Dossier temático: Comportamiento humano informativo

Information behavior research in Africa: past, potential and a "cry" for impactful research
Investigación del comportamiento de la información en África: pasado, potencial y un "clamor" por una investigación impactante
Pesquisa de comportamento da informação na África: passado, potencial e um "grito" por pesquisa impactante

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Abstract

Africa is a vast continent with 54 (arguably 56 or even 59) countries differing in culture, political ideologies, languages, financial status and technological infrastructures. All are developing countries; some, e.g., Egypt, Kenya, Nigeria and South Africa being more progressive. Deep poverty, political instability (sometimes civil wars), and poor healthcare are prominent. African information behavior research developed over several decades. Some researchers are associated with African institutions while many others study and work abroad. African journals and journals indexed by Library and Information Science databases and Web of Science were searched. Theses and dissertations are not included. African research follows international trends, e.g., information behavior in educational, professional and health contexts and business enterprises. Less traditional topics include religion, agriculture, crafts and vulnerable contexts e.g., orphanage. A few authors have reflected on fundamental issues, progress in information behavior research, theories and frameworks per se. Wilson's interpretations of information behavior and his models often guide research. Acknowledgement of his differentiation between primary and secondary

information needs and dormant needs are less prominent. Societal issues such as Sustainable Development Goals (SDGs), equity, diversity, inclusion and accessibility (EDIA) and the deep challenges faced by African countries are seldom explicitly addressed. Suggestions are offered on expanding African information behavior research agendas.

Keywords: Africa; Contexts; Information behavior; Information seeking; Wilson, T.D.

Resumen

África es un vasto continente con 54 (posiblemente 56) países que difieren en cultura, ideologías políticas, idiomas, estado financiero e infraestructuras tecnológicas. Todos son países en desarrollo; algunos, por ejemplo, Egipto y Sudáfrica son más desarrollados. La pobreza profunda, la inestabilidad política (a veces guerras civiles) y la atención médica deficiente son prominentes. La investigación africana sobre el comportamiento informativo se desarrolló durante varias décadas. Algunos investigadores están asociados con instituciones africanas, mientras que muchos otros estudian en el extranjero. Se realizaron búsquedas en revistas africanas y revistas indexadas por las bases de datos de Library and Information Science y Web of Science. Las tesis y disertaciones no están incluidas. La investigación africana sigue las tendencias internacionales, por ejemplo, el comportamiento informativo en contextos educativos, profesionales y de salud y empresas comerciales. Los temas menos tradicionales incluyen la religión, la agricultura, la artesanía y los contextos vulnerables, por ejemplo, el orfanato. Algunos autores han reflexionado sobre cuestiones fundamentales, el progreso en la investigación en comportamiento informativo, las teorías y los marcos en sí. Las interpretaciones de Wilson del comportamiento Informativo y sus modelos a menudo guían la investigación. El reconocimiento de su diferenciación entre necesidades de información primarias y secundarias y necesidades latentes es menos prominente. Los problemas sociales como los Objetivos de Desarrollo Sostenible (ODS), la equidad, la diversidad, la inclusión y la accesibilidad (EDIA) y los profundos desafíos que enfrentan los países africanos rara vez se abordan de manera explícita. Se ofrecen sugerencias sobre la expansión de las agendas africanas de investigación del comportamiento de la

información.

Palabras clave: África; Contextos; Comportamiento informativo; Búsqueda de información; Wilson, T.D

Resumo

A África é um vasto continente com 54 (possivelmente 56 ou mesmo 59) países que diferem em cultura, ideologias políticas, idiomas, situação financeira e infraestruturas tecnológicas. Todos são países em desenvolvimento; alguns, por exemplo, Egito, Quênia, Nigéria e África do Sul são mais progressistas. Pobreza profunda, instabilidade política (às vezes guerras civis) e assistência médica precária são proeminentes. A pesquisa de comportamento de informação africana desenvolveu-se ao longo de várias décadas. Alguns investigadores estão associados a instituições africanas, enquanto muitos outros estudam e trabalham no estrangeiro. Revistas africanas e revistas indexadas por bancos de dados de Biblioteconomia e Ciência da Informação e Web of Science foram pesquisadas. Teses e dissertações não estão incluídas. A pesquisa africana segue tendências internacionais, por exemplo, comportamento de informação em contextos educacionais, profissionais e de saúde e empresas. Tópicos menos tradicionais incluem religião, agricultura, artesanato e contextos vulneráveis, por exemplo, orfanato. Alguns autores refletiram sobre questões fundamentais, progresso na pesquisa de comportamento informacional, teorias e estruturas per se. As interpretações de Wilson sobre o comportamento da informação e seus modelos geralmente orientam a pesquisa. O reconhecimento de sua diferenciação entre necessidades primárias e secundárias de informação e necessidades latentes é menos proeminente. Questões sociais como os Objetivos de Desenvolvimento Sustentável (ODS), equidade, diversidade, inclusão e acessibilidade (EDIA) e os profundos desafios enfrentados pelos países africanos raramente são explicitamente abordados. São oferecidas sugestões sobre a expansão das agendas africanas de pesquisa sobre comportamento informacional.

Palavras-chave: África; Contextos; Comportamiento Informativo; Busca de informações; Wislon, T. D.

1. Introduction

As elsewhere, information behavior research in Africa can improve understanding of often very complex situations, contexts, information needs and the actions required to fill those needs and to make sense of situations on a physical, cognitive and emotional level. Information behavior research can also inform the design of information systems, services, training and information interventions (Huvila, Enwald, Eriksson-Backa, Liu and Hirvonen, 2022). This paper reviews the scope of information behavior in and about African countries over several decades with specific reference to the influence of the work of Tom Wilson to whom this issue is dedicated. The intention is to raise awareness of the value of work done by researchers from Africa. In 2010 Stilwell did groundwork on South African information behavior research for the period 1980–2010, followed by an update by Stillwell and Meyer (2018). At that time, she already noted an extensive body of information behavior literature generated by South African researchers and their postgraduate students.

