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# **Public Libraries and Knowledge Commons in a Municipality in the Free State, South Africa**

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## **Abstract**

The purpose of the study is to examine the emergence of Commons in the public libraries in the Free State in South Africa using the Institutional Analysis and Development Framework. The study examined the roles of the libraries and communities, the linkage of the new library with open access to knowledge, level of awareness of both users, and the community and administrators. Also, the study examined the role of library users and their communities in the maintenance of the new library. The study adopted a qualitative research design to study 16 community leaders and 17 library staff using an interview schedule. The interview schedule was developed following the Institutional Analysis and Development Framework, and administered by the researchers. Data analysis was conducted by a narrative approach to highlight the voices of the participants. Knowledge commons is emerging in the communities studied in a serendipitous manner; there is no formal national or regional policy that spells out what knowledge commons is and their entailments. There is strong evidence of community ownership and governance of human knowledge and other resources that are associated with learning and innovation in the communities.

**Keywords:** Public libraries, Knowledge commons, South Africa, Open access, Information technology

## **Introduction**

Knowledge Commons (KC) refers to community ownership and governance of that human knowledge and resources that are associated with learning and innovation in an environment that promotes, supports, and enhances interaction, self-consultation, and self-cogitation. Rather than a community of people, information resources, community, or place, researchers view knowledge commons as an institution that arranges and coordinates the use of the resources through a combination of formal rules, social norms, customs, and informal disciplines, and technological and other material considerations (Stevenson 1991, Singer 2000, Ostrom 2005). KC is achieved through the combination of information technologies, the library, librarians, and the community that the library serves in a seamless co-dependence manner that influences both library content,

services, and user achievement. KC has the potential to strengthen the lives of community members through inclusive capacity building and innovation (Daniel, Darch, and Jager 2010).

Globally, the stimulus to the fast rise in knowledge commons is the rapid development and diffusion of information technology. Information technology applications have been recognized as the key driver of the future of the library, and the libraries are seeing the implementation of various systems driven by computers, e-readers, games, and tablets among others, aimed at enhancing library services and strengthening the learning experiences in the community. In South Africa, the Bill Gates-funded Mzansi Libraries Online Country Grant has reinforced ICT applications in the public libraries and has contributed to initiating radical changes in the way the libraries work (National Library of South Africa 2016). How does the library institution that has matured in information delivery and services techniques in an analog manner adapt to managing and serving users in the current fluidly digital environment?

Interactions in the Thabo Mofutsanyana District public libraries demonstrate ongoing social and institutional changes. Information service providers in these libraries are already finding it difficult to cope with the rapid changes in library users' information behavior. The demands of library users have changed tremendously in line with the peculiar ways in which information technologies are facilitating information service delivery. Many library visitors are beginning to demand, and much of the time utilize, self-services that are facilitated by information technologies. The libraries are compelled to absorb new users and use demands by adjusting their regular service delivery methodologies to ensure that library users collaborate and share information and knowledge in ways previously unavailable, and these new developments align properly with expected modern library standards (Lihn 2008).

On several occasions, users are asking for or using tutorials that are available online, and are participating in online lectures and conferences, while at the same time using offline information resources, which the library has accumulated over the years. Increasingly, the shared resources used by the library users include those in the public domain such as the resources on the shelves, electronic networks to which the libraries are connected, and myriads of other resources some of which the library has no control over. Library users are using any resources they can link with their studies whether available open access basis, copyrighted to the library or not. The rate at which library users use the library spaces for discussion among themselves and with library service providers has also risen tremendously; there is also a higher level of freedom to access and use library resources than was the case previously. This new status of the library differs significantly from what used to be and the libraries and library service and the communities that own the public libraries providers require some retuning to match the new challenges.

### Statement of the Research Problem

The Annual Reports of Thabo Mofutsanyana District public libraries often document their activities and their social responsibility engagements as evidence of the performance of their tasks. They also record the achievements of the public libraries to meet the knowledge and information needs of their clients. These records show that the use of Thabo Mofutsanyana District public libraries is increasing day by day. Clients are increasingly making demands that touch on bandwidth, databases, libraries, and archives among others. On many occasions, clients ask for online tutorials; they participate in online lectures and conferences, while at the same time using offline information resources which the library has accumulated over the years.

Knowledge commons will present some benefits and also pose some risks to the libraries and the users. For example, what would be a suitable structure of the public library in a knowledge

commons era? How does the emerging knowledge commons translate to adequate service provision by the libraries in the district? What is the library users' assessment of the performance of the library service providers during the advent of knowledge as commons? There are bigger and more complex issues such as governance and economic issues, which require to be carefully understood. The capacity of the libraries in the Free State to absorb the new practices occasioned by knowledge commons and the need to understand the extent of development of the commons in the libraries are necessary for decision making and planning to ensure that the needs of users are adequate.

Thinking through these issues suggests a critical interrelationship between the knowledge commons, the characteristics of the resources, and the community of users of a shared resource pool (Frischmann et al 2014; Hess and Ostrom 2007). There is a need to understand the opinions of library service providers, the owner communities, and library clients in the Free State on the roles and performance of the new library (Zickuhr, Rainie, and Purcell 2013). In this regard, this study has implications for understanding human factors, ICT infrastructures, library spaces, maintenance, network effects, sustainability, marketing strategies, knowledge and information sharing, and satisfaction of library users. There is presently no empirical research documenting the knowledge commons in the Free State, and how it contributes to meeting the information needs of the Thabo Mofutsanyana District community members.

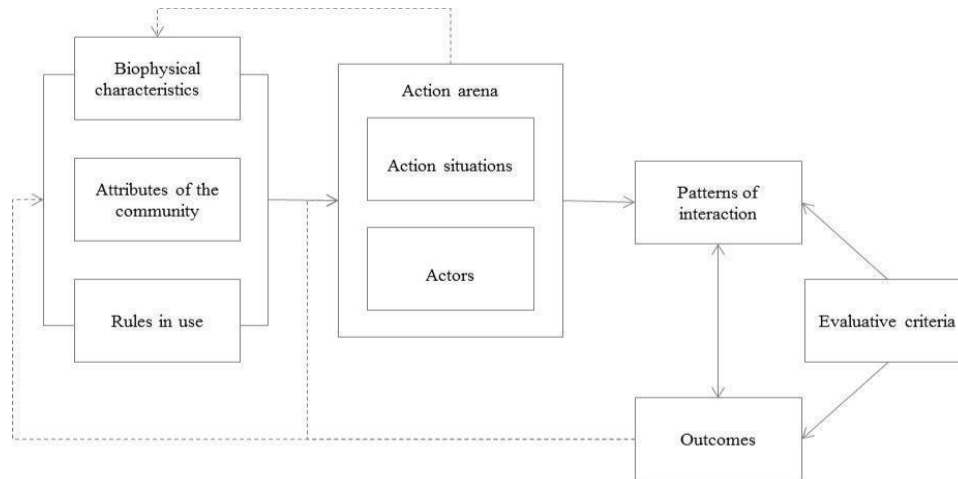
## **Theoretical Clarification and Literature Review**

### *The Institutional Analysis and Development Framework*

The Institutional Analysis and Development (IAD) Framework is a diagnostic tool that can be used to investigate any subject where people repeatedly interact within rules and norms that guide their choices of strategies and behaviors towards a shared resource. Ostrom and Hess (2007) provide the first formulation of the IAD framework in the context of the knowledge commons. The framework provides a methodological lens that is fluid and dynamic; it structures a checklist of causal schema that allows great flexibility in the determination of what factors should be included (Gibson 2005). The framework is structured around three broad clusters of variables that are taken to be the basic underlying factors affecting institutional design and the patterns of interaction within a community or organization. As indicated in Figure 1, the left-hand side describes the underlying situation: the resource characteristics, the make-up of the community, and the rules that they use. The biophysical characteristics of a knowledge commons are composed of three distinctive elements: tangible and intangible artifacts, facilities that store artifacts and make them available. The community is composed of individuals who could be users, providers, or policymakers. The rules-in-use, or institutions, are the normative instructions about what could be done in any action situation, and this is backed by sanctions for non-compliance. Rules could be written or unwritten.

