makes it easy to find information”*
- *“I am able to cite and write my assignments with no complications”*
- *“Advised how to cite on my thesis and research question”?*
- *“Easier access to a convenient environment for study”*
- *“As a student the lecture clearly describes how a student may be able to access online databases, how to account for the research results and it provided a glimpse on how to research for academic purposes and the lecturer gave a few examples of the search engines that cater for academic purposes. Also being taught how to write for academic purposes proved to be vital in assignment writing and this can all be linked to Literature review as a sub-module to improve the writing skills of students. In addition to the above, lecturers emphasized on academic integrity, referencing among other factors”*
- *“Access to computers for my research and assignments really helped me a lot”*
- *“I learnt how to do different citations to my academic work”*
- *“It provides a quiet place for individual study”*
- *“It gives reliable and UpToDate information”*
- *“Improved surroundings for studying”*
- *“The library together with the Postgraduate Centre organised training course on online reference. Research and manuscript writing. I found it very important”*
- *“Online resources, identifying free resources and free referencing software”*
- *“Proper use of electronic library resources”.*

These examples indicate the extent to which the students valued the university library for its assistance to them in learning and studying.

6.5.3 Academic library and learning skills

The respondents were provided with a predefined set of library skills needed for learning (there was an option for them to add additional skills), and they were asked to indicate the ones that they

would like to improve. The results indicated that the desire for improvement was highest for their ‘Citation and reference skills’ (48%), ‘Literature searching’ (44%), and ‘Critical thinking’ (44%) skills. The aggregated responses are presented in Fig. 6.17, below.

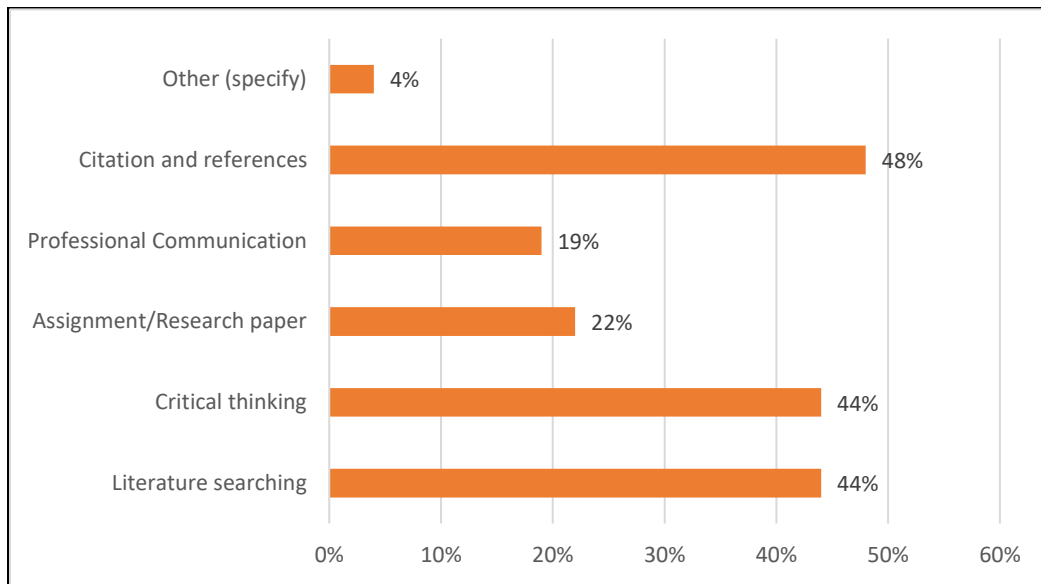


Fig. 6.17: Library and learning-related skills that should be improved

The responses to this question showed that the students valued the various skills the library has to offer of relevance to their learning path. There was a follow-up question asking how the students located reference literature, background or documentation they needed for their assignments or theses. The results are depicted in Fig. 6.18, below.

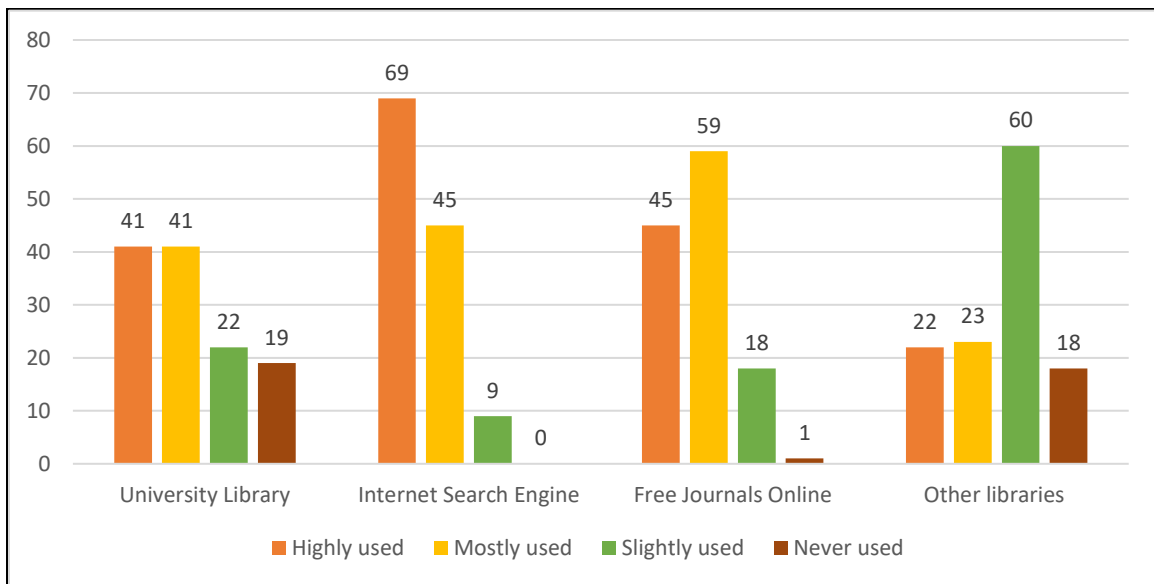


Fig. 6.18: Means used to locate literature

The most widely used means of locating literature was ‘Internet search engine’ (69 respondents or 56%), followed by “Free journals online” (59 respondents or 47%) and “University library” (33%). As many as 14.81% of the respondents indicated that they “Never” used the library for locating literature. Some indicated their use of libraries “other” than the university library.

6.6 Findings presented in the form of R-I-R framework at Institution A

The first, thematic level of analysis of the data is presented in the above sections. As discussed in Chapter 4 (Section 4.8, above), the second level of analysis of data involved using the *Taxonomy of value in academic libraries* hierarchies to code the responses received, so as to explain them in terms of the Reasons-Interaction-Results framework. The coding was done automatically using the ATLAS.ti software. The relevant sections of the *Taxonomy of value in academic libraries* were used and mapped into a “code book structure” in ATLAS.ti to code as datasets (Appendix 5 of this report provides a summary of this process).

6.6.1 Results from Institution A mapped against the taxonomy classes (interview data)

Selected full-text responses for the interview dataset from institution A were collected and coded (as discussed in Section 4.8, above). A summarised presentation of the responses in the R-I-R format appears in Table 6.4, below. The analysis shows that the reasons why academic staff at Institution A use the library are mainly to support their teaching roles and to access resources for their research. Analysis of the comments indicates that their reasons for interacting with the library services are to ensure that their students access the collections that support teaching and learning. In the *Taxonomy of value in academic libraries*, CLASS C for RESULTS features four groups. These are student-specific outcomes, personal outcomes, faculty-specific outcomes and institution-related outcomes. The results from analysis of the interviews show that in the R-I-R framework, academic staff results for using the academic library are related to “C.3.3 improved teaching” and “C.3.4 improved research productivity”.

CLASS A – REASONS	CLASS B – INTERACTION	CLASS C - RESULTS
<i>For codes used refer to the Taxonomy, in Section 5.4.2 above</i>	<i>For codes used refer to the Taxonomy, in Section 5.4.2 above</i>	<i>For codes used refer to the Taxonomy, in Section 5.4.2 above</i>
Relevant online resources and public media (A.3.2)	I use the laptop at home and in the office (B.1.2); (B.5.1)	Usually, I get all the material for my research work. (C.3.4); (C.2.1.4)
Current Articles in referred journals on internet and on institutional library resources (A.3.1)	I use a personal laptop (B.1.2)	yes, I leave all the necessary DOC AND MY LECTURES IN THE LIBRARY FOR THE STUDENTS TO ACCESS. I also help recommend the appropriate books for the students (C.3.3); (C.2.1.4)
textbooks, latest literature from internet, HINARI, and free pediatrics journal which we receive in Zimbabwe (A.3.2)	my laptop with access to library Wi-Fi service (B.1.2); (B.5.1)	yes, by providing lessons, support by sending research material on email (C.3.3)
learning purposes- pub med, colleagues from other countries forward articles upon request, google scholar, internet in general (A.3.2)	Some are in the library (B.1.2). I share with the students most of the materials because they usually don't have internet access (B.2.3)	its involved to a lesser extent in student learning, not involved in curriculum or creation of course outlines. (C.3.3)
library helps with the literature search. trains student on how to use the library and methods for accessing latest literature, etc., ZOTERO (A.3.2)	some is in the library if not I direct them to relevant websites (B.5.4)	yes. there is actually a course which is facilitated by the library on that area (C.3.3)
	No, they always only request lecturers to submit details of core readers for each course (A.3.2)	we were taught how to use search engines (C.3.3)
	ILS for new students	assisted with getting articles for reference (C.3.4)
	Sometimes but have connectivity challenges. Some hard copy texts are there but most are quickly become outdated.	the library provides reference materials thus facilitating my completion of papers for publication (C.3.4)

Table 6.5: Sample presentation of the interview data

6.7 Summary of findings from Institution A

The results from institution A can be divided into three groups according to the research instruments used.

6.7.1 Document analysis results

Institution A's library strives to meet the teaching, learning and research needs of the students and academic staff. Document analysis revealed that the strategic thrust of the university library dovetails with the vision and strategic goals of the parent institution, which are aligned with the goals of higher education in the country. The *Education 5.0 – Doctrine for the modernization and industrialization of Zimbabwe through education, science & technology to achieve Vision 2030* is the policy that guides higher education in Zimbabwe. Examination of the University Library Strategy, Vision and Mission revealed that the library has aligned its services to meet the needs of the institution that houses them and the HE needs of the country. However, regarding the four elements of academic library value examined in this thesis – student learning, student success, faculty teaching and faculty research productivity – the university library in Institution A needs to explore further how best to serve its clients. Even though both students and lecturers appreciate the library service in these areas, it appears that the services could be substantially improved in the light of these findings.

6.7.2 Interview results

The interviewees were researchers and/or lecturers from Institution A. They acknowledged that the university library played a crucial role in their work and the education of their students. They accessed the library's online resources regularly and used materials from the library for teaching and research purposes. The librarians provided support, such as directing them to relevant resources and placing essential materials on reserve. The library also contributed to their

publication efforts and applications for research grants. If the library were to shut down, their work and the education of their students would be seriously affected.

6.7.3 Questionnaire results

The students surveyed indicated that they primarily used internet search engines to locate reference literature for their assignments or theses, yet nevertheless frequented the university library. What attracted them most to the library were electronic journals, library spaces and access to the library network. They also acknowledged the library's appreciable contribution to achieving a good graduation grade, continuous lifelong learning and completion of assignments. Most of the respondents participated in library instruction programmes or classes on information literacy skills.

6.8 Chapter summary

This chapter presented the results of the research carried out at Institution A via three methods: document analysis, interviews and a questionnaire. Section A focused on the results obtained from the document analysis, Section B focused on thematic analysis of the results of the interviews with academic staff, and Section C on analysis of the postgraduate student questionnaire. In the last section, the chapter used grounded theory analysis based on the theoretical framework employed for the study. The chapter concluded by summarising the research results obtained from Institution A. The following chapter will use the same structure to present the results from Institution B.

Chapter 7

Data analysis and presentation of results from Institution B

The power of education extends beyond the development of skills we need for economic success. It can contribute to nation-building and reconciliation. – Nelson Mandela (Mandela;1997, n.p)

7.1 Introduction

This chapter presents the results of data collected at Institution B. As similar to Institution A, (discussed in the previous chapter) the three research instruments used to collect data were document analysis, interviews and questionnaires. The Chapter is organised according to these categories.

SECTION A: DOCUMENTARY ANALYSIS RESULTS

7.2 Results from the document analysis

There were two objectives for document analysis in this study. The first research question was: What institutional outcomes do the academic libraries expect for their universities and researchers, regardless of the changing needs of the research terrain? The second was, to what extent do the mission statements of the universities demonstrate how their libraries should add value to their institutional goals and objectives? The review of the literature revealed the generic framework governing higher education institutions in South Africa where Institution B is situated. As shown in the previous chapter, the document analysis was subject to the parameters of data collection that are set out in Appendix 1. After examining the policy landscape and expectations of HE in South Africa, the study proceeds to review the mission statement of Institution B. The goal was to

examine the extent to which library services were aligned with the goals of the University and to understand clients' expectations of those services. As noted earlier, mission statements fulfil a variety of functions, "including defining the purposes of the institution, communicating with its stakeholders, shaping its strategic planning process, providing a realistic snapshot of its everyday work, and outlining its future goals or objectives" (Baker, 2019:35). In this study, the mission statements were examined to ascertain how the academic libraries should add value to the experience of students, academics and their universities.

Full details of the documentary analysis for Institution B are set out in Appendix 5.

7.2.1 National mandates for universities in South Africa

The South African higher education landscape, as adumbrated in Section 2.2.2, above, has emerged from a background of historical imbalance entrenched by apartheid. The South African democracy born in 1994 has made a concerted effort in the past three decades to unify the sector in terms of governing arrangements, quality assurance processes, funding arrangements, enrolment planning and qualification types (Department of Higher Education and Training, 2012). Document analysis aimed to establish the higher education priorities in the country for all universities in order to determine what role Institution B was expected to fulfil. For this purpose, relevant national legislation and higher education policy documentation, Institution B's vision and mission statements, and the library's mission statements and mandates were collected and analysed. The reports were collated, uploaded to ATLAS.ti and coded, as explained in Section 4.8.3 of this report.

7.2.2 Higher education priorities gleaned from documents analysed

In South Africa, the Department of Higher Education and Training (DHET) is responsible for determining national policies in higher education. DHET relies on the Council on Higher Education (CHE) for policy and quality assurance advice. The CHE is an independent statutory body established by Act of Parliament, the Higher Education Act, no. 101 of 1997. The Higher Education Act gives the CHE the power to issue periodic reviews on the state of higher education in South Africa and “publish information regarding developments in higher education, including reports on the state of higher education, on a regular basis” (5.1.d).

As indicated in Section 2.2.2 of the literature review (cf. De Kadt, 2015), the following policy documents were consulted and analysed: the *Higher Education White Paper 3: A Programme for the Transformation of Higher Education* (1997); the *Higher Education Act* (1997); the *National Plan for Higher Education* (2001); *Transforming and Restructuring: A New Institutional Landscape for Higher Education* (2002); the *National Development Plan 2030* (NDP); the *White Paper for Post-School Education and Training* (2013); and the *Policy Framework for Internationalisation of Higher Education in South Africa* (2019). The documents were read for content and analysed. As revealed therein, the priorities of the higher education sector in South Africa include:

- ***Equity in policies*** – the major objectives were to develop a higher education system that was fair, equitable, non-racial, non-sexist, and that promoted a democratic South Africa. The following target groups were noted: poor students, gender groups, black students and students with disabilities. The *White Paper for Post-School Education and Training* of

2013 presented a challenge for South African universities: “Participation rates are expected to increase from the current 17.3% to 25% – that is, from just over 937 000 students in 2011 to about 1.6 million enrolments in 2030” (Department of Higher Education and Training. 2013:xiv).

- ***Institutional landscape in HE*** – A major restructuring of the institutional landscape has seen the creation of new institutions (mainly through mergers) and the disappearance of old ones. Today there are traditional universities, universities of technology and the new comprehensive universities. The sector is more “unified in terms of governance arrangements, quality assurance processes, qualification types, funding arrangements and enrolment planning processes” (Council on Higher Education, 2016:6).
- ***Student participation rates*** – since 1994, most higher education institutions have included many black students in their complements. However, inefficiencies still lurk in the system: only 25% of students graduate in regulation time, and around half of the intake of students (even fewer PhD students) do not graduate at all. Student success rates are sharply skewed by race and gender.
- ***Teaching and Learning*** – The *White Paper on Post-School Education and Training* of 2013 emphasised teaching and learning as core university functions and the need to professionalise university teaching and learning. Grants were offered to support this goal.
- ***Research*** – There has been considerable emphasis on research and research productivity in government policies. For example, The DHET (then called the Department of Education) policy on publications²⁰ led to a significant increase in research productivity.

²⁰ Department of Education. 2003. *Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions*. This policy was applied from the 2004 output onwards.

Researchers in South Africa have incentives to publish (through established reward or rebate systems) and institutions are jostling for ranking accreditations.

The demands of higher education in South Africa are set out in the various policies cited above. A full analysis of these policies using the document analysis themes of the study is available in Appendix 5, below.

7.2.2.1 Institution B: strategic alliances gleaned from documents analysed

The second set of documents analysed was from the University that houses Library B. Institution B has a strategic plan for 2020 to 2025 that responds to the needs of South African higher education. Typically, the strategic plans of universities such as Institution B include statements of vision, mission, values and objectives aimed at guiding the institution's growth and development. The strategic plan of Institution B focuses on certain key areas:

- **Academic excellence:** Emphasising quality education, research and innovation to meet global standards.
- **Student success:** Enhancing the learning experience, support services and opportunities for student development and success.
- **Research and innovation:** Encouraging and supporting research initiatives, fostering innovation and promoting industry partnerships.
- **Community engagement:** Strengthening collaborations with local communities, industries and stakeholders to address societal needs.
- **Infrastructure and resources:** Improving facilities, technology and resources to support teaching, learning and research.

