Synthesis Lectures on
Information Concepts, Retrieval, and Services

SYNTHESIS
COLLECTION OF TECHNOLOGY

Dennis Ocholla · Omwoyo Bosire Onyancha ·
Aderonke Olaitan Adesina *Editors*

Information, Knowledge, and Technology for Teaching and Research in Africa

Information Behavior in Knowledge and Economy

Springer

Synthesis Lectures on Information Concepts, Retrieval, and Services

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ISSN 1947-945X ISSN 1947-9468 (electronic)
Synthesis Lectures on Information Concepts, Retrieval, and Services
ISBN 978-3-031-65744-3 ISBN 978-3-031-65745-0 (eBook)
https://doi.org/10.1007/978-3-031-65745-0

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Foreword

The main driver for progress in information seeking in essence, dwells on the relationship between users' information needs, their immediate demands and purposes/tasks identified thereof. The information related to fulfilling these needs involves several processes characterized by multitudes of different materials from various sources and formats; and new methods for discovering and selecting information. This book *Information, Knowledge, and Technology for Teaching and Research in Africa: Information Behavior in Knowledge and Economy* presents a brilliant narrative in seven chapters on the topic which forms the cornerstone of information-seeking behavior studies. The knowledge economy on the other hand, points to the ability to make the most of on scientific discoveries and applied research, which resultantly generates big data. This book is important as it articulates literature, case studies, and some of the theoretical frameworks that can be adopted in information-seeking research.

The book begins with an informetric perspective by Omwoyo Bosire Onyancha titled: "Which Way Information Seeking Behaviour as a Research Area in the Library and Information Science Field? An Informetric Study" This chapter looks at progress in information seeking, publication trends across disciplines, spanning over a period of six decades. The findings highlight the interdisciplinary nature of information-seeking behavior research from 1961 to 2023 with a wide subject orientation outside the humanities and social sciences.

The second chapter by Ikoja-Odongo looks at "Information Needs and Uses of the Informal Sector Entrepreneurs: A Conceptual, Contextual and Historiographic Review", dwelling mostly on this sector of the economy in Uganda. The dearth of literature on the activities of informal sector practitioners motivated this study. Illiteracy, lower levels of education poor infrastructure were found to stifle the adoption of ICT-based platforms for information sharing for business among the practitioners.

"Financial Literacy Amongst Women Entrepreneurs for Economic Empowerment in Kenya" constitutes the third chapter and is co-authored by Joyce W. Kinyanjui and Dennis Ocholla. The study brings to light economic empowerment of women entrepreneurs

in that when financially literate, women can make independent decisions and take control of their financial destinies. To overcome the challenges, training on special skills and aptitudes becomes inevitable.

Ease of access to library services can present challenges to users with disabilities as they require special assistance aided by assistive technologies in some instances. The forth chapter "Library Service Provision for Students with Disabilities in Academic Libraries: A Literature Review" by Dorothy Doreen Eneya and Aderonke Olaitan Adesina provides a literature review on Library Service Provision for Students with Disabilities in Academic Libraries. Based on searches in databases, developing countries faced more barriers to accessing academic libraries in contrast to those in advanced economies. Funding and implementation regulations were thus important for successful all-encompassing library services due to the high costs of assistive technologies involved.

The nature of information resources and infrastructural facilities contribute significantly to the provision of quality services by libraries. Service quality is influenced by several variables impacting on service quality. In the fifth chapter "Applying Service Quality Theoretical Framework for Quality Service Delivery in Academic Libraries from an African Library Perspective", Paul Mbua reviews issues of quality, particularly in higher education and in academic libraries using the GAP model (and the Servqual tool) as the theoretical foundation for service quality research in academic libraries from an African library perspective. The chapter brings to the fore the intricacy and array of service quality parameters, identifying factors critical in improving the service quality within academic libraries.

The exponential growth of information being generated, and information sources has brought to fore the need for library users to possess skills that will enable them to efficiently access, evaluate and use available resources. In the sixth chapter "Information Literacy Skills of Students in Secondary Schools with African Perspective. A Literature Review" by John Mwaura Ireri reviews literature on Information Literacy Skills of Students in Secondary Schools in Kenya. Despite the importance attached to IL skills, background, school environments, poor infrastructure including ICTs and libraries were identified as major hindrances in the study, and in cited literature.

Lastly, the seventh chapter "Reflections on Trends, Challenges and Opportunities of LIS Research in South Africa. A Contextual Discourse" by Dennis Ocholla navigates trends, challenges, and opportunities of LIS Research in South Africa. As a prominent proponent of LIS education, Ocholla fuses personal experience and literature to inform anticipated future advancement in the discipline. Academics in the LIS discipline was mentioned in the popular indexed journals with significant increase in research collaboration among researchers in South Africa, both within and without institutions. The importance of funding backed by legislation to support research was also applauded as a positive investment in LIS research in South Africa.

The technical depth and knowledge exhibited in the seven cases shows how the generation and use of a range of information sources is impacting on LIS research and the library

services delivery landscape. This book is very important to students and researchers of information behavior research as it explores the emerging themes through literature review and case studies. I recommend this book to students and researchers as they will find this collection very engaging in every chapter.

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Preface

Information behavior research is popular and one of the major focal points in Library and Information Science (LIS) research because of the importance of knowing consumer or user relationships and the challenges of accessing, succeeding, and using knowledge products and services provided by the market or knowledge economy defined by quantity, quality, and accessibility to information. The increased use of information and communication technologies and computer human interaction and user interfaces is making research in the domain more attractive and demanding. We believe that information behavior research cannot be dismissed as most studies show its leading role in LIS research and indeed in information systems design and improvement, even beyond the LIS sector, as reflected in chapter one of this book. The knowledge economy, which is increasingly driven by data, information, and fourth industrial revolution (e.g., internet of things and AI) technologies is adding pressure to information-seeking behavior research in different ways. We seem to agree that information products and services cannot be provided effectively without the knowledge of their users and how they access and use them. The chapters in this book address this important and growing research area.

The first and opening chapter of this book, which links well with chapter two, entitled "Which Way Information Seeking Behaviour as a Research Area in the Library and Information Science Field? An Informetric Study" is written by Omwoyo Bosire Onyancha, from the University of South Africa. The chapter explores the evolution and current state of information-seeking behaviors research within LIS and uses informetric methodology, based on SCOPUS subjects, and keywords from 1961 to 2023 to achieve this. The findings reveal the growth of research in the domain, dispelling doubts about its survival as an important LIS research domain. The interdisciplinary nature of this field and the influence of technology underscores its viability in the future which also reiterates its importance in informing practice, policy, and the design of information systems today and in the future. In the second chapter, Robert Ikoja-Odongo, from Soroti University, writes on "Information Needs and Uses of the Informal Sector Entrepreneurs: A Conceptual, Contextual and Historiographic Review" and reviews historical literature in the domain. At

the time of his Ph.D. study (1999–2002), he noted that few studies delved into the informal sector and relatively few studies of information needs and uses with focus on Africa and Uganda in particular. There is also a wide information gap in government, NGOs, and other stakeholders in the sector regarding what they do, yet the sector contributes substantially to the national economy. Robert concludes that an appropriate model for information behavior for information-poor communities like the informal entrepreneurs must be grounded on oral traditions and indigenous knowledge and should be sensitive to poverty, infrastructure, and illiteracy. Also, there is a need for information repackaging and the use of appropriate media for information provision. The third chapter, entitled "Financial Literacy Amongst Women Entrepreneurs for Economic Empowerment in Kenya" is co-authored by Joyce Wangui Kinyanjui and Dennis Ocholla, from the University of Zululand. The study confirms that financial literacy skills are a major factor in women's economic empowerment. Women entrepreneurs acquire financial literacy skills through social constructionism. Lack of financial literacy skills is hindering women entrepreneurs from becoming economically empowered. This study proposes that regular assessment of women entrepreneurs' financial literacy skills be carried out, and tailor-made training courses to fulfill these needs be introduced. The authors suggest focus areas such as computing, loans, reading and understanding bank statements, budgeting, spending, saving, and investing in business ventures. The fourth chapter, "Library Service Provision for Students with Disabilities in Academic Libraries: A Literature Review" written by Dorothy Doreen Eneya, from the University of Malawi, and Aderonke Olaitan Adesina, from Nottingham Trent University and the University of Zululand, is a topical area in LIS research and practice. The chapter focuses on the role of academic libraries in universities, library services for students with disabilities, and accessibility of library services to students with disabilities, including the accessibility of library websites; assistive technologies for students with disabilities; challenges faced by academic libraries in providing services to students with disabilities, and the impact of policy and legislation on academic library service provision for students with disabilities; The chapter is underpinned by the social model of disability, which posits that disability is socially constructed. The fifth chapter, entitled "Applying Service Quality Theoretical Framework for Quality Service Delivery in Academic Libraries from an African Library Perspective," is written by Paul Mbua from Dedan Kimathi University of Technology and the University of Zululand. The chapter focuses on how the models could be used to enhance and improve service delivery in academic libraries by expounding on the theoretical frameworks of service quality. The sixth chapter, referring to "Information Literacy Skills of Students in Secondary Schools with African Perspective. A Literature Review" is written by John Mwaura Ireri from Chuka University and the University of Zululand. In the chapter, John unpack the concept of information literacy and its significance, the challenges and role of stakeholders, and advice that it is important for governments to incorporate information literacy knowledge into academic programs to ensure that citizens are enlightened and equipped with knowledge to function effectively in the modern world. The chapter delves

into the extant literature discussing information literacy in secondary schools and highlights prevalent challenges and opportunities. The seventh and last chapter "Reflections on Trends, Challenges and Opportunities of LIS Research in South Africa. A Contextual Discourse" is written by Dennis Ocholla from the University Zululand. Dennis acknowledges that Library and Information Science research is rapidly changing in South Africa and builds on related studies, some bibliometrics and experiential knowledge as LIS academic to the changing trends, challenges, and opportunities of library and information science research in the country. The issues of quantitative and qualitative research growth as well as research visibility, collaboration and support are discussed. The challenges relating to LIS research capacity building among others are highlighted. The research support opportunity in the country is recognized and commended for future growth if sustained.