The action arena in the middle of figure 1 describes how specific participants cooperate or do not cooperate, with one another given the underlying situation. The action arena focuses on the incentives that face diverse participants, and how these incentives can affect their choices to cooperate or not cooperate. Interactions that obtain in the action arena are those that are aimed at learning, and the quality of the interaction reflects the situation. The interaction may lead to conflicts that are sorted out according to the rules.

*Figure 1: The original Institutional Analysis and Development Framework*



Source: Hess and Ostrom (2007)

At the right-hand side of the figure, the combination of the action arena and the underlying situation results in various patterns of interaction with specific outcomes, which can then be assessed using the evaluation criteria. The key outcomes include increasing the amount and quality of scientific knowledge in the commons, sustainability, and preservation of the commons, building standards that promote participation, economic efficiency of the commons, fair standards that promote equality are key criteria for assessing the outcome of the interaction in the commons.

### Objectives of the study

The objective of the study is to examine the commons in the public libraries in the Free State in South Africa – the roles of libraries and communities, connection with open access, level of awareness of both users, the community, and administrators about this connection. There is the question of the mix of online and offline artifacts in the commons in the libraries and the perception of the library users about the role of their community in the maintenance of the new library as well as the performance of the service providers in meeting users' needs. Understanding the antecedents of the commons in the libraries and the role of the spectrum of participants and actors, the nature of the interactions in the commons, and the outcome of the interactions is very important in ensuring that the emerging commons fit into global practice and efficient investment and utilization of human and material resources.

### Methodology

This paper was developed from a larger survey that encompassed quantitative and qualitative approaches (Matobako 2021). This current paper is, however, based only on data that was collected with the qualitative approach, using an unstructured interview schedule. The interviews involved a population of the library staff, and then a selection of community leaders. The researcher is examining the interviews data because interviews always provide first-hand information about any phenomenon under study. Interviews also provide the participants the chance to express their thoughts about what they know about the subject matter. Unstructured interviews usually extend or formalize a dialog; the interviews in this study dealt with one participant at a time (De Vos *et al* 2011).

There are 34 public and dual-purpose libraries in Thabo Mofutsanyana District, with 80 library staff, and a total of 77 805 library memberships, serving 34 communities as of May 2018 (ProLib

Free State Provincial Library Management System 2018). Ten libraries were purposively selected based on their participation in the Mzansi Online Country Grant Project in 2016 (National Libraries of South Africa 2016). The ten libraries had a library staff size of 25 and the population of users in the libraries is 22 818 (ProLib Free State Provincial Library Management System 2018). All the librarians (17) and the selected community leaders (16) were included in the study. The unstructured interview was guided by an interview schedule (see the Appendix).

The researcher, with the cooperation of the library officials, selected two community leaders from each participating community. The community leaders included a wide range of people: heads of the institutions, professionals, and distinguished residents who were considered to have first-hand knowledge about those libraries and their operations. The library experts provided insight knowledge on the evolution of the information needs and behavior in the community, and the libraries and how the commons meet these needs. The interviews were scheduled for an hour for each interviewee. However, the length of the interviews varied because some of the participants requested that the interview be conducted in the local language. Being speakers of the local languages themselves, the researchers only translated the interview schedule contents at the point of interviews. Data collected from the 33 respondents were translated where necessary, transcribed, and sorted.

This study is conceptualized based on the interpretivist paradigm that has a relativist ontology and subjectivist epistemology. Interpretivist research “is guided by the researcher’s set of beliefs and feelings about the world and how it should be understood and studied” (Denzin & Lincoln, 2005, p. 22). In the interpretive paradigm, “knowledge is relative to particular circumstances—historical, temporal, cultural, subjective—and exists in multiple forms as representations of reality...” (Benoliel, 1996, p. 407). We will accept multiple meanings and multiple ways of knowing, and acknowledge that objective reality may never be captured but may be represented (Denzin & Lincoln, 2005, p. 5). The focus in the interpretivism paradigm is primarily to recognize and then narrate the meaning of human experiences and actions in given situations (Fossey et al., 2002).

The process of creating the questions, as well as recognizing and narrating in this paper has been eased by the adoption of IAD as a guide. A set of questions was created from each of the concepts in figure 1, and subjected to vetting. We could not identify studies that applied IAD to study knowledge commons in Africa, and this constrained the opportunity of finding scholars that are knowledgeable on the subject matter. We relied on three of the ten professors we approached to study the IAD framework to vet the interview questions. We had deliberately created a large number of questions, but the questions were reduced and or merged as the case may be due to the opinions of the senior scholars.

The analysis of the data was conducted through a narrative approach that favored interpretation of key opinions of the respondents regarding each of the questions posed. However, NVIVO, a qualitative analysis software, was also used to generate codes to further strengthen the results, where it was considered necessary. NVIVO is capable of extracting a wide range of codes that address a subject matter thus providing a better picture of each situation. Word frequencies and the word clouds are capable of highlighting the most frequent or most significant codes.

The goal of this study is not to discover any emerging theory but rather to use the elements in IAD to explain the emerging knowledge system in the libraries in the community. Adopting a narrative approach mainly to present the findings of the study was a deliberate way to permit the issues to manifest as they were voiced by the library officials and community stakeholders. In several studies, it has been suggested that qualitative research could assist in generating objectives, research questions, and hypotheses on issues that have not been sufficiently explored. The

researchers believe that meeting such an expectation in a research undertaking would require *hearing* the voices of the participants and so enable the researchers and the readers to tease out their specific objectives for similar research activity. The acronyms LO and CL were used to represent library officials and community leaders respectively; in situations where opinions centred on the same point, we merely alluded to group adjectives such as many, some, etc. It is also good to point out that there were minor differences between the interview guides for the CLs and COs. To ensure a free flow of the presentation of the results of the two categories of respondents, findings were not presented differently but rather presented together whether views are complementary or not.

## Result Presentation and Discussion of findings

### Background Information of the Communities, Community Leaders, and Library Officials

Eight communities namely Bohlokong, FatengTseNtsho, Leratswana, LS Sefatsa, Mashaeng, Meqheleng, Moemaneng, and Petsana were represented by two community leaders (CL) each, 16 in all. Seventeen library officials represented communities. Table 1 shows that the library officials (LO) identified themselves as Librarians (6), Assistant Librarians (4), and Library Assistants (7). The mean age of the CL was 30.28 years while the mean age of the library officials was 38.76 years. In respect of gender, 15 of the CLs were males while nine and eight of the library officials respectively were males and females. On the highest education of the respondents, Table 1 shows that an equal number of community leaders and library officials (4) have high school certificates or equivalent certificates and tertiary certificates.

**Table 1: Highest educational qualification of respondents**

	Community leaders		Library officials	
	Frequency	Percent	Frequency	Percent
High school certificate or equivalent certificate	4	25.0	4	23.5
Tertiary certificate	3	18.8	3	17.6
Diploma	4	25.0	8	47.1
Degree	5	31.3	2	11.8
Total	16	100.0	17	100.0

More LOs (8) than CLs (4) reported having diplomas. Ironically though, more CLs (5) than LOs (2) reported having degrees. In addition to English, 14 of the CLs speak Southern Sesotho while 2 speak IsiZulu; for the library officials, 11 speak Southern Sesotho, 2 Setswana, and 4 speak IsiZulu. All the interviewees were blacks. Of the CLs, 11 were single and had never been married/never lived together as husband/wife/partners while 5 (31.3%) were legally married (including customary, traditional, religious, civil, etc.).