Institution B is seeking to contribute to HE in South Africa in these areas, as stated in their strategic plan. The mission and vision statement of Institution B are reproduced in Fig. 7.1a, below:

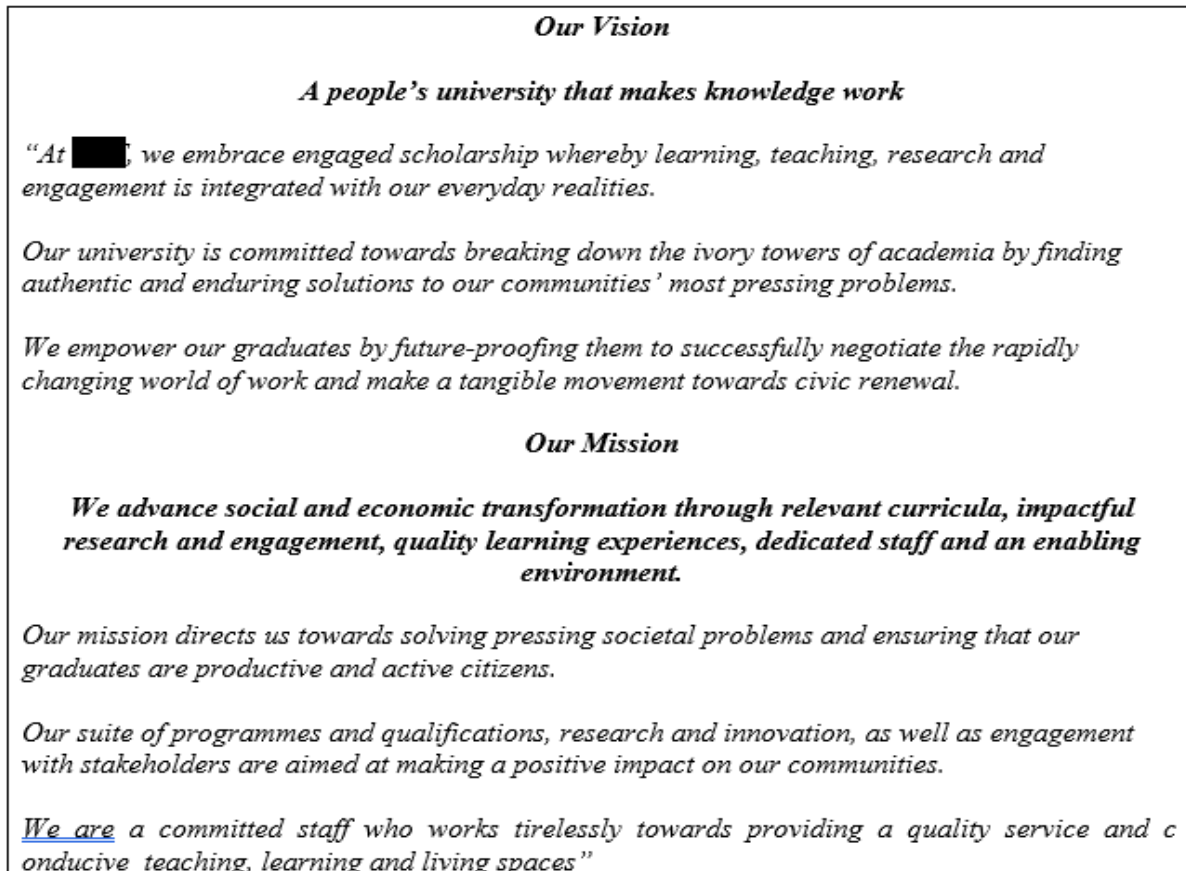


Fig.7.1a: Institution B's vision and mission statements

7.2.2.2 University library in Institution B: document analysis results

The university library reports, and service offerings were similarly analysed to ascertain the library's contribution to the institution's goals, and to understand the value of the services the library offers to its clientele in terms of student learning and student success, faculty teaching and

researcher productivity. Full details of the document analysis for Institution B are set out in Appendix 5.

Contribution of the university library to fulfilment of the institutional mandate

From analysis of the university library's website and reports, it was discovered that the library's strategic orientation was much the same as that of Institution B, as illustrated in Fig. 7.1a.

Contribution of the university library to students and researchers

The University library contributes to meeting the teaching, learning and research needs of the students and academic units. Library services are separated into two groups – learning support and research support. The research support services include links to research support tools such as ATLAS.ti, referencing tools and publication and funding sources. Student-oriented services include collections, electronic databases and reading spaces.

In summary, through its Strategic Plan 2020-2025 Institution B shows commitment to the goals of higher education in South Africa, as presented in Section 7.2.2, above. The University seeks to provide higher education for all, but especially for those from disadvantaged communities in the rural and peri-urban areas.

SECTION B: RESULTS FROM THE INTERVIEWS

7.3 Results of the interviews

The interviews were targeted at the lecturing staff in three academic units, as discussed in Section 4.5 of this report. This section of the chapter will present analysis of the collective responses of the interviewees by key thematic area.

7.3.1 Basic information

The following are the basic facts about the interview participants:

Participation

There was a low rate of participation by lecturing staff at Institution B. From the target sample of 142 lecturing staff 70 participated in the online interview (representing 49% response rate) and of these four chose a Zoom call. The Zoom responses were transcribed and analysed collectively with the rest of the data.

Affiliation within Institution B

The participants were asked to indicate with which faculty – business, education or health sciences – they were affiliated. Fig. 7.1b, below, shows the responses from lecturers at Institution B.

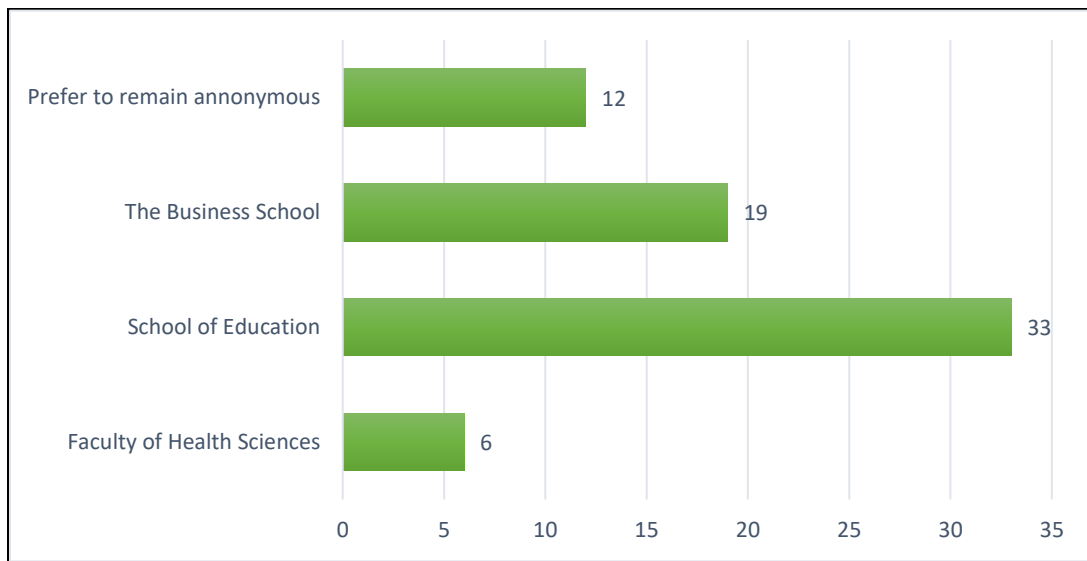


Fig.7.1b: Lecturers/academic staff by faculty affiliation

The affiliation of the participants did not affect the outcome and was therefore not used as a data analysis metric. There was strong participation from the education faculty with 33 participants out of 70 (representing a 47%) while a sizable number (17% of respondents) chose to remain anonymous. This detail however has no impact on the overall results of institution B.

Teaching responsibilities

Lecturers were asked to state the number of classes they taught in a year. The answers ranged from two to 13 classes, with an average of four classes per respondent per year.

7.3.2 Access to library services

The first set of questions focused on access to library services by the academic staff.

Frequency of accessing library services

Respondents indicated that they made frequent use of library services - : a combined 76% (representing 52 respondents) for those who indicated “yesterday” (26 respondents) and “two or three days ago” (26 respondents).

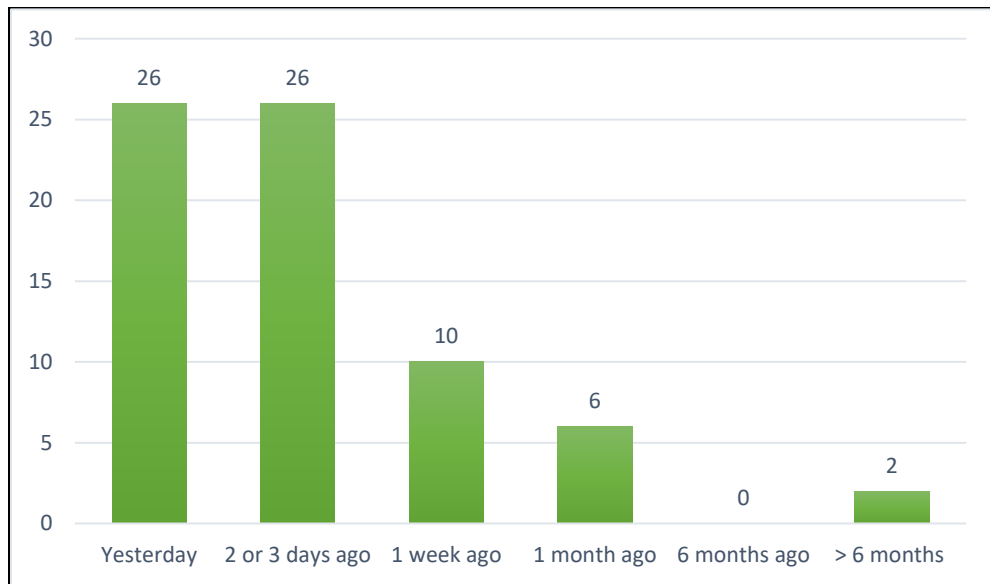


Fig. 7.2: Frequency of accessing library services by academic staff

Location when accessing library services

The respondents were given a set of choices to indicate where they accessed library services: desktop PC at home, desktop PC in the library, desktop machine in the faculty, personal tablet, mobile telephone and Other. They were asked to rank these. The majority of the respondents mostly gained access from home (49 respondents or 70%), followed by a desktop PC in the library (28 respondents or 41%). The distribution of the responses is seen in Fig. 7.3, below.

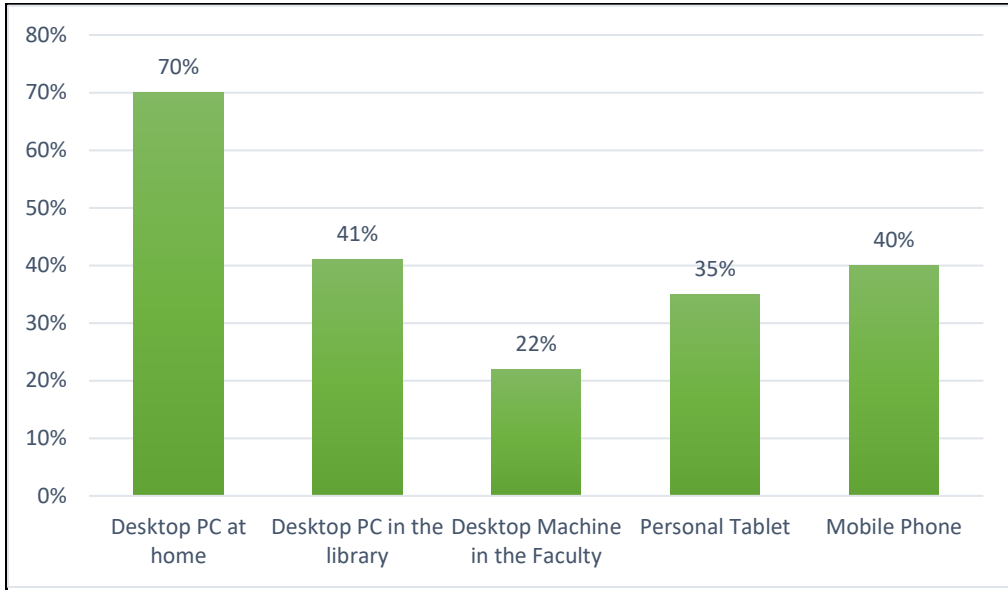


Fig. 7.3a: User's location when accessing library services

In order to corroborate the physical access question, an additional question requested the respondents to indicate the frequency of their accessing the library website or online platforms. This question was answered by 65 respondents (less 5 from those of other questions' responses). The response indicated a similar trend as Fig.7.3b shows that 41% (representing 28 respondents) electronically accessed the library daily and 43% (representing 30 respondents) accessed it once or twice a week.

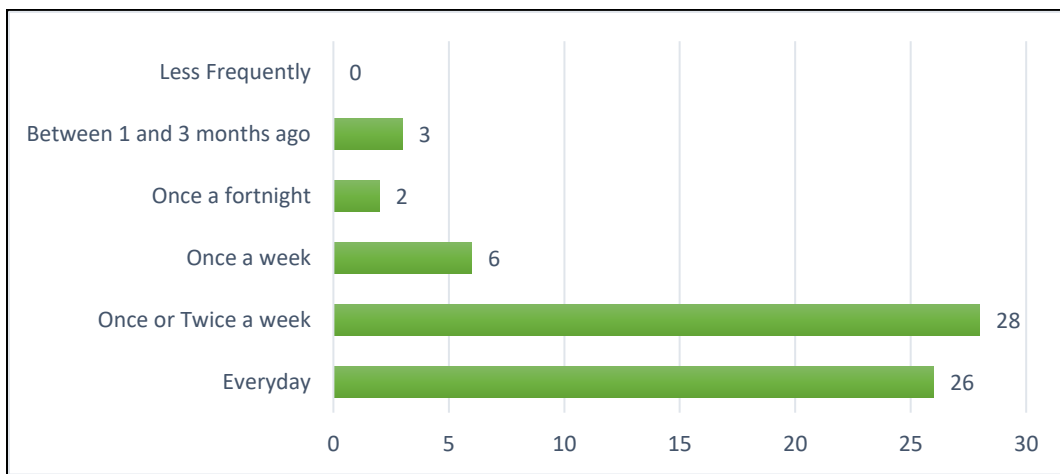


Fig.7.3b: Frequency of accessing the library website or online platforms

7.3.3 Information resources for teaching and learning

The respondents were asked where else besides the library they found information that they needed for their classes. The majority of responses indicated the internet and Google. The Tag cloud in Fig. 7.4, below, shows their response.

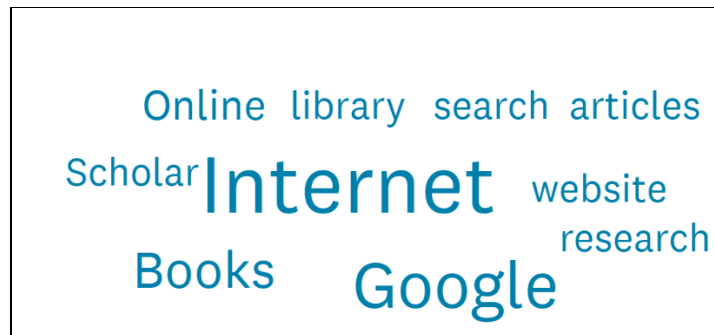


Fig. 7.4: Alternative information sources for teaching

The specific occurrence of choices comprised Internet (27%), Google (22%), books (18%), online (8%), library (9%), and journals, articles, and Google Scholar at 3% or less.

Students citing relevant resources

A specific question on whether students were required to cite relevant sources drew a 90% (63 respondents) YES response from the respondents.

7.3.4 Library and student learning

The respondents were asked about the involvement of the library in student learning, the design of the curriculum or the creation of new course outlines. Most respondents indicated that the library was not involved in curriculum design but somewhat in student learning – through learning materials provision. A typical response: *“No. The library involves only the information that may be required by the students. The lecturers design the curriculum.”*

Regular academic unit and library contact

The follow-up question enquired about the relationship between academic units or faculties and the library, and the nature of the contact between them. Most of the respondents replied that there was no contact unless they had a specific need.

Materials on reserve or reading lists

The lecturing staff were asked if they placed materials essential for students on reserve or easy access in the library. Most of the respondents indicated YES.

Integration of library resources with course manuals

The follow-up question requested the respondents to indicate if they integrated resources available in the university library into their course materials. Most of the respondents answered YES.

7.3.5 Library services for teaching and support for publication

The third research question of this study sought to understand the contribution of the university library to the research productivity of the academic staff, or to helping them publish their work.

Regularity of publishing

The respondents were asked to indicate their publications in journals and other research outputs. At Institution B there were more patents than at Institution A. Their collective responses are shown below.

<i>Research Output</i>	Response
<i>Academic Journals</i>	100%
<i>Book Chapters</i>	94 %
<i>Books</i>	88 %
<i>Patents/and other</i>	66%

Table 7.1: Research outputs from respondents at Institution B

Table 7.1 shows that academic staff at Institution B produce more academic journal publications than any other research outputs.

Role of the university library in researchers' publications

An interview question asked the respondents to comment on the role of the university library in getting them published. In response, they acknowledged that the library provide materials needed to review the literature and providing reference management tools, but not directly related to publishing process. Excerpted from the responses:

- *“They guided me through the research process by making it easy for me to find resources and teaching me on how to be an ethical researcher”*
- *“The university has had books that were very useful in one of my publications. The ease of access to these books made a huge impact on my research journey”.*

Librarians' role in their publication activity

The academic staff members were asked to indicate if librarians had a role in their getting published. Most of the respondents said NO. Some respondents pointed out the sort of help that they would have liked to receive:

- *“if they could help with identifying resources for my literature reviews”*

- *“if they could identify sponsors and grants for us”*
- *“Publishing support. Librarians have helped me find reputable articles to reference”*
- *“Books on publishing and academic writing. I consulted with some librarians on the materials I might need”*
- *“Librarians and their assistance in sourcing articles and locating the necessary books. Our librarians also assist with referencing software training, and this has made life very easy”.*

These responses indicate that academic staff believe that they need additional research support services to publish. Institution B should prioritise services that support the publishing careers of their academic staff.

Contribution of the library to your tenure, promotion judgments and research grant decisions

The respondents were also asked about the contribution of the university library to tenure, promotion, and research grants-related decisions. All the respondents answered NO to the question. This surely presents an opportunity for librarians in Institution B to explore.

7.3.6 Perception of the value of the academic library service

The interview concluded with a direct question about the respondents’ perception of the value of the academic library. They were asked what they thought would happen if the academic library at their university were to shut down, how this would affect their work and that of their students. All the respondents indicated that this would harm teaching and learning at the university. These are some of their verbatim responses.

- *“Students will be greatly affected, as the library is free and easily accessible”*

- *“The university will be affected in a negative way, and we would have to rely on a lot of unreliable sources from the internet which is not a good thing”*
- *“I and my students would be highly affected as that would be we would have to source the books for ourselves and most of them are costly”*
- *“We would struggle to find relevant sources and my students won’t be able to conduct research effectively”*
- *“My work will be affected and my students too if they no longer have access into library”*
- *“I will be affected tremendously, because I get all my lecture content, using library resources”*
- *“This would have a huge effect on my students and my work as well. Especially in relation to my teaching and my assessment of students”.*

The responses evinced a real fear of the consequences of the library’s closing and indicated the considerable value the library has for both teaching staff and students at Institution B.

SECTION B: RESULTS FROM THE QUESTIONNAIRE

7.4 Results of the questionnaire

The questionnaire was distributed to graduate students in the three selected academic units at Institution B. The findings are presented below.

7.4.1 Basic information about the respondents

The basic information about the respondents requested in the questionnaire is set out below.

Participation

As indicated in Section 4.4.3.2, the sample size for Institution B was 185 students and 94 students participated in this survey, representing a 50% participation rate.