All chapters have been blind peer reviewed by at least two reviewers of good academic standing from Africa and their valuable recommendations duly incorporated to improve the quality of the chapters. We thank the reviewers for their time and valuable input for quality control of the book. We also thank the contributors to this book for their quality chapters and for enabling knowledge sharing globally. We strongly believe the book will be valuable for university-level teaching and research in Africa, and perhaps elsewhere, where such knowledge would be valuable for comparative studies.

Richards Bay, South Africa — Dennis Ocholla
Pretoria, South Africa — Omwoyo Bosire Onyancha
Nottingham, England, UK — Aderonke Olaitan Adesina

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About the Editors

Dennis Ocholla Ph.D., graduated with a Ph.D. in Library and Information Science in Kiev and Saint Petersburg/Leningrad in the former USSR in 1988. He is currently a Research Fellow at UNIZULU after retirement as a Senior Professor at the university in 2022. He joined the University of Zululand as Professor (FP) and Head of the Department of Library and Information Science (1996–2014) and appointed Senior Professor at the University in 2006. He started his academic career at Moi University in Kenya, as a lecturer in 1988 and later Senior Lecturer and Head of the Department of Library and Information Studies before moving to the University of Botswana as a Visiting Scholar (1995–1996). He has served the University 0f Zululand as Dean (1998–1999), Vice Dean (2007–2011), Deputy Dean of Research and Internationalization (2014–2019), in the Faculty of Arts (now Humanities and Social Sciences). His research and teaching interest-where he has published and graduated with many masters and Ph.D.s—include—information seeking, KM and IKS, ICT4D/Human-computer interaction—user interfaces, LISE, data science—bibliometric/informetrics, information practices—information seeking, information ethics, scholarly communication, and research methods. He serves/has served in the editorial and peer review boards of many local (RSA) (e.g., SAJLIS) and international journals (e.g., Library Management, Informetrics, LIBRI), conferences, and research organizations/councils. He was the Editor-in-Chief of Inkanyiso: Journal of Humanities and Social Sciences (2009–2022) and before that, Editor-in-Chief of South African Journal of Libraries and Information Science (2002–2008). He has received research awards including NRF [RSA] established researcher rating (until 2028). Some of his research publications can be accessed at: https://scholar.google.com/citations?user=OJHFQG0AAAAJ&hl=en.

Omwoyo Bosire Onyancha Ph.D., is a Research Professor at the Department of Information Science, University of South Africa (Unisa). He is also the Head of Graduate Studies and Research at the College of Human Science, Unisa. He holds a Ph.D. in Library and Information Science and is a C2 National Research Foundation (SA)-rated researcher. His areas of research interest include Informetrics and Scientometrics, Information and Knowledge Management, Science Communication, and Knowledge Mobilization. He has explored these areas of research interest in order to advance the academic and societal understanding of how information and knowledge are created, disseminated, and utilized in various contexts. Furthermore, his research has provided insights into the impact of information and communication technologies in information processing and use, the role of metadata in information retrieval, and the importance of knowledge management in organizational performance. Some of his research can be accessed at: https://www.researchgate.net/profile/Omwoyo_Onyancha/contributions.

Aderonke Olaitan Adesina Ph.D., is an academic, researcher, author, and resourceful educational consultant with a background in the physical and social sciences. She has garnered work experience in the health, education, and consulting sectors over the last 25 years. Her passion lies in empowering young people through academics and life skills; a passion that led her to undertake a master's degree in Career Development at Nottingham Trent University, UK, to enable her to enhance her career planning, development, and counseling skills for teenagers, and adults in and out of schools. She earned her bachelor's and master's degrees in physics and information science, respectively, from the University of Ibadan, Nigeria, and her doctoral degree from the University of Zululand, South Africa. She is a member of the Chartered Institute of Personnel Management, Nigeria (CIPMN) and the Professional Editor's Guild of South Africa, both at the Associate level. She is a professional career practitioner at the Career Development Institute (CDI), UK. She is currently the Postgraduate and International Students Employability Project Officer at Nottingham Trent University, Nottingham, UK. Her research and teaching interests include information management, information systems, knowledge management, and enhancing the employability of individuals. Her research publications can be accessed at: https://scholar.google.com/citations?user=9T-V1aUAAAAJ&hl=en.

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Information Needs and Uses of the Informal Sector Entrepreneurs: A Conceptual, Contextual and Historiographic Review

J. R. Ikoja Odongo

Abstract

This chapter reviews extant literature on information needs and uses of the informal sector entrepreneurs of Uganda. The review is based on the study conducted from 1999 to 2002. By this time, studies on information needs were already forty years old since the early writing and exposition by Taylor in 1962, 1968. Motivation to the study is that the informal sector whose entrepreneurs were studied, had during this time relatively few studies of information needs and uses undertaken in developing Africa and within Uganda there was no empirical evidence to rely on to the size, nature, range, and activities of the sector. There is also a wide information gap in government, NGOs and other stakeholders on the sector regarding what they do and yet the sector contributes to the national economy. However the sector is part of the Ugandan economy that is deeply rooted in the history, customs and culture of the country. It is the second economy that has demonstrated remarkable ability to survive and expand in recent years. To understand the information needs and uses of entrepreneurs, their demographic and business characteristics are highlighted and empirically tested. Qualitative research methodologies, applying critical incidence technique for interviews of informal entrepreneurs from various trades was employed. Observations of entrepreneurs' work environments and historical methods were engaged. Results suggest modern/exotic models of information transfer based on textual media and ICT, exhibit less impact on the entrepreneurs' information needs and use at macro levels because of illiteracy, low levels of education and poor information infrastructure. Most 'elite' models share a platform with information behavior of entrepreneurs at the micro levels. The

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D. Ocholla et al. (eds.), *Information, Knowledge, and Technology for Teaching and Research in Africa*, Synthesis Lectures on Information Concepts, Retrieval, and Services, https://doi.org/10.1007/978-3-031-65745-0_2

conclusion is drawn that an appropriate model for information behavior for information poor communities like the informal entrepreneurs must be grounded on oral traditions and indigenous knowledge and should be sensitive to poverty, infrastructure and illiteracy. There is need for information repackaging and use of appropriate media for information provision.

Keywords

Information behaviour • Information seeking • Informal sector • Uganda

1 Introduction and Background of the Informal Economy of Uganda

The essential background to the chapter is the nature of the informal sector and the demographic and business characteristics of the informal entrepreneurs in Uganda, an East African country with a developing economy is described. Uganda's economy depends both on formal and informal sectors. Available data suggests the Sector (I. S.) grew at an annual rate of 25% between 1995 and 1998. Factors contributing to this growth include retrenchments in public service, lay-offs in public enterprises, demobilization of soldiers, increasing number of schools dropouts without formal employment, the on-going rural–urban migration, increasing entry of women and children into the sector, "frozen" vacant positions in the public sector and the automatic entry of illiterate people into the sector. The sector is the bulwark against unemployment, destitution and crime (Ministry of Planning Economic Development [MPED] 1989). This sector has also grown out of economic crises the country experienced in the 1970s and the early 1980s. These were: the collapse of the formal sector in the 1970s, the expulsion of enterprising Asians during the same period, the political instability of the 1970 and 1980s, and the failure of the modern (protected) sector to cope with the growing number of job seekers and structural adjustment programs of the IMF entailing stringent reductions in the growth of recurrent expenditure in government and in the public sector organizations. Studies in recent times indicate that informal sector employs 34% of the working population. UBOS estimates that this sector contributed to over 50% to Uganda's GDP in 2014 up from 43% in 2002. In 2017/18 the Ministry of Finance, Planning and Economic Development attributed informal economy to contributing 51% to national GDP. Different figures is an indicator the informal economy exists.