The situation is different with the library officials. Six were single and have never been married/never lived together as husband /wife/partners, legally married (including traditional, religious, civil, etc.) while one respondent each was separated but still legally married, divorced, or living together like husband and wife/partners. Regarding employment, five of the CL reported that they were employed. Eight were unemployed while three were self-employed. The number of years of employment of the library officials ranges from 1-28 years, with several employees in

each number of years being unit except for three library officials that have spent 25 years on the job and two that have worked for 10 years. The CLs have been associated with the libraries in the communities they represent for a period ranging from one to 10 years. Besides three CLs who have been associated with the libraries for 10 years and two others for five years, the rest of the CLs have only been associated with the libraries for one year each.

On the roles of the community leaders and library officials in the libraries

A tutor in the school in the community and a user of the commons reported that he helped learners with their assignments, homework, and revision of previous question papers. Another who identified himself as a community and political leader assisted members of the community to access the internet to meet their personal information needs? He also provided legal and financial assistance to the community members and helped them in the development of programs. An unemployed graduate of the Central University of Technology also assisted learners with their homework.

A middle-aged community leader reported that he is someone that likes to encourage hopeless people to read and pursue their dreams; he is also a leader in the church youth committee. A young commons user, a class prefect at Tlokola Secondary School was helping the needy people and further helped the people find support and branding of small businesses. Very close to the language and expected role in the commons was a respondent who assigned himself the role of protecting the community-shared resources, and he mentioned that his interest included clinics, libraries, and schools. He also supported the community to meet a variety of needs, and also participated in non-governmental organizations' activities.

In respect of their roles in the library, community leaders reported:

*Assisting the library officials and the users with my knowledge where necessary, and participating in other activities which are beneficial to the library; I am a community member that assists learners who come to the library with their homework and love to interact with people a lot; I am a good library user who protects and live this library it is one of my assets; I am a library user, and on the other hand, I assist users who need information on the internet and I help learners with their homework; I facilitate extra classes for learned to help them with their school work, and also assist them in the knowledge commons; I'm a regular user using the library because it is the only place where we can access and use internet free. I sometimes assist other users with how to use the internet or Linux to type their documents; My role is to help other library users to navigate the information they want to access and be better scholars of the future. Regular library user who also helps other users with how to use computers and also offer with for example CV template from my personal flash/ memory stick; Research user who is trying to clarify how the library works and how people should use the spaces in the library; Researching materials for policy development; Student of UNISA using this library ever since I was a child. I am doing my research and studies here and studying, researching on the Internet, and reading for leisure only.*

In the same way, the roles of the library officials were very diverse, but they were related more to the specific and general library roles expected in a public library. The librarians reported helping commons users with lifelong education by providing them with access and support to use the library resources. They also reported managing issues desk, reading shelves, organizing library activities, and marketing library displays. Other activities in which they engaged included managing operational library activities according to both Dhlabeng Municipal and Free State



provincial structures and making sure that every user is satisfied before leaving the library. They assisted users with an internet search, made copies of, and scanned documents for community members, trained the users on how to access library commons like using computers and providing the relevant sources where necessary or always; among other tasks, the librarians planned and coordinated management of the library and also managed financial resources. Furthermore, the librarians performed administrative duties, rendered professional library and information services to the community, and planned and coordinated the services and activities. A relatively experienced librarian said he contributed to establishing community structures to facilitate consultation of the library resources. Six of the library officials have had training on the use of ICT in the libraries while three have trained on open access while four participated in both. Twelve of the library officials had formal training while one person's training was informal.

The library officials elaborated on their training:

*As the person in charge of the library, I attended all the training based on Southern African Bibliographic Information Network (SABINET), ICTs, and toy library, enhancing and empowering officials about how to use the ICTs equipment and also be in the position to assist users; I attended training on open access so that I can assist users with knowledge published. I received training on how to use computers, tablets, and search on the internet; I received training on open access from SABINET and ICTs resources so that I can be in the position to assist users; I was trained on how to use ICTs equipment and also on how to assist users who utilize them; The training was about how to access database or knowledge published online on SABINET; The training was to ensure that we serve professional services to users regarding ICTs, and also to train users with basic digital literacy and digital creative skills; Toy library training on how to play with educational toys with children, SABINET training empowered me to become a knowledgeable official who assists users with digital resources, and training was based on open access, so that I can be able to assist users on knowledge published materials online.*

#### Open Access and Knowledge Commons

##### *The prevailing openness in the libraries*

We inquired about the opinions of the respondents about the current openness practices in the libraries in which many information resources are somewhat freely available through the internet. The respondents were regular users of the commons, and they relied on online resources for their learning. They expressed happiness with openness practices in the libraries as well as the expansion in the spaces and services offered by the libraries. In addition, there was a relative consensus that the libraries have improved and/or developed in terms of making internet access available for library users. However, respondent CL-3 preferred printed books, although he observed that many learners/students who came to the commons appeared to prefer online publications, and he felt that there must be a balance in the provision of print and online resources. Respondents CL-10 and K1-14 expressed full support for an intellectual property right, upholding the restriction and associated requirements for access of publications such as subscription fees. Similar to this view was respondent CL-13 who reported that the library should only serve users with resources that are available on open access basis and that the library should avoid complete publications that require subscription fees.

### *Awareness about open access and associated developments*

The researchers also wanted to know the level of awareness about open access from the CLs. Hence this question focused on respondents' level of awareness about open access and associated developments and how they play out in their library. Eight of the 16 CLs were confident and positive about their levels of awareness about open access and associated developments, and how they played out in their libraries. Five of the respondents expressed uncertainty regarding their awareness levels, but they observed that training is required to improve their knowledge about IPR and open access issues. Respondent CL-8, CL-9, and CL-13 mentioned that his level of awareness about open access was low, but that the library has not done enough to make users aware of open access.

### *Systems/strategies to be installed or implemented to support and promote open access in the library*

The study probed the CLs about open access by asking about the systems/strategies they think should be installed or implemented to support and promote open access to their libraries. The interest of many of the CLs was on the library covering subscription and license fees of relevant resources so that the materials can be free of charge for users. Capacity building was the major interest of respondents CL-2, 3, 13, and 14 who suggested that training and workshops should be hosted by the libraries. The respondent CL-8 recommended that marketing and networking should be prioritized by the libraries and that the libraries should conduct community needs analyses and host open days to inform and train the students and users. The case of library PCs not to be allowed for personal use and recreation, but rather for only academic purposes, was the concern of respondent CL-10. Making access to Wi-Fi free to enable users to make use of their smartphones, laptops, and tablets were the suggestion of respondent CL-11.

### *Training on open access in the past five years*

In terms of elaborating on any training received in the past five years, eight of the 17 Los stated that they had not received any relevant training on open access in the last five years. In contrast, seven informed that they had received relevant training on open access in the last five years. LO-11 and LO-15 stated that although they had received some training, not all the training required had been delivered.

### *Disposition towards open access philosophy*

The disposition of the LOs towards the open access philosophy in their public libraries shows that majority of the LOs felt that open access was a positive complement to the information available in the library and that it was a sufficient development. However, respondents LO-1, 4, and 7 highlighted that they felt it unfair that access to restricted materials was not being granted to students who needed it.

### *The open access environment in the library*

The LOs were asked to describe the open access environment in their respective libraries. The majority of LOs said that the open access environment was positive, favorable, and conducive. However, LO-15 mentioned that the open access environment was not yet conducive due to the

lack of free Wi-Fi and lack of human resources. Also, unlike other respondents, four of the LOs argued that the open access environments in their respective libraries were good but access to some resources was still restricted.

Table 2 illustrates the intersection between open access and the knowledge commons in South Africa, with Free open software service (FOSS), having the highest weight of 50% and a length of 23.