Wilson (2022:12) defines information behavior as <human interaction with all sources and channels of information, and the interaction as active and passive. Thus, information behavior includes communication with others (orally or written), use of any kind of information resource, and the passive reception of information, such as watching TV advertisements, or reading unsolicited e-mail messages>. His interpretation of the concept and his models are often cited and used as points of departure for research relevant to the African continent e.g., Mostert and Ocholla (2005), Stilwell (2010) and Zimu-Biyela (2021). Meyer (2016) is a South African researcher who noted that students often quote Wilson's (2000:49) encapsulating definition of information behavior without proof of understanding what it entails. She therefore developed a model to guide novice researchers who often are overwhelmed by the concept when first encountering it.

The paper reviews the trends in information behavior research in African countries and written by authors from Africa. Core research topics is highlighted and the conclusion addresses gaps in African information behavior research and suggestions to extend research agendas and research methods.

2. Methodology for a scoping literature review

SAePublications, produced by SABINET, was searched as a database that indexes journals published in South Africa and in some African countries. In addition, Library and Information Science Abstracts (LISA), Library and Information Science Technology Abstracts (LISTA) and Web of Science were searched. The search terms Africa* (including Africa and phrases such as the different regions from Africa e.g., West Africa), and the names of prominent countries such as South Africa, Uganda, Nigeria, Ghana, Kenia were included. To represent the concept of information behavior (information behaviour), information needs and specific information activities such as information seeking, information searching, information encountering, etc. had to appear in the title. This search strategy ensured a manageable collection of core publications from researchers residing in African countries as well as those studying and working outside their countries, e.g., the USA or UK. Only research explicitly reporting on African countries, by mentioning Africa, African, or a specific country name or region, is included as well as a few conceptual works from known researchers residing in South Africa. Research is reported in a wide spectrum of journals, most prominently: *African Journal of Library, Archives and Information Science, Health Information & Libraries Journal*, *Information Research*, *Mousaion*, *Library Philosophy and Practice* and *South African Journal of Library and Information Science*.

3. Context of Africa: a Vast, Deeply Challenged Continent

3.1 Interpretations of context

Over several decades, dimensions and constructs of contexts, the meaning of context and the difference between context and situation have been argued. For Wilson (2022:16) context is the situation in which an information need arises. It is determined by the life-world of people, the multiple realities they experience in that life-world, and its spatial structure. This is the context the person brings to the situation in themselves, which Schutz (as cited by Wilson) terms the <biographically determined situation>, which is <the sedimentation of all of man's previous experiences, organized in the habitual possession of his stock of knowledge, at hand, and as such is his unique possession, given to him and him alone>. Context features prominently in some of Wilson's information behavior models. In his recent book (2022), he notes that, although context may be implicit in research, its dimension is rarely discussed.

Context includes time, place, people and their culture and technology. The understanding of contexts, situations and surroundings can and should influence initiatives, designs, development, and studies with users everywhere – healthcare, academia, government, industries, business and everyday life. For this paper Agarwal's (2018) explanation of context is accepted. He acknowledges the value of different interpretations and identities when exploring contexts and how new opportunities to improve information services for society at large can be opened.

> The moment of epiphany was realizing that all three were valid views or perspectives on context, and what one concluded to be context depended on the view one was using to envision context. All views were true and co-existed, and were a part of the concept of context. They were just different ways of looking at the same thing. Depending on where you looked at it from, and what you focused on, you would see different things… (Agarwal, 2018:82).

In Africa, the importance of context and opinions about interpretations have also been stressed (Fourie, 2012).

3.2 Africa as Context: Background Information

Information behavior research conducted in and on Africa, must acknowledge the challenges and needs of Africa as context. Africa is the second largest continent in terms of area (i.e., geographical size) and population. It hosts an estimated 1.39 billion people (WorldData, n.d.) and is divided into five main regions: north, west, central, east and south. Each region hosts several countries. There are 48 countries on the mainland of Africa and six island nations. In addition to the 54 sovereign African countries there are two disputed areas (Somaliland, an autonomous region of Somalia) and Western Sahara (occupied by Morocco and claimed by the Polisario) (Nationsonline, n.d.) and perhaps even 59 (WorldData, n.d). All countries are marked by deep diversity in culture, political ideology, language, government, financial stability and technological infrastructures. Almost a thousand languages are spoken on the continent, divided into the following major groups, each including a number of languages: Afro-Asiatic (i.e., Berber [Amazigh] languages, Arabic), Nilo-Saharan, Niger-Congo (Bantu), and Khoi-San (WorldData, n.d.). There is also the lingua franca such as English, French, Portugese and Spanish. All the countries are classified as developing with some showing more progress such as Egypt, Kenya, Nigeria and South Africa. Nigeria has the largest population.

The continent faces many challenges: deep poverty, poor livelihood, poor education, low levels of literacy, power abuse, civil unrest, political instability, poor health and healthcare, pandemics such as HIV/AIDS and Ebola and lack of access to medical support. These challenges are also noted by the United Nations (UN) (n.d.) and the World Health Organization (WHO) (n.d). Although the life-worlds faced by people in Africa and their challenges must be addressed by information behavior research, there is still a paucity of research explicitly addressing Sustainable Development Goals (SDGs), equity, diversity, inclusion and accessibility (EDIA). Although there are reports about subsistence farming (Lwoga, Ngulube and Stilwell, 2012; Zimu-Biyela, 2021) these are not explicitly

linked to SDGs. In her 2010 review Stilwell (2010:10) concluded that <The paucity of research into information behavior relating to HIV/Aids, given the scale of the HIV/Aids pandemic in the region, was surprising>. The challenges of Africa are understudied in information behavior research.

4.   Information Behavior Research in Africa

Information behavior research in Africa has been active over several decades. Research follow international trends, covering information behavior in educational, professional and health contexts. A few projects address less traditional topics such as religion, agriculture, crafts and vulnerable contexts such as orphanage. Wilson's interpretations of information behavior and his models often guide research. Acknowledgement of his differentiation between primary and secondary information needs and dormant needs, are however less prominent. Most African information behavior research is reported from the disciplines of Library and Information Science with some contributions from the health sciences, finance, agriculture and religion. Agricultural research has, e.g., been reported in the *Farmer's Weekly* and *Journal of Agricultural & Food Information*. Health related research has appeared in *Therapeutic Innovation & Regulatory Science*. Bothma and his collaborators, Bergenholz and Gouws, is an example where Information Science is combined with expertise in lexicography (i.a., Bergenholtz and Bothma, 2011; Bothma and Bergenholtz, 2013; Bergenholtz, Bothma and Gouws, 2015; Bothma and Gouws, 2022).