7.4.2 Access to library services

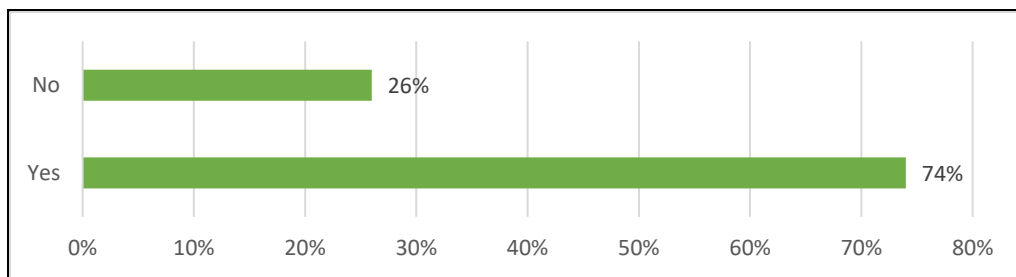


Fig. 7.5: Visits to the university library services (physical or online)

The graduate students were asked if they visited the library, and 70 students (74% of the respondents) responded positively. They were asked to elaborate on the frequency of their visits. From the five options – yesterday, two or three days ago, one week, one month and six months – “two or three days ago” was the most popular choice with 31 out of 94 the respondents, followed by yesterday at 24 respondents. The combined response of 73 responses (yesterday, 2 or 3 days ago and 1 week ago) indicates that the majority of respondents did visit the library frequently.

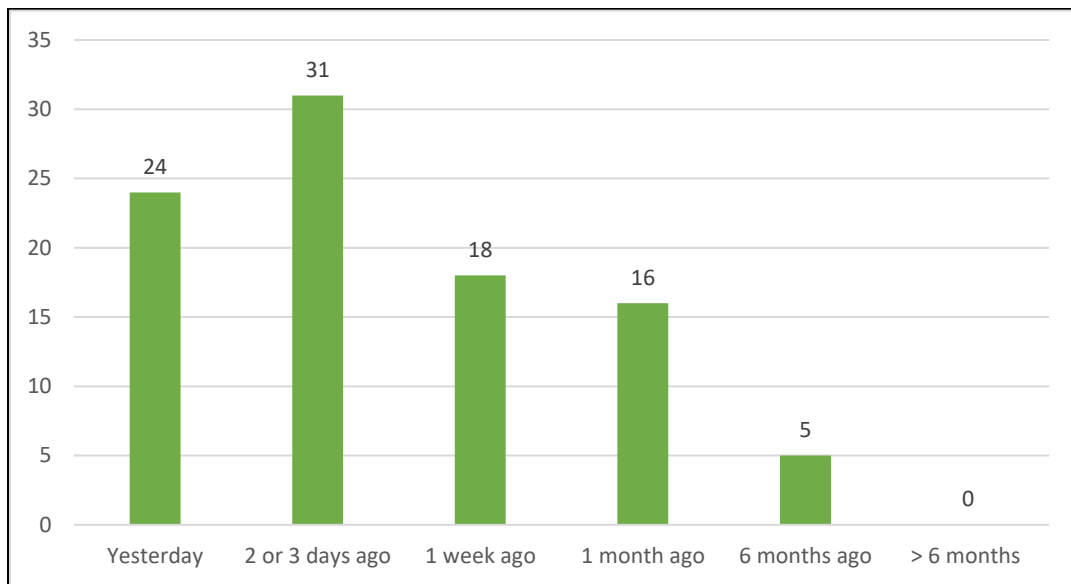


Fig. 7.6: Frequency of visits to library services

The 26% of the respondents (or the 24 students – see No in Fig. 7.5) who indicated that they did not visit the library were asked why they did not use the service. They offered various reasons such as, “I do not live close to the university library”, “I use online resources”, “I prefer to study in my apartment or residence”, “since I take online classes off-campus I rely on notes provided by fellow students” and “the library can be too silent for my liking”. These responses show that there were various reasons for not visiting that did not necessarily show a dislike of or lack of appreciation for the library services.

Access to the library website or online portal

The respondents were asked about their use of the library online portals and web services. A total of 79% of the respondents confirmed using the library online portals, while 21% claimed not to. They were then asked how they accessed the library portals; they could indicate multiple answers. As can be seen in Table 7.2, most students access the resources from their personal computers at

home (67%), followed by their own tablet (52%), indicating general private access. Some students accessed the library portals via a PC in the library or elsewhere on campus.

Location of Access	Result
Desktop PC or Laptop at home	67 %
Desktop PC or Laptop in the library	44%
Desktop PC in the faculty	38 %
Personal Tablet or Laptop	52 %
Mobile Telephone	27 %
Other (Please Specify)	1 %

Table 7.2: Access by location and device

Frequency of accessing library website or portals

A clarifying question sought to establish the frequency of respondents’ access to the online portals.

Their responses are depicted in Fig. 7.7, below.

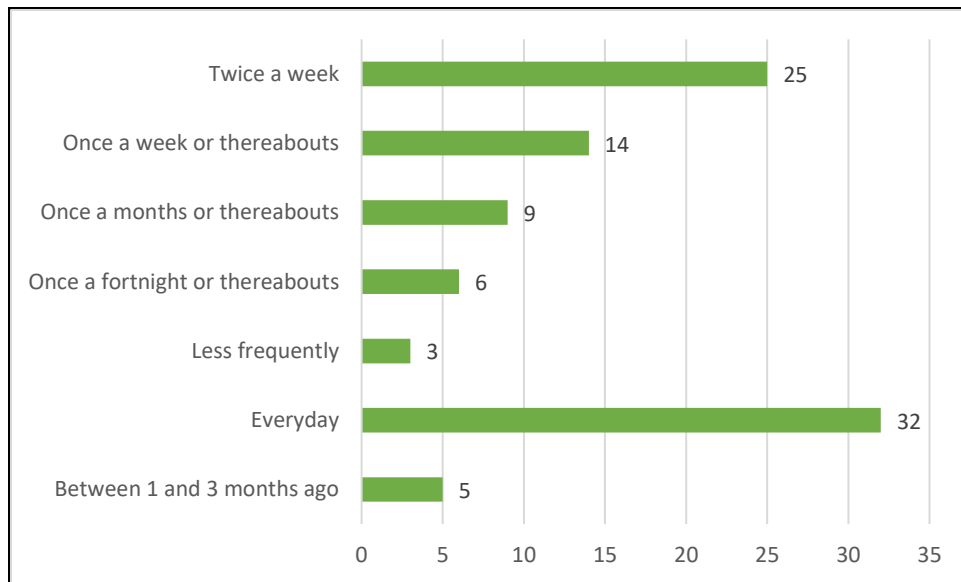


Fig. 7.7 Frequency of access on online portal or website.

The responses in Fig. 7.7 show a similar pattern for frequency of electronic access as was indicated in Fig. 7.6, where everyday visits, once a week and twice a week have high respondents.

7.4.3 REASONS for using the library service

The respondents were asked to nominate their three most important reasons for using the library service. Table.7.3 depicts these responses.

REASONS for using the library services	Responses
Availability of computers or electronic resources	51%
Availability of specific materials or information	55%
Convenient location	51%
Comfortable surroundings	11%
Group study space	16%
Hours of operation	23%
Helpfulness of the library staff	22%
A place to meet with friends	8%
Quiet place for study	54%
Other (specify)	3%

Table.7.3: Reasons for using the library

The top four reasons for using the library were: “availability of specific materials or information” (55% of the respondents), “Quiet place for study” (54% of the respondents), “the availability of computers and/or electronic resources” (51% of the respondents), and “convenient location”

(51% of the respondents). It seems from the results that users value the library for its resources, convenience and quiet spaces for study. Lesser appreciated were hours of operation, collaboration spaces (group study space and places to meet friends) and the helpfulness of the librarians.

7.4.4 Frequency of requested/selected services used in the last 12 months

The respondents were asked to indicate how often they used the library for certain purposes in the past 12 months. Table 7.4 collates the responses to this question. This question was answered by 88 respondents and 6 skipped.

Service Requested	Very Often	Often	Occasionally	Never
Used the library as a quiet place to read or study materials you brought yourself	55	19	12	2
Asked a librarian or staff member for help in finding the information you want	14	23	24	27
Read assigned material other than textbooks in the library	24	16	30	18
Used the library resources to compile a bibliography for assignment or research work	13	21	36	18
Used a library computer to do research	31	20	23	14
Accessed the library WIFI and library network for information access purposes	60	10	10	8

Table 7.4: Services requested in the last 12 months

The above table shows the requested services in the last 12 months . The three aspects of service were most frequently requested were Wi-Fi and library network access (with 60 out of 88 indicating Very Often use), “Used the library as a quiet space to read...” (with 55 respondents indicating Very Often use), and “Used a library computer to do research.” (with 31 respondents

out of 88 indicated Very Often use). The higher occasionally used service and Never used, indicate specific service the library in institution B needs to promote to its users.

Specific library services used in the previous 12 months

A related follow-up question asked the users to nominate the library services they had used in the previous 12 months. Table 7.5, below, portrays the frequency of the answers given (similar to 7.4.4 this question was answered by 88 respondents).

Specific Library Service	Total Score
Computer access	51 %
Electronic databases/article indexes	55 %
Traditional printed resources	35 %
Meeting or study space	55 %
Web connection for laptop	30 %
Reference and past exam papers	26 %
Interlibrary loans	30 %
Information/research services provided by library staff	22 %
Library Guides	22 %
Information Literacy Classes	19 %
Online Tutorial	19 %
Other	5 %

Table 7.5: Specific library services used in the previous 12 months

The most popular services indicated by the users were electronic databases and articles (55 %) and library spaces (55%). The popularity of electronic databases and resources was prominent throughout the responses to this survey.

Helpfulness of library staff

The survey went on to ask respondents to describe the helpfulness of library staff in responding to their needs, which were provided as a series of options (with the opportunity for respondents to

include additional areas). Most prominently, the staff helped find resources that they needed – a reply in line with the results of the two preceding questions. Members of the library staff helped students to find books, journals and web resources (52 respondents out of 94), to use online/electronic journals (42 respondents) and to identify the type and amount of information they needed (36 respondents). The rest of the responses are tallied in Fig. 7.8, below.

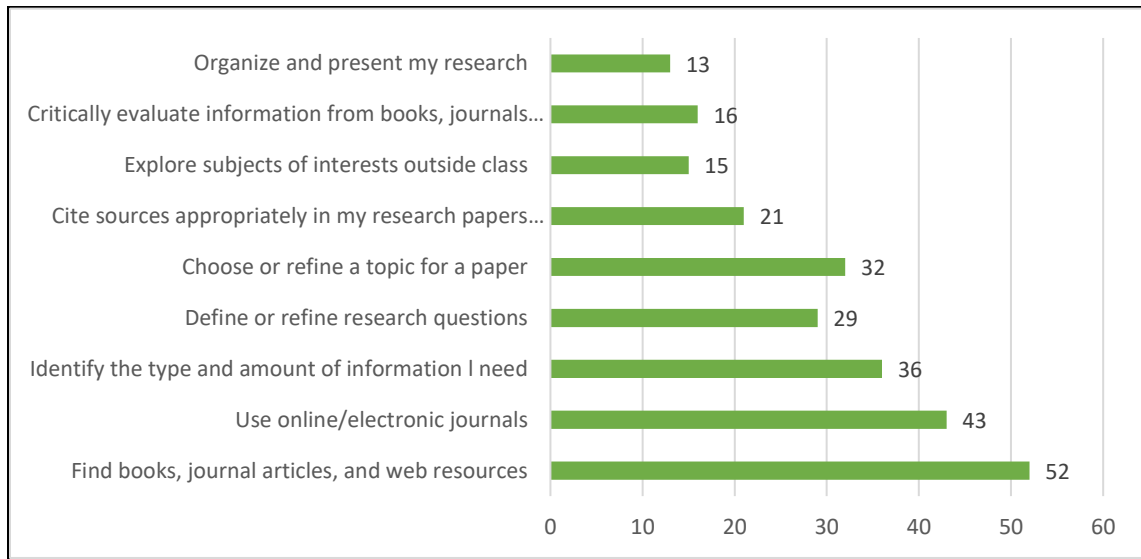


Fig.7.8: Helpfulness of staff in identified areas

Services that need improvement

A follow-up question provided a list of services and asked the respondents to indicate which services they thought needed improvement. This reverse question allows respondents to suggest by implication those services that they would like to be improved by indicating their current appreciation of that service. Fig. 7.9, below, provides aggregated response(s) to these individual choices.

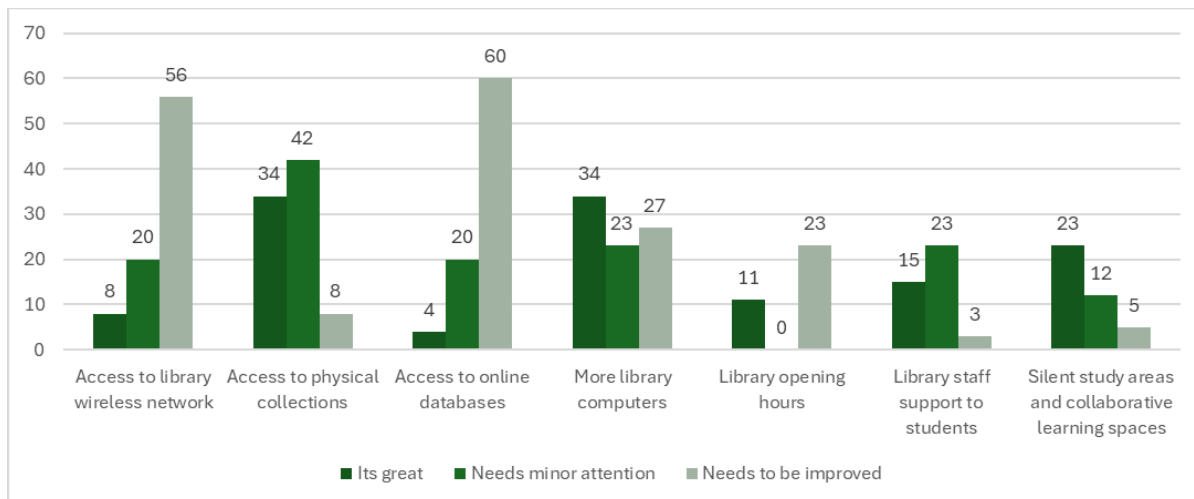


Fig.7.9: Graduate student evaluation of services that need improvement

This question was completed by all participating indicating an interest in the various aspects of library service. The participants felt strongly that “Access to online databases” (60 respondents or 63%) and access to library infrastructure (“access to library wireless network” and “ More library computers”) should be improved. The rest of the results are shown in Fig. 7.9 above.

7.5 The academic library and student learning

The role of academic libraries in student learning was one of the areas of investigation in this study. Three questions focused on the contribution of the library to student learning, student participation in library instruction programmes and, specifically, the contribution of the library instruction programmes to student learning. The respondents were asked to provide feedback if they believed that library services were making a difference to their learning.

7.5.1 Contribution of the library to student learning

Students were asked to choose among the following learning outcomes to describe the contribution of the library to their achievement – achieving good graduation grades, timeously completing

assignments, successfully completing each academic year and continuous lifelong learning. The results are displayed in the following two figures.

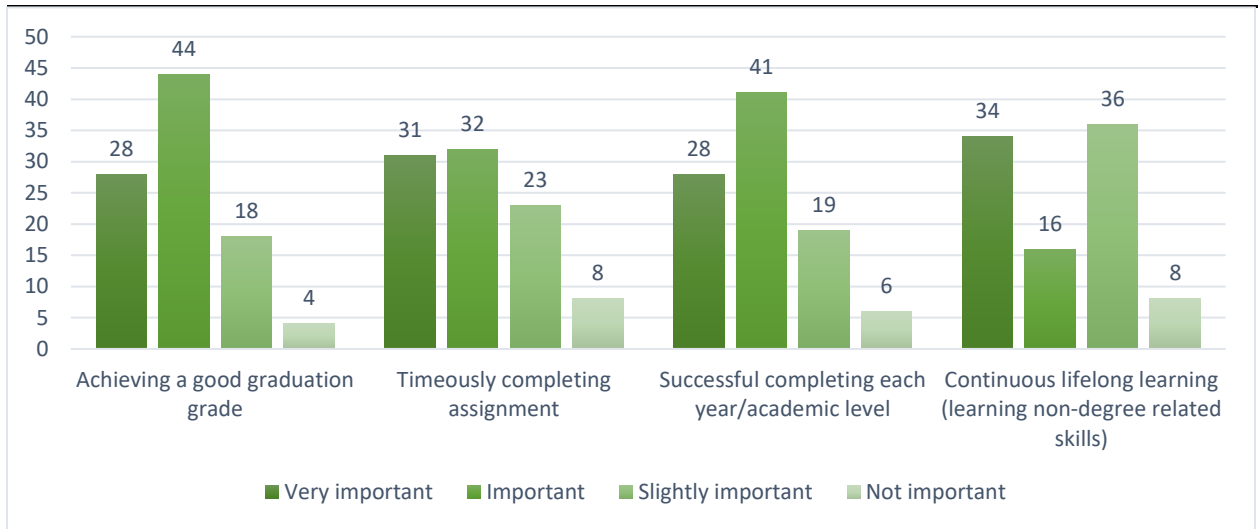


Fig.7.10a: Contribution of the library to student learning

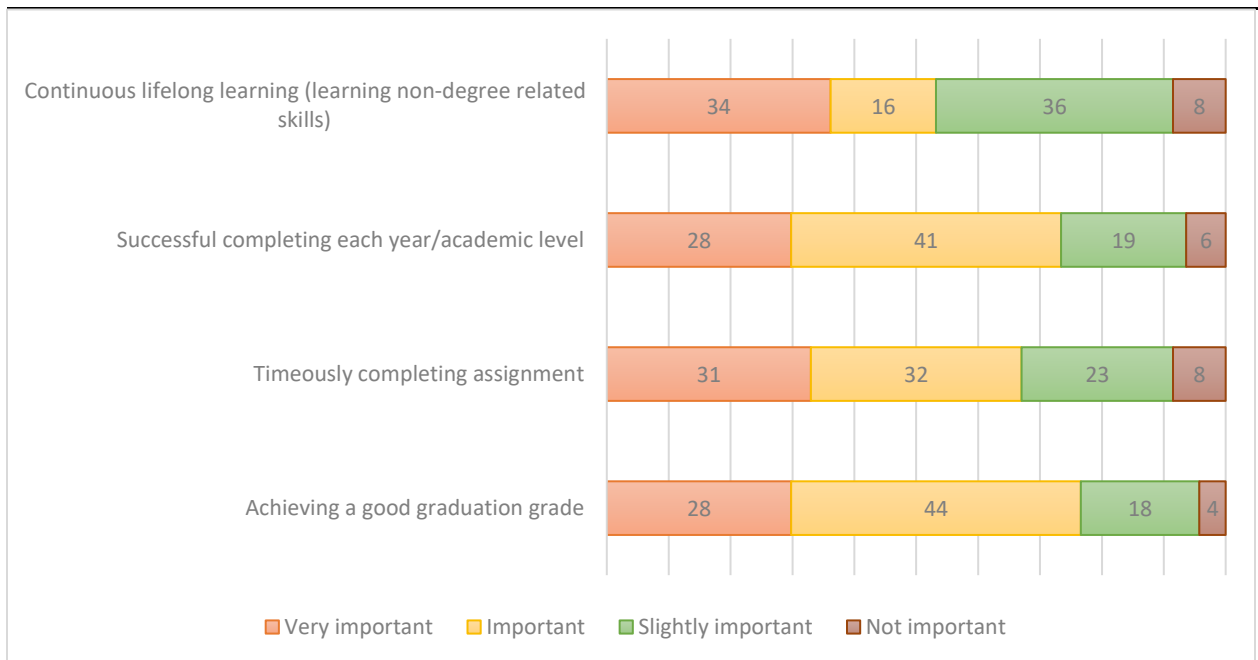


Fig.7.10b: Contribution of the library to student learning

In the above Figures, the respondents indicated the importance of the library in four areas given, as more than 50% of the respondents indicated “Very important” and “Important” in all the areas. Students indicated that “Achieving a good graduation grade” (with a total of 72 responses (Very Important and Important) was the most contribution the library has on learning, the second most chosen contribution was “successfully completing each academic year” with a combined score of 69 responses.