Table 2: Word Frequency Results on Open Access resources

Word	Length	Count	Weighted (%)
Freeopensoftwareservice (FOSS)	23	10	50.00
None	4	7	35.00
Electronicmanuals	17	1	5.00
Freeoperatingsystem	19	1	5.00
Listserve	9	1	5.00
<b>TOTAL</b>			<b>100</b>

Electronic manuals, free operating system, and Listserve had the least weight of 5%, but the length of 17 and 19, and counts of one respectively.

#### *Open access policies, statements, or positions of the library*

When requested to provide information concerning any open access policies, statements, or positions of the library, the majority of the LOs stated that their library had no known policy on open access. According to respondent LO-4, there were only internal rules.

Table 3 shows that there is a high level of preponderance of open access ideas in the knowledge commons. The weight of *good* or *beneficial* open access, is 35%, and 11.76% *fair* and *helpful*, with lengths of 4 apiece, and counts of 6 and 2, respectively.

Table 3: Word Frequency Results on character towards open access idea

Word	Length	Count	Weighted Percentage (%)	Similar Words
Good	4	6	35.29	beneficial, good
Fair	4	2	11.76	fair
Helpful	7	2	11.76	helpful, helps
Advantage	9	1	5.88	advantage
Benefits	8	1	5.88	benefits
Fine	4	1	5.88	fine
Important	9	1	5.88	Important

The rest of the descriptors have very low weights although *advantages* and *benefits* have lengths of 9 and 8 respectively.

## Biophysical Conditions

### *Adaption of global transformation in the library*

This question requested the respondents to inform the researcher about how they think their libraries have conformed to the global transformation of creating spaces where library users can freely interact with information resources. Further, explanations were provided about the meaning of the commons to enable the respondents to efficiently take part in the discussion. Two streams of opinions can be discerned on responses to this question. The first was eight CLs that reported that the libraries have successfully adapted to the global transformation and that the advances have been satisfactory. Another eight CLs said that their libraries were still in the process of adapting to the global transformation, but that they had not yet reached that high standard.

### *Recent transformation in the library*

The consensus among the CLs was that the libraries were indeed meeting their needs more than ever before. In terms of space, few of the respondents mentioned that library space has improved and enough room has been created to accommodate several users simultaneously. Further, other respondents stated that book circulation was increasing, however, the internet speed in some of the libraries has slowed down greatly, but that the information needs of the community were being met. Then respondent CL-15 felt that the needs of the community are being met up to a point, although there has been improvement since 2014.

Most of the CLs referred to the fact that they were able to gain further detailed information on an important subject via the internet on a library computer. One of them referred to the fact that he is a student and uses the internet a lot for obtaining most of his study material and that the library has provided him access to the internet. Then, respondent CL-3 who is an unemployed graduate highlighted an important fact that the youth in his community have nothing to do after school and that the crime rate is fairly high, and that he uses the library for self-development and recreation. Many of the respondents said that the internet in the library had improved in terms of speed. Respondents CL-5 differed and rather stated their frustration that even though the library officials were so helpful, toy library was not available, and there were not enough computers to accommodate users in the knowledge commons.

Few of the respondents gave the reasons that computer classes and photocopying were facilities were available, and that the library hall was being used for social development activities. Many respondents applauded the fact that many online materials were available free of charge, but respondent CL-9 raised the concern about people with disabilities not benefiting in the commons due to lack of special services. Other respondents applauded the reasons for the increase in the number of available computers, observing that those visible efforts were being made to meet the changing needs of the community in the aspects of information technology and information resources. Respondent CL-13 voluntarily assists learners for the reason that the entire user base at Bohlokong library was comprised of school learners.

### *Aspects that negate expected roles of the library*

CLs were requested to state with examples whether they thought that the ongoing transformations in the libraries were generally favorable to expectations of the library's roles. The majority of the respondents felt that there were both benefits and areas requiring improvement. For instance, most

of the respondents included the fact that computers provide better assistance than books but that they were obsolete, and the fact that despite legal operating hours, the library remains open for use on Saturdays. In some cases, there were expectations of government-sponsored library upgrades, workshops, and training for the community. Another example included the expectation of children to be empowered academically through the library's services.

*Observations, feelings, experiences, and opinions about artifacts that exist in the library*

This question focussed on physical and nameable issues such as articles, books, internet resources such as web access, ICTs such as computers lab, tablets, free internet access, multimedia space, and others, such as toy library materials. Many of the CLs generally reported that books and articles were always available, but that they were not always relevant or updated items. The majority of CLs mentioned that the resources were not enough in number to accommodate the number of common users who required them. Mention was made of data that easily run out before the end of the month due to the high number of internet users visiting the library. In terms of the toy library, most of the CLs reported that resources were available. Others pointed out that many tablets and photocopiers were either often broken or not available at all, that the Wi-Fi available was not often free, and that many websites were restricted this hindering students and learners.

The LOs mentioned that computers and books were available for use in their libraries. Laptops were listed by 10 different respondents, while photocopiers, tablets, scanners, magazines, newspapers, articles/journals/periodicals, projectors, and televisions were mentioned by others.

Table 4 shows the spectrum of online resources in the commons, with photocopiers, tablets, and printers leading in weights (14.43%, 14.43%, and 13.40%); counts (14, 14, and 13) and lengths (12, 7, 8) respectively.

Table 4: Word Frequency Results on Electronic resources in the commons

Word	Length	Count	Weighted Percentage (%)
Photocopiers	12	14	14.43
Tablets	7	14	14.43
Printers	8	13	13.40
Desktopcomputers	16	11	11.34
Laptops	7	11	11.34
Scanner	7	11	11.34
DVDs	4	4	4.12
Onlinegames	11	4	4.12
Cds	3	3	3.09
Videos	6	2	2.06
Wifi	4	2	2.06
Securitysystems	16	1	1.03
Projectors	9	1	1.03
<b>TOTAL</b>			<b>100.00</b>

Other devices are desktop computers, laptops, scanners, DVDs, Online games, CDS, and videos. Yet others are videos, wifi, security systems, and projectors.

Respondent LO-1 voice was that of frustration when he stated:

*We have computers, tablets, online games, photocopiers, and scanners. We have four computers for the public. We have four tablets, but they are currently not working due to a lack of connectivity.*

Some of the respondents listed online games, printers, Wi-Fi and internet connections, furniture, DVDs, videos, toy library, and CDs. However, according to four respondents, Wi-Fi indeed was available but restricted, LO-13 thought that Wi-Fi was available at her library.



*Figure 2: A WordCloud of nonelectronic artifacts in the commons*

Figure 2 is the word cloud of the nonelectronic artifacts in the commons, and they include books as the major resource, and newspapers following. Other major items are magazines, toys and articles, among others.

#### *Observations about facilities that store the artifacts and make them available*

CLs were requested to describe the facilities that store the artifacts and make them available, such as new forms of library spaces and computer network infrastructure in the library. According to eight of the CLs, the new space of the library accommodates community needs in terms of information availability, space, toy library facilities, and strategic location. Many of the CLs were somewhat more conflicted in their opinions, pointing out several areas in the libraries that needed improvement, namely that the library buildings were without running water or toilet facilities, sufficient security systems, and that there were many empty shelves but not enough space for learners to sit and work/study in. Respondents CL-1 and CL-2 pointed out that libraries have made an impact in the community and that the spaces were conducive even though they need to be designed strategically. Also, some respondents mentioned that libraries need to install security systems to prevent possible burglary and that they should provide more library materials. Unlike many of the CLs who expressed positive, CL-15 and CL-16 stated that the library spaces available were mostly too small, and not enough.

#### The Commons Community of the Library

*Support and role the community has provided, or played in the sustenance and maintenance of the library*

The CLs were asked what role or assistance the community had provided or played in sustaining and maintaining the library. A large majority of the CLs indicated that the community did not provide any assistance to the library.