4.1   Scope of contexts and participants

Research on information behavior covers various African countries e.g., Botswana, Ethiopia, Kenya, Lesotho, Nambia, South Africa, Tanzania, Uganda, Zambia and Zimbabwe, with some like Nigeria, being more prominent. Research generated from South African universities, often supervising the postgraduate research of students from other African countries, is dominant. Most notably is the work from the University of Cape Town, University of KwaZulu Natal, University of Pretoria, University of the Western Cape and University of Zululand. There are, however, many African countries on which no information behavior research could be traced e.g., Angola, Egypt and Somalia. This might be because research is published in other languages, such as Arabic, or not indexed by the databases searched.

Amongst the different sectors of society covered, the financial, educational, health and agricultural and craft sectors feature most prominently. For the agricultural sector, work has been reported on agricultural extension work, artisanal fishery, butterfly farming (collaborative information behavior), crayfish farming, maize farmers, root, tuber and rice farming (e.g., Ikoja-Odongo and Ocholla, 2003; Ndumbaro and Mutula, 2017). Iwuchukwu, Eke and Udoye (2018) found that information on adaptation to the effects of climate change on aquatic animals, especially crayfish, was needed by the crayfish farmers. Primary occupation, monthly income from the crayfish enterprise, household size, and the number of extension contacts were determinants of output on crayfish. The restriction of fishing activities on traditional festival days was a challenge, while the use of modern boats and durable nets were strategies for improving harvesting of crayfish. Such challenges need to be addressed when interpreting the findings from information behavior studies to improve conditions in society. There is also other work making an important contribution. Zimu-Biyela (2021) argues that subsistence farming is important for food security and for breaking the poverty cycle. However, in many developing countries the development of women in rural areas remains a major concern. Meyer (2005) is a researcher who advocates research impact when she pursues arguments based on her work in the late 1990's regarding the impact of user behavior on the transfer of information and the underutilisation of research results on irrigation programs in South Africa. Her

focus is on the effective use of information in rural development. Mwanzilo (2005) addresses the sharing of information on the best practices in sustainable development in Kenya published in a journal for an agricultural association.

 In the financial sector, studies on entrepreneurship, small-medium businesses and the informal sector are very important to deepen understanding of challenges for communities with low income and high percentages of unemployment. In this cadre, the work of Fairer-Wessels (2004) on the information needs of leisure tourist black professional women, Ikoja-Odongo (2002) on the information needs of women in the informal sector of Uganda and Chiware and Dick (2008) on the information needs and information seeking patterns of small, medium and micro enterprises in Namibia, is most notable. Underwood (2009) explored the information needs of entrepreneurs in South Africa; he argues for the use of public libraries as a channel for information and expertise as a <grass roots>, community-driven, approach. Some of the more recent studies have guidelines for industries such as Adekannbi and Akuma's (2021) study on textile traders' information behavior when looking for loan procurement. They found evidence on disinformation from loan sources and risk of falling victim to fraudulent transactions. They therefore recommended closer involvement of the Government in monitoring information activities related to smaller enterprises.

Although information behavior studies in the health sector (including health professionals, patients and caregivers) feature strongly, the scope of diseases and the number of studies do not nearly cover the scope of health challenges faced in Africa. In 2010 Stilwell noted the limited number of information behavior studies in South Africa on HIV/AIDS. She cited Kendra Albright (USA):

> <Sub-Saharan Africa is the hardest hit region in the world where AIDS threatens to decimate entire populations. Although the region has 10% of the world's population, it accounts for 63% of people living with HIV/AIDS. Of the estimated 2.1 million AIDS-related deaths in 2006, 72% of them were in Africa…> (Stilwell, 2010).

This plight is still not reflected in African information behavior research.

Nwezeh's (2010) report on students' knowledge and information needs on HIV/AIDS in Nigeria and Mosha and Manda's (2012) work on HIV/AIDS information and changing sexual behavior among undergraduate students in Tanzania are also worth noting. On a more general level, Fourie and her Canadian collaborator, Julien, argued the need to address affect and emotion in information

behavior research on HIV/AIDS (Julien and Fourie, 2015). Research has also been reported on children with attention-deficit/hyperactivity disorder (ADHD), cancer (in general and specific cancers such as breast cancer), COVID 19, diabetics, mental illness and tuberculosis (e.g., Adebayo, Segun-Adeniran, Fagbohun and Yusuf, 2020; Omosekejimi, Dada and Ebhonu, 2021; Lwoga and Mosha, 2013; Okeyo and Dowse, 2016; Olayemi and Abolarinwa, 2021; Omosekejimi, Dada and Ebhonu, 2021). Akanbi and Fourie (2021) represents the interest in pregnancy, reproduction and maternal health. Apart from studies with patients/families (Fourie, 2008), the information behavior of nurses, social workers and doctors has also been studied (Fourie and Claasen-Veldsman, 2011; Ricks and Ten Ham, 2015).

Information behavior studies on professions include teachers (Bitso and Fourie, 2014), engineers (Du Preez and Fourie, 2009; Tackie and Adams, 2007), veterinary scientists (Nel and Fourie, 2016) and lawyers (Nwagwu and Igwe, 2015; Mathabela and Hoskins, 2018). More unique professions that have been studied are the prescribers of drugs (Hussien, Musa, Stergachis, Wabe and Suleman, 2013), traditional leaders (Buadi and Dzandza, 2015), and studies on the life-saving information behavior of commercial motorcyclists (Nwagwu and Olatunji, 2012) and safety information-seeking behavior of artisanal and small-scale miners (Nwagwu and Igwe, 2015).