Since its entry into research and academic vocabulary in early 1970s, the concept of the I. S. has been interpreted in different ways in different parts of the world. Many names have been linked to it where it exists. It has been described rather negatively in some countries. Names like unofficial, parallel, undeclared, concealed, creeping, clandestine, alternative, marginal, independent, submerged, invisible, illegal, unobserved, fraudulent, hidden, submarine, secondary, underground, dual, secret, black, irregular, veiled, peripheral, shadow, informal, disguised, grey, counter-economy, wangling economy at the "lower

circuit" of the urban economy (Karl, 2000) have been used. These names represent different attributes and have different connotations. Many of their naming appear to mean that the I.S. is an illegal phenomenon simply because they appear to escape taxation or the purview of current societal measurement. Most of terms used indicate the sector exists in different parts of the world and that its activities or what led it to occur differ from one country to another.

In East Africa where Uganda is found, the sector is largely a private sector of the economy that supports lower income earners and therefore assumes befitting names such as *Jua Kali* or *Nguvu Kazi*. These names derive from the Kiswahili, an East African popular language. *Jua Kali* means the "hot sun". *Jua* is the "sun", *Kali* means "very hot". *Jua Kali* is a Kenyan phrase and the colloquial name given to those enterprises operating informally and mostly without shelter or in the open air or under very difficult conditions. Tanzania uses the name *Nguvu Kazi. 'Nguvu'* is a Kiswahili word for "strength" while *'Kazi'* means 'work'. Translated into business, it refers to activities requiring a lot of energy to produce anything. Uganda lacks a proper name simply because Ugandans' knowledge of Kiswahili is limited since they use English and indigenous languages mostly. But being an East African country, the descriptions given by Kenya and Tanzania are most appropriate. In summary, the I.S. is that part of a developing economy that works in very difficult conditions and its practitioners use a lot of effort to produce goods and services.

More significant about this sector in Uganda is that it is visible and operates in the open, is rampant, dynamic and found in rural and urban areas alike operating alongside the formal sector. It comprises a diversity of small and micro enterprises (SMEs) and trades that are widely spread throughout the country. It excludes illicit activities like smuggling, money laundering and drug trafficking that are hidden, secret or underground. The sector employs males and females; adults, youth and children; the literate, semi illiterates and illiterates; and able and disabled people alike. It is characterized by routine work involving innovation, imitation and duplication of products and services where artisans acquire wide experience, compensating for their limited education. It provides goods and services to a majority of low- income earners, making extensive use of local raw materials, employing adaptive technology. The sector demonstrates low levels of productivity given that they are labour intensive because of low division of labour, low incomes, low capital intensity, flexible hours of operation, low level of formal credit, and ease of entry and departure. It is also characterized by a wide variety of employment statuses and labour relationships (ILO 1998). The sector is influential on most entrepreneurs who recognize it as an entrepreneurial sector for helping themselves in a number of ways including generating income for survival, fighting poverty, saving themselves from stress for lack of self-support or gainful employment. It is an income situation to deploy already available skills, obtain training and gaining experience, or entering to it because of peer influence. It is this background that supported the purpose of the study, to determine the information needs and uses of the I. S. entrepreneurs in Uganda (see Ikoja-Odongo, 2001, 2002). It is

against this background on which the theoretical perspective of the study of information needs and uses is anchored and presented.

2 Theoretical Background

The starting point in establishing the information needs and uses of the informal entrepreneurs, is understanding of key concepts. Concepts are elements of scientific method. Concepts most commonly used during research on information seeking behaviour are: information, information needs, information seeking, information seeking processes, and information use (Ikoja Odongo & Mostert, 2006). According to Ikoja-Odongo (2002a) concepts refer to major phenomena studied, eventually forming the foundation of the conceptual framework of the subject under investigation. They may also be viewed as mental images expressed as subjective thoughts around things encountered in daily life. As it is not possible to communicate thoughts directly, words, symbols, and phrases of language are used to represent these mental images. In daily communication, a system of general and often vague agreements about the use of terms results in misunderstandings. Depending on the context within which many concepts used within the field of Information Science are used, they can assume different meanings, hence the need for clarification (Davis, 2000). By conceptualizing terms, an individual specifies precisely what is meant by a specific term (Maxfield & Babbie, 1998). This is done to relate the findings to informal entrepreneurs' needs and uses and establish if there are any differences.

Past studies reveal that the concepts defining information, information needs, information seeking and information use have undergone significant evolution since they were first introduced (Ikoja Odongo & Mostert, 2006). A number of information seeking and retrieval studies seem to focus on these concepts, albeit in different ways though it is widely understood that concepts form the basis for describing and explaining phenomena and processes in a field of study. Within the field of Information Science in which the information needs and uses of the informal entrepreneurs fall, many of the concepts used need to be understood in terms of research context, as a variety of meanings can be attached to most concepts. This chapter reviews major studies (e.g. Wilson, 1981, 1996; Krikelas, 1983; Ellis, 1989; Kuhlthau, 1991) and information searching and retrieval (Ingwersen 1996; Choo et al., 1999, 2000) who focus on these concepts for greater clarity and an understanding of their relationship and application in LIS research. The theoretical framework used here is based on related international studies concerning literature and theory in the field of information behaviour namely seeking, searching, evaluation, retrieval and use (e.g. Belkin et al., 1982a, b; 1999; Dervin & Nilan, 1986; Ingwersen, 1986, 1992; Wilson, 1981, 1997, 1999; Xie, 2000). Similar studies have been completed in parts of Africa as well (e.g. Kaniki, 1991, 1995; Ocholla, 1998, 1999). The conclusion drawn here is that context should be the foundation for any research within this field, with the observation that many of the models discussed describe general information seeking

behavior, without catering for variations. For purposes of comparison, disciplines concerned with understanding how people seek and make use of information, the channels they use to get information, and the factors that inhibit or encourage information use include: the study of personality in psychology, consumer behaviour, innovation research, health communication studies, organizational decision-making, and information requirements in information system design (Wilson, 1997). Thus, there exists a strong recognition amongst information scientists of the interconnectivity of disciplines involved in research on all aspects of information. These concepts are described in the following lines.

2.1 Information

The importance of the concept information to information science and to this chapter is that information must be relevant; it must be related to knowledge, it is definable and operational, and offers a means for the prediction of effects on information (Ingwersen, 1992). Information influences understanding, and further understanding, developing and/or applying the various techniques of information needs assessment (Kaniki, 1999).

While it is assumed that the concept of 'information' is familiar, a review of definitions, explanations and descriptions reveals that this is not such an obvious word. It remains a problematic concept in the vocabulary of communication science. It is for this reason that information scholars have long argued over the nature of information, and ways of developing concepts of it for practical use. It is not even clear whether attempts to give meaning to it have a long history; that is, perhaps why the concept is a subject of continuous and important discussion (Buckland, 1991; Ingwersen, 1992; Smith, 1991). It is stated that the concept originated from the Greek words *typos, idea and morphe,* evolving into the Latin word *informatio*. Cornelius (1996) reports of attempts arguing that efforts have been made to develop hermeneutic approaches to the study of information. He refers readers to the works of Blair who wrote on Language and representation in information retrieval; Ingwersen whose work is Information retrieval interaction, and Qvortrup (1993) who dealt with it on the controversy over the concept, information. Their works were a reaction to a concern raised by Winograd and Flores (1986) understanding computers and cognition. But briefly, the concept "information" remains one with multiple meanings Dick; (Alien and Losee in Davis 2000; Zweizig & Powell, 1990). Consequently, information is a product of processed data but not data itself. It is part of knowledge but not knowledge itself. Theoretically it is something between data and knowledge.

In the context of user studies, the term "information" has been used to denote a physical entity or phenomenon, the channel of communication through which messages are transferred, or the factual data empirically determined and presented in a document or transmitted orally (Wilson, 1981). It is *a property of matter, any message, document, or information resource; any publicly available symbolic material; or any data* (Smith, 1991), or as *ideas, facts, imaginative works of the mind and data of value, potentially useful for*

decision making, question answering, etc. (Kaniki, 2001). Information denotes the factual data, advice, or opinion, a physical object such as a book or journal, or channel of communication through which a message is conveyed, for example oral or written communication (Rohde, 1986). Dervin and Nilan in Taylor (1991) in a paradigmatic shift in the study of information needs and uses provide an alternative paradigm that contrasts the traditional. They posit information as something constructed by human beings. From another angle, information may also be understood as a commodity, which can be traded, given away, sold, hoarded, or even analogous to some precious metals, debased through various kinds of distortions. Unlike many other commodities which, if possessed by one, information cannot simultaneously be held by another (Sligo & Jameson, 2000). This definition falls under the meaning approach and its value lies in its ability to describe reality, potentially completely, thereby reducing uncertainty and allowing people to function more effectively. In this regard, information is a thing that can be transferred from one person to another like a brick (Dervin et al., 1982) and knowledge can be accumulated brick by brick. But unlike bricks, information is organically indivisible. It is given and the giver does not lose it at the same time. Rohde (1986) collated earlier ideas by other people citing Ford, Krikelas, and Faibisoff and Elly who opined that information is the structure (or order) of any text that is capable of changing the image structure of a recipient, any stimulus that reduces uncertainty and a symbol or set of symbols, which have the potential for meaning. Paisley also considered information as any stimulus that alters the cognitive structure of the receiver in the course on information task sequences that focus on learning, decision-making, problem solving, calculation, and verification. A synthesis of these definitions makes information fall under the effect approach.