Respondent CL-3 stated:

*There is a group of unemployed and underemployed youth and others who are looking for employment opportunities. They are involved in the government community program called Community Work Programme (CWP). This group receives a monthly basic level of income to supplement their existing livelihood. They are people who are always cleaning and maintaining the library.*

On how much of the roles the community would be able to play given the rapid transformations previously discussed, was met with a variety of responses, most of which were quite constructive. The majority of the CLs were of the view that, if the members of their communities stood together and acted in unison, their libraries would be developed more rapidly and effectively, especially in terms of community opinions through suggestion boxes, digital transformations, the purchasing of new books and material and increasing the number of computers and/or tablets available. Other respondents felt that, in working together to protect and secure their libraries, the communities would then really own the libraries. CL-6 pointed out that:

*My community is passive. They don't know that the library belongs to them. The community is not plowing back to the community. Awareness campaigns about the library activities are needed.*

CL-8 felt that management should initiate a meeting with stakeholders to facilitate transformations and involvement of the communities. Four respondents recommended calling on donations of either money or data from the communities and authorities to improve the libraries in general, while respondent CL-12 suggested that hosting fundraiser events would be a good approach to this goal.

## Participating in Making Rules and Regulations for the Commons

### *Rules and regulations guiding the use of the space*

The interviewees were requested to describe the rules and regulations guiding the use of the library commons. Of the 17, 12 LOs stated that they have general rules covering commons users and

Table 5: Word Frequency Results on Rules and Regulations guiding the Use of the Commons

Word	Length	Count	Weighted Percentage (%)
Membershiprules	15	15	30.00
Timeallocationrules	19	11	22.00
Decorum	7	9	18.00
Borrowingbooksrules	19	3	6.00
Computerroomrules	17	3	6.00
Toylibraryrules	15	3	6.00
Discussionrule	14	2	4.00
Readingrules	12	2	4.00

Monitoringrules	15	1	2.00
Websiterestrictionrules	23	1	2.00
TOTAL			100.00

library officials concerning noise levels, eating/drinking in the commons, littering, use of cell phones in the library, and age restrictions for toy library use. The respondents, LO-1, 2, 3 referred to the presence of rules in terms of library computer usage, time limits, signing in/out, accessing of restricted sites, and food/water in proximity to the computers. LO-7 stated that they also had rules concerning the borrowing of books. Further, respondents LO-8 and 10 stated that they had never seen any rules written down or on display since using the library. Library users were not involved in the making of the rules, but respondent LO-3 stated that a suggestion box was available for library suggestions.

Table 5 is the word frequency distribution of codes in respect of rules and regulations guiding the commons. The codes include membership rules (30%), time allocations rules (22%), and decorum (18%); others are rules about borrowing books, computer room rules, ty library rules, and discussion rules. Yet others are monitoring rules and web access restriction rules.

### Library Policies

#### *New library policies regarding managing the library in the event of the emergence of the commons*

Are there new library policies addressing issues about managing the library in the event of the emergence of the commons? A large number of the LOs except LO-5, 6, and 7 stated that there had been no new policies at all. Administration of the commons has been on an ad hoc basis. But LO-5 mentioned the charging of new tariffs; LO-6 mentioned the recent policy of no longer charging users for internet access. LO7 referred to the adjustment to time-allocation for computer use as being a new/updated policy in the library commons.

#### *The policymakers*

The LOs stated that Free State Department: Sport, Arts, Culture and Recreation was responsible for policy-making, and not the community members or users. The remaining respondents maintained that either their employers, library officials, and/or politicians were responsible for policy-formation, and not the community members or users.

#### *The response and role of the community of users and policymakers in this new development*

In response to the question of what the responses and roles and reactions of community users and policymakers are in this new development, a vast majority of LOs thought that good satisfaction and/or support levels were being experienced from the community. LO-17 stated that there were poor support/satisfaction levels from the community. Regarding support from Free State Department: Sport, Arts, Culture and Recreation, seven of the respondents thought that the support received was poor. Eight respondents stated that they received sufficient support from Free State Department: Sport, Arts, Culture and Recreation.

#### *Intellectual Property Rights - Legal issues regarding Intellectual Property rights, subsidies, contracts, antitrust provisions*



15 LOs stated that no legal issues had ever been encountered in the library whatsoever. However, LO-14 pointed out that the only legal-related issue was about users wanting to photocopy entire books. All LOs, except for respondent LO-13, stated that library officials are conscious of IPR.

The respondent LO-13, however, stated that:

*We do not consider IPR as a library. But we do not train users. I think we need to train our users about IPR and Copyright Act issues also.*

*Problems arise out of Intellectual Property Rights*

LO-6 and LO-13 explained that the problems concerning IPR have not arisen in their libraries but informed that training on the subject needs to be mounted to avoid future issues.

*Governance in the commons*

Do the commons impose any forms of the new governance system in the library? Fourteen of the 17 LOs reported that there were new governance systems in place in their respective libraries but that the governance systems are not formalized. Other respondents voiced frustration that no new governance system has been imposed, while LO-6 suggested that their library was about implementing a new governance system soon.

*Self-governance mechanisms*

All respondents, except for LO-16, stated that there were general rules or mechanisms in place in the commons and that there were norms in place for conflict resolution. While the majority of the respondents mentioned that commons users received explanations concerning membership rules, and also referred to suspension, reporting, finding, and/or disciplining as consequences for sanctions for rule violation of the aforementioned rules. Also, 10 of the respondents stated that they were responsible for the monitoring of the commons, while five others pointed out that resource contribution and extraction requirements were in place and made visible in their libraries and/or maintained by the Free State Department: Sport, Arts, Culture and Recreation.

Table 6: Word Frequency Results on self-governance mechanism

Word	Length	Count	Weighted Percentage (%)
Membershipcard	14	8	34.78
Freemembership	14	5	21.74
Residentialaddress	18	4	17.39
Identificationbook	18	2	8.70
Identificationcard	18	2	8.70
Cellphonenumber	16	1	4.35
Tworeferences	13	1	4.35
TOTAL			100.00

As could be seen in the word frequency in Table 6, the self-governance issues that could be discerned in the commons are membership card (34.78%), residential addresses of commons users (17.39%), identification book (8.40%), and card (8.70%), cell phone numbers (4.35%) and the references supplied by the user at the point of registration (4.35%).

*Any administrative and other costs involved in constructing, monitoring, and enforcing compliance with the rules installed to guide the use of the commons?*

The majority of the LOs stated that there were indeed costs involved when it comes to the loss or damage of library books/property at the hands of commons users, while respondents: LO-7, LO-12, and LO-17 indicated that they have never encountered any such situations in the library.

*Observations about how the practice of norms, rules, and laws that control management of commons*

The majority of the CLs thought that the library norms, rules, and laws have indeed been influenced in terms of needing to register for internet use, not being allowed to eat or drink in the library, not being allowed to loan books previously, behaviors that were now allowed, and that previously existing norms, rules, and laws have been negatively influenced because they are no longer properly enforced. In contrast, three respondents observed that library norms and rules were now difficult to implement.

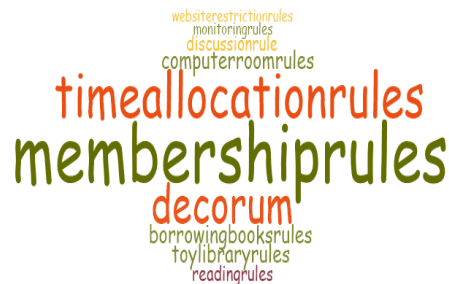


Figure 3: Word cloud of norms, rules, and laws that govern the library

Word cloud in figure 3 shows that membership rules, time allocation rules, and decorum are the most prominent rules in the commons.