African research is marked by interest in the social status of vulnerable people such as widows (Abiolu, 2022), orphans (Odunmade, Oloniruha, Ibrahim and Owunesi, 2022), juveniles (Akintola and Onifade, 2011), homeless youth (Markwei and Rasmussen, 2015) and those who take care of them (i.e., their caregivers) (Mnubi-Mchombu and Mostert, 2011). Juveniles' main needs for information are about their families and adjustment information. Religion (various denominations) also features prominently in African information behavior research, e.g., studies on Catholics (Dankasa, 2017) and Muslim clerics (Saleh and Sadiq, 2013).

Similar to international trends, there are also studies on the information behavior of school pupils and students (including distance students) e.g., Rugambwa, Lyaka and Mutibwa (2020) who studied adolescents seeking indigenous

information for HIV and Oladokun (2010) and Wasike and Munene (2012) reporting on students.

In general, African information behavior studies mostly focus on individuals with a few examples of studies on collaborative information seeking and behavior e.g. Du Preez (2018) and Ndumbaro and Mutula (2017). Very few studies report on the information needs of industries and organisations – thus, larger units., e.g., Adekannbi and Akuma (2021) and Adimorah (1993).

As for constructs such as age, gender and geographic location, the following studies are worth noting: Nwagwu (2009) reporting on a participatory gender-oriented study of the information needs of the youth in a rural community, Khayesi, Machet and Meyer (2013) reporting on the health care of home-based elderly people, and Markwei and Rasmussen (2015) and Nwagwu (2009), who both studied youth (respectively as urban homeless, and in rural communities). Gender-specific information behavior studies were traced, e.g., women in general and women as substance farmers (Fairer-Wessels, 1990, 2004; Omoregbee, Abiola and Alabi, 2019). No transgender or gender-neutral studies were found. Reports on geographic location include Fairer-Wessels (1990) on urban township black women, Saleh and Lasisi (2011) on rural women and food security information and Odefadehan, Akinola and Odefadehan (2016) on rural dwellers.

In spite of the political turmoil in Africa, there is a scarcity of studies on politics, policy makers and decision-makers. Exceptions are: Thapisa (1996) reporting on the legislative information needs of indigenous parliamentarians and Anyim (2021) who studied how the Twitter ban in Nigeria affected the economy, freedom of speech and information sharing. Twitter was found to be one of the platforms people can use to make a living.

Studies focusing on the use of information sources range between the use of information communication technology (ICT) (e.g., Obioha, 2005) and preference for specific sources or channels e.g. Wium and Naude (2004) who studied health workers' use of electronic information concerning children with specific communication needs, and Udem, Aghoghovwia and Baro (2020) on the use of WhatsApp groups as a channel for sharing information among library and information science professionals. Other studies on the use of information sources

worth noting are Rugambwa, Lyaka and Mutibwa (2020) on the seeking of indigenous information to prevent HIV, and Geldenhuys (2021) on sharing information needs about crime and the use of social media. Studies on ICT are not specifically linked to ICT4D (i.e., information communication technology for development and social informatics).

Similar to international trends, African research mostly focuses on information seeking and information needs with limited interest in other information activities such as information and knowledge sharing. Exceptions are Umbima (1993) reporting on regional approaches to information sharing as part of an agricultural information network for Africa, and Tella (2016) on knowledge sharing amongst information professionals.

4.2 Models, Frameworks and Theory

Although several models and frameworks of information behavior or specific information activities such as information seeking are noted in African research, Wilson's models (Wilson, 2022) feature prominently and if not chosen as framework for a particular study, his models are at least acknowledged. Examples of studies using a Wilson model include Ugbala, Lawal, Olawale, Oloniruha and Fatokun (2022) who studied the use of the public library as a source of business information for small and medium enterprises in Nigeria, Rugambwa, Lyaka and Mutibwa (2020) on seeking indigenous information for HIV prevention among adolescents in secondary schools, Uganda and Norbert and Lwoga (2013) in a study on the information seeking behavior of physicians in Tanzania. Mostert and Ocholla (2005) also used a Wilson model in their study on the information needs and information seeking behavior of parliamentarians in South Africa. Sometimes a Wilson model is combined with other models or frameworks. Zimu-Biyela (2021), e.g., used a Wilson model in a study on the information needs of women subsistence farmers in combination with the farmer-to-farmer extension (FFE) model to help in understanding the information need monitoring chain of women

subsistence farmers. Findings revealed both expressed and unexpressed information needs. Unexpressed needs included the need for adult education as most women subsistence farmers had low levels of information literacy skills.

Other models that feature in African information behavior research is Musoke's (2007) work on the information behavior of primary health care providers in rural Uganda. An interaction-value model guided the study. The 1996 model of information seeking of professionals (developed by Leckie, Pettigrew and Sylvain) was used in work by Du Preez (Du Preez and Fourie, 2010). Meyer and Fourie (2018) used Maniotes' third space in guided inquiry model as a theoretical framework for a study on architecture students and creativity and the McKenzie's two-dimensional model of information practices guided a study by Akanbi on pregnant women (Akanbi and Fourie, 2021).

4.3 Theories

Although theories are acknowledged in African information behavior research, this is seldom a prominent part of the titles of articles. Although Africa is known for extreme poverty, the concept and theory of information poverty is seldom acknowledged. An exception is the study by Dankasa (2017) who applied Chatman's life in the round theory to the information small world of Catholic clergy in northern Nigeria. The article title refers to seeking information in circles. It explored Chatman's proposition of the theory of life in the round that members of a small world who live in the round will not cross the boundaries of their world to seek information. Findings from the study with Catholic clergy from northern Nigeria showed that these clergy are not likely to cross boundaries of their small worlds to seek information about their ministry or private lives. They prefer to seek such information within their circle of clergy. The findings align with Chatman's conclusion that life lived in the round has a negative influence on information seeking. Another study that explicitly acknowledge the use of theory is Wambiri (2020) using Vroom's Expectancy Theory of motivation.