7.5.2 Student participation in library instruction programmes

52 respondents indicated that they had participated in library instruction programmes and 42 indicated a No.

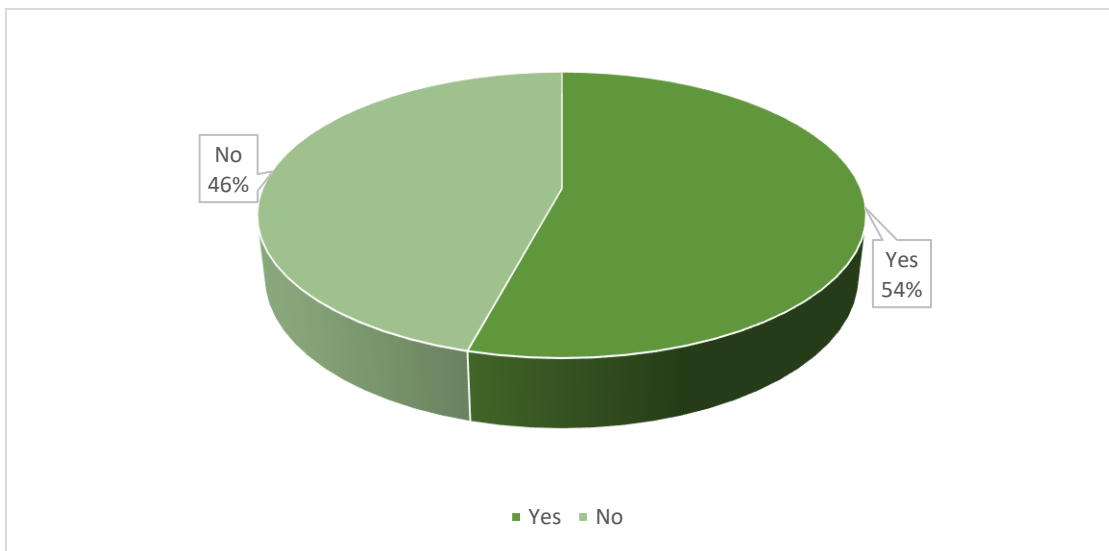


Fig. 7.11: Student participation in library instruction programmes

The respondents who chose the YES option were asked to provide further explanation for their choice. They were asked to rank the role of the library instruction programme in their student learning processes. Their feedback is noted in Fig.7.12, below.

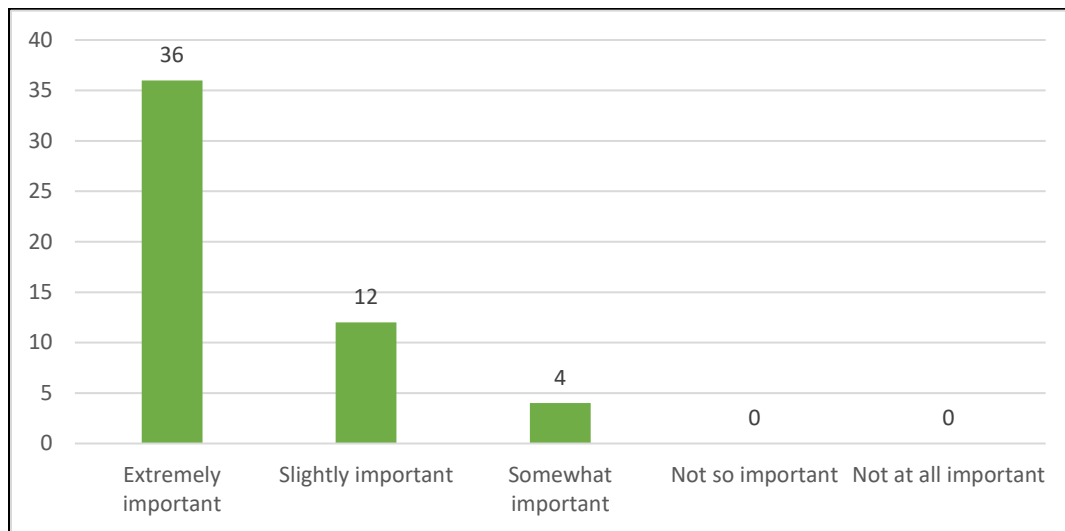


Fig. 7.12: The role of the library instruction programme in student learning processes

The respondents all agreed that the instruction programmes were important, with 36 respondents indicating “Extremely important”, 12 stated “Slightly important”, and 4 indicated “Somewhat important” to their learning processes.

7.5.3 The difference the library or its services make to studying or learning at the University

The respondents were asked for a specific example of how the library, or its services, made a difference to their learning at the university. A small majority (51% of the student respondents or 47 responses) claimed to be able to supply an example of library services that had made a difference in their studies. Of the 47 students who chose YES, about a quarter of them offered examples. Some of the examples that were shared included the following:

- *“I managed to submit a good paper after I consulted library resources, without which my work would have been of poor quality”*
- *“Thesis collections helped me frame my own study”*
- *“I can do constant research and find the materials and or information I need”*
- *“I always find it difficult to read when I am home, but my school/university library has played a vital role to my reading”*

- *“Many of my students in general have learned how to discriminate between credible and incredible sources of information by learning how to navigate library databases”*
- *“It helps me get more information with the lowest price”*
- *“Proper use of electronic library resources”.*

These examples indicate that students valued the university library for its support of their learning and studying.

7.5.4 Academic library and learning skills

The respondents were provided with a predefined set of library skills needed for learning (there was an option for them to add to those listed), and to indicate which ones they would like to see improved. This question was answered by 84 respondents and 10 skipped the questions. The results indicated that most students chose improvement in “literature searching skills” (50%), “assignment/research paper presentation skills” (47%), “citation and reference skills” (40%) and “critical thinking” skills (39%). The aggregate responses are presented in Fig 7.13, below.

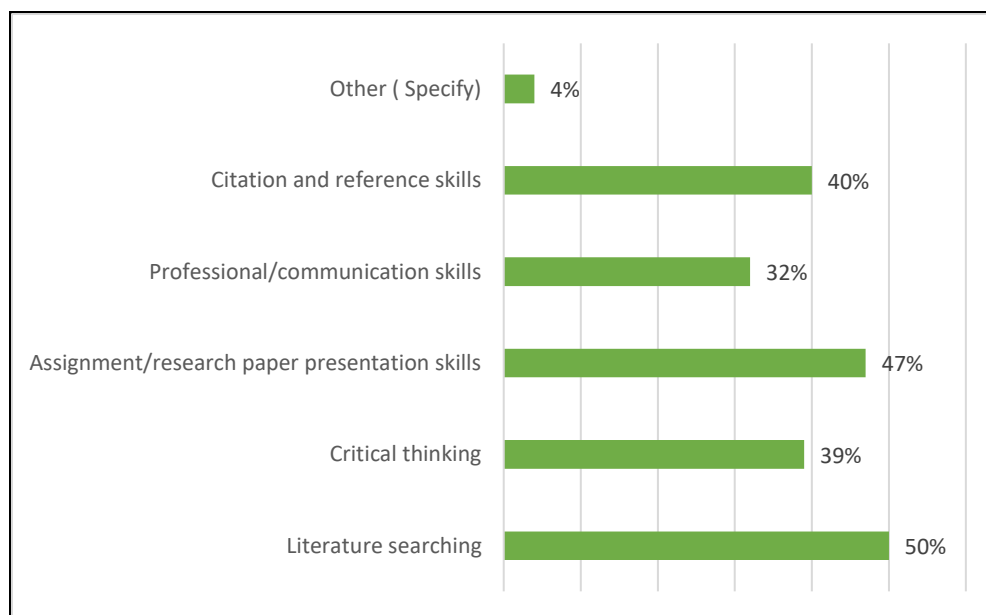


Fig. 7:13: Library (and learning) related skills that should be improved

The responses to this question showed that the students valued the various skills the library was capable of teaching them or enhancing. A follow-up question asked the students to rank in terms of frequency of use the method or means they employed to locate reference literature or documentation needed for their assignments or thesis. The results are depicted in Fig. 7:14, below.

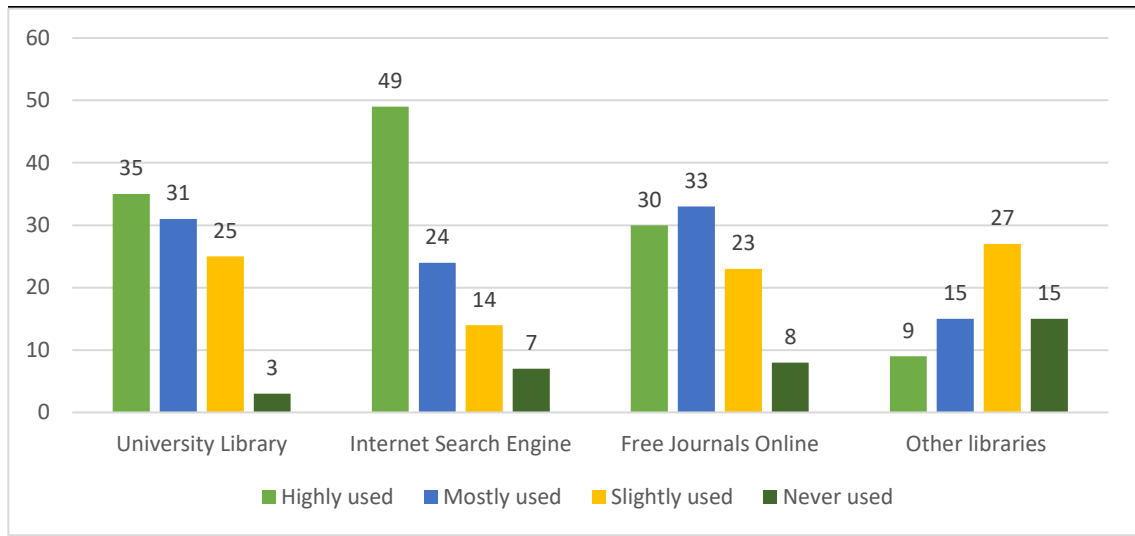


Fig.7.14: Means used to locate literature

The ‘highly widely’ used method or means of locating scholarly literature is “internet search engine” (with 49 responses out of 94), followed by “university library” (35 responses), “free journals online” (30 responses) and “other libraries” (9 responses). The general trend is clear.

The result does not preclude students from making internet searches from within the university library. In the “Other” option (shown in Fig.7:13), some respondents said that they asked their peers for assistance, while others said they used e-books.

7.6 Findings presented in the form of R-I-R framework at Institution B

The preceding sections have presented the data as analysed in the first level of analysis according to question-led themes. The second level of analysis was achieved through coding the responses

using the *Taxonomy of value in academic libraries*. This coding, complementary to the first level, was accomplished through the use of the ATLAS.ti software (see Appendix 6).

7.6.1 Interview results from Institution B analysed in terms of the taxonomy classes

In Section 7.3 above, analysis of the interview dataset from Institution B was presented. As discussed in Section 4.8 (data analysis) and 4.9 (data presentation), these results are also presented in accordance with the R-I-R approach, as mandated by the theoretical framework. Thus, a summary of the interview responses in the R-I-R format is shown in Table 7.6, below. Analysis of the comments from interviewees at Institution B shows that the *Reasons* for interacting with the library services for lecturing staff are related to teaching and student learning. Their core expectations arise from the resources that the library can make available to their students. There are minimal *Interactions*, however, and mostly through the library website (see Section 7.3.2 for more discussion of access to library services). The Results seem more related to institutional outcomes than to teaching and learning, although lecturers also reported specific personal outcomes associated with research and publication.

CLASS A – REASONS	CLASS B – INTERACTION	CLASS C - RESULTS
<i>For codes used refer to the Taxonomy, in Section 5.4.2 above</i>	<i>For codes used refer to the Taxonomy, in Section 5.4.2 above</i>	<i>For codes used refer to the Taxonomy, in Section 5.4.2 above</i>
“Library databases available on their websites (A.3.2)”	“I use the laptop at home and in the office (B.1.2); (B.5.1)” “Librarians and their assistance in sourcing articles and locating the necessary books. (B.5.4)”	“Publishing support. Librarians have helped me find reputable articles to reference” (C.3.4); (C.2.1.4).
“They guided me through the research process by making it easy for me to find resources and teaching me on how to be an ethical researcher”.(A.3.1)”	“Books on publishing and academic writing. I consulted with some librarians on the materials I might need”. (B.1.3); (B2)	Yes, they helped with point where to publish my papers and my book. (C.3.3); (C.2.1.4)
<ul style="list-style-type: none"> • “Support learning path of students” • “Students are requested to do research then we are able to use the research for their learning curriculum”. 	<p>“No. The library involves only the information that may be required by the students. The lecturers design the curriculum” (B.2.1)</p> <p>“It has workshops that help students navigate the entirety of the library” (B.1.3)</p>	yes, by providing lessons, support by sending research material on email (C.3.3)
learning purposes, we place resource links on the LMS platform(A.3.2)	<p>Services used</p> <ul style="list-style-type: none"> • “The free internet usage and Pc’s” (B.5.3) • “ Reading spaces” (B.3.1) • “I used their laptop, and it has high speed when it comes to researching” (B.5.1) 	

Table 7:6 Sample presentation of Interview data in R-I-R format

7.7 Summary of findings from Institution B

Institution B’s library seeks to support the teaching, learning and research needs of its patrons. The document analysis revealed that the library strives to support the vision, mission and strategic thrust of the University it serves. An analysis of how the university seeks to align itself with higher education policy injunctions in South Africa can be found in Appendix 5. The overarching findings are that the university library service seeks to support the strategic direction of the university and

to meet the needs of both students and researchers. The findings in respect of Institution B are presented in three parts below.

7.6.1 Document analysis results

HE policy requirements in South Africa are several and varied, as explained in Section 7.2.2, above. The Council on Higher Education as an institution mandated to review the policies and status of higher education in South Africa periodically publishes reports on the sector. Analysis of these and other documents established that the University does indeed serve the needs of HE in South Africa. Institution B's academic library has services that clearly support the university's research and learning agendas. However, the strategic role of the library is not entirely evident from its website and needs to be publicly documented in specific mission and vision statements.

7.6.2 Interview results

The findings from the research interviews are that researchers/lecturers at Institution B have regular contact with the university library and find its services and resources useful. The library is involved in student learning and curriculum design. However, some respondents do not have regular contact with the library or integrate its resources into their courses. The library's contribution to tenure, promotion judgments, and research grant decisions is not recognised by all respondents. If the library were to cease operating entirely, this would have a severely negative impact on both researchers' work and the students' access to information. This finding concurred with the findings from Institution A.

7.6.3 Questionnaire results

The students surveyed indicated that they primarily used the university library and internet search engines to locate reference literature for their assignments or theses. The participants had mixed opinions about the various library services and resources, and believed that access to the library wireless network, physical collections and personal computers needs improvement. They recognised the library's considerable contribution to their achieving good graduation grades and continuous lifelong learning, but had differing opinions about its contribution to the successful completion of each year/academic level and the timely completion of assignments. Some respondents had participated in useful library instruction programmes and classes on information literacy, though they would like to improve their assignment/research paper presentation skills.

7.8 Chapter Summary

This chapter presented the results of the research carried out at Institution B, grouped according to the three data collection methods employed in the study. Section A focused on the results obtained from the document analysis, Section B presented a thematic analysis of the data from interviews with the academic staff, and Section C discussed the results of the questionnaire completed by postgraduate students. The chapter concluded by summarising the research results obtained from Institution B. The next chapter, Chapter 8, will provide a discussion and comparative analysis of the results from Institution A and Institution B.

Chapter 8

Discussion and Comparative Analysis

I see comparison as an epistemological function competing with learning about and from the (particular) case. Comparison is a powerful conceptual mechanism, fixing attention upon the few attributes being compared and obscuring other knowledge about the case.

(Stake, 1994:242)

8.1 Introduction

The main goal of this study was to explore the *value* of academic libraries to their students, academic staff and the institutions that fund them. This chapter discusses the findings of the study in terms of its research objectives and research questions, and presents a comparative analysis of the results from Institution A and Institution B. The analysis coheres around the four principal elements of value: student learning, student success, faculty teaching, and faculty research productivity. The chapter concludes with a brief summary.

8.2 Discussion of the findings

This study explored the value of academic libraries in the face of the changing demands of higher education, their funders and users. The aim was to discover how two academic libraries demonstrated value to their students, academics and their universities. The specific objectives were captured in the four research questions as formulated in Section 1.4, above. The following subsections present discussion of the findings organised around the research questions.

8.2.1 Expected institutional outcomes from higher education

As shown in the literature on higher education discussed in Section 2.2 above, the United States and the rest of the Western world are facing challenges concerning the financing of universities. In Southern Africa, governments continue to fund university education (although the funding is not adequate for the needs of the institutions). As a consequence, HE policymakers, parents and students are demanding justification for the considerable public investment in universities. This situation requires academic libraries to support their institutions in justifying their existence.

The findings show that in both countries, the sector is going through a transformation. Higher education in Zimbabwe is seeking to address a deficit in the production of qualified specialists and technicians in science, technology, engineering and mathematics. The challenges identified include dropouts, high tuition and accommodation fees, underfunding, staff shortages and economic decline, hyperinflation, and large public debt (The World Bank, 2022). The government seeks to address these issues through two strategic policies, the *National Development Strategy 1: 2021-2025* and *The Education 5.0 – Doctrine for the Modernisation and Industrialisation of Zimbabwe through Education, Science & Technology to Achieve Vision 2030*. The priorities for Zimbabwean higher education are that HE institutions should support teaching, learning, research, community service, innovation and industrialisation. HE in Zimbabwe is challenged to support the fourth industrial revolution (4IR), technological advancement in the 21st century.