*What, if anything, would you change about norms, rules, and laws in the library operations if you could?*

Respondents would change the rules and laws concerning interactions between library officials and commons users; they recommend modification of norms and rules and laws in the library. They would want a written set of new library rules to be placed where they could be easily seen and read by the commons users. Changes to be made to the existing rules as well as new rules should include the opinions and ideas of the commons users. There were issues about allowing permission for children to use the library on Saturdays; users should be permitted to eat in the activity hall. Changes should be made to the operating days and times. There should be changes made concerning accessing what are considered illicit or age-restricted materials and individuals who

infringe these issues should be banned from using the library. Library officials would want to see changes in the rules and laws about library officials' training and development. They demanded that commons users should come to the library clean and hygienic. Furthermore, commons users should be allowed to use the computers for one hour at a time instead of two or more; strict changes need to be made in terms of rules regarding noise levels in the library. Some of the respondents want to see changes about the rules and laws of the shelving and general library spacing and structuring to the intent that more space should be created and more physical and electronic resources acquired.

*What would you recommend in respect of norms and rules that guide the use of the present-day library?*

Space for children should be different from spaces for adults. Five respondents advised that library operating hours should be extended, and should include half-days on Saturdays. LO4 requested that stakeholder meetings with library officials should be reinstated and that communities should be engaged in terms of by-laws, including the rules and regulations that should guide library use. Some of the respondents mentioned that the library must install a weapon-detection system to ensure the safety of all individuals within the library, and respondent CL-17 recommended that there must be equality for all commons users in the commons. CL-10 recommended that:

*The library is meant for all community members. I will recommend a rule that forces officials to be friendly. The rule that will humbly request library officials to assist school children with their work when they are struggling with internet searching. The rule that will forbid the officials to cook in the library (I am not talking about warning of lunch boxes), we have users who come to the library with an empty stomach, imagine if they smell food that they cannot eat, it is unfair to them.*

CL-10 did not explain why he made the recommendation, but there is an implication for an unpleasant attitude of librarians towards commons users' behaviors.

Action Arena

*The antecedents of the commons in the library*

Positively, a large number of the respondents articulated that the library users were previously limited to books and have since gained access to computers and the internet, as well as DVDs and CDs which is a major advantage, making the library a place of various benefits. LO-12 and LO-15 strongly affirmed that the establishment of the new commons has made it difficult for library officials to manage commons users, and has rendered these library officials overworked.

*Personal stories about the commons in the library*

Most of the respondents pointed out that the commons are growing. They stated the library services have changed to accommodate job seekers, letter writers, and business people, among others. Services rendered now include training in CV-writing, general computer proficiency, and presentations preparations. LO4 said that the library is now a central information hub, serving the needs of everybody. Accordingly, projectors and the toy library section have been added to the list of mentioned developments in the libraries. Spacing, sections, and room divisions were mentioned

by the majority of the respondents as being positive developments. The Los elaborated that technology has brought the digital age and advancement to the library in their communities, while the majority of the respondents informed that assistance of commons users by library officials has also improved.

### *Makerspaces*

The participating libraries had what could be regarded as maker spaces. The maker spaces were called DIY (Do-It-Yourself) spaces. Most of the respondents reported that the resources in the makerspaces were supplied by community members and government departments.

### *Library human resources implications*

Three categories of responses by LOs could be identified. First were negative responses that show that librarians were threatened about the emergence of commons as their training and employment conditions. Affirmative responses were provided by the nine respondents, who pointed out that human resources available in the commons were sufficient and that they operated well working together. The last category indicated that there were insufficient human resources to meet the need of the commons.

### *Commons interference with performance as a librarian given your knowledge and training*

Most of the respondents said that the commons do indeed interfere in their performance and that they need training. Contrastingly, LO-3, 5, 10, and 16 gave the opinion that although they do need training that there is no interference with their performances.

### *The spectrum of participants in the commons in the libraries*

Among the more frequently mentioned groups were Africans, Whites, youth, students, school children, and people with disability. Less frequently mentioned were elderly persons, adults, colored and foreign nationals.

Five respondents pointed out that people of all ages, races, and communities were served in their libraries. Religious groups, teachers, and unemployed people were mentioned less frequently.

Respondent LO-16 eloquently said:

*Our library standard has risen. Our quality-of-service delivery is good. Our problem in this library is the depletion of data within a short time. Points of conflicts between your understanding of the library mission and the new development in the libraries*

Table 7: Word Frequency Results on the spectrum of participants in the commons

<b>Word</b>	<b>Length</b>	<b>Count</b>	<b>Weighted Percentage (%)</b>
Blacks	6	15	33.33
Peoplewithdisability	20	6	13.33

Whites	6	6	13.33
Schoollearners	14	4	8.89
Everybody	9	3	6.67
Youths	6	3	6.67
Communitymembers	16	2	4.44
Adults	6	1	2.22
Africanyouths	13	1	2.22
Elderlypersons	14	1	2.22
Religiousgroups	15	1	2.22
Teachers	8	1	2.22
Unemployedyouths	16	1	2.22
<b>TOTAL</b>			<b>100.00</b>

However, Table 7 tells the story of the spectrum of participants in the commons in more details. The commons are visited by Blacks, people with disability, Whites, school learners, everybody, youths, community members, adults, African youths, elderly persons, religious groups, teachers, unemployed youths.

### *Conflicts*

The question of whether or not there were any points of conflict between the respondent's understanding of the library mission and the new development in the libraries, or conflict in the access to and use of the resources in the commons, was met with the almost unanimous response that there were indeed conflicts between the mission and the new developments. The majority of LOs revealed that there were points of conflict between the understanding of the library mission and the new development in their respective libraries. However, respondent LO-12 was not able to provide any feedback as he was uncertain as to whether or not there were any points of conflict. LO-13 stated that there were no points of conflict, and the commons have brightened and raised the quality of their library practices.

### Incentives for Participating in the Commons

#### *Incentives to promote the use of the commons*

When asked if their respective libraries provided any incentives or rewards to promote the use of the commons, the majority of the LOs answered negatively. LO-5 and 7 mentioned that free internet, competitions, award prizes, and certificates form part of the incentives offered to promote the use of the commons in the libraries. Incentives were also in place in the commons to stimulate participation, and they range from free access to knowledge, skills, and information via books and internet-connected computers, to certificates and refreshments being offered to children.

*Teamwork among library users to create, or supply resources to the library to meet people's information need*

There were different actors in the knowledge commons, and they cooperated to achieve the use of the commons' resources. Table 8 shows the codes capturing the actors in the commons, including youths, learners, schoolchildren, businesspeople, adults, government officials, elderly persons governmental departments, religious people, semi-literate persons, senior citizens, teachers, and unemployed youths

Table 8: Word Frequency Results on Characteristics of actors

Word	Length	Count	Weighted Percentage (%)
Youths	6	13	26.00
Learners	8	10	20.00
Schoolchildren	14	7	14.00
Businesspeople	14	6	12.00
Adults	6	3	6.00
Governmentofficials	19	3	6.00
Elderlypersons	14	2	4.00
Governmetaldepartments	22	1	2.00
Religiouspeople	15	1	2.00
Semiliteratepersons	19	1	2.00
Seniortizens	14	1	2.00
Teachers	8	1	2.00
Unemployedyouths	16	1	2.00
TOTAL			100

A majority of CLs responded stated that there was teamwork among the library officials and commons users. CL-7 appreciated the fact that they protected their resources, and they reprimanded those who were violating the rules to assist the library officials. Only very few of the respondents felt that there was no identifiable teamwork among community members and/or library officials.

*Compliance with library norms and regulations*

The CLs felt that library rules, norms, and regulations were indeed being adhered to. However, some users complied, and others did not comply. The LOs observed the difficulty of addressing the question of rules and regulations in the commons. What could be considered rules are just communally agreed issues or issues raised by outstanding users of the commons? These rules are therefore sedentary and will differ from one library to another, depending on environmental and other peculiarities.