5.   Conceptual Information Behavior Work from Authors Residing in African Countries

From an early stage authors residing in African countries have presented work of a conceptual nature that is often not picked up in searches for information behavior studies. These can add value to information behavior research in global contexts. A 1996 article by Dick titled <What information science theory needs to explore in South Africa today> highlights selected research issues in information science that require theoretical analysis in the (then) contemporary South Africa. The debates and discussions surrounding alternative information services, especially during the 1980s, promised the development of a critical perspective in information work. However, he was concerned about the demise of this perspective and argued that the rehabilitation of such a perspective is necessary for the mature growth of information science as a vocational discipline and for the education of critically conscious information professionals. The research issues include historical, ontological, epistemological, methodological, race and gender, and educational perspectives. Although Dick (1996) writes about Information Science in general, these should also be valuable directions for information behavior research in the African context of 2022 and later.

Bothma, Bergenholtz and Gouws specialize in lexicographic research and e-dictionaries (i.a., Bergenholtz and Bothma, 2011; Bothma and Bergenholtz, 2013; Bergenholtz, Bothma and Gouws, 2015; Bothma and Gouws, 2022). In the 2011 article, Bergenholtz and Bothma characterize three categories of potential dictionary users in terms of their domain knowledge, viz. lay persons, semi-experts (or interested/knowledgeable lay persons) and experts, and explain how their information needs may differ in the execution of a task. In the 2013 article they reflect on interpretations of information needs and changes over time. Inspired by the work of Ingwersen and Järvelin, they note that for more than twenty years phrases such as <stable information needs>, <unstable information

needs> or <information needs changing over time> are found in many contributions to information science. Although the statements seem simplistic and obvious, there are questions such as <for which types of information need do we see that these needs are changing over time - for all types, or only for certain types?> One may also wonder how information needs relate to changes in the world, or to changes in the human understanding of the world? The main point of their argument is that when we consider changes in information needs, we need to distinguish between changes in the world, situation/context, user, types of information need and interpretation of data and that clarity of writing is essential in scientific writing and using phrases such as <information needs changing over time> or similar phrases. In 2015, they discuss a number of examples and case studies, and provide a detailed schematic representation of the workflow in the access process. In the 2022 article, they discuss the importance of contextualization in the dictionary consultation process when e-texts are linked to online dictionaries. These are valuable points for information behavior research in contemporary Africa and globally.

Other examples of conceptual work include Meyer (2016) who developed an information behavior model after exploring interpretations, components and elements with the specific purpose of guiding novice researchers to establish a more solid understanding of the complexity of information behavior and how to conduct such research. Fourie also addresses some conceptual issues in her own work and work with international collaborators such as multiplicity of contexts (2012) and grief and bereavement as context (2020). Overall, Fourie argues for deeper immersion and understanding of the contexts of situations where information behavior manifests such as grief and bereavement (Fourie, 2020).

6. Gaps in Information Behavior and Suggestions to Extend Research Agendas and Methods

Considering the poor health conditions and health care in Africa, the deep poverty and famine, there is a dire need for a wider spectrum of research on health information behavior, and in particular research that acknowledges the importance of culture and health and the indigenous beliefs and practices that are core in African countries. Much more is needed about indigenous methods of research and data collection and entrance into communities if the research is done by people from Western backgrounds. To enrich information behavior research on Africa, the scope of studies, depth of findings and especially the ability to analyse findings to see beyond the obvious and to propose research agendas that move beyond isolated studies, are very important.

The review articles by Stilwell (2010) and Stilwell and Meyer (2018), noted gaps in South African information behavior research, still seems to be very valid, e.g., a paucity of information behavior research on the diseases from which African countries are suffering. I can add famine and malnutrition, very poor health infrastructures and poor access to medicine. Stilwell and Meyer (2018:7) raised concerns to convince Library and Information Science practitioners of the relevancy of information behavior to add value to their services and how to convince other subject fields of the value of information behavior. They are confident that theory and practice can inform each other and that one should understand the balance between theory and practice to move one's research to the next level. Development agencies, Library and Information Science practitioners and information behavior researchers can work together. Researchers from other disciplines should also be made aware of the value of information behavior models and theories; they should be participating in collaborative, participatory, interdisciplinary and transdisciplinary research and designs.

7. Conclusion

Bearing the context of Africa in mind and the severity of challenges that are faced, there are numerous opportunities for information behavior research. A good

point of departure would be to use SDGs and EADI as frameworks to stimulate large scale, funded, research projects that involves researchers and practitioners, e.g. system designers from a variety of disciplines. Hansen, Fourie and Meyer (2021) suggests a third space information behavior study framework, based on the principles and process of participatory design that might stimulate ideas.

Bibliographic references

Abiolu, O.A. (2022). Widows and their information seeking behavior in South-Western Nigeria. *Library Philosophy and Practice (e-journal)*, article 7309. Available at: https://digitalcommons.unl.edu/libphilprac/7309/

Adebayo, O., Segun-Adeniran, C.D., Fagbohun, M.O. and Yusuf, F.O. (2020). Meeting the information needs of children with attention deficit hyperactivity disorders (ADHD): the role of school libraries in Nigeria. *Library Philosophy and Practice (e-journal),* article 3877. Available at: https://digitalcommons.unl.edu/libphilprac/3877/

Adekannbi, J.O. and Akuma, E.O. (2021). Information behaviour on loan procurement by textile traders in Nigeria. *African Journal of Library, Archives & Information Science*, 31(2), 187-202.

Adimorah, E.N.O. (1993). An empirical study of the information needs of industries in Nigeria. *African Journal of Library, Archives and Information Science*, 3(1), 45-54.

Agarwal, N.K. (2018). *Exploring context in information behavior: seeker, situation, surroundings, and shared identities*. Morgan & Claypool Publishers.

Akanbi, O.M. and Fourie, I. (2021). The information source preferences and information monitoring behaviour of pregnant women in Pretoria, South Africa. *Information Research*, 26(2), paper 902. Available at: https://informationr.net/ir/26-2/paper902.html

Akintola, B. and Onifade, F. (2011). Study of information needs of juveniles in Asero remand home, Abeokuta, Nigeria. *Innovation: Journal of Appropriate Librarianship and Information Work in Southern Africa*, 42, 23-32.