South Africa has a robust regime of higher education policies overseen by the Department of Higher Education and Training, covering various aspects of HE (see Section 7.2.2, above). For example, the *National Plan for Higher Education* (2001) sets out an inclusive and ambitious

strategy for HE accommodate to disadvantaged groups and train graduates needed for the economy. Document analysis also revealed challenges in HE, including the National Student Financial Aid Scheme funding, unpaid student debt, electricity shortages, unaffordable student accommodation, university students dropping out before graduation, increased enrolment demands and “the missing middle students” (students who do not qualify for financial aid but cannot afford fees outright) (Van der Merwe, 2021).

Document analysis also showed that higher education in SA has undergone many changes over the past decades. Higher education priorities in SA now include the internationalisation of education, a decolonisation agenda, the fourth industrial revolution, and affordable, accessible and quality higher education for all. The study found that both universities under study have designed strategic vision documents (both ending in 2025) that seek to align their strategic goals with the HE policies of their respective countries.

8.2.2 Academic libraries and the institutional goals and objectives of their universities

The literature insists that academic libraries should serve the mission of the institutions that house them (Allison, 2019; Nous, 2015; Salisbury & Griffiths, 2014; Wadas, 2017). Document analysis in this study confirmed that the academic libraries in both Institution A and Institution B have aligned their institutional goals and objectives with their university’s strategic vision. In the case of Institution A, an examination of the strategic goals of the university and the library showed a replication of policies, with the elements of teaching, learning, research and innovation featuring prominently. In sum, the document analysis – specifically of mission statements and other strategic

documents – confirmed that the two libraries support the institutional goals and visions of their parent universities.

8.3 Contribution of the libraries to student learning, student success, faculty teaching and researcher productivity

Chapters Six and Seven presented the results of analysing the data collected at Institution A and Institution B, respectively. Section 8.3.1 below presents a detailed comparative analysis of these findings in relation to the four elements of student learning, student success, faculty teaching and researcher productivity. As noted in Chapter seven, that there was a low rate of participation in Institution B as compared to A, this research acknowledges the limitations that this might bring to the comparisons. The previous chapter endeavoured to synthesize and analyse the data within the context of the research and data obtained in institution B (See Section 4.4.3.1 on page 165, and Andrade, 2020 on online surveys and low participation)

8.3.1 Library contribution to student learning

With regard to the role of libraries in student learning, Oakleaf (2010) identified two surrogates for measuring student learning: learning assessments and faculty judgments. Subsequent literature has emphasised the importance of academic libraries in student learning. Library users – students and academic staff – at both institutions were asked to describe the role of their libraries in learning. The questions focused on the importance of library instruction, reasons for using the library services, and the library services that respondents had used in the past 12 months. The questions sought to interrogate students' views on the role of libraries in meeting their learning needs. The findings of the study confirm what the literature revealed in Section 2.7.2; that academic libraries

are very important to students. Table 8.1, below, presents a comparison of the results from Institutions A and B regarding student learning.

Student learning		
Comparative attribute	Institution A	Institution B
Contribution of the library to student learning (top three).	Response was YES, 1. Continuously life-long learning. 2. Achieving a good graduation grade. 3. Timeous completion of assignments. <i>(See full results: Fig.6:16)</i>	Response was YES, 1. Successful completion of Assignments 2. Continuous life-long learning. 3. Timeous completion of assignments. <i>(See full results: Fig.7:10 a & b)</i>
Library and learning skills (top three)	1. Citation and reference skills 2. Literature searching 3. Critical thinking skills <i>(See full results: Fig.6:17)</i>	1. Literature searching skills 2. Assignment or research paper presentation skills 3. Citation and reference skills <i>(See full results: Fig.7:13)</i>
Reasons for using the library service (top three)	1. Availability of specific materials or information 2. Quiet space for study 3. Availability of computers/or electronic resources <i>(See full results: Fig.6:13)</i>	1. Availability of specific materials or information. 2. Availability of computers and/or electronic resources 3. Convenient location <i>(See full results: Fig.7.3)</i>
Services used in the last 12 months (top three)	1. The use of the library as a quiet place to study. 2. Used the library resources to compile a bibliography for assignment or research work. 3. Accessed the library Wi-Fi or network. <i>(See full results: Section 6.4.4)</i>	1. Accessed the library Wi-Fi or network. 2. Used the library resources to compile a bibliography for assignment or research work. 3. Used a library computer to do research. <i>(See full results: Section 7.4.4)</i>
Specific library resources used in 12 months (top three)	1. Electronic databases/article indexes 2. Computer access 3. Information services provided by library staff. <i>(See full results: Fig.6:10)</i>	1. Meeting or study place (ranked No. 1.) 2. Electronic databases/article indexes (ranked No.1) 3. Computer access <i>(See full results: Table 7.5)</i>

Table 8.1: Comparative analysis of the library’s contribution to student learning

Table 8.1 presents the study’s findings on the library’s contribution to student learning. In both cases, students affirmed the importance of libraries to their learning. They indicated that library

services helped them complete their assignments while supporting their research needs and life-long learning ambitions. Again, at both institutions, respondents indicated that the library supported research and learning skills, although their priorities varied somewhat.

8.3.2 Library contribution to student success

The third research question sought to establish the library's contribution to student success. Discussion of the literature on student success (Section 2.7.3, above) concluded that attempts to define it were inconsistent. Two approaches were distinguished, a 'narrow' and a 'broader' one. The narrow approach is partly measured through the student use of library resources – “increased use of library resources increases student success” (Anderson & Garcia, 2020: 459). There is also a positive link between students attending library instruction and achieving success (Rowe et al., 2021). Among the questions aimed at measuring success, the students were asked to rate the importance of the library instruction programmes and describe the help they requested from library staff. The findings, as presented in the previous two chapters, are tabulated in Table 8.2.

Student Success		
Comparative attribute	Institution A	Institution B
Importance of library instruction	Students agree (77%) that library instruction is “ somewhat important”	Students agree (54%) that library instruction is “ somewhat important”
Students view of library instruction	<ol style="list-style-type: none"> 1. Extremely important 2. Slightly important 3. Somewhat important 4. Not so important <p><i>(See full results in Fig.6:15)</i></p>	<ol style="list-style-type: none"> 1. Extremely important 2. Slightly important 3. Somewhat important 4. Not so important <p><i>(See full results in Fig.7:12)</i></p>
Help requested from library staff (top three)	<ol style="list-style-type: none"> 1. Use online/electronic journals. 2. Finding books, journal articles, and web resources 3. Cite sources appropriately in my research paper and assignments. <p><i>(See full results: Fig. 6:11)</i></p>	<ol style="list-style-type: none"> 1. Finding books, journal articles, and web resources 2. Use online/electronic journals. 3. Identify the type and amount of information I need. <p><i>(See full results: Table 7.8)</i></p>
Library services needing improvement (top three)	<ol style="list-style-type: none"> 1. Access to online resources 2. Access to library wireless network 3. More library computers <p><i>(See full results: Fig.6.12)</i></p>	<ol style="list-style-type: none"> 1. Collections of online databases 2. More library computers 3. Access to library wireless network <p><i>(See full results: Fig.7.9)</i></p>

Table 8.2: Comparative analysis of the library’s contribution to student success

The findings above indicate that in both institutions, the students regarded library instruction as important to their success. This study favoured the ‘narrow’ approach towards establishing the role of the library in students’ success. The answers in Table 8.2 indicate that students focused mainly on academic achievement. To obtain a ‘broader’ perspective, it would have been necessary to add questions about success-related outcomes such as career skills, job placement, attainment of marketable skills. It was felt that such questions would better be asked of students already in employment to establish what role the library might have played in their “success”. The measurement of student success in the *Taxonomy of value in academic libraries* tried to embrace aspects of both ‘narrow’ and ‘broader’ approaches (see the Results or CLASS C of the taxonomy in Section 5.4.2).

8.3.3 Library contribution to faculty teaching

Part of the third research question in this study focused on the library’s contribution to faculty teaching. In Section 2.7.9 above, it was reported that, according to the literature, while academic libraries certainly impact students, they provide significant value for faculty teaching. Academic libraries provide instructional support, resources that support teaching, the integration of library resources and services into course syllabi, websites, lecture labs and reserved readings (Dickenson, 2006; Goldenstein & Kearley, 2013; Rowe et al., 2021). Members of the academic staff were asked if they recommended materials available in the library, if their students cited current resources, if they used the material reserve service of the library and whether they integrated library resources into their courses. The responses to these questions are presented for comparison in Table 8.3, below.

Faculty teaching		
Comparative attribute	Institution A	Institution B
Availability of information resources for teaching	Yes, but respondents indicated the internet and Google Scholar as primary go-to sources. <i>(See full results: Fig.6.5)</i>	Yes, but respondents indicated the internet and Google as primary go-to sources. <i>(See full results: Fig.7.4)</i>
Integration of library resources in course materials	Yes <i>(See full results: Section 6.3.4)</i>	Yes <i>(See full results: Section 7.3.4)</i>
Library role in course and curriculum design	The library has no role in curriculum design. Regular formal contacts exist in the context of faculty boards, etc.	The library has no role in curriculum design, although they are consulted as needed.
Materials placed on course reserves	Yes, the academic staff use this service	Yes, the academic staff use this service
Students cite relevant resources	Students do cite current and relevant resources	Students do cite current and relevant resources

Table 8.3: Comparative analysis of the libraries’ contribution to faculty teaching

In both institutions, the academic libraries strive to support the teaching role of the academic units they serve. The respondents indicated that the students do cite relevant sources of information and that the academic staff do place required materials on library course reserves. In neither institution did the respondents see the university library as involved in course and curriculum design. This finding concurs with similar studies elsewhere, for example, Klain, Gabbay and Shoham (2019), who found that the contribution of library services to the various aspects of teaching was perceived as greater by librarians than by the faculty members.

8.3.4 Library contribution to research productivity

Libraries have traditionally contributed to faculty research productivity through making their collections available. As online collections have grown and various other online academic sources of information have emerged, the role of academic libraries has had to be expanded. The third research question sought to understand the library's contribution to research productivity in this changed and changing context. How do libraries serve academics who are preparing publications or patent applications or tenure applications? The literature reviewed in Section 2.7.7 has established that research productivity positively and significantly correlates with the investment an institution makes in its libraries (Rawls, 2015). However, few studies have attempted to measure how the productivity of academic staff has been influenced by the academic library (Fernández-Marcial, Costa & González-Solar, 2016).

The interview questions asked the academic staff if and how the library and librarians contributed to their getting their research published. The questions also sought to establish whether the library contributed to appointments, promotion judgments, patents and research grants. Table 8.4, below, profiles the lecturers' answers to these questions.

that there is potential for academic libraries to expand their role in support of academic researchers. For instance, there have been some exploratory studies towards integrating libraries in grant application processes (Downing, 2009) and establishing the role of a ‘grants librarian’.

8.4 Chapter summary

This chapter has presented the findings in terms of the research objectives of the study. The chapter began by discussing the higher education environments in Zimbabwe and South Africa. Through document analysis of their mission, vision and other strategic documents, it went on to describe how institutions A and B, and their libraries, are responding to these environments. The chapter then discussed the findings of the thesis in respect of each of the four identified elements of value and compared the results from each institution. The following chapter will build on these findings and present a summary of and conclusion to the study.

Chapter 9

Summary, Conclusion and Recommendations

What is the value of libraries? Through lifelong learning, libraries can and do change lives, a point that cannot be overstated.

– Michael E. Gorman (2000, 1-15)

9.1 Introduction

This study has been about assessing the value of academic libraries in the 21st century in the context of the technological and economic changes in higher education. The need to justify the existence and continued public funding of higher education institutions and academic libraries keeps growing in many countries. The goal of the study was to establish the extent to which two southern African academic libraries add value to their users. The literature review identified the baseline studies commissioned by the Association of College and Research Libraries (ACRL) and led by Megan Oakleaf (Oakleaf, 2010), and the *Academic library impact study* (ACRL, 2017).

These studies established the elements that define the “value” of academic libraries. Among the eight elements of value established by Oakleaf (2010), this study focused on four: student learning, student success, faculty teaching and researcher productivity. The study sought to find out how and to what extent students and academic staff recognised and appreciated these elements of value in regard to the two southern African academic libraries selected for case study.

This final chapter is organised into three parts. The first part provides a summary of the study’s objectives, methods and approaches, detailing how it arrived at its conclusions. The second part

summarises the key findings of the study. The third part provides a conclusion and certain recommendations, including possible areas for future research on the value of academic libraries.

9.2 Summary of the study

The study examined two institutions from southern Africa: Institution A in Zimbabwe and Institution B in South Africa. The results from data collection at these institutions were presented separately, in Chapters six and seven of the thesis. In Chapter Eight, results from the two case studies were compared through analysis of similarities, differences and patterns, using common points of focus.

The study sought to discover how academic libraries demonstrated their value to their students, academics, and parent institutions. Using selected elements of value important to students and academic staff, the study examined how and to what extent these user groups value their respective academic libraries. In both cases, three research instruments (document analysis, interviews and questionnaires) were used to collect data from students and academic staff. The study developed the *Taxonomy of value in academic libraries* as a tool for conceptualising elements of value for academic libraries and as a source code book for simulating users' reasons for using, interacting with and getting results from an academic library service. Since value, like beauty, is a difficult concept to measure, it was necessary to determine a common understanding of value. In academic libraries, research by Oakleaf (2010) and other follow-up studies have convincingly characterised what constitutes value in academic libraries. The *Taxonomy of value in academic libraries* encapsulates the various aspects of value as they emerged in the literature (see Sections 2.6 and 2.7, above).

Various approaches have been essayed in the discipline of library and information science to measure value. The measures have been classified as embodying economic or social approaches (see Malapela & De Jager, 2018), and have borrowed extensively from other disciplines. The evaluation and performance measurement of library services, an approach stimulated by management sciences, grew within library and information science. It introduced new terminology and methods, which led to attempts to standardise the terminology and application of the principles of performance management and evaluation (see ISO Standard 16439:2014). These developments led to several theoretical developments within library and information studies that borrowed from different fields in attempting to measure the performance of a library's services and/or the value of a library (see Section 2.5.1, above).

This study approached value in libraries from the point of view of *value-in-use*, a theoretical approach introduced by Adam Smith (Smith, 1776:3) in his original attempt to define economic value. The approach was refined in Library and Information Science literature by Saracevic and Kantor (1997) in their *Theory of use-oriented value of library and information services*. This framework assumes that a user has *Reasons* for demanding library and information services, the user *Interacts* with a service and because of that interaction obtains *Results* (R-I-R) (Saracevic & Kantor, 1997a & b). The *Reasons* and the *Interactions* are considered as a 'cause' and the *Results* as an 'effect' (see Chapter Five for a full explanation). The *Reasons* within the context of this study related to student learning, student success, faculty teaching and researcher productivity.

The study employed a comparative case study research methodology and used three research instruments – document analysis, interviews and questionnaires – to collect data at two institutions,

one in Zimbabwe (Institution A) and one in South Africa (Institution B). Each institutional dataset was analysed separately before the results were compared (see Chapters 6–8). A mixed-methods research design was chosen for this study (Creamer, 2018; Creswell & Clark, 2018; Ngulube, 2010, 2022) and is described in Section 4.4. Table 4.3 presents the three research instruments in relation to the study’s research questions. The specific instruments are available in Appendices One and Two. The data was collectively analysed in two stages, the first based on the research questions and objectives and the second informed by the theoretical approach of the *Taxonomy of value in academic libraries*. The second approach was based on the Grounded Theory and involved coding with the help of ATLAS.ti software (see Section 4.8.2 and Appendix 5).

9.3 Summary of the findings

The full findings regarding Institution A are to be found in detail in Chapter Six of this study, and the full findings regarding Institution B are detailed in Chapter Seven. Chapter Eight offered some systematic comparison between the two cases. In this section, the findings of the study are summarised in terms of the research objectives.

- The higher education environments in South Africa and Zimbabwe have certain expectations of their universities (and other higher education institutions). The study established that the policies of the sector are aligned with the respective country’s national development plans. While the two countries (and institutions) are in the same sub-region and share similar historical and political environments, the HE demands of each country are distinctive.

Literature on the value of libraries (see Section 2.2 above) cites the calls for accountability from higher education policymakers (mostly in the US, UK and the Western world) for university administrators to justify the spending of public funds on their institutions. These calls translate into the demand that expensive services like academic libraries justify their existence in terms of the value that they contribute to the university. This study identified no such (explicit) calls from HE in South Africa or Zimbabwe. However, in this sub-region, universities face different challenges, such as sustaining their service delivery while being underfunded by the state. For example, in South Africa it has been established that “state funding of higher education in real terms has been declining over the years” (Department of Higher Education and Training, 2013:7). Universities are nevertheless expected to increase student enrolment, produce more graduates to meet the countries’ national development needs, and support their respective countries in meeting the human capital demands of their economies. Meanwhile, due to inadequate national student financing schemes, students and their parents struggle to pay tuition and accommodation fees. Academic libraries in this study aligned their strategic focus (as reflected in their mission statements, strategic goals and work plans) with the needs of the parent institutions. At Institution A, the library goals were almost a duplicate of the university’s strategic statements. Theoretically, this met the requirements proposed by the academic literature on value; however, the results of the study indicate that academic libraries need further to refine the alignment of their services to fully achieve the set goals. Academic libraries should also demonstrate the return on investment that they represent through internal and external reviews measuring their value, and communicating evidence of that value to their stakeholders.

- Despite the academic staff and students at both institutions claiming to make more use of the internet (especially Google and Google Scholar) to locate academic information, they still value academic libraries. Students and academic staff frequently visit the library, students mostly for library study spaces, library Wi-Fi and the library network for accessing electronic resources and services.
- The study concurs that while there are environmental changes in higher education, academic libraries are still appreciated and used by both students and staff. Both user groups in both institutions indicated that if the academic library were to disappear entirely, the impact on research, teaching and learning would be dire.
- The *Taxonomy of value in academic libraries* is an important tool for anchoring the “value in academic libraries” discourse and functioning as a yardstick for the measurement of elements of value in academic libraries.
- Four elements of value in academic libraries were explored in this thesis (as a sample of the broader range of elements constituting value in academic libraries): student learning, student success, faculty teaching and researcher productivity. This study found that:
 - **With regard to student learning** – the students at both institutions agreed that the academic library contributed to their learning outcomes (for example, at Institution A, *lifelong learning* was the most chosen outcome, while at Institution B, *successful completion of assignments* was chosen).
 - **With regard to student success** – the study established that student success was important, although the measurement of success should be interpreted against the students’ expectations of the University in terms of obtaining degrees.
 - **With regard to faculty teaching** – the study found that both libraries contributed to teaching and provided some services for academic staff. There is a need to

explore further the potential role of the academic library in teaching, beyond mere materials provision.

- **With regard to research productivity** – at both institutions, the academic staff acknowledged the library's role in helping them to access the resources they needed to conduct research and get published. The libraries are not yet contributing to tenure, promotion or grant applications by academic staff.
- While both institutions in this study designed services for their students and academic staff, the findings of this study suggest that there is a need to design and enhance user services to fully meet expected outcomes on behalf of both students and academic staff.