*Conflicts that arise in terms of resource sharing and other cooperative activities among library users*

Most of the CLs were of the view that there was no conflict of any sort in their respective libraries and that, if there were, they were not serious and were quickly and easily resolved. Unlike other respondents, CL-3 stated that there was a conflict between library officials and commons users, but no conflict between commons users themselves. In the case of non-regular users, respondent CL-4

felt that they often caused conflict situations in the libraries, while according to other respondents, there was a great deal of conflict regularly, due to limited resources being available to large numbers of users. Eight of the 17 respondents stated that some users solve their problems alone or amongst each other, and that others still approach library officials for assistance in conflict/problem resolution. Other respondents claimed that commons users, especially adults, tended to solve their problems on their own or with each other, but that sometimes children required assistance from officials. Signifying his concern about patterns of interaction, LO-11 pointed out:

*There are patterns of interactions that can create conflict. In general, there is good and bad interaction among the users. Those who can solve their problems do that but those who can't, contact us to solve them.*

#### *Difficulties or challenges experienced in the use of the library given the new changes*

The majority of the CLs stated their challenges and difficulties were associated with broken computers, air-conditioners, scanners, photocopiers, and insufficient computers to accommodate the number of commons users. Others were the absence of free Wi-Fi and the absence of uninterruptible Power Supply (UPS) backup devices for load-shedding protection. Other challenges mentioned by most of the respondents were a continuous change of software, lack of access of entrance to the facility during rain, unavailability of water in the library, life skills sessions for older people, and allocation of time to use the computers. Three of the respondents did not report any difficulties or challenges in their libraries.

#### *Benefits of advantages experienced in the use of the library given the new changes*

A large number of the CLs benefited from the changes in the library in terms of skills in different kinds of software, such as MS Word, internet, emailing, and other computer/technological skills. CL-2 a student reported that:

*ICT has benefited users who are studying through distance learning like me. Libraries must install software that is useable to all users, such as Microsoft office. It is disadvantageous to users when they start a document at the library and want to finish it at home. The program Linux that they use here, doesn't work on the Microsoft office program.*

#### Outcomes

##### *Access and use of the commons in the library, and issues associated with inequality such as race, age, and gender*

LO-14 mentioned an equality issue where some adult users want to be assisted before the children who were ahead of them in line, but the issue was solved immediately. Furthermore, all other LOs pointed out that all commons users were treated equally, regardless of race, age, disability, and gender.

*The benefits of the commons, in terms of resources and who benefits*

In describing the promotion of equality within the commons, equality or equal treatment, respondents pointed out that for all commons user equality was practiced. Most of the respondents indicated that the commons did indeed facilitate the production of high-quality intellectual resources. While other respondents mentioned the value of open access, computer literacy and the supplementation of books with computers and some mentioned that it was beneficial that the retrieval of more information was enabled, that unnecessary labor was reduced, more knowledge was acquired and that new management was received while old materials were discarded. Regarding the issue of ensuring sustainability, responses from the majority of the respondents included that the roles of district management are critical to sustaining the commons. LO-9 and 14 added that both library officials and community members also assisted in cleaning and sustaining the commons.

**Synthesis, discussion of the findings and conclusions**

This paper was based on a conversation between the authors and the public library officials on one hand and the community stakeholders of the public libraries in Thabo Mofutsanyana district in the Free State in South Africa, on the other. The themes that guided the conversation were distilled from the Institutional Analysis and Development framework developed by Ostrom and Hess (2007). The goal of the study was to generate the opinions of the stakeholders and library officials on the emergence of the knowledge commons in the communities from which basic understanding of the structure, function, and a diversity of issues about the emergence of the knowledge commons in the libraries can be gleaned.

The onset of knowledge commons in the Free State can be described as emergence. The properties of the new library are more than the sum of the parts of the old library. The summation of the properties of the knowledge commons shows that the new library takes on very novel characteristics and traits that do not exist at a lower level and is not necessarily predictable (Jost, Berschinger & Olbrich, 2010). Both library users, the community leaders, and library officials know and appreciate the transformations that are taking place, but none of these categories of persons can explain the why and how about the changes. The librarians only know that the library is undergoing transformations that embrace issues divergent to their training and capacity; they observe a Meta model kind of change to the extent that there exist "... properties of a higher scale that are not present at the lower scale" (Gershenson & Fernandez 2012:18). Before the initiation of the study, the librarians did not describe the transformation as knowledge or any other type of commons; they rather were merely attributing the changes in the libraries to the roles of new information technologies.

The parameters of the library in the community are changing, and there is a dissonance between the library's original mission, the training, and orientation of the librarians, and the current practices being installed to meet the needs of the knowledge commons users. The libraries are drawn to the new direction of the change (Pascale *et al.*, 2000), and triggers and causes adjustments in behavioral changes in the libraries and their staff. This is the stage which Paraskevas, 2006; Sullivan, 2004 referred to as the threshold of "bifurcation" or a "phase transition". The experiences of the library from what looks like a crisis has rather become a part of its learning process and has also influenced its behaviors presently (Paraskevas, 2006; Felie, 2007).

Commons has always been framed from the perspective of shared resources such as agricultural fields in the USA in the 17<sup>th</sup> century. Yet Africans have an enduring culture of shared



resources. This culture is embedded in the Ubuntu philosophy which is collectivist and inclusive in approach and calls for human respect and dignity, and value for cooperation and collaboration within the communities. The African philosophy of Ubuntu stands for a universal bond and it connects humanity and fosters and strengthens the responsibility to share scholarly knowledge. Ubuntu is centered based on the practice in Southern African where sharing and linkage among all humankind are like a religion (Borchi 2018). How did the practice of sharing resources, including knowledge originate? They are elements of the African culture of Ubuntu.

What manifests in this study is that despite the absence of formalized processes of implementing knowledge commons, library officers, community leaders, and library users are cooperating to achieve knowledge sharing for the benefit of their communities. Instead of the threshold of “bifurcation” anticipated when emergence progresses without deliberate organization (Paraskevas, 2006; Sullivan, 2004) and in which there would be some disruption in the system, there is rather evidence of self-organization and all stakeholders are adjusting their behaviors to ensure the prosperity of the emergence. There is evidence of a relationship between the library’s information processing capacity and the information processing requirements of their environment (Fioretti, and Visset, 2004). Librarians are adjusting the parameters of both their profession and institution to meet the needs of the knowledge commons users.

Before this study, the librarians had not heard about knowledge commons. They had rather been trained on how to deploy information technologies in the library; they had also been exposed to new developments in the area. Many had heard and were already trained on open access, but there was no consciousness that what was emerging was knowledge commons. The library staff was only conducting themselves in manners that promoted the deployment of information technologies, learning new service provision models, and passing the same information to their library clients. They were only obeying instructions from their supervisory agencies, and putting into place facilities that could promote access and use of library and information resources online and offline.

## Recommendations

Ostrom and Hess (2007) recommended using the Institutional Analysis and Development framework to study knowledge commons, but development and implementation of knowledge commons would benefit from the deployment of a diversity of research models and theories to generate results that could provide alternative policy options. The key of IAD is that it addresses the cooperative nature of ownership and governance of facilities, as well as the group rule system that is adopted in the commons. But knowledge commons in its present state is facilitated by the explosion in information technology applications, and several models have been adopted to study social aspects have of technology applications. How would the ubiquitous technology acceptance model, or models around information technology readiness, perform in generating information that could guide knowledge commons? Baidoo and Nwagwu (in progress) are already carrying out a study on knowledge commons that is guided by information technology use theories/models.

Many African scholars have eulogized the Ubuntu philosophy (Matobako 2021), but there is hardly any articulation of how Ubuntu obtains in a typical emerging infrastructural resource such as the new library. What new theoretical insights can be developed to understand the cooperative and communal spirit of Africans based on Ubuntu, and how can this new understanding facilitate the development of the new library? How does the Ubuntu philosophy that is emblemized in the new library facilitate political discourse, scientific inquiry, free speech, and the creativity needed for a healthy democracy?