Anyim, W.O. (2021). Twitter ban in Nigeria: implications on economy, freedom of speech and information sharing. *Library Philosophy and Practice (e-journal),* article 5975. Available at: https://digitalcommons.unl.edu/libphilprac/5975

Bitso, C. and Fourie, I. (2014). Information-seeking behaviour of prospective geography teachers at the National University of Lesotho. *Information Research*, 19(3), paper 637. Available at: http://InformationR.net/ir/19-3/paper637.html

Bergenholtz, H and Bothma, TJD. (2011). Needs-adapted data presentation in e-information tools. *Lexikos*, 21: 53-77. https://doi.org/10.5788/21-1-37

Bergenholtz, H, Bothma, TJD & Gouws, RH. (2015). Phases and steps in the access to data in information tools. *Lexikos* 25: 1-30. doi: https://doi.org/10.5788/25-1-1289

Bothma, T.J.D. and Bergenholtz, H. (2013). "Information needs changing over time": a critical discussion. *South African Journal of Libraries and Information Science,* 79(1), 22-34. doi: http://dx.doi.org/10.7553/79-1-112

Bothma, T.J.D. and Gouws, R.H. (2022). Information needs and contextualization in the consultation process of dictionaries that are linked to e-Texts. *Lexikos,* 32(2), 53-81. doi: http://dx.doi.org/10.5788/32-2-1697

Buadi, D.W. and Dzandza, P.E. (2015). Information seeking behaviour of traditional leaders in the Shai Osudoku district of Ghana. *Library Review*, 64(8/9), 614-628. doi: http://dx.doi.org/10.1108/LR-04-2015-0036

Chiware, E.R.T. and Dick, A.L. (2008). Information needs and information seeking patterns of small, medium and micro enterprises in Namibia. *Information Development,* 24(1), 24-36.

Dankasa, J. (2017). Seeking information in circles: the application of Chatman's life in the round theory to the information small world of Catholic clergy in northern Nigeria. *Journal of Information Science*, 43(2), 246-259. doi: http://dx.doi.org/10.1177/0165551516632659

Dick, A.L. (1996). What information science theory needs to explore in South Africa today. *Mousaion*, 14(1), 44-59.

Du Preez, M. (2018). Collaborative information behaviour. *Innovation: Journal of Appropriate Librarianship and Information Work in Southern Africa*, 56, 51-70.

Du Preez, M. and Fourie, I. (2009). The information behaviour of consulting engineers in South Africa. *Mousaion*, 27(1),137-158.

Du Preez, M. and Fourie, J.A. (2010). Development of a conceptual model for studying engineers' information behaviour. *Mousaion*, 28, 1, 62-88. Doi: http// dx.doi.org/ 10.10520/EJC78994

Fairer-Wessels, F.A. (1990). Basic community information needs of urban black women in Mamelodi, Pretoria, South Africa. *South African Journal of Library and Information Science,* 58(4), 359-369.

Fairer-Wessels, F.A. (2004). Information needs and information-seeking behaviour of leisure tourists: a pilot study of professional black women in Pretoria. *Mousaion,* 22(2), 136-149.

Fourie, I. 2008. Information needs and information behaviour of patients and family members in a cancer palliative care setting: an exploratory study of an existential context from different perspectives. *Information Research*, 13(4) paper 360. Available at: http://InformationR.net/ir/13-4/paper360.html

Fourie, I. (2012). Understanding information behaviour in palliative care: arguing for exploring diverse and multiple overlapping contexts. *Information Research*, 17(4) paper 540. Available at: http://InformationR.net/ir/17-4/paper540.html

Fourie, I. (2020). Contextual information behaviour analysis of grief and bereavement: temporal and spatial factors, multiplicity of contexts and person-in-progressive situation. *Information Research*, 25(4), paper isic2003. doi: https://doi.org/10.47989/irisic2003

Fourie, I. & Claasen-Veldsman, R. 2011. Exploration of the needs of South African oncology nurses for current awareness services available through the Internet. *Information Research*, 16(3) paper 484. Available at: http://InformationR.net/ir/16-3/paper484.html

Geldenhuys, K. (2021). Sharing information about crime on social media needs to be done responsibly. *Servamus Community-Based Safety and Security Magazine*, 114(9), 14-17.

Hansen, P., Fourie, I. & Meyer, A. (2021). *Third space, information sharing, and participatory design*. (Synthesis Lectures on Information Concepts, Retrieval, and Services. Edited by G. Marchionini.) Morgan & Claypool. https://doi.org/10.2200/S01096ED1V01Y202105ICR074

Hussien, N., Musa, S., Stergachis, A., Wabe, N.T. and Suleman, S. (2013). Drug information: prescribers' need for and access to drug information resources in Ethiopia. *Therapeutic Innovation & Regulatory Science*, 47(2), 219-225. doi: http://dx.doi.org/10.1177/2168479012460758

Huvila, I., Enwald, H., Eriksson-Backa, K., Liu, Y-H. and Hirvonen, N. (2022). Information behavior and practices research informing information systems design. *Journal of the Association for Information Science and Technology*, 73(7), 1043-1057. doi: http://dx.doi.org/10.1002/asi.24611

Ikoja-Odongo, R. (2002). Insights into the information needs of women in the informal sector of Uganda. *South African Journal of Libraries and Information Science,* 68(1), 39-52. doi: http://dx.doi.org/10.7553/68-1-765

Ikoja-Odongo, R. and Ocholla, D.N. (2003). Information needs and information-seeking behavior of artisan fisher folk of Uganda. *Library and Information Science Research*, 25(1), 89-105. doi: http://dx.doi.org/10.1016/S0740-8188(02)00167-6

Iwuchukwu, J.C., Eke, J.N-N. and Udoye, C.K. (2018). Characteristics and aquaculture information needs of crayfish farmers in Akwa-Ibom State, Nigeria. *Journal of Agricultural & Food Information*, 19(3), 255-271. doi: http://dx.doi.org/10.1080/10496505.2017.1374868

Julien, H. & Fourie, I. (2015). A reflection of affect in studies of information behaviour in HIV/AIDS contexts: a quantitative content analysis. *Library and Information Research*, 37(1), 3-9. doi: https://doi.org/10.1016/j.lisr.2014.09.001

Khayesi, M.K., Meyer, H.W.J. and Machet, M. (2013). Health care information needs and behaviour of home-based elderly people in Kenya: a case study of Nakuru district, Kenya. *African Journal of Library, Archives & Information Science*, 23(2), 123-132.