McCreadie and Rice (1999) provide a very concise overview of the current concepts defining information. According to them, there are currently four major assumptions about information:

Information as commodity/resource. Information is seen as a physical commodity to be *produced, purchased, replicated, distributed, manipulated, passed along, controlled, traded and sold* (1999:46). Buckland (1991) advocates that 'information-as-thing' is always situational, i.e., the information value of any given piece of information may differ from situation to situation. An underlying assumption of this concept is that when a message is sent from a sender to a receiver, the receiver is expected to understand the message and attach the correct meaning/interpretation to the message.

Information as data in the environment. This concept views information as including readily available data from an individual's environment. This data may be communicated both intentionally and unintentionally for human processing, and is gained from objects, artifacts, sounds, smells, visual and tactile phenomena, events or natural phenomena.

Information as a representation of knowledge. Information is viewed as *a representation of, or pointer to, knowledge.* The printed document, i.e. books, journals, citations, etc., is assumed to be the primary representative of knowledge. Recent technological advances in electronic media have provided previously alternative options as primary representatives.

Information as a part of the communication process. Meanings are seen to be inherently in people rather than in words or data. Factors such as timing and other social and personal factors influence the processing and interpretation of information. When interpreting and evaluating information, the context, be it geographical, social, and educational or professional, would influence the understanding of the message (Madden, 2000). Allen (in Davis, 2000) describes information as *the process by which an informant's cognitive structures are encoded and transmitted to an information seeker who perceives the coded messages, interprets them and learns from them.*

From the viewpoint of information theory, information is something subsisting within the person. It is in the mind of a person and in an inert state. Should the need arise for its use, it is recalled from memory and use. This fits well into the situation theory of information that states that " …information is able to provide only an incomplete rather than complete description of reality, and it is essentially internal, a part of an individual frame of reference, rather than an object that exists externally". Basic to situational theory is the assumption that the factor common to all situations is that people move through time and space, making their own sense of the world to move through it (Rohde, 1986). Information is therefore that which informs. It is the supplement, which makes it possible for the actual mental state to cope with new situations, to transform into some slightly different configuration using language and other communicative means as key instruments in the process. It is the "glue" or cobweb binding people together, empowering them, and making them operate, effectively and efficiently, stimulating action, invention, and innovation. It expedites use in the individual. This type of information is one that can be gained by study, investigation, instruction, experience, experiment, observation, and practice. It should be packaged and communicated to its user in appropriate media. Information constructs knowledge and knowledge procreates information. Following the ideas of Mackay, information is defined as merely a sequence of bits, symbols, and signs (Campbell & Rijsbergen, 1996). It is unchanging and absolute. If a modification is made to it, it is a different piece of information.

Within the interactive feedback model, information is regarded from the cognitive viewpoint as a subjective construct (Belkin and Ingwersen in Spink et al., 1996). It modifies knowledge and at the highest level, and must enter the perceptual system (Cole, 1996). It is the individual who makes sense of the information, constructs reality, and decides the utility of the information in each situation (Dervin, 1982). In Dervin's *sense making theory,* a person becomes "informed" in a series of stages. First the person is confronted by a situation, but what is important is a specific aspect of the situation only, namely the individual's perspective on the situation or the gap-situation, which may be defined as an occurrence that raises questions. When this happens, the sense or meaning in the situation runs out or breaks down. The individual then attempts to reconstruct meaning or sense by defining the gap then bridging the gap. The individual then defines the gap and bridges the gap by seeking instructions from the environment. This results in the construction of new sense or meaning so that the individual can move forward again (Cole,

1996). For example, it permits action and decisions Orminski in Mchombu (2000). All through the definitions and explanations given above, information is something that must be interpreted and understood. Failure to interpret means there will be no meaning. This brings this study to a new dimension related to the meanings of information stated above. That is, how information can be perceived from an interpretative viewpoint which says information is generated as meaning by the development of shared views and accounts of practices (Cornelius, 1996). The implications of this are that there can be no objective, meaning-independent information and that no one can anticipate what meaning it will have at any time in practice. It is through interpretation that meaning resorts.

Up to this point, the dimension of information as a concept remains a subject of continuous and important discussion. To summarize, it is generally agreed information is transferred in the communication chain from its generator to its recipient, that it is a set of symbols brought together (e.g. letters, numbers, pictures, signs), and that it can be transferred in several forms (e.g. written, oral, gesturing). Information enables the task performance (Bystrom, 1996). It is knowledge in the form of messages, ideas, facts, data of value, recorded or otherwise; a resource (Taylor & Farrell, 1994) to its recipient, pertinent to the real and perceived needs of the person, such as awareness, decision-making, problem-solving (Kaniki, 1999). It is factual knowledge (Mersham & Skinner, 1999) which to serve its purpose, should be timely to its recipient, must be accurate, detailed enough, understandable (Taylor & Farrell, 1994) and should contain some element of newness, and should enable its user make confident and better decisions. It should be integrated with other information that already exist (Prasher, 2002) and within the preceptor's system (Stonier, 1991). To this work, it is sustained that information is what facilitates informal entrepreneurs to do their work. It can be accessed in many ways already mentioned above and in a manner suitable to its users.

2.2 Information Needs

Like the concept information, information need has also been the subject of many studies for many years but that is defined or explained in a variety of ways. However, information need is one of the core concepts in library and information science, that remains not well understood (Afzal, 2017) and there is no clear agreement on how information needs should be measured. It is a concept difficult to define too. Its vagueness is not the focus of this chapter rather information needs exist among informal entrepreneurs. Instead it is an expression of a deficiency in the cognitive structures of an active individual, the informal entrepreneur. The purpose here is not to canvas the history of information needs rather to state that people have information needs and at their work place. In that context, an information need is a requirement that drives informal entrepreneurs into information seeking so that they achieve their objectives.

An information need evolves from a feeling or an awareness of something missing or lacking, which necessitates the seeking of information that might contribute to understanding and meaning (Kuhlthau, 1993). Citing MacKay, Taylor (1968) describes an individual with an information need as having *a certain incompleteness in his picture of the world - an inadequacy in what we might call his 'state of readiness' to interact purposefully with the world around him.* It is this inadequacy that drives the people to a feeling of need. This 'inadequacy' led Taylor to discern four levels of information needs:

The visceral need which is an existing need one that either on a conscious or unconscious level is still unexpressed. It can manifest itself in the form of 'unease', which could potentially develop into action as more information becomes available.

The conscious need which is an expressed need, albeit expressed rather vaguely, ambiguously and indecisively.

By communicating the need, it is hoped that clarity can be achieved.

The formalized need which is formally stated as a rational statement.

The compromised need which represents the question as eventually posed to an information system.

Devadason and Lingam (1997) distinguish between expressed, unexpressed and dormant information needs. Dormant needs are described as needs of which a user is still unaware, potentially activated by an information service provider. Krikelas (1983) nonetheless cautions that, unconscious needs do not necessarily (or eventually) lead to action. Smith (1991) classifies information needs as being either general or specific. General information refers to current information on topics of interest, while specific information involves finding solutions, and problem solving. Information should, however, not be seen as a need, but rather as a construct or tool used to satisfy primary human needs (Van Lill, 2000). Whichever way, an information need can be identified in different ways. There is no restriction as to whether it should be expressed, unexpressed or whether it is visceral, conscious or not. What is cardinal is getting information and satisfying the information need.

Satisfying information needs is a dynamic process during which absorbed knowledge may lead to renewed information needs (Kuhlthau, 1991; Kebede, 2000). Within a work environment, for example, several factors influence information needs, be they content or non-content oriented. Factors such as the type of work, whether the work is on a basic or applied level, and the specific field of discipline within which the work falls, all influence information needs, both on content and non-content levels (Lin & Garvey, 1972). In this chapter, the purpose of information need is to find answers to the problems disturbing the informal entrepreneur, and secondly to present information need as a gateway to a flow of information that may or may not address the need at hand. This need presupposes a judgement that a genuine or legitimate information purpose exists and that there is a judgement that the requisite information contributing to achieving the information purpose (Derr in Afzal, 2017) is possible.