The speed with which knowledge commons is emerging in the Free State public libraries demands an investigation of what is occurring in the public libraries in other states in South Africa. There only exists knowledge that knowledge commons exist in many universities in the country, but knowing how the development of the commons happens in public libraries in other communities is required for some better understanding and deployment of the innovation benefits of common nationwide. Besides sectoral understanding, there is a need to facilitate comparison and contrast, and learning and application of best practices in academe and the communities for cross-fertilization of ideas.

One crucial issue that comes out of the study is that knowledge commons are emerging in the communities studied in a serendipitous manner; there is no formal national or regional policy that spells out what knowledge commons is and their entailments. The communities are only either copying what they observe going on elsewhere or are adjusting to the changes forced on them by information technology applications. Or further still, they are only adhering to instructions from higher authorities to make changes in their library services behaviors. Time is now ripe for a deliberate effort to formalize knowledge commons through policy formulation. Issues of governance, financing, participation, and role of users. Related to this is the need for retraining of staff. Change in an organization comprises a complex, integrated, socially embedded, and socially dependent process that is affected by a variety of causes and concepts. Managers that are aware of the complexity of the events will be in a better position to understand the dynamics and behavior of the new library, and then provide leadership that is necessary to foster strategic development (Mason, 2007).

The point must be reiterated that today's digital technologies offer unprecedented possibilities for human creativity, global communication, innovation, and access to information, and for which the new library has an unprecedented role. The major trigger of the commons in this community is the Mzansi Libraries Online Country Grant in South Africa that strengthened ICT applications in the public libraries and initiated radical changes in the way the libraries work (National Library of South Africa 2016). At the time of the implementation of the project, the focus was not on birthing commons. It is appropriate therefore to examine the roles of information technology and integrate these roles in the new library.

On a global scale, what is the relationship between open access and knowledge commons? In the seminal book on the commons by Ostrom and Hess (2007), Suber (2007) aptly suggested that open-access research literature is a sort of intellectual commons. Suber used the terminology "OA Commons", and he has also highlighted how copyrights regimes and other OA issues interrelate open access with knowledge commons. However, an empirical investigation is required to understand the extent to which open access implementation in a library births knowledge commons. Fundamentally, however, OA literature is tragedy-proof because it is non-rivalrous since it is digital (Suber 2007). ICT has the tendency of opening access to literature that is not made available based on OA principles, thus compromising ethical expectations in information access and use. On the contrary, outcomes of the interactions of people and resources in the commons can be positive or negative or somewhere in between.

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## Appendix

### Interview for Library Officials

1. Elaborate on your disposition to open access? Elaborate on any training you have had on open access in the past five years. Could you please inform me of any open access policies, statements, or positions of this library? Are there any open access resources built by the library? For instance, FOSS, Listserve, electronic manuals, etc. to serve information to the community?
2. Describe the antecedents (background) of the commons in your library?
3. Can you tell us any relevant stories about the creation and operation of the commons in your library?
4. Can you describe the new library community given the commons?
5. Describe the characteristics of the community which the commons serve – individual, markets, government, or the public?
6. What are the electronic and non-electronic resources you have in the commons?
7. Please describe the rules and regulations guiding the use of the space?
8. Are the users involved in making rules for use of the commons?
9. Can you describe the makerspace that provides aspects of commons services in your library?
10. Who are the suppliers of the resources used in the commons?
11. Do the commons impose any forms of the new governance system in the library?
12. What are the governance mechanisms: membership rules, resource contribution and extraction requirements, conflict resolution mechanisms, monitoring rules, sanctions for rule violation available in the library as a result of the commons?
13. Are there any administrative and other costs involved in constructing, monitoring, and enforcing compliance with the rules installed to guide the use of the commons?
14. Does the library provide any incentives to promote the use of the commons?
15. Have you encountered any legal issues regarding Intellectual Property rights, subsidies, contracts, antitrust provisions?
16. How does this encounter shape the operations of the commons?
17. What are the new library policies regarding managing the library in the event of the emergence of the commons?
18. Who are the policymakers, are the community members and users involved in making the policies?
19. What are the library's human resources implications (involvement) of the creation of the commons, and how is the library responding to them?
20. What is the response and role of the community of users and policymakers in this new development?
21. Do you consider the commons as an appropriate response to the development of the open access model of knowledge access?
22. Describe the open access environment in your library
23. Based on your observation as a library officer, what are the interactions you have observed among users of the commons?
24. How is the community of commons in your library accessible to and interconnected with related institutions and social practices?
25. To what extent do you think issues about Intellectual Property rights have been taken into full consideration in the emerging library model?
26. Can you describe the spectrum of participants in the commons in the libraries?
27. Does the library offer any form of incentives to stimulate participation in open access?
28. Do the commons address problems that arise out of Intellectual Property rights?

29. Do you consider that the commons in your library is growing since its inception (establishment)?
30. Do you envisage (foresee) that the commons will illuminate (brighten) the normative foundations of a library?
31. Are there points of conflict between your understanding of the library mission and the new development in the libraries?
32. Regarding access and use of the commons in your library, have you ever encountered any issues associated with inequality such as race, age, gender, etc?
33. What are the patterns of interaction among patrons of the commons? Is there any observed way they solve underlying collective problems when they arise?
34. How do the commons interfere with your performance given your knowledge and training?
35. What are the benefits of the commons, in terms of resources, and who benefits? For instance, to what extent does the commons facilitate the production of high-quality intellectual resources, promote equality within the commons, and ensure its sustainability?

#### Interview Schedule for Community Leaders

1. How do you describe the prevailing open access in the libraries in respect of the provision and access to materials in the operations of your public library?
2. Can you describe your level of awareness about open access and associated developments and how they play out in this library?
3. In your own opinion, what systems/strategies do you think should be installed or implemented to support and promote open access in this library?
4. To what extent do you think this library in your community has conformed (adapted) to this global transformation?
5. Describe your observations, feelings, experiences, and opinions about artifacts that exist in your library. Focus on the physical nameable representation of ideas such as:
  - (i) Articles, (ii) books, (iii) internet resources such as web access, (iv) ICTs such as computers lab, tablets, free internet access, multimedia space (v) others, such as toy library materials.
6. Describe your observations about facilities that store the artifacts and make them available such as (i) new forms of library spaces (ii) computer network infrastructure in the library.
7. From your experience as a user of this library, could you please describe how the recent transformation in the library appears to have enabled the library to meet the information needs of users better than before?
8. Do you have any examples to buttress (support) your description?
9. In your own opinions, are the transformations going on in the libraries altogether very beneficial or do you think that there are aspects that negate (exclude) your expected roles of the library?
10. As one knowledgeable about the existence and activities of the library in this community, what assistance and role has the community provided, or played in the sustenance and maintenance of the library?
11. How much of these roles do you think the community can play together given the rapid transformations we have discussed?
12. Teamwork among library users to create, or supply resources to the library to meet people's information need?
13. Knowledge and information sharing among library users to mutually meet the information needs of the library users?
14. Compliance (submission) to library norms and regulations?
15. Conflicts that arise in terms of resource sharing and other cooperative activities among library users?
16. Could you please share your observations about how the practice norms, rules, and laws that control the management of library services have been influenced?
17. Have you observed any self-governance mechanisms in the library such as relate to:

- (i) membership rules? (ii) resource contribution and extraction requirements? (iii) conflict resolution mechanisms? (iv) monitoring library use and sanctions for a rule violation?
18. What, if anything, would you change about norms, rules, and laws if you could?
  19. Can you describe any particular difficulties or challenges experienced in your use of the library given the new changes?
  20. Can you describe any particular benefits or advantages in your use of the library given the new changes?
  21. What would you recommend in respect of norms and rules that guide the use of the present-day library?