Lwoga, E.T. and Mosha, N.F. (2013). Information seeking behaviour of parents and caregivers of children with mental illness in Tanzania. *Library Review*, 62(8/9), 567-584. doi: http://dx.doi.org/10.1108/LR-10-2012-0116

Lwoga, E.T., Ngulube, P. and Stilwell, C. (2012). Information and knowledge needs, access and use for small-scale farming in Tanzania. *Innovation: Journal of Appropriate Librarianship and Information Work in Southern Africa*, 44, 126-140. Available at: http://hdl.handle.net/10413/10555

Markwei, E. and Rasmussen, E. (2015). Everyday life information-seeking behavior of marginalized youth: a qualitative study of urban homeless youth in Ghana. *International Information & Library Review*, 47(1-2), 11-29. doi: http://dx.doi.org/10.1080/10572317.2015.1039425

Mathabela, N. and Hoskins, R. (2018). Information seeking behaviour of private practicing lawyers in Swaziland and the role of the Law Society of Swaziland. *Innovation: Journal of Appropriate Librarianship and Information Work in Southern Africa,* 57, 90.

Meyer, H. (2016). Untangling the building blocks: a generic model to explain information behaviour to novice researchers. *Information Research,* 21(4), paper isic1602. Available at: http://InformationR.net/ir/21-4/isic/isic1602.html

Meyer, H.W.J. 2005. The nature of information, and the effective use of information in rural development. *Information Research,* 10(2) paper 214. Available at: http://InformationR.net/ir/10-2/paper214.html

Meyer, A. and Fourie, I. (2018). Applying Maniotes' third space in guided inquiry model as a theoretical framework to understand architectural students' information behaviour: a quantitative approach. *Innovation: Journal of Appropriate Librarianship and Information Work in Southern Africa*, 56: 91-114. doi: http//dx.doi.org/10.10520/EJC-104e01c68b

Mnubi-Mchombu, C. and Mostert, J. (2011). Information seeking behaviour of orphaned and vulnerable children's caregivers in Namibia. *Library Review*, 60(5), 396-408. doi: http://dx.doi.org/10.1108/00242531111135308

Mosha, N.F. and Manda, P. (2012). HIV/AIDS information and changing sexual behaviour among undergraduate students in Tanzania. *Aslib Proceedings*, 64(5), 509-518. doi: http://dx.doi.org/10.1108/00012531211263120

Mostert, B.J. and Ocholla, D.N. (2005). Information needs and information seeking behavior of parliamentarians in South Africa. *South African Journal of Libraries & Information Science*, 71(2), 136-150. doi: http://dx.doi.org/10.7553/71-2-616

Musoke, M.G.N. (2007). Information behaviour of primary health care providers in rural Uganda: an interaction-value model. *Journal of Documentation*, 63(3), 299-322. doi: http://dx.doi.org/10.1108/00220410710743261

Mwanzilo, P.K. (2005). Sharing information on the best practices in sustainable development in Kenya. *Quarterly Bulletin of the International Association of Agricultural Information Specialists*, 50(3/4), 133-140.

NationsOnline (n.d.): https://www.nationsonline.org/

Ndumbaro, F. and Mutula, S.M. (2017). Collaborative information behaviour of butterfly farmers in Eastern Usambara Mountains, Tanzania. *Malaysian Journal of Library & Information Science*, 22(2), 15-29. doi: http://dx.doi.org/10.22452/mjlis.vol22no2.2

Nel, M. and Fourie, I. (2016). Information behavior and expectations of veterinary researchers and their requirements for academic library services. *The Journal of Academic Librarianship*, 42(1), 44-54. doi: http://d.x.doi.org/10.1016/j.acalib.2015.10.007

Norbert, G.L. and Lwoga, E.T. (2013). Information seeking behaviour of physicians in Tanzania. *Information Development,* 29(2), 172-182. doi: http://dx.doi.org/10.1177/0266666912450449

Nwagwu, W.E. (2009). Participatory gender-oriented study of the information needs of the youth in a rural community in South-Eastern Nigeria. *African Journal of Library, Archives & Information Science*, 19(2), 129-140.

Nwagwu, W.E. and Igwe, E.G. (2015). Safety information-seeking behaviour of artisanal and small-scale miners in selected locations in Nigeria. *Libri,* 65(1), 71-90. doi: http://dx.doi.org/10.1515/libri-2013-0096

Nwagwu, W. and Olatunji, O. (2012). Life saving information behaviours of commercial motorcyclists in a metropolitan city in Nigeria. *Libri*, 62(3), 259-275. doi: http://dx.doi.org/10.1515/libri-2012-0021

Nwezeh, C.M.T. (2010). Students' knowledge and information needs on HIV/AIDS in Nigeria. *Journal of Hospital Librarianship*, 10(2), 152-164. doi: http://dx.doi.org/10.1080/15323261003680176

Obioha, J. (2005). The role of ICT in information seeking and use amongst research officers in research institutes in Nigeria: the Nigerian Institute for Oceanography & Marine Research Institute experience. *International Information and Library Review*, 37(4), 303-314. doi: http://dx.doi.org/10.1080/10572317.2005.10762688

Odefadehan, O.O., Akinola, A. and Odefadehan, O. (2016). Information need, access, and use for social welfare and family planning by rural dwellers in Ido and Akinyele local government areas of Oyo State, Nigeria. *Library Philosophy & Practice (e-journal),* 394-410. Available at: http://digitalcommons.unl.edu/libphilprac/1415

Odunmade, A.O., Oloniruha, E.A., Ibrahim, R.O. and Owunesi, M.K. (2022). Information seeking behaviours of orphans and vulnerable children in selected homes in Ogun State, Nigeria. *SRELS Journal of Information Management*, 59(2), 87. doi: https://doi.org/10.17821/srels/2022/v59i2/168146

Okeyo, I. and Dowse, R. (2016). Community care worker perceptions of their roles in tuberculosis care and their information needs. *Health SA Gesondheid*, 21(1), 245-252. doi: http://dx.doi.org/10.1016/j.hsag.2016.05.004