2.3 Information Seeking

Archival research informs that information 'finding and gathering' are as old as humans (Ikoja Odongo, 2002). What is new, is perhaps the fact that information seeking is researched under the relatively young domain of Information Science. For instance during the 1940–1970s, focus was placed on the evaluation of information collections, concentrating on information services and systems and how to make them more relevant to their users (Meho & Tibbo, 2003). By the early 1970–1980s this position changed, as attention shifted: from looking at physical information systems as sources of information, to information seeking both as concept and process. Research conducted during this period attempted to depict the characteristics of users as a sociological group, which *inter alia* explains the steps people take to satisfy their information requirements (Itoga, 1992). The studies focused on discovering useful information about the research habits of individuals or groups such as geologists, engineers, etc., to design appropriate information systems and services for the defined groups (Belkin, et al., 1982a, 1982b; Ellis, 1989, 1993; Marchionini, 1995). Since the 1980s, researchers have realized that deciphering questions concerning information requirements could not only be done from a systems point of view, but also from an individual's perspective. Evidence of this shift is mapped in the works of Taylor (1968), Kuhlthau (1991), Belkin and Vickery (1985), Borgman (1984), Wilson (1981, 1997, 1999); Ingwersen (1992, 1996).

In spite of various ways to which it is considered, information seeking is a complex process consisting of social, communicative and interactive behaviour (Fourie, 2004). It is the purposive search for information in order to satisfy certain goals (Wilson in Case, 2002), while Johnson (1997) defines it as the purposive acquisition of information from selected information carriers. Case (2002) describes it as a conscious effort to acquire information in response to a need or gap in one's knowledge. Kuhlthau (1991) conceives information seeking as a user's constructive effort to derive meaning from information in order to extend their state of knowledge on a particular issue or topic. This activity incorporates a series of encounters with information within a space of time, rather than a single reference incident. Finding information is therefore an engagement an individual gets involved in to try and rectify uncertainty in the process of moving through space and time. From that exposition, searching for information is therefore experientially not a straightforward act. It is a process and form of problem solving that goes through problem recognition, problem articulation, source selection, query formulation, search execution, examination of results, extraction of required information, and reflection (Marchionini, 1995). Information seekers can either take responsibility for their own processes, or work through or with an intermediary. Once relevant information is located, the information seeker studies, copies and integrates it with what is already available, thus enabling problem solving (Fourie, 2004). Should the problem remain unresolved, the process may be iterated. This is, however, subject to the internal restrictions of the individual, either the enthusiasm to proceed with looking for further information or ending the process.

Information seeking therefore is a process with which humans engage to purposefully change their state of knowledge. This process is said to be internally active as information seekers direct attention, accept and adapt to stimuli, reflect on progress, and evaluate the efficacy of continuing (Marchionini & Komlodi, 1998). It is the route in which knowledge states are changed through inputs, purposive outputs, and feedback. To proceed with information seeking, this requires an information seeker to apply their personal knowledge and skills. Marchionini (1992) describes it as a *memory scan or personal infrastructure.* The infrastructures or skills are: general cognitive abilities, knowledge skills in relation to the problem/task domain, knowledge and skills in general, knowledge and skills specific to the system, and knowledge and skills regarding information seeking. Seeking can be active or passive, purposeful or unintentional. It is a strictly human process that requires adaptive and reflective control over the afferent and efferent actions of the information seeker. Progress during the information seeking episode is thus a product of information seeker attributes, information environment attributes, and the communication channel through which it flows (Marchionini & Komlodi, 1998). In local usage this is called the road map to getting information. The process of information seeking described above from different authorities fits well into the same process the informal entrepreneurs go through when seeking for information.

2.4 Information Seeking Behaviour

Studies in information-seeking behaviour stem from concerns surrounding how people use information in their work environments. It is the behaviour that arises as a consequence of a need perceived by the information user, who in order to satisfy it, makes demands upon formal or informal information sources or services, resulting in either success or failure (Wilson 1999). Way back forty years, Krikelas (1983) observed that an information need is perceived within the context of an individual's environment. The individual recognizes an inadequacy in his/her knowledge that needs to be resolved in order to deal with a problem. The effort to satisfy the perceived need results in information seeking behaviour. Wilson (1999) broadly conceptualizes this behaviour as activities a person may engage in when identifying his or her own needs for information, searching for such information in any way, and using or transferring the information. In the course of seeking, a variety of information systems, be they manual or computer-based, may be interrogated (Wilson, 2000). Fourie (2004) restates what Itoga (1992) explains that behavior as *steps an individual takes to satisfy information needs*, and Fairer-Wessels (1990) describes as *the way people search*, as *different manifestations of information seeking behaviour*, namely physical, cognitive and affective behaviour. Supporting her views, she refers to the cognitive behaviour research output of persons such as Ford (2004), Ford et al., Kim, Pennanen & Vakkari and Kim & Allen work on physical behaviour works by Ozmutlu et al. (2004);

Spink et al., (2001, 2004), and works on affective behaviour by Kuhlthau (1991, 1993, 1994, 1999).

It has to be noted that information seeking behaviour is not the monopoly of Information Science (Wilson, 1997). Many disciplines contribute to the knowledge of how humans seek and use information, which channels are preferred in the process, as well as which factors hamper, or contribute towards, information utilization. Despite the interdisciplinary nature of the field, Wilson is of the opinion that a general model can be constructed supporting the needs of all respective disciplines. Like all information seekers in other fields, informal entrepreneurs also exhibit a behaviour when seeking information to satisfy their information needs. And we should remember that information seeking drives a particular behavior called information seeking behaviour as processes in or on the route to getting the required information. The description given immediately up also fits to the informal sector entrepreneurs and therefore adopted.

2.5 Information Seeking Behaviour Models

Models represent concepts and the relationships between them (Jaccard & Jacoby, 2010) and are useful in presenting a conceptual understanding of phenomena (Afzal, 2017). According to Case (2012), models attempt to focus on more specific problems, thus suggesting that the scope of models is limited as compared to theories. In LIS, for which this was one, a large number of models have been proposed to understand information bahavour many of which primarily focus on information seeking and searching behaviors; examples include (Bates, 1990; Foster, 2004; Krikelas, 1983; Kuhlthau, 1991; Leckie et al., 1996; Wilson, 1981; Ellis, 1989; Ingwersen, 1996; Choo et al., 1999). These scholars see models as being broader than scientific theories as they provide the basis for the preconditions of theory formulation, providing the conceptual and methodological tools for formulating hypotheses and theories. A conceptual model is thus an instrument that provides a working strategy - *a scheme containing general major concepts and their interrelationships* (Jarvelin & Wilson, 2003).Both posit that *all research has an underlying model of the phenomena it investigates, be it tacitly assumed or explicit*. Kousoyiannus in Aina (2004) describes a model as *a simplified representation, including the main features of the real situation it presents.* Models therefore serve two purposes: that of analysing and that of predicting.

In recent years a considerable number of information seeking models have been developed with the aim of improving information access to users (Aina, 2004). However, Wilson (1999) had earlier doubted that *rarely do such models advance to the stage of specifying relationships among theoretical propositions: rather they are at a pre-theoretical stage, but may suggest relationships that might be fruitful to explore or test*. Despite this criticism, several models proposed are well regarded and now used in further studies of user information needs. Most of these models seem to focus on the process of active

information seeking (McKenzie, 2002), the benefits derived from acquiring data during the information seeking process, and practical issues, for example stages, mechanisms, processes, channels, sources and barriers involved when searching for information (Case et al., 2005). Wilson's models were adopted in the study of information seeking behaviour of informal entrepreneurs.

2.6 Information Use

Common-sense links need to a purpose. The need for something implies that what is required will sooner or later be put to some use or satisfy some requirement. That something in this study is information, which is used for actions such as making a decision, solving a problem, or doing something else. It is it that people seek for and express in the form of seeking behaviour and use. This is how information need and "information use" are linked. One is the continuum of the other.

The concept 'information use' means a purposeful recourse to an information source, or deliberate and active exposure of oneself to its content with the hope of obtaining useful information from it (Apalayine & Ehikhamenor, 1996). If this hope is blessed and the information so required is attained, it will presumably be put to use. This means information use is a social action that is distinguished by a motivation to achieve some goal (McQuail, 1984). Well explained in mass communication, and supported by a theory, *uses and gratification theory*, motivation is an activity that is related to the attainment of gratification or the avoidance of some deprivation. This approach takes on the belief that people have complex needs that they seek to satisfy and that these needs can be satisfied in a variety of ways (Fiske, 1991) such as sports, leisure or work. For instance, the uses and gratification theory, is founded on the premise that the media consumer controls the mass media message. It views the members of the audience as actively utilizing media contents, rather than being passively acted upon by the media. The audience is assumed to be active and goal oriented. The focus of the theory is not what the 'media do to people' but 'what people do with the media.' It suggests that basic human needs motivate individuals to attend to particular mass media and to select and use messages in ways they find gratifying (Mersham & Skinner, 1999). Alternatively, some members of the audience may have no use for this information at all.