9.4 Conclusions and recommendations

The following are the conclusions reached by this study.

9.4.1 Academic libraries are to some extent responsive to the needs of higher education and the institutions that house them. While there are no direct requests for them to justify their existence, academic libraries are expected to support the mission and goals of the institutions they serve. Keen attentiveness to the needs of the university, its academic units, staff and students will ensure that the academic library remains valuable to stakeholders.

9.4.2 Value in academic libraries is a multifaceted concept encompassing various elements. The study has demonstrated that the library contributes to aspects of value in terms of student learning, student success, faculty teaching and research productivity. The results of this study confirm that academic libraries meet the general expectations of students and academic staff.

- 9.4.3 Different academic libraries have different service offerings and different expectations among their users (as revealed by the comparisons in Chapter 8). Despite these differences, there was a common belief in the value of libraries, to the extent that users agreed that without academic libraries, their learning and research would not be possible.
- 9.4.4 The *Taxonomy of value in academic libraries* needs further development and expansion to cover all aspects of library value, so that it can serve as a general tool for academic librarians to use in value-based studies and discussion.

Recommendations

Based on these findings, the following recommendations are made to improve our understanding of value in academic libraries in the global south.

- i. The study highlighted the importance of academic libraries aligning their goals, mission and strategies to fulfil the aims of the institutions that fund them, thereby ensuring that their services meet the needs of students, research staff and teaching units. The study recommends that academic libraries in South Africa and Zimbabwe design services that are more responsive to the needs of their users.
- ii. In the 21st century, the technological landscape is mutating very rapidly, the economic climate remains volatile, and expectations of higher education keep changing and varying from country to country and from region to region. The study established that despite these realities, students and staff (with access to alternative information sources) still consider academic libraries essential to teaching, learning and research. Users come to the library for a wide variety of

reasons. The study recommends that academic librarians continue to explore their changing environment and monitor the needs of their clientele. Meeting these needs through appropriate service delivery remains vital if libraries wish to retain and or even enhance their value. Users consider academic libraries essential because they have *reasons* that get *results* through *interaction* with them.

- iii. The value of academic libraries is multifaceted, and some facets are underexplored. The study recommends the *Taxonomy of value in academic libraries* to the academic library community as a tool to be jointly developed to embrace all aspects of academic library value.

9.5 Future research

This study explored the value of academic libraries in the 21st century through the lens of the available literature. In Library and Information Science, our understanding of value is not fully developed, yet we are privileged to stand on the shoulders of giants in economics, marketing, business, psychology and other fields. Of the eight elements of value identified by ACRL and Oakleaf (2010), only three have been fully researched. There is clearly a need for further exploration of the contribution of academic libraries to other aspects of value such as:

- Academic libraries and student enrolment
- Academic libraries and student success
- Academic libraries and student achievement
- Academic libraries and student engagement
- Academic libraries and faculty research productivity

- Academic libraries and faculty grants.

These areas require examination to improve our understanding of value in academic libraries. Academic librarians need to identify data sources that can be explored to obtain relative metrics for use in providing outside data supporting the value of libraries. Finally, value needs to be communicated to stakeholders, but there is insufficient consensus on how this should best be done.

9.6 Contribution of this study to new knowledge

This thesis examined the concept of value in academic libraries. As shown in Section 2.5, above, there have been several explorations of value, but more in the sphere of public libraries than in that of academic libraries. This work contributes to the understanding of value in academic libraries. It adds to the literature on the value of libraries to researchers, institutions and, ultimately, to their national higher education systems. The study has emphasised and contributed to academic librarians' and library administrators' concepts of value measurement in libraries for the purpose of justifying institutional support for them. More than five decades have elapsed since library and information science scholars started exploring the concept of value in relation to libraries, yet no comprehensive study has been carried out in Africa. This study contributes to the understanding of value and library assessment from an African perspective.

This study has been conducted at a time when libraries need to justify their existence, publicise their service delivery, and provide evidence of their contribution to their users and institutions (Matthews, 2017). The study has contributed new approaches to the measurement of the value of academic library services. Through the application of the “theory of use-oriented value of library

and information services” (Saracevic & Kantor, 1997a; 1997b), the study offers a unique mapping of a user’s reasons for using a library service to the results emanating from that use. In this way, the study contends that the value of the academic library cannot be determined economically, but rather through the benefits derived from its use (value-in-use). The use outcomes (such as student learning, student success, teaching, and research productivity) can be derived from the services delivered. To support this approach to measuring value, the study offered the *Taxonomy of value in academic libraries* as a tool to refine the study of value in academic libraries.

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Appendices

Appendix 1: Research Instrument - Documentary Analysis

Research question	Checklist/Evidence
<p>RQ1. What institutional outcomes do the libraries of the respective universities expect for their universities and researchers, despite the needs of the changing research terrain?</p>	<p>National mandate</p> <ul style="list-style-type: none"> • What Higher Education Priorities does the University fulfil? • Institutional mandate • What are the institutional mission statements for the two institutions? • What mandates emanate from the University mission statement? • What outcomes are envisaged from the University mission statement? <p>Library mandate and service (s) targeted at researchers and students.</p> <ul style="list-style-type: none"> • Do the respective libraries have mission, vision, or strategic statement? • What does it spell out in relation to their role in student learning and to student success; faculty teaching; and to the researcher productivity. • Evidence of library services offered as a commitment to student learning, to student success, faculty teaching and faculty research productivity and faculty grants. • Known contribution of library to student learning and to student success; faculty teaching; and to the researcher productivity. • What do annual library reports statistics (and other data) show regarding to their support to the institutional mandate (faculty and students)
<p>RQ2. To what extent do the mission statements of the respective universities demonstrate how these libraries should add value to their institutional goals and objectives?</p>	<ul style="list-style-type: none"> • Are the mission statements of the respective libraries aligned to the mission statements of the Universities they serve? How they compare? [Mapping of the library mission and the institutional mission]. • Do libraries have strategic plans? What do they reveal about student learning, student success, faculty teaching and faculty research productivity?

<p>RQ3. What value does each respective library, and its services contribute to student learning and success; faculty teaching; and to the researcher productivity at the respective universities?</p>	<ul style="list-style-type: none"> • When it comes to student learning and to student success; faculty teaching; and to the researcher productivity what services do the libraries offer that support these outcomes? • Do any local/internal studies or reports reveal aspects of impact of these libraries on their communities? • What initiatives are put in place by the respective libraries to add value to their clients, or to institutional goals and objectives

Appendix 2: Research Instrument – Interview Guide

Cover letter for Interview to Researchers

Consent Form for Researchers Interview

Dear Sir/Madam,

My name is Thembani Malapela a PhD research student at the University of Cape Town, in the Department of Knowledge and Information Stewardship. My study is titled ‘**Exploring the value of academic libraries in the 21st century: a comparative study of two universities**’, under the supervision of Emeritus Professor Karin De Jager. The major purpose of this study is to establish how academic libraries add value to their users and to demonstrate how they contribute directly to the missions of the institutions they serve—specifically in the areas of research, teaching and learning processes.

I therefore, kindly invite you to participate in the interview for lecturers/researcher to get your views. This interview seeks to understand the role of the library in meeting academic staff needs in support of their teaching, publishing, and research activities.

The interview is available online here [REDACTED]

Alternatively you can opt for a zoom call interview, if you wish so you can book your slot here <https://docs.google.com/forms/d/1rWctKTwTK9abIYhQUlskrMr55jCkCreaB4dCBnuhACY/edit>

Before clicking and participating in the above link, please read the consent statements below

Item no.	Consenting statements	Tick (✓)
	<i>By clicking the above interview link I consent to the statements below</i>	
1.	I confirm that I have read and understood the information provided about the study.	
2.	I understand that I am not obliged to participate in the study, and that I am free to withdraw from the study at any time, without providing a reason.	
3.	I understand that my anonymity as a participant in the study will be adhered to and confidentiality of the data provided will be assured during the reporting of the findings.	
4.	I hereby freely consent to participate in the study.	
5.	I have not included any identifying information in completing this interview	

For further information please contact the research team below:

Researcher: Thembani Malapela
Cell: + [REDACTED]
Email: mlpthe002@uct.ac.za

Supervisor: A/Professor Karin de Jager
Phone Number: [REDACTED]
Email: Karin.DeJager@uct.ac.za

INTERVIEW GUIDE FOR RESEARCHERS

Introductory questions

1. To which faculty are you affiliated?
2. How many years of teaching and/or research do you have?
3. How many classes do you teach per semester?
4. And what is the estimated number of students enrolled in your courses?
5. Do you access university library online or physically?
 - a. From where do you access the University Library website or online resources?

Faculty Teaching

6. Are the materials you recommend in the course (s) you teach available in the library?
7. Where do you direct your students to find the materials they need for the courses you teach?
8. Do you require that your students to cite resources other than the teaching materials you give them?
9. Do your students cite relevant resources for their assignments?
10. Do you reward your students for citation and references (or for providing evidence of further reading)?
11. Is the university library involved in student learning, design of the curriculum or creation of new course outlines?
12. Do you have a regular contact or formal meetings with the faculty library or with librarians? (If so are these useful in helping faculty with their research needs?)
13. Do you place some additional materials essential for your students on reserve or in a study collection in the library?
14. Do you integrate library resources and services into your course syllabi, and tutorials?

Research Productivity

15. How many different peer reviewed research outputs have you published so far?
 - a. Journal articles_____
 - b. Books/Monographs_____
 - c. Book chapters_____
 - d. Conference proceedings_____
 - e. Patents/other_____
16. What library services are essential for you getting published?
17. How have the librarians contributed to your publication results?
18. What is the contribution of the library to your appointment, promotion judgments, and research grants decisions?
19. Have you received direct personal support by librarians when publishing your work?
20. If the academic library in your university were to shut down, how will your work and that of your students be affected?

Thank you for participating in this interview if you have any questions kindly contact

mlpthe002@uct.ac.za

Appendix 3 : Research Instrument – Questionnaire

Dear Participant,

My name is Thembani Malapela, and I am a PhD Student in Library and Information Science at the University of Cape Town. I am conducting research “**Exploring the value of academic libraries in the 21st century: a comparative study of two universities**”. Therefore, I wish to invite you to participate in this study by completing the attached questionnaire.

The major purpose of this study is to establish how academic libraries add value to their users and to demonstrate how they contribute directly to the missions of the institutions they serve – specifically in the areas of research, teaching and learning processes.

The information you will provide will be used solely for the research and to support learning and teaching in the field of information sciences.

Kindly take note that:-

- This study is for academic purposes and your responses will be treated with confidentiality.
- Do not indicate personal details (e.g. names or id numbers) on any of the responses.
- To obtain a conclusive picture of the issues, I urge you to complete all questions and you may also use the last question to provide additional details.
- You may decline to answer any question and you have the right to withdraw from participation at any time.

Specific questions about this research project and the questionnaire may be mailed to mlpthe002@uct.ac.za

Yours faithfully,

Thembani Malapela

QUESTIONNAIRE FOR GRADUATE STUDENTS

Section A: User and Academic Library Service

01. Gender Male Female

02. Qualification you are pursuing.

.....
.....

03. Have you recently used your University Library Service (physical or online services)?

- YES [if YES, go to Q4]
 NO [if NO, jump to Q 5]

04. If YES, could you elaborate when you last visited the library

Time Frame	Tick appropriate
Yesterday	
Two or three days ago	
A week or less ago	
1 month ago,	
More than Six months ago	

05. If you answered yes for Q3, ignore this one. Could you tell us the reasons **why you do not use** the University Library Services?

.....
.....
.....
.....

06. Have you accessed the university library’s website to do research or search for books?

- Yes
 NO [if NO go to Q.11]

07. Where do you access the University Library website or online resources? (**Select those that apply**)

Device	Tick
Desktop PC or laptop at home	
Desktop PC or laptop in the library	
Desktop PC or laptop in the faculty	
Personal tablet or laptop	
Mobile telephone	
Other devices [specify]	

08. How frequently do you access the library's website or online? (**Select one that applies**)

	Frequency
Every day	
Twice a week	
Once a week or thereabouts	
Once a fortnight or thereabouts	
Once a month or thereabouts	
Less frequently	

09. What are the three most important reasons why you use your college/university? Library? (**Please select three**)

Reason	Tick
Quiet space for study adjust spacing of boxes	
Availability of computers/electronics resources	
Availability of specific materials or information	
Convenient location	
Group study space	
Comfortable surroundings	
Hours of operation	
Helpfulness of library staff	
Place to meet with friends	

Other – please specify

10. In your experience at this institution during the current school year, how often have you...

	Very Often	Often	Occasionally	Never
Used the library as a quiet place to read or study materials you brought with you				
Asked a librarian or staff member for help in finding the information you want				
Read an assignment material or assigned material other than textbooks in the library				
Used the library resources to compile a bibliography for assignment or research work				
Used a library computer to do research				
Accessed the library WIFI and library network for information access purposes				
Other (specify)				

11. Which of the following library services have you used during the past 12 months? (**check all that apply**)

Computer access	
Electronic databases/article indexes	
Traditional printed resources	
Meeting or study space	
Web connection for laptop	
Reference and past exam papers	
Interlibrary loans	
Information/research services provided by library staff	
Other (specify _____)	

12. The library staff have helped me to...(Check all that apply)

Find books, journal articles, and web resources	
Use online/electronic journals	
Identify the type and amount of information I need	
Define or refine research questions	
Choose or refine a topic for a paper	

Cite sources appropriately in my research papers and assignments	
Explore subjects of interests outside class	
Critically evaluate information from books, journals and websites	
Organize and present my research	

13. Which of the following university library services and resources need to be improved to meet your learning and research needs?

Library aspects	It's perfect	Needs minor attention	Needs to be improved
Access to library wireless network			
Access to reading rooms or physical collections			
Access to online databases			
More library computers			
Library opening hours			
Library staff support to students			
Silent study areas and collaborative learning spaces			
Other			

14. Where else do you find information for your learning purposes?

Section B: The benefits of using your university library for student learning

15. Academic libraries are important in supporting student learning. How do you consider the contribution of your library to the following learning outcomes?

	Very Important	Important	Slightly important	Not important
Achieving a good graduation grade				
Timeously completing assignment				
Successful completing each year/academic level				
Continuous lifelong learning (learning non-degree related skills)				
Other [specify] _____				

16. Did you participate to the library instruction program or Information Literacy Skills?

YES (if YES proceed to Q17)

NO (If NO proceed to Q19)

17. How do you rank the role of the library instruction program or information literacy skills to your student learning?

	Very Important	Slightly Important	Not important	I am not sure
Tick relevant				

18. Do you have a specific example of how the library or its services made a difference to your study or learning at university??

19. Which of your library and learning skills would you like to improve? (Select all that apply)

- a. Literature searching
- b. Critical thinking
- c. Assignment/research paper presentation skills
- d. Professional communication
- e. Citation and reference skills
- f. Other (Specify)_____

20. Which means do you use to locate the reference literature, background or documentation you need for your assignments or thesis? **Could you rank your responses**

	Highly used	Mostly used	Slightly used	Never used
University library				
Internet search engine				
Free journals online				
Other libraries (public libraries)				
Other (Specify)_____				

Thank you for completing this questionnaire, if you have any questions kindly contact mlpthe002@uct.ac.za

Appendix 4: Documentary Analysis: Zimbabwe (Institution A)

A4.1: Introduction

The first case study was a university in Zimbabwe, as stated in Section 1.2.2, the specific identities of the institution under study must be concealed – as a request from these institutions – and as a result all identifying names will be anonymized. As indicated in Section 4.5.1, the purpose of documentary analysis was to explore the content of the documents and understand the focus of the academic library services and to establish “the elements of value of academic libraries” as guided by the research questions. The specific evidence sought in each of the selected documents were outlined in the documentary analysis checklist – and these checks are aligned to the objectives of this study (these can be read in Appendix 1 of this report).

Three sets of documents groups were examined in the case of Institution 1, national policy documents, institutional mandates documents and library service-related documents. Table A4.1 below provides a summary of the documents consulted.

Category of Document	Name of document	Check-list evidence
i) National policy documents	<i>National Development Strategy 1 (2021-2023)</i>	What Higher Education priorities does the University fulfil?
	<i>Transitional Stabilization Programme- (TSP) (2017-2020) (Reforms Agenda)</i>	
	<i>Education 5.0 – Doctrine for the Modernization and Industrialization of Zimbabwe through Education, Science & Technology to Achieve Vision 2030</i>	
ii) Institutional policies documents	<i>Institution A* Strategic Plan 2019-2025</i>	<ul style="list-style-type: none"> • What mandates emanate from the university mission statement?
	<i>Institution A* Act of Parliament</i>	
	<i>Institution A* Vision and Mission</i>	
iii) Library service - related policy documents	<i>Institution A* Library Strategic Plan 2019 -2025</i>	<ul style="list-style-type: none"> • What do they reveal about student learning, student success, faculty teaching and faculty research productivity?
	<i>Institution A* Reports (published or unpublished)</i>	

Table A4.1. Summary of documents consulted in Institution A

The documents listed in Table A4.1 were examined and two strands of evidence as expected from the documentary analysis (as discussed in section 4.5.1 and the checklist) and the theoretical framework – (i) evidence from national higher education priorities fulfilled by the universities and what priorities are reflected in the university mission statement, (ii) evidence from the university library strategic plan and service offering on the elements of value – with a specific bias on student learning, student success, faculty teaching and faculty research productivity (as defined in the scope of this study). With regards to the four specific elements of value – the CLASS A elements of the Taxonomy of Value in Academic Libraries will be used to tag these as they appear in the university library documents. These represents evidence of existence of REASONS for the use of academic libraries – reinforced by national and institutional documents. The summarized Class A elements tagged in the documents are listed below: -

- A.1 to get Faculty Grants/ Research Grants*
- A.2 to increase Faculty Research Productivity*
- A.3 for Faculty Teaching*
- A.4 to support Institutional Reputation and Prestige*
- A.5 to support Student Achievement*
- A.6 to Improve Student Enrolment*
- A.7 to enhance Student Experience*
- A.8 to support Student Learning*
- A.9 to support Student Retention and Graduation*
- A.10 to facilitate Student Success*
- A.11 for Personal reasons*

A4.2 Evidence or mandates emerging from the national policy documents.