Oladokun, O. (2010). A comparison of the information seeking pattern of distance learners in Botswana: a case study of four tertiary institutions. *Journal of Library & Information Services in Distance Learning*, 4(3), 119-136. doi: http://dx.doi.org/10.1080/1533290X.2010.506359

Olayemi, O.M. and Abolarinwa, S.T. (2021). Health information needs of tuberculosis patients in Lagos State, Nigeria. *Journal of Hospital Librarianship*, 21(4), 433-444. doi: http://dx.doi.org/10.1080/15323269.2021.1982262

Omoregbee, F.E., Abiola, M.O. and Alabi, C.O. (2019). Assessment of female plantain marketers information needs in Edo State, Nigeria. *Gender and Behaviour*, 17(2), 13291-13307. Available at: https://journals.co.za/doi/abs/10.10520/EJC-16f5d3ca11

Omosekejimi, A.F., Dada, G.A. and Ebhonu, S.I. (2021). COVID 19 information seeking behaviour of internally displaced persons (IDPs) in the federal capital territory, Abuja, Nigeria. *Library Philosophy and Practice (e-journal),* article 5150. Available at: https://digitalcommons.unl.edu/libphilprac/5150/

Ricks, E. and ten Ham, W. (2015). Health information needs of professional nurses required at the point of care: original research. *Curationis*, 38(1), 1-8. doi: http://dx.doi.org/10.4102/curationis.v38i1.1432

Rugambwa, O.N., Lyaka, M. and Mutibwa, L.N. (2020). Contextualizing Wilson's information behavior model in seeking indigenous information for HIV prevention among adolescents in secondary schools, Uganda. *Library Philosophy and Practice (e-journal),* article 4718. Available at: https://digitalcommons.unl.edu/libphilprac/4718/

 Saleh, A.G. and Lasisi, F.I. (2011). Information needs and information seeking behavior of rural women in Borno State, Nigeria. *Library Philosophy and*

Practice (e-journal), article 625. Available at:

https://digitalcommons.unl.edu/libphilprac/625/

Saleh, A.G. and Sadiq, H. (2013). Information needs and seeking behavior of

Muslim clerics in relation to preaching in Nigeria. *International Journal of*

Library and Information Science, 5(3), 55-67.

Stilwell, C. (2010). Research into information behaviour in the South African

context: a preliminary exploration and bibliography: 1980 to date. *Innovation:*

Journal of Appropriate Librarianship and Information Work in Southern Africa,

40:1-33. Available at: https://hdl.handle.net/10520/EJC46508

Stilwell, C. and Meyer, H.W.J. (2018). Introduction: information behaviour

research in South Africa: an update using a snapshot of recent research.

Innovation: Journal of Appropriate Librarianship and Information Work in

Southern Africa, 56, 5.

Tackie, S.N.B. and Adams, M. (2007). Information needs and seeking behaviour

of engineers in Ghana: a case study of the Volta River Authority. *African Journal*

of Library, Archives & Information Science, 17(2), 69-78. Available at:

https://www.ajol.info/index.php/ajlais/article/view/26186

Tella, A. (2016). Knowledge-sharing intention among information professionals

in Nigeria: a statistical analysis. *Portal: Libraries and the Academy,* 16(2), 225-

245. doi: http://dx.doi.org/10.1353/pla.2016.0025

Thapisa, A.P.N. (1996). Legislative information needs of indigenous

parliamentarians in Botswana and impact on effective decision making.

International Information and Library Review, 28(3), 203-232. doi:

http://dx.doi.org/10.1080/10572317.1996.10762398

Udem, O.K., Aghoghovwia, D.U. and Baro, E. (2020). WhatsApp groups: channel

for sharing information among LIS professionals in Nigeria. *The Electronic*

Library, 38(4), 805-820. doi: http://dx.doi.org/10.1108/EL-12-2019-0289

Ugbala, C.P., Lawal, O.W., Olawale, G.S., Oloniruha, E.A. and Fatokun, A.M.

(2022). Application of Wilson's theory of information seeking behavioural to

public library as a source of business information for SMEs in Nigeria. *Library*

Philosophy and Practice (e-journal), article 6834. Available at:

https://digitalcommons.unl.edu/libphilprac/6834/

Umbima, W.E. (1993). Regional approaches to information sharing: an agricultural information network for Africa. *Quarterly Bulletin of the International Association of Agricultural Information Specialists*, 38(2-3), 110-113.

Underwood, P. (2009). Supporting the information needs of entrepreneurs in South Africa. *Library Review*, 58(8), 569-580. doi: http://dx.doi.org/10.1108/00242530910987064

United Nations (n.d.): https://www.un.org/en/

Wambiri, M.D. (2020). Relationship between users' past experience and cognitive factors that influence information seeking: a case study of graduate students in Nairobi, Kenya. *SRELS Journal of Information Management,* 57(4), 181. doi: https://doi.org/10.17821/srels/2020/v57i4/149840

Wasike, J.M. and Munene, S. (2012). Information needs and study behaviour of non-traditional students with particular reference to university libraries in Kenya. *International Journal of Library and Information Science*, 3(6), 94-103. Available at: https://academicjournals.org/journal/IJLIS/article-full-text-pdf/87784995134

Wilson, T.D. (2000). Human information behavior. *Informing Science*, 55(3), 49-55. doi: http://dx.doi.org/10.28945/576

Wilson, T.D. (2022). Exploring information behaviour: an introduction. *Information Research.* Available at: http://informationr.net/ir/Exploring%20information%20behaviour.pdf

Wium, A.M. and Naude, E. (2004). Health workers' use of electronic information concerning children with specific communication needs. *Health SA Gesondheid*, 9(2), 43-53. doi: http://dx.doi.org/10.4102/hsag.v9i2.163

WorldData (n.d.): https://www.worlddata.info/africa/index.php

World Health Organization (WHO) (n.d.): https://www.who.int/

Zimu-Biyela, N. (2021). Information needs of women subsistence farmers in the Dlangubo Village, South Africa. *Libri*, 71(4), 361-373. doi: http://dx.doi.org/10.1515/libri-2020-0007

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