Closely associated with uses and gratification is dependency or addiction to something. Again used in the context of mass media and supported by a theory, *dependency theory*, it is suggested that people will fulfil their needs with the media in different ways. Originally proposed by Sandra Ball-Rokeach and Melvil de Fleur, dependency, according to Mersham and Skinner (1999), develops when certain kinds of media content are used to gratify specific needs or when certain media forms are consumed habitually as a ritual, to fill time or as an escape or distraction. For example, a taxi commuter may come to rely on tapes or CDs for entertainment to minimize distraction on long, cramped journeys.

Similarly, a teenager may become dependent on videos. The two examples bring this discussion into context. How do the two theories relate to the study of information needs and uses? And more so the information needs and uses of the informal sector entrepreneurs? The issue at hand is gratification. It is stated earlier that information use is a social action distinguishable by motivation to achieve some goal or avoidance of some deprivation. Precisely because use of information means consolidation of the state of knowledge in an individual, gratification is assumed especially when the quantum of benefit derived from successful use of information is greater than before use of information. And because an individual may trust particular sources for information or particular channels means that there is a likelihood of dependence on these sources. It could imply "validity" and reliability of information attained from the particular sources. How? Because entrepreneurs, like other human beings, are never complete with each and every information source they require for their work, they have to look for this information. One or many sources may be consulted. One or many channels may be used. Luck can strike and information is found within the first search, or it would take a long search involving many sources or channels. Certainly and humanly too, getting the crucially needed information will be a small victory to the individual. This is what may be described as gratification. More to that if this information is put to use and significant results are achieved or information accelerates action, for which it was needed, another victory will have been scored. If still, over a period of time, the same sources are consulted or channels are used and are found reliable, the entrepreneur will always go back to such sources or use those channels again and again. This is how dependency is established. The inverse of this would be the stress resulting from acting without relevant and timely information. The individual and the enterprise would stand at an immediate disadvantage. This can be costly in terms of time, business and profit (Dalton, 1989). On that basis, it can be argued that both theories are relevant to the information use by informal entrepreneurs.

Smith (1991) suggested that the use of information by recipients may be examined with reference to the attributes of the information obtained and factors related to the settings in which information is used. These attributes include relevance, timelessness, locate-ability, and usability. The following factors have a further effect on the use and value of information: ways of how information is used, which include its use for decision-making, problem solving, calculation, verification, and so forth. Within these, are characteristics of the individual seeking information, including preference for cognitive complexity or simplicity. Then there is also the extent to which they differentiate information and label of information; social and organizational factors, including characteristics of work team, work organization, and the belonging to a particular grouping; task requirements, including whether the problems encountered in a task are recurring or episodic. It will be reported whether those factors do affect informal entrepreneurs as well.

Writing at that time, Paisley (1983), stated that the medium of communication has a profound effect on the use made of information. Messages may be communicated by means of various combinations of mode and channel. The mode of information transfer is

the physical state in which it is encoded such as oral, handwritten, printed and electronic coding. The channel of communication is the medium or other arrangement by which information is conveyed from sender to receiver. This can be the oral mode, where information can be conveyed by means of a casual conversation or formal speech, while in the printed mode it can be conveyed in a journal or a book etc. It is established this also affects the informal entrepreneurs.

The range of channels an informal sector entrepreneur can employ to acquire information are normally categorized as formal channels and informal channels. The formal ones involve written and/or printed modes of communication while the informal ones are those mostly involving oral transmission such as through conversations or using other senses like seeing or imitation etc. Smith (1991) moves a step further to say that formal and informal channels, in turn, can be either personal or impersonal. The main characteristic of impersonal channels is that information is first recorded and then transferred by means of a medium such as a book or journal. Garvey & Griffith, Meadows in Smith (1991), state that personal communication involves individuals and can be direct, from person to person, or indirect via a third person or a number of persons. He makes a further distinction between direct and indirect channels of communication. Direct channels usually contain information being sought, while indirect channels lead the user to the source or channel containing information. Thus communication channels are selected not to maximize gain in the information obtained but to minimize the cost in terms of effort that must be expended to access information (Salasin & Cedar, 1985). This is logically correct. Here, the informal sector is being looked at as a business system whose information use by the informal entrepreneurs would be understood as a purposeful recourse by them to information sources by whatever channels or means to gain information for action and / or sustained competitive advantage as Taylor and Farrel (1994) state.

The previous section described the informal sector of Uganda, how it came about. It moved to discuss concepts related to information behavior namely information, information seeking, and information seeking behavior, information needs and information uses. These were necessary to understand whether there were any correlations or divergences to the theory of information needs and uses. Understanding of the phenomena gives the essential background from which the context in which the study relates. The study was about the information needs and uses of the informal entrepreneurs whose information behavior was the aim of the study. Therefore understanding the resource called information, recognizing need for it, how to look for it, the conduct of information seeker and understanding the seeker's behaviour and information use provides the platform and the fence of information behaviour. This section reports the empirical evidence of the information behaviour of the informal entrepreneurs. This behaviour is discussed under the following headings or sections: information needs, information behaviour of entrepreneurs, and information use and its impact. In summary the study attempted to interrogate existing literature though scantly, to show that people seek for information because they experience information gaps in their minds, which gaps exist as information

needs, how information is desired for its relevance to the needs of its users, difficulties people sometimes experience in seeking for information. Some of the difficulties may be internal to the person or external. Information can be located in a number of sources. What matters is the level of knowledge of sources, literacy is information work. It is also acknowledged that personal factors influence information seeking behaviour. There are barriers to information seeking and that information seeking methods and processes are unique to every individual. Word of mouth is most common method of information access and sharing. Personal contact by informal entrepreneurs is an important way of getting information. Information is used to satisfy information need and the study of information needs, information seeking behaviour and information use is a study of the human mind in information activity mode. It is a study of information user behaviour. And therefore understanding information behaviour is one of the most important factors in planning information services (Ikoja Odongo, 2002).

3 Information Needs of Entrepreneurs: Uganda Context

Information needs are situations where informal entrepreneurs need information to solve work-related problems. The aim of the study was to determine the information needs and uses of the informal sector in Uganda and largely applied a survey method covering the population residing in various districts in Uganda including Entrepreneurs working in the sector out of which six hundred and two were sampled for the study. From the study, Ikoja Odongo & Ocholla (2004), it was established that entrepreneurs have information needs. The identified needs are need for training and new skills, marketing, inputs/supplies and their prices, record keeping, transport, credit facilities, and problems concerning hazards affecting then at workplaces like fishing sites. Other types of information needs mentioned by respondents include maintenance of tools and equipment, opportunities for better employment, quality improvement, planning and management of businesses.

What they expressed are the needs of every type of business, irrespective of the question of formality or informality. This indicates that entrepreneurs are in a position to identify appropriately other types of problems that affect them. It serves to indicate that entrepreneurs are knowledgeable about what goes on around them. To crosscheck the findings, responses from organization representatives, informants, and personal observations presented.

From the organizations interviewed, it was established that they have all been in contact with the informal entrepreneurs and vice versa. Their relations with the entrepreneurs enables them to establish a pattern of the entrepreneurs' information needs that could be compared to the needs expressed by the entrepreneurs in the different parts of the study. Innovations in the study, though, were advocacy and lobbying, as well as advisory centres. Fortunately, in the opinions of organizations, training is important because most of the entrepreneurs have a low level of education and therefore are not able to exploit

technology or other sources that require a higher degree of literacy. They do not know how to price their products and services effectively due to limited knowledge of costing. In connection with marketing, they reported that the informal entrepreneurs have genuine problems. Due to crowding in identical businesses that show limited signs of diversification, the market is easily oversupplied with similar products thus irritably pushing down prices of goods or services. This could be solved if and when entrepreneurs are able to determine where else to sell their products. Lack of knowledge of markets beyond their own areas lowers the entrepreneurial spirit. Organizations expressed the need for an agency to keep advertising markets that exist and for what products and services for the benefit of the informal entrepreneurs as well.

Informants held similar views about the information needs of the entrepreneurs as expressed by themselves and by the organizations. Organization highlighted that indeed entrepreneurs have difficulties in selling or marketing their products and services for a number of reasons. Firstly, they attribute problems to the low mobility of entrepreneurs. Secondly, many entrepreneurs are found to be doing the same business. As soon as fellow entrepreneurs see their colleagues improving and/or benefiting from a specific type of business, many would automatically join in and 'share away' the market. Thirdly, low education among entrepreneurs reduces their inventiveness to such an extent that nothing strikingly new emerges from them. And fourthly, is the inferior quality of products that could be attributed to factors that have already been explained in the preceding paragraphs.