The higher education policy in Zimbabwe was changed and aligned to the country's national development visions and plan. The documentary analysis was conducted on the documents stated identified in Table A4.1 above. The results from three documents identified as national policy documents:

Name of Document	Results from relevant section (s) of the document
<p><i>1. Transitional Stabilization Programme- (TSP) (2017-2020) Reforms Agenda</i></p>	<p>1.1 “1628. Construction of accommodation, teaching (A.3) and learning (A.8) facilities will be implemented, complemented by private sector funding through joint ventures” (p. 254)</p> <p>1.2 “National University of Science and Technology (NUST) Central Library Construction of a 3-storey library” (p. 326)</p> <p>1.3 “1608. This is being realised through restructuring the higher and tertiary education sector to deliver university and college training institutions focused on five missions: Teaching (A.3); Research (A.2); Community Service: Innovation and Industrialization” (p. 272).</p> <p>1.4 “1267. The Transitional Stabilisation Programme will, therefore, promote the development of human resource capacities in line with the attendant demand for higher technological and technical skills through enhancing the teaching (A.2) of science and innovation subjects from early childhood learning up to tertiary education”</p>
<p><i>2. National Development Strategy 1 (2021-2023)</i></p>	<p>2.1 “636. To achieve the objective, Government will fully re-configure the Higher and Tertiary Education System from the tripartite education system of Teaching (A.3), Research (A.2) and Community-service (Education 3.0) which produces only literate job seeking graduates, to that which includes Innovation and Industrialisation, which produces entrepreneurs, quality goods and services (Education 5.0). – (p. 151)</p> <p>2.2 “645. The objective is to ensure that resources earmarked for Research (A.2), Development and Innovation will be availed in order to operationalize Innovation Hubs and Industrial Parks in Institutions of Higher learning.” – (p. 152).</p> <p>2.3 Related to youth and sports, “Percentage increase on research papers/publications on Cultural and Creative- Industries (CCIs) and heritage (%)” - (p.286).</p>
<p><i>3. Education 5.0 – Doctrine for the Modernization and Industrialization of Zimbabwe through Education, Science & Technology to Achieve Vision 2030.</i></p>	<p>3.1 “Ministry is implementing Education 5.0; teaching (A.3), learning (A.8), community service, innovation and industrialisation to move the nation towards attaining the status of a middle – income economy by 2030” – (p. 8).</p> <p>3.2 “The Government is restructuring the higher education and tertiary education to deliver universities and college training institutions focused on five missions: - 1. Teaching, (A.3) 2. Research, (A.2) 3. Community Service, 4. Innovation and 5. Industrialisation” – (p.16).</p> <p>3.3 “3.1.1 Teaching – focusing on local environment in teaching (A.3) and learning. 3.1.3 Research (A.2) – Research and Development is the engine for bringing in new ideas and innovations” – (p.17).</p>

Table A4.2 Results from documentary analysis from Higher Education Policy in Institution A.

The analysis of higher education policy in Zimbabwe indicates a number of key priorities that are set for institutions in the country. The five priority mission areas tabulated in the Education 5.0 policy document are – *Teaching, Research, Community Service, Innovation, and Industrialisation*. There is an additional one which constantly mentioned in the other documents is *learning*.

A4.3 Evidence or mandates emanating from the institutional policy document (s)

Institution A is operating under the policy regulations discussed in Section 6.2.1 above, and the specific university policies consulted can be seen in Table A4.1 above. As stated in Table A4.1 (examined together with the documentary analysis checklist – see appendix of this report) the document analysis exercise sought evidence from institutional policies that would address the following checklist under the research questions of this study (as discussed in Section 1.3).

Some examples of the checklist questions - What mandates emanate from the University policy documents? What outcomes are envisaged from the University policies and mission statements? How are the mandates of the university aligned to the national mandates -in comparison? The documentary analysis results of the institutional policy documents in Institution A are presented in Table A4.3 below.

Name of Document	Results from relevant section (s) of the document
1. Institution A* Strategic Plan 2019-2025	<p>The University will pursue its missions through seven (7) strategic objectives.</p> <p>1.1 “Strategic Objective 1: Develop and promote a programmatic approach to research and innovation for generation of knowledge products, goods and services that responds to the needs of industry, commerce and society”.</p> <p>1.2 “Strategic Objective 2: Review, streamline and/or introduce undergraduate and postgraduate degree and academic programs inspired by growing demands for technological advancement, industrialization and modernization at national level and beyond”.</p> <p>1.3 “Strategic Objective 3: Develop strategic partnerships to leverage knowledge-sharing, resource mobilization and investments for advancement of innovative research, outreach, teaching and business development”.</p> <p>1.4 “Strategic Objective 4: Talent identification, nurturing and mentorship towards an industrialization and modernization agenda”.</p> <p>1.5 “Strategic Objective 5: Internationalization of university’s academic programmes, research, advisory and consultancy services”</p> <p>1.6 “Strategic Objective 6: Modernization of University infrastructure, learning and research and co-curricular facilities for improved service delivery systems and enhanced career opportunities and welfare for student and staff”.</p> <p>1.7 Strategic Objective 7: Organization, management, and administration of university business for effective delivery of the strategy”.</p>
2. Institution A* Act of Parliament	<p>2.1 “...the objects of the University are the advancement of knowledge, the diffusion and extension of arts, science and learning, the provision of higher education and research and, so far as is consistent with those objects, the nurturing of intellectual, aesthetical, social and moral growth of the students at the University”. – (Section 4)</p> <p>2.2 “To make provision for research, to provide courses of instruction, and to take such other steps as may appear necessary or desirable for the advancement and dissemination of knowledge” – (Section 4).</p> <p>2.3 “To promote research into economic, political, social, cultural, scientific and other matters generally and with particular reference to the interests of Zimbabwe”- (Section 4)</p>
3. Institution A* Vision and Mission	<p><u>Vision</u>: To be recognised as Zimbabwe’s Global Centre of Excellence in Research, Innovation, and higher education training...”</p>

	<p><u>Mission:</u> The university provides leadership in relevant and cost-effective research, knowledge-based innovative solutions, products and services, advanced educational training and technical advisory for industry, commerce, and society to inform modernization process in developing economies.</p>
<p align="center">Table A4.3: Results from documentary analysis institutional policy in Institution A</p>	

The results presented in Table A4.2 above indicate that Institution A aligned their strategic policy documents to the national higher education priorities as seen in Table A4.1. To reinforce this finding, for example, the preamble of the *Institution A* Strategic Plan 2019-2025* states that “the plan while builds upon past strategic documents and achievements, it also seeks to operationalize the Government of Zimbabwe Education 5.0 model” (Institution A* Strategic Plan 2019-2025: 4). The following mission areas emerged in the documentary analysis as presented in Table A4.3 – “research and innovation for the generation of knowledge”, “introduce undergraduate and postgraduate degree and academic programs”, “teaching and business development”, “university academic programs”, “learning and research” infrastructure, “advancement of knowledge...science and learning”, “to make provision for research and to provide courses for instruction”, “to promote research... and dissemination of knowledge”, “higher education training”, “relevant and cost effective research” and “educational training”. This analysis showed that Institution A strives to support national priorities in higher education teaching, research (including action research and what the Education 5.0 calls “heritage-based research”), innovation, science, and learning.

A4.3 Evidence or mandates emanating from the university library documents.

The third aspect of the documentary analysis was to examine the Institution A’s university library strategy, related policy documents and reports. The specific consulted documents for this analysis were mentioned in Table A4.1 above, and in the following table – as similarly presented in Section 6.2.1 and 6.2.3 - would provide the evidence of alignment with institutional mandates and presents what the service offering reveal about student learning- (A.8), student success (A.10), faculty teaching (A.3) and faculty research productivity (A.2).

Name of Document	Results from relevant section (s) of the document
<p>1. Institution A* Library Strategic Plan 2019-2025</p>	<p>The University library will pursue its missions through seven (7) strategic objectives.</p> <p>1.1 “Strategic Objective 1: To provide a wide spectrum of information resources that are responsive to the research needs and interests of the University, industry, commerce and society”.</p> <p><i>Sample activities linked to Outcomes of Objective 1 - Design the Researcher Profile Database (A.2.5); Harvest researcher profiles (A.2.5); Soliciting reading lists from the faculties; Updating and redesigning of the XX* e-Scholar (A.2.5), etc. (Appendix of the Library Strategic Plan 2019-2025 provides a detailed mapping of services)</i></p> <p>1.2 “Strategic Objective 2: Provide library training services and programmes that stimulate independent/lifelong learning (A.8) and promote the acquisition of information technology skills. (A.8.1)”</p> <p><i>Sample activities linked to Outcomes of Objective 2 – Develop Information Literacy Skills programme meeting the demands of 21st Century students (A.8.1); E-resources training for researchers (A.3.5), staff, and students; Offer research data management (RDM) training, (A.2.6) etc.</i></p> <p>1.3 “Strategic Objective 3: Develop strategic partnerships to leverage knowledge-sharing, resource mobilisation and investments for advancement of innovative research (A.1), outreach, teaching (A.3) and business development”.</p> <p>1.4 “Strategic Objective 4: Provide a conducive environment that nurtures and promotes talent development (A.8)”.</p> <p>1.5 “Strategic Objective 5: Develop and provide diverse and multicultural resources and services that meet international best practices (A.4.2)”.</p> <p>1.6 “Strategic Objective 6: Modernisation of library facilities in line with user needs and current trends”.</p> <p>1.7 Strategic Objective 7: Align and implement Library Policies for effective service delivery”.</p> <p><u>Vision:</u> “To become a technologically driven centre of excellence in the provision of library and information services in support of advanced educational training, research and innovation.”</p> <p><u>Mission:</u> “To provide access to robust high quality knowledge resources, services and facilities that support knowledge-based innovative research, advanced educational training and advisory services that stimulates modernisation processes in Zimbabwe and beyond”.</p>
<p>Table A4.5: Results from documentary analysis of library documents in Institution A</p>	

In the Table A4.5 above, it indicates that there are number of mission commitments by the *Institution A's** university library to provide services for both students and staff in these areas - student learning- (A.8), student success (A.10), faculty teaching (A.3) and faculty research productivity (A.2).

A4.4 Mapping the Class A (Reasons) to corresponding academic library services indicated in the library policy documents.

The Table A4.6 below maps the class A areas, using the guiding questions provided in that class, to relevant specific services envisaged in the *Institution A* Library Strategic Plan 2019-2025*

Class A - Category	Guiding Questions from the Taxonomy of Value	Evidence of aligned Services from the <i>Library Strategic Plan 2019-2025</i>
1.0 To increase faculty Research productivity (A2)	<ul style="list-style-type: none"> • How does the library contribute to faculty research productivity? • How do librarians serve faculty who are preparing publications, presentations, or patent applications? • How do librarians help faculty prepare their tenure and promotion packages? 	<p>Library does not directly support A2, but following services aligned,</p> <ul style="list-style-type: none"> • “Information resources that are responsive to the research needs A.2.6”. • “Profiling of expertise of academic staff to identify research strengths - A.2.5”.
2.0 To support Faculty Teaching (A3)	<ul style="list-style-type: none"> • How does the library contribute to faculty teaching? • Does the library collaborate with faculty on curriculum, assignment, and assessment design? • In what other ways does the academic library contribute to faculty teaching? 	<p>Library does support teaching, following services highlighted in documents.</p> <ul style="list-style-type: none"> • “Acquire and subscribe to resources based on the reading lists” A.3.1 & A.3.2 • “Reference management training researchers, staff, and students” A.3.5
3.0 To support Student Learning (A8)	<ul style="list-style-type: none"> • How does the library contribute to student learning? • Is there an impact of information literacy instruction and assessment on student learning? 	<p>Library somewhat support student learning, following service highlighted in documents.</p>

	<ul style="list-style-type: none"> • What is the role of the academic library on student learning? How do academic libraries services contribute to student learning? 	<ul style="list-style-type: none"> • “Offer information literacy training to university staff and students”. A.8.1
4.0 To facilitate Student Success	<ul style="list-style-type: none"> • How does the library contribute to student success? As a result of library use, are students doing well in internships, securing job placements, earning salaries, gaining acceptance to graduate/professional schools? Are there linkages between academic libraries and student success? 	No direct evidence library facilitates Student Support in

Table A.4.6: Mapping Class A (Reasons) to aligned Services from the Library Strategic Plan 2019-2025

Appendix 5: Documentary Analysis: South Africa (Institution B)

A5.0 Introduction

The second case study was a university in South Africa, as stated in Section 1.2.2, the specific identities of the institution under study must be concealed – as a request from these institutions – and as a result all identifying names will be anonymized. The purpose of documentary analysis was to explore the content of the documents and understand the focus of the academic library services and to establish “the elements of value of academic libraries” as guided by the research questions. The specific guidance related to the analysis was outlined in the documentary analysis checklist – and these checks are aligned to the objectives of this study (these can be read in Appendix 1 of this report).

Similarly, to the first case study, three sets of documents groups were examined in the case of Institution B, national policy documents, institutional mandates documents and library service-related documents. Table A5.1.1 below provides a summary of the documents consulted.

Category of Document	Name of document	Check-list evidence
iv) National policy documents	<i>Education White Paper 3: A programme for the Transformation of Higher Education (1997)</i>	What Higher Education priorities does the University fulfil?
	<i>National Plan for Higher Education (2001)</i>	
	<i>National Development Plan 2030</i>	
v) Institutional policies documents	<i>Institution B* Strategic Plan 2020-2024</i>	<ul style="list-style-type: none"> • What mandates emanate from the university mission statement? • What do they reveal about student learning, student success, faculty teaching and faculty research productivity?
	<i>Institutional Statute of the XXXXX University Act, 1997</i>	
	<i>Institution B* Vision and Mission</i>	
vi) Library service - related policy documents	<i>Institution B* Library Strategic Plan 2020 -2025</i>	
	<i>Institution B* Reports (published or unpublished)</i>	

Table A5.1. Summary of documents consulted in Institution B

The above documents were reviewed and as discussed in Section 4.5.1 and the checklist in Appendix 1 the following was the guiding objective – “the evidence from national higher education priorities fulfilled by the universities and what priorities are reflected in the university mission statement”. The Table A5.1 also shows the check-list evidence questions from the documentary analysis.

A5.2 Evidence or mandates emerging from the national policy documents.

The South African higher education policy landscape has been discussed in Section 2.2.2 and Section 7.2.1 respectively. In South Africa the Department of Higher Education and Training (DHET) defines the national policies in the sector. The documentary analysis was conducted on the higher education documents identified in Table A5.1 above. The results from these documents are presented in Table A5.2 below:

Name of Document	Results from relevant section (s) of the document
<p>1. <i>Education White Paper 3: A programme for the Transformation of Higher Education (1997)</i></p>	<ul style="list-style-type: none"> ▪ “1.14 The Ministry’s vision is of a transformed, democratic, * meet, through well-planned and co-ordinated teaching (A.3), learning (A.8) and research programmes (A.2), national development needs, including the high-skilled employment needs presented by a growing economy operating in a global environment”. ▪ “GOALS. 1.27 (5) To improve the quality of teaching (A.3), and learning throughout the system and, in particular, to ensure that curricula are responsive to the national and regional context”. ▪ 1:27(7) “To ensure and advance high-level research capacity which can ensure both the continuation of self-initiated...” ▪ 1:27(9)“To produce graduates with the skills and competencies that build the foundations for lifelong learning (A.8), including, critical, analytical, problem-solving and communication skills, as well as the ability to deal with change and diversity (A.10), in particular, the tolerance of different views and ideas”. ▪ RESEARCH. 2:82 “...Research plays a key role...the dissemination of knowledge through teaching (A.2) and collaboration in research tasks (A.3) are the principal tools for developing academic and research staff through postgraduate study and training”. 2:86 “research system...must redress past inequalities and strength and diversify research capacity”. ▪ 2:91. “The ministry supports the ...identification of national priorities for research and postgraduate training ...incentives for collaboration and partnerships,... and in research and postgraduate training”
<p>2. <i>National Plan for Higher Education (2001)</i></p>	<ul style="list-style-type: none"> ▪ “Producing graduates needed for social and economic development in South Africa”. ▪ “9.1 Research will be funded through a separate formula based on research outputs (A.2),, including, at a minimum, master’s and doctoral graduates and research publications”. ▪ SECTION 5: SUSTAINING AND PROMOTING RESEARCH – “To increase research outputs (A.2), <ul style="list-style-type: none"> • To sustain existing research capacity and strengths, and to create new centres of excellence and niche areas in institutions where there is demonstrable research capacity or potential. • To facilitate collaboration and partnerships, especially at the regional level, in research and postgraduate training

	<ul style="list-style-type: none"> • To promote articulation between the different elements of the research system with a view to developing a national research strategy linked to the national system of innovation”. ▪ “The Ministry is convinced that in the short to medium-term, i.e., over the next five to ten years, the priority must be to increase graduate outputs at the master’s and doctoral level”. ▪ 5.4.3 Enhanced research output and quality – “The Ministry will attempt to enhance research output and quality through : - Revising the current policies and procedures on the measurement of research outputs at universities and Technikons”.
<p>3. <i>National Development Plan 2030</i></p>	<ul style="list-style-type: none"> ▪ “By 2030, South Africans should have access to education and training of the highest quality, leading to significantly improved learning outcomes”.(p.296) ▪ “The graduates of South Africa’s universities and colleges should have the skills and knowledge to meet the present and future needs of the economy and society” (p.296). ▪ “Critically, the pool of researchers needs to expand, and their productivity needs to increase significantly”(p.297). ▪ “Increase the participation rate at universities by at least 70 percent by 2030 so that enrolments increase to about 1.62 million from 950 000 in 2010”
<p>Table A5.2 Results from documentary analysis from Higher Education Policy Institution B</p>	

The policy documents reviewed indicate a higher education that supports national development, through eliminating poverty and reducing inequality by 2030. In the three policy documents above, the need to address previous disadvantaged communities, access to higher education, equality in access to education and standardization and internationalization of South African education are constant themes. The following can be seen as priorities, governance, public funding, access to education, change and transformation, increased research outputs and ICTs development for teaching, learning and research. An examination of Class A elements of the Taxonomy of Value in Academic Libraries indicates (as shown in Table A5.2 above) that there is evidence of A.1 Faculty Grants/Research Grants; A.2 need for research productivity; A.3 emphasis on teaching; A.10, Student success from the South African higher education demands.

A5.3 Evidence or mandates emanating from the institutional policy document (s)

Institution B is governed by the higher education policies included above. Furthermore, the document analysis exercise also sought to discover evidence from institutional policies that would address the following checklist sub questions - What mandates emanate from the University policy documents? What outcomes are envisaged from the University policies and mission statements? How are the mandates of the university aligned to the national mandates in comparison? Fig.7.1a below shows the vision and mission of the university.

Our Vision

A people's university that makes knowledge work

"At [REDACTED], we embrace engaged scholarship whereby learning, teaching, research and engagement is integrated with our everyday realities.

Our university is committed towards breaking down the ivory towers of academia by finding authentic and enduring solutions to our communities' most pressing problems.

We empower our graduates by future-proofing them to successfully negotiate the rapidly changing world of work and make a tangible movement towards civic renewal.

Our Mission

We advance social and economic transformation through relevant curricula, impactful research and engagement, quality learning experiences, dedicated staff and an enabling environment.

Our mission directs us towards solving pressing societal problems and ensuring that our graduates are productive and active citizens.

Our suite of programmes and qualifications, research and innovation, as well as engagement with stakeholders are aimed at making a positive impact on our communities.

We are a committed staff who works tirelessly towards providing a quality service and conducive teaching, learning and living spaces"

Fig.7.1a: Vision, Mission for Institution B

Table A5.3 below analyses the strategic documents from Institutional B

Name of Document	Results from relevant section (s) of the document
<p><i>1. Institution B* Library Strategic Plan 2019-2025</i></p>	<p>The University library has identified four pillars to support its strategy in six years.</p> <p>Pillar 1: “Future-ready graduates who make a positive societal impact (A.7)”.</p> <ul style="list-style-type: none"> • “Deliver research-informed, high-quality teaching (A.3) and learning experience (A.7) to our students”. • “Equip our students with knowledge, skills and attitudes to be enterprising and responsible citizens”. • “Engage our students as active participants in their learning experiences (A.7)”. <p>Pillar 2: “Service and operational excellence through resource optimisation”</p> <ul style="list-style-type: none"> • “..Deploy agile and efficient processes and structures to ensure sound governance, resource sustainability and effective service delivery”. <p>Pillar 3: “Impactful research (A.3), innovation, engagement and technology transfer to foster growth, development and sustainability”.</p> <ul style="list-style-type: none"> • “Develop our internal capacity and opportunities for creativity, research, innovation, engagement and technology transfer”. • “Increase our productivity and impact to advance growth, development and sustainability”. <p>Pillar 4: “Digitally advanced University”</p> <ul style="list-style-type: none"> • “Deploy digital smart technologies to enhance student leaning experiences, facilitate knowledge creation, increase engagement and accelerate technology transfer”. <p><u>Vision:</u> “A people’s university that makes knowledge work”</p> <p>“At XXX ; we embrace engaged scholarship whereby learning (A.8), teaching (A.3) and research (A.2) and engagement is integrated with our everyday realities. Our university is committed towards breaking down the ivory towers of academia by finding authentic and enduring solutions to our communities’ most pressing problems. We empower our graduates by futureproofing them to successfully negotiate the rapidly changing world of work and make a tangible movement towards civic renewal”.</p> <p><u>Mission:</u> “We advance social and economic transformation through relevant curricula, impactful research engagement, quality learning experiences, dedicated staff and an enabling environment”.</p>
<p>Table 6.4: Results from documentary analysis of library documents in Institution A</p>	

Appendix 6: Coding - Using the Taxonomy of Value in Academic Libraries (and ATLAS.ti)

A6.0 Introduction

As indicated in Chapter 4.8 the Taxonomy of Value in Academic Libraries was used to devise a Code Book for the ATLAS.ti as indicated in Section 4.8.4 of the thesis report. This section provides summarised information of how the codes extracted from the taxonomy were used to code the documentation collected within the context of documentary analysis (see Appendix 1 above), responses from the interviews and responses from the questionnaire. This appendix is presented in two parts. The first part focuses on the translation of the taxonomy hierarchies into the code book for the ATLAS.ti, and the second part investigates the document's groups and coding of the responses from interviews and questionnaire for both institution A and institution B. The appendix will conclude with a summary.

A6.1 Coding in ATLAS.ti

ATLAS.ti is qualitative data analysis software widely used in various research fields. The software allows for the application of grounded theory approaches in coding and synthesizing data. There are ten steps involved in coding using this tool. These are,

- **Importing Data:** The first step involves importing data into ATLAS.ti. The tool can handle a wide range of formats such as text documents, PDFs, multimedia files, and even spreadsheets. In this thesis, data was available in excel, pdf and csv files from the survey

monkey database, also including video and notes from the zoom and interviews notes. There were also published reports in form or word or PDFs.

- **Reading and Familiarization:** The literature review, the coding of the data, the taxonomy creation and reading through the thesis allowed the researcher to understand the research context and its nuances. This helped in identifying potential codes and in rephrasing and recoding.
- **Creating Codes:** The background codes came from Taxonomy of Value in Academic Libraries, the constant literature review and automatically generated codes from ATLAS.ti – these were cleaned up to establish a Code Book reflecting the research questions for this study. These tags or labels were applied to the segments data to categorize and organize them around core themes.
- **Applying Codes:** The codes were then applied to the relevant segments of the data. ATLAS.ti allowed for both manual and automatic coding.
- **Refining Codes:** This involved merging similar codes and splitting broad codes into more specific ones.
- **Code Groups and Networks:** For better organization, the codes were grouped into four categories for this study – student learning, student success, faculty teaching and faculty research productivity.
- **Review and Iteration:** Coding was an iterative process with a lot of review and refinement.
- **Quotations:** These were essentially the excerpts of data that are tagged with codes. For example, the files from Institution B (interview results and the questionnaire results had 980 tags (both from code book or the free text codes from the ATLAS.ti).

- **Analysis:** This process included looking for patterns, themes, and relationships between codes.
- **Reporting and Exporting:** Finally, the tool was used to create reports and export findings, codes, and quotations for further use or presentation in this report.

The data from the SurveyMonkey in excel format, including the documents collected as per Appendix one for both institutions were uploaded in ATLAS.ti for analysis. As structured in the software, two broad documents groups were created – one for institution A and another for institution B. In each respective folder, two subfolders were created. The first included all the documents collected in each institution (see Appendix 4 and 5) and in the second all data received from interviews and questionnaires were uploaded.

Two approaches were done in the coding, manual approach (the result of the manual approach can be seen for example in Appendix 4) and automatic approach. This Appendix details the automatic coding by the ATLAS.ti tool.

A6.2 Translating the taxonomy into code book.

There were four categories from the taxonomy indicated in Section 4.8 and these corresponded to these themes - student learning, student success, faculty teaching and faculty research productivity. These became “code groups” within the context of the ATLAS.ti tool. The following was the initial structure of the “code book” in Table A2.1

Code	Code Group	Code Group	Code Group	Code Group
<i>publications</i>	Research Productivity			
<i>patents</i>	Research Productivity			
<i>journal articles</i>	Research Productivity			
<i>tenure</i>	Research Productivity			
<i>promotions</i>	Research Productivity			
<i>collaboration</i>	Research Productivity			
<i>conference papers</i>	Research Productivity			
<i>grants</i>	Research Productivity			
<i>funding</i>	Research Productivity			
<i>library instruction</i>		Faculty Teaching		
<i>guest lectures</i>		Faculty Teaching		
<i>online tutorials</i>		Faculty Teaching		
<i>library guides</i>		Faculty Teaching		
<i>instruction</i>		Faculty Teaching		
<i>course reserves</i>		Faculty Teaching		
<i>secure job placements</i>			Student Success	
<i>career skills</i>			Student Success	
<i>skills development</i>			Student Success	
<i>job placement</i>			Student Success	
<i>career skills</i>			Student Success	
<i>learning materials</i>				Student Learning
<i>learning outcomes</i>				Student Learning
<i>library instruction programs</i>				Student Learning
<i>information literacy</i>				Student Learning

Table. A6.1: Code Book and its categories

A6.3 Concepts emanating from the responses obtained in institution A and B.

When the results from both interviews and questionnaires were auto tagged by the above taxonomy, the results returned 11,301 concepts and some of the filtered terms are shown in the two figures below, Fig.A6.1 shows the top concepts from the responses and Fig.A6.2 shows the word cloud of the concepts filtered at more than 150 occurrences.

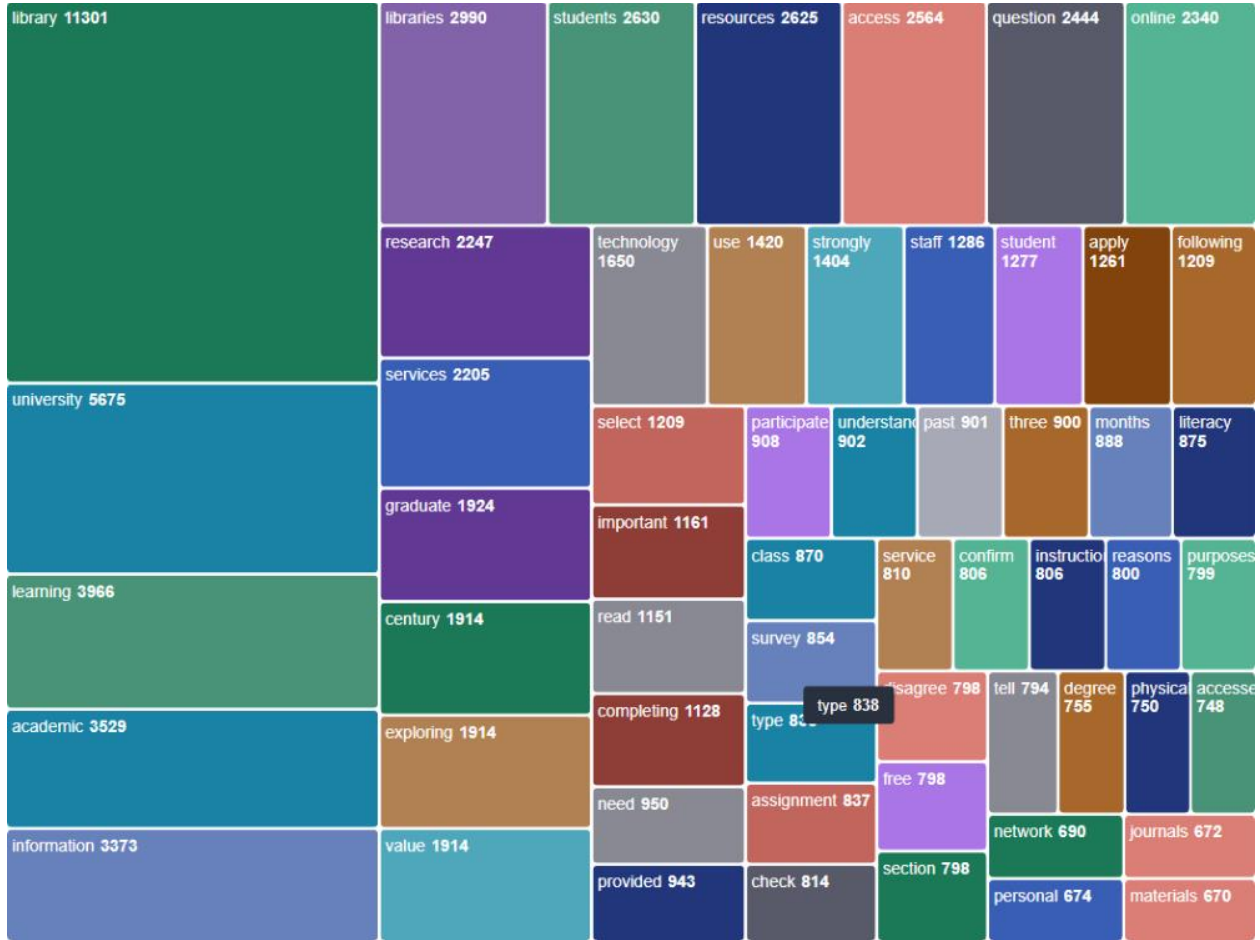


Fig.A6.1: Top concepts from ATLAS.ti automatic coding.

The diagram below shows the word cloud from the concepts with more than 150-word occurrences.

In the code book there were four sub-tags for the student learning, which are “information literacy”, “learning materials”, “learning outcomes”, and “library instruction programme”. The coding occurrences for the responses from Institution A are shown in Fig.A6.3 below,



Fig.A6.3 Coding occurrences for student learning codes

This data shows that most respondents responses indicated an awareness of “information literacy” and its contribution to student learning. The respondents also indicated the importance of “learning outcomes”. This shows that information literacy classes are the greatest contribution to student learning in institution A.

A6.4.2 Student Success

The codes for student success, which were “career skills”, “job placement”, “secure job placement” and “skills development” did not yield any occurrences. This could be because there was no question that asked items related to these sub-concepts under student success.

A6.4.3 Faculty Teaching

The codes for faculty teaching are indicated in Fig.A6.1 above and included, for example “course reserves”, “guest lecture”, and “library instruction”. Fig.A6.4 shows the code occurrences from the data from institution .

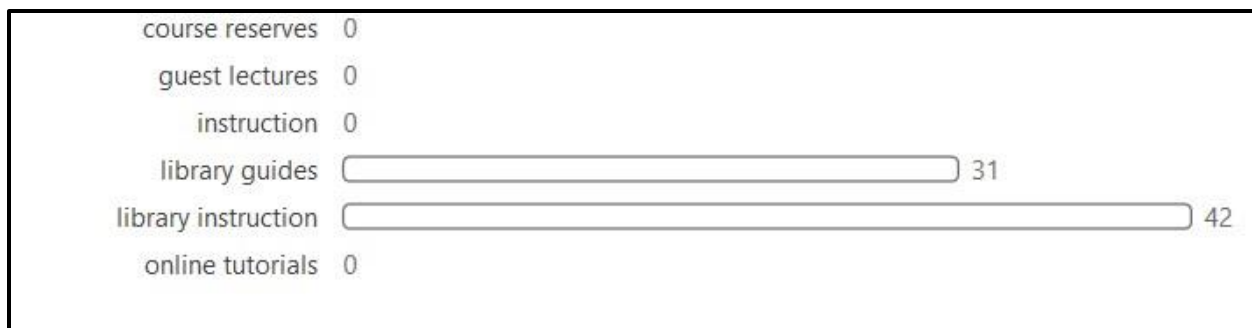


Fig.A6.4 Coding occurrences for faculty teaching

As shown in Fig.A6.4, “Library guides” and “library instruction” codes are indicated in responses as the contribution to faculty teaching in Institution A

A6.4.4 Research productivity

Some of the verbatim responses from the researchers in Institution A included, and when manually coded,

- *“Assisted with literature search during the process of conducting research”*. [A2]
- *“Assisting in access to research materials”*.
- *“Direct the journals to publish with”*. [A2]
- *“Pointing to Research grants [A1] information”*.
- *“Giving accredited and recommended journals”*.
- *“Most literature search done on library website”*.
- *“The librarians are always ready to help with accessing the articles”*.
- *“The library provides reference materials thus facilitating my completion of papers for publication”*. [A.2.1] [A.2.3]
- *“Citations needed in papers submitted”*. [A.2.1]

Based on the coding above, the library does support the researchers in getting published in Institution A.

At Institution B regarding student learning, the above code analysis or occurrence shows that the library usage is linked to mostly “completing” degrees and or acquiring “skills”. The other codes that had higher association with learning were “continuous/instruction” and “literacy”.

A6.5.2 Student Success

The codes for student success, which were “career skills”, “job placement”, “secure job placement” and “skills development” did not yield any occurrences. This was a similar result experienced in institution A, see.A6.4.2.

A6.5.3 Faculty Teaching

Fig.A6.6 below shows the automatic coding for Institutional B documents and the results of the items related to teaching. In institution B, “learning”, “information” and “research” were associated with teaching.



Fig.A6.6 Faculty Teaching Institution B

A6.6 Summary Automatic Coding of all data.

Automatic coding with ATLAS.ti was an important addition and insight to understand the responses, and using the code book inspired by the Taxonomy of Value in Academic Libraries aligned the tool to the needs of the study. ATLAS.ti is yet to improve the utilization of the code books in artificial intelligence part of their tool. Even with the code book, the researcher had to clean up the codes occurrence results. Fig.A6.7 below shows the generic code occurrences for all the data for institutions A and B at 200 plus word occurrences.

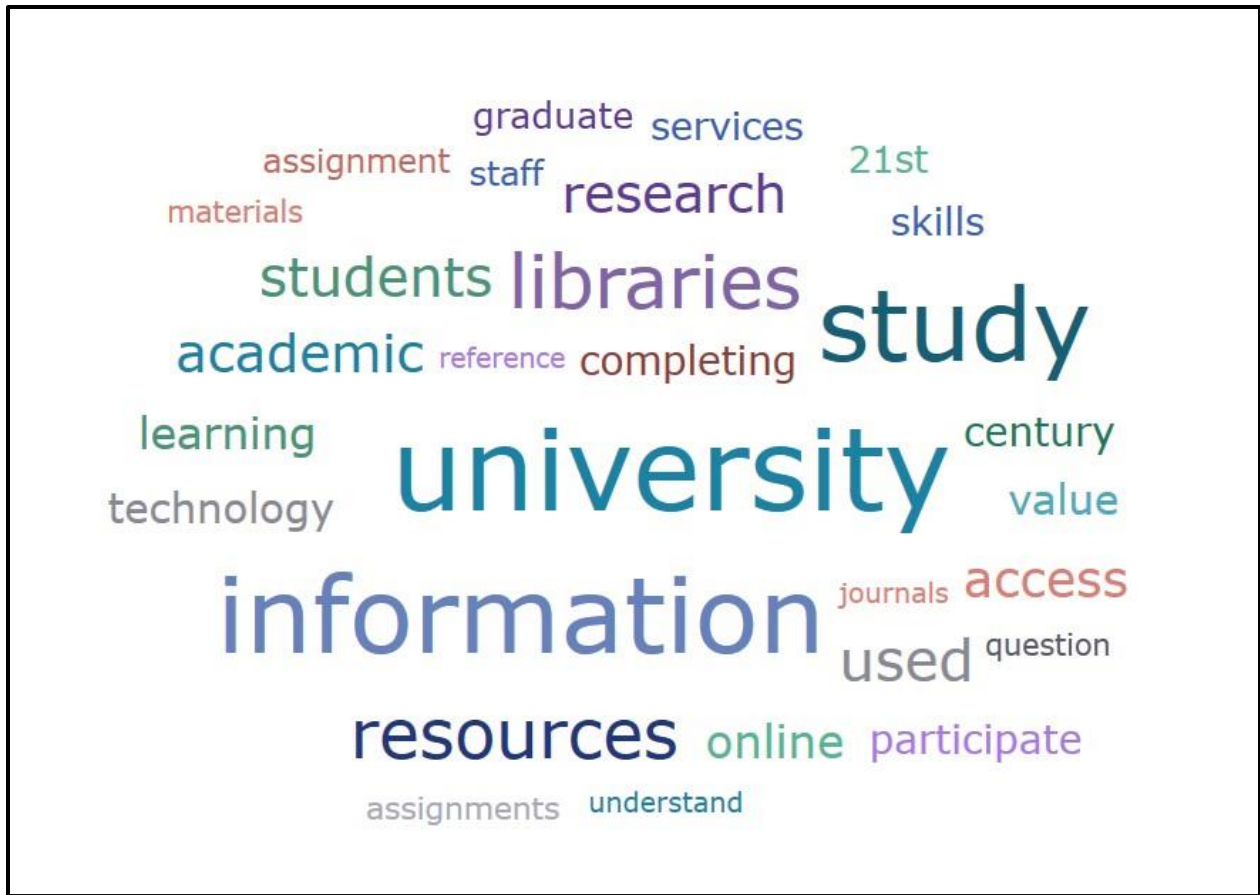


Fig.A6.7 Automatic code occurrences at 200+ word occurrences for Institution A and B

The above figure shows the highest emerging themes from the respondents in both institutions, these themes resonate well the issues raised in this study. Themes like “libraries”; “university”; “information”; “access”; “completing”; “access”, indicate nouns and words that show the importance of the libraries to their users. As indicated by the respondents elsewhere, these affirm that, users had a positive view about their respective libraries and appreciate the efforts of the library staff and find the library services useful.