Bringing all data together, the information needs of the informal entrepreneurs are *training, capital, marketing, sources of inputs/supplies, tools and equipment, business management and development, pricing and pricing techniques, knowledge of production processes, advocacy and lobby skills, new areas of investment, appropriate technology, quality improvement, and record keeping.*

Findings indicate that information needs are contextual. Ugandan informal entrepreneurs typically need information to do better in their work. They need information regarding training and skills, markets and marketing techniques, cheaper sources of raw materials/supplies, sources of finance, tools and equipment, business management and development, relevant information centres, knowledge of production processes, advocacy and lobbying skills, new areas of investment, record keeping, quality improvement and recognition by government.

3.1 Information-Seeking Behaviour of the Entrepreneurs

There is consensus that information-seeking behaviour results from the recognition of certain needs (Robins, 1996; Itoga, 1992) as reported from other studies. It is activity that individual undertakes to identify information that satisfies a perceived need. It begins when someone perceives that his/her current state of knowledge is less than adequate or lower than the essential level required to deal with certain issues. It is a practice in which

the affected individual attempts to make sense out of a given situation. At that state an individual is said to be actively involved in finding meaning which fits in with what he/she already knows.

Considering this behaviour from the viewpoint of the informal entrepreneurs, it is realized that there are gaps in their knowledge that prevent them from dealing effectively with problems that they face in their work situations. These gaps are indicators of the Anomalous State of Knowledge (ASK) existing in their minds. This is why entrepreneurs have information needs, which they wish to resolve. Entrepreneurs resolve these problems by seeking information and therefore resolve this by manifesting a particular behaviour.

From the sample, it was established that informal entrepreneurs exhibited particular information seeking habits since they applied several methods to seek information. Overwhelmingly, oral means of seeking information predominates. For example, interviews with entrepreneurs identified listening and talking with other people, contacting people who may know, use of personal experience, asking a friend or relative or neighbor and through visiting and asking customers. In addition, listening to radio/TV, use of social networks and asking supervisors, inquiring from educated people in their areas, and asking extension agents are used. Asking role models in their areas, seeking assistance from area councilors, also featured. Expectedly, seeking information through printed media, such as reading newspapers/manuals/books or visiting the nearest library, played an minor role. These methods of information seeking suggest that information seeking is overwhelmingly oral, using a multiplicity of oral methods. The conclusion on the multiplicity of information seeking strategies concurs with studies by Xie (2000: 841) who also summarises several related conclusions from Kuhlthau (1991) that more research has demonstrated that people engage in multiple type of information-seeking strategies within an information seeking episode. As a consequence, this identification of multiple seeking strategies raises the issue of how information users change their information-seeking strategies in the information-seeking process. Xie (2000) admits that research confirms that users do change their information-seeking strategies within an information seeking episode, and strategy shifts are the most important shifts in their information seeking processes. He concedes that although very few studies have examined the shifts of information-seeking strategies and the structure behind these shifts, user goals are identified as most important factors in defining information-seeking behaviour. Belkin et al. (1993) supports this viewpoint. What is not clear from these studies is whether the multiple information seeking strategies fall within a single domain or whether the oral method of information seeking predominates such as it does in this study. The formal sources of information such as the library, or reading of newspapers that were described, as ‘exotic information systems’, are rated quite low. Several reasons can be advanced. These may include low level of literacy, cultural norms that still hold oral traditions of information transfer as significantly important. This is because of its closeness/proximity to the target users. And therefore, being accessible and available to the entrepreneurs, and the failure of the ‘exotic information systems’ to meet the needs of the target population and address

their limitations on accessibility and availability seriously impacts negatively on their use. And also, poverty and insufficient infrastructure bring to light why perhaps informal means of seeking information is so. As example, there are very few public libraries, resource centres and tele centres in Uganda. Information materials in these libraries are in English that a number of entrepreneurs cannot comprehend well. Besides, libraries have few books. Literacy rates are just little more than 50%. This situation is exacerbated by the lack of a culture of reading.

Another important conclusion is that the reported methods of information seeking are different from those preferred in developed countries. In these countries, formal sources, especially information systems using computers, databases and libraries, are more pronounced. The Ugandan entrepreneurs like their counterparts from other developing countries rely mostly on the traditional sources using the informal methods. Menou (1995) however, recognizes the importance of traditional sources expressing that he does not discriminate against these sources. He recognizes that informal sources of information play an important role and may well be the only form of information for many constituencies. He argues that when formal sources, especially information systems and services, are not used, it does not mean that people live without information, but simply that they rely upon other channels. For all people, irrespective of their position, education and culture, asking a peer or neighbour is the most natural way to obtain information. He points out that in traditional societies, drama, storytelling and trivial conversations are privileged means for sharing information to be used in all sorts of endeavor. He recognises that those channels of informal information and the patterns of their use are, more difficult and less interactive than in this case with the formal. On the basis of this explanation, it is accepted that Uganda informal entrepreneurs operate mainly via informal and traditional modes of information seeking although some use the formal sources.

The study also applied observation technique to establish different aspects of the information behaviour of the entrepreneurs. During information seeking, entrepreneurs were observed as taking active interest in looking for information. For this, it was found that entrepreneurs relied on both their internal information faculties and the external environment.

In the internal aspect, entrepreneurs rely on their personal information infrastructures or tacit knowledge. The internal aspect would have been difficult to find out if careful observations were not done. To detect information action, states of personal reflection, a look of contemplation, and thoughtfulness signifying inner dilemmas were observed. These moments of uneasiness gave the researcher a chance to ask some of the entrepreneurs what was troubling them. The responses were, ‘there is something troubling my mind. I am looking for something but I have not come across it, there is something bothering me. You see I cannot find what I want’. On further interrogation of that something that was puzzling the entrepreneurs, it was established that some of them were looking for information through reflection and thinking that led to places where they can get what they wanted such as spare parts. Some were looking for information about the

market for their products etc. These therefore were the micro moments that were detected as situations under which internal information infrastructures were at work. The personal information infrastructures really are parts of the human brain (mind) that absorb, keep, and process and release information in the form of stimuli. This stimuli is what is decoded and relied on as personal experience. This experience is the accumulated reserve of knowledge. It is this knowledge entrepreneurs recollect and use to solve their work problems.

Coming to the external situation, it is observed that individuals are not so often complete in their internal information infrastructures so that contact with the external world is inevitable. This world can be any information source immediately away from the information seeker. Observations reveal that entrepreneurs seek for information from the nearest source known to them first. The source could be a person, or information institution. The most immediate information-seeking activities that were witnessed going on very often were inquiring, conversing and consulting. These activities signified active searches for information. There were passive ones too that came to light. These involved listening, observing, and reading. And in practical situations, entrepreneurs gathered the required information through participating in work. Participating and/or performing activities enabled them to gain experiences necessary to improve their own performance in future. This is how cumulative experience develops knowledge. This was particularly involving activities like pottery, garage and metal work etc. And being told the required information and telephoning, as well as visiting others were also some of the technique entrepreneurs used in information seeking.

The information-seeking techniques are useful in detecting methods by which people including entrepreneurs gather information. From observations, it was established out that entrepreneurs gather information by actively or passively using their experiences, obtaining information accidentally, using social networks, attending meetings, observing what goes on in specific environments where similar activities are being done. In addition, information is gathered through reading, telephone conversations, workshops and seminars, visiting places, talking and conversing with visitors, customers, inquiring from those who may know, buying newspapers, listening to radio and attending exhibitions.

In gathering information, it was established that entrepreneurs had defined patterns of communication. It was observed that horizontal, vertical, diagonal and diffused patterns were noticed as being applied. For example, a horizontal pattern was exhibited when entrepreneurs exchange information among themselves. The information gathering behaviour is casual and relaxed. But in situations when an employee entrepreneur sought for information from his/her employer, a vertical pattern was exhibited. This could be detected from an employee being very polite, very attentive, sensitive and organised. But in a situation where an entrepreneur was looking for information without physically seeing the other person, like in the cell phone way, it was diffused. An entrepreneur could be seen walking around as he talks or moves his hand as a way of gesturing.

The findings show that word of mouth is the most predominant and natural method of getting information. This was followed by friends/relatives/neighbours and thirdly by radio and TV. This was followed by cultural ceremonies. But what is important to note is that the same pattern keeps recurring, that is the word of mouth, friends and relatives, radio, cultural ceremonies, local council leaders and opinion leaders, experience etc. Why could this be so? This is perhaps because majority of entrepreneurs have only basic education, they interact with fellow entrepreneurs without travel costs incurred, local administrators, and other business associates during business hours or seminars, without spending additional time in looking for information elsewhere. They prefer and enjoy conversing as they work and, in the process, receive information they need. In addition, information via word of mouth can be delivered instantly in a language that is understandable. It takes a short time to acquire information. Any clarifications can be sought as a conversation goes. The inconvenience of illiteracy can also be avoided. And because they have been found helpful, most people prefer to use them always.

The findings therefore are not accidental. They consistently keep bringing to foresight important questions: who are the informal entrepreneurs? What are their characteristics? At what levels of operation or business are they found? And most importantly, do these findings establish that there is more to learn from the informal sector than the eyes see? Answers to these questions will help highlight the plight of the entrepreneurs in the informal sector and create a foundation for planning.

At the beginning of the study, many organizations were assumed to be providing the informal entrepreneurs with most of the information they required. These were the Public Libraries, Uganda Small Scale Industries Association, Uganda Informal Sector Association, Uganda Manufacturers' Association, Uganda National Chamber of Commerce and Industry (UCCI), Private Sector Foundation etc. It was found out that certainly these organisations were dealing with the informal entrepreneurs. However, none of them has impact to the entrepreneurs. Their services are poorly marketed and their activities remain obscure. These associations do not meet the information needs of the informal entrepreneurs.

How then is information received? The findings indicate that almost 50%: receive information they needed verbally, 20% get through Radio and TV. Quite a small percentage said they received it in written form while another equivalent stated that they obtained it from the printed sources. Less than ten percent were securing the required information through seminars and lectures. The meaning of these findings is that whereas entrepreneurs are able to sift information by word of mouth, there were also those who were using formal means of receiving information. This is expected because the sector is a theatre of action where all types of people are found, from illiterates to university graduates. Therefore, it can be expressed that entrepreneurs will use such methods of receiving information that tally with their information seeking strategies, and information sources.

Following these findings, types of information that entrepreneurs seek often and that they seek only occasionally are enumerated. Findings show, marketing, sources of raw materials/supplies, pricing and training information was most sought. Similar findings were reported during the pilot study. Of rather lesser importance were loan information, health information, information about quality control, government policies, security and transport. The findings of the pilot study indicated a different picture that is, processing of agricultural products, contracts and security of the country as some of the areas they needed information. These findings compare favourably with the information needs entrepreneurs reported and indeed they are. These findings therefore serve as a confirmation of these needs.

Organisations have attempted to serve the informal entrepreneurs with information. The information they give out is internally generated within the organisations and also derived from external sources such as the government departments, research institutions and partners.

The informants recognized that Government is their biggest supplier of information. Non-Governmental Organisations (NGOs) are reliable sources of information. Places of worship, local councils, customers, personal experience and knowledge, reading of newspapers and listening to radio are also prominent sources of information. Informants rely on these sources to access information that they in turn disseminate to entrepreneurs. They revealed that they sometimes attend training and meetings where they obtain information that they in turn take to their people including the informal entrepreneurs.

Observations were also carried out on sources of information entrepreneurs' use to access information. The findings show that entrepreneurs relied on their personal experience, and other entrepreneurs for information. Entrepreneurs are of two kinds, employers and employees. Customers, traders and friends were also visible sources of information. Up to this point the study confirms the vitality of informal sources, and channels of accessing information to the informal sector.

3.2 Information Use

This section reports the findings from the entrepreneurs and observations. In doing this, Belkin's ASK model (Belkin et al., 1982a, 1982b) and [Dervin's] "sense-making" approach that users have gaps in their knowledge and seek information to bridge these gaps is brought on for comparison. By accepting that proposition, information need is tied to information use or motive. Information use is presented as a social action that is distinguishable by a motivation to achieve some goal (McQuail, 1984). The findings of the final and pilot studies both established that information is important to the informal sector like it does to the formal sector as well. By the majority of 92% of the final study as against 97% of the pilot study, information is recognized as essential to the entrepreneurs. Both studies confirm the point that entrepreneurs know how important information is. Because

questions about information use were qualitative in nature, and because several activities were studied, highlights about information use are presented here.

Entrepreneurs stated that information use crossed all activities they did. That is, from personal development to business activities. And that information is required at every stage. When interpreted that way, it should mean entrepreneurs put information to use when seeking initial capital, deciding types of businesses to do, types of products or services, starting the business, location of business, where and how to acquire inputs or supplies, and pricing of products or services. Further, information is used in marketing, production, coping with challenges and taking advantages of opportunities available in the markets, and countering threats to business from time to time. Outside business, entrepreneurs stated that information enabled them to understand current affairs including national issues.

To evaluate whether the information they used really helped them, the contribution of information is tested. The findings indicate that the highest contribution is realised in the area of training, followed by entrepreneurs becoming self-reliant. Besides, entrepreneurs are able to obtain inputs rather cheaply, improve on their efficiency, and to secure better markets for their products. Other benefits are that some entrepreneurs became employed, some are able to pay taxes more easily than before. Some of them claim that their health improved because they had extra money to use to improve their diets and sustain themselves.

From observations, information is most use in solving problems affecting the entrepreneurs during the working time. For example, information is used in locating inputs, markets and during marketing itself, pricing of products and services. Information is also used in understanding the day to day happenings in the country or current awareness. There are situations that called for specific use of information. For example, traditional birth attendants use information to seek for histories of pregnant women, to find out if there were problems before that could help the attendants to make decisions on whether to nurse a pregnant woman or not. The number of children already produced is vital for the traditional birth attendants. Metal workers, especially the blacksmith, are most active in using information for finding places where scrap is available and during the marketing of their products. Artists are after contracts and so their information use involves talking to people who make decisions to award tenders. Therefore, the role of information is felt at the stage the problem is affecting an entrepreneur. This could be at the decision making stage, or at the stage of understanding the problem or at the last stages of entrepreneurial activity. At whatever stage information has use. The most important consideration is that information use is linked to problem solving, enlightenment and awareness creation. Once the problem for which information is required is solved, gratification is achieved and that particular information activity is terminated and the process continues.

3.3 Impact of Information Use to Informal Entrepreneurs

Tracing the share of information in the end results is an important consideration. Impact of information is understood as the changes that accrue to entrepreneurs as a result of using information in business activities. It is acknowledged that impact can either be positive or negative. To bring entrepreneurs into information perspective, several examples of the word, 'impact' itself are given. This was done to make it easy for them to understand the context by which this issue is asked. It was decided to settle on the word 'effect' if this made it any simpler. Open-ended questions were asked which enabled the respondents to mention their experiences as much as they know. A collation of the main findings shows that: business improved, and expanded, (information as input), easy to co-ordinate workers and activities and forming of groups, (information as input), skills improved, (information as input), business was sustained, (information as output), opened new and better markets, (information as input), living standards improved, (information as output), sales increased and more profits were generated, (information as input), new and better opportunities were realized, (information as input), gained popularity and publicity, (information as input), able to meet tax obligations more easily than before, (information as output) and, motivation increased (Information as input).

In Menou's view (1998), achievements should be decomposed in a complex series of inputs, outputs and associative supportive or inhibitive factors. This study attempted to do this by attaching information to benefits. From the findings it is noted that information is a contributor both as input and output as well. The contribution of information to the growth and development of the informal sector is also sought and the role of information estimated as either input or output. The findings are reported as follows: information helps in skills development (Information as input), brings business improvement and sustainability (Information as input), helps in marketing (Information as input), creates awareness of government policies (Information as output), assists in securing inputs (Information as input), morale booster (Information as output), improves domestic income and living (Information as output), assists in publicity (Information as input), and promotes change in attitude (Information as output). On the whole, the impact of information was more felt in the area of input than output.

4 Conclusions and Future Studies

This chapter has acknowledge that there is need for deeper understanding of the concepts of information, information needs and information uses in different work situations. More studies in other work environments could be envisaged taking cues from this study. From a study like this one, it shows that all people in different work situations need information of some kind or other and at a situational time. It therefore brings ideas to mind that nations should attempt to find ways of meeting information needs of their people than just

relying on exotic information systems mainly. They would do this by constantly undertaking research study within communities by profiling their people so that planning for well suited services is done. Educating citizens on information access by whatever ways should be a crucial undertaking. Prior knowledge of people is an important consideration. Training people on relevance of information and how to extract it can help in increasing information literacy. The chapter has underscored the value information plays though what it is, is still problematic. Personal characteristics of information users, work settings and environmental constraints and methods of information communication provide an approach to supporting people with information access. Characteristics of information users are important in designing information systems. Community profiling and information repackaging are important thoughts. People provide a foundation for information systems. To support community information models through translational knowledge diffusion to target communities, it is essential to do more training and training in areas of informal information systems and services. A study like this one has also demonstrated that information science should relate with cognitive science to understand how people think and act in different work environments. In addition, information users are now adept with information technology (where mobile phones, social media, and internet thrives by massive exploitation of digital technologies), what matters most is guiding them to useful information sources that quickly allow them access information they may wish. This calls for structural changes in designing African libraries and library and information science education and training curricula for relevance and appropriateness.

Acknowledgements I acknowledge with deep appreciation my Professor D.N. Ocholla who rigorously took me through the Ph.D. Studies about which I have risen in life. I thank him for making suggestions to improve the chapter. I also extend my gratitude to my family for the support they extended to me while on study leave. All my colleagues at Zululand at that time. God Bless you all wherever you are. I recognize my former University, Makerere University for making sure I studied when I had chosen to go back home to look after cattle.

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