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# A Review of Information Behaviour Literature on Professoriates across Disciplinary Fields

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# A Review of Information Behaviour Literature on Professoriates across Disciplinary Fields

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## Abstract

*This paper reviewed empirical literature on information behaviour of academic faculty across disciplinary fields with particular reference to studies whose demography included the professoriate in the context of their information needs, purposeful information seeking and use of information for teaching and research. Paucity of literature focusing on the professoriate prompted this study. Literature focusing on the professoriate will provide a rich theoretical and contextual background for researchers embarking on studies that focus specifically on the professoriate in related information context, besides filling the knowledge gap in library and information science literature. The scope of the literature review covers scholarly journals in major electronic databases and search engines such as EBSCOhost, ERIC, Social Science Citation Index, ProQuest, Google and Google Scholar. In reviewing the empirical literature, attention was given to literature with professoriate in their population. The outcome of the literature review revealed the general information needs of the professoriate are for teaching and research. Literature on purposeful information seeking revealed the professoriates' use of print and electronic information resources varied across disciplinary fields, and is influenced by age, environmental and individual characteristics. Use of electronic information resources is context-dependent and prevailed more in research settings and in studies conducted in the West relative to those carried out in sub-Saharan Africa and the Middle East. The paper concludes that in spite of the continued relevance of print information resources, electronic information resources usage continue to increase in academic environment that is fast embracing information technology.*

**Keywords:** *Electronic, Print, Information Resources, Information Needs, Use, Professoriate,*

## Introduction

Information behaviour encompasses the entirety of human behaviour with regards to information sources and the medium of information dissemination (Wilson 2000). Active information seeking refers to the purpose for which information is sought by an individual due to the need to satisfy goals (Kakai et al., 2004; Wilson, 2006). Purposeful information seeking begins by users selecting information sources and applying different criteria to prioritise and select such sources (Bronstein, 2010).

Professoriate in the universities places high value on information, as it is essential in providing knowledge needed for meeting teaching and research requirements (Bruce, 2005). The professoriate are distinguished academic dignitaries by way of their prolonged intellectual contribution to teaching, research and community activities (Carrell & West, 2010). It also refers to the rank or position of a university professor.

Due to changing information environment, Information seeking patterns of university professoriate has been influenced by the advent of the Internet, search engines, electronic resources such as online databases, e-journals, e-books, e-mails, online catalogues, and web portals. With increased access to computers, smart phones and the Internet, information can easily be accessed anywhere and anytime. With these new technologies professoriates can conveniently access information in their offices and home, thereby reducing the need to patronize the library. Information technology has not only increased access to global information, but has greatly enhanced information sharing in high volume and speed.

There are similarities and differences in information behaviour of professoriates across academic disciplines. Factors such as age, gender, discipline, language, geography, information literacy, and personal characteristics

have been shown to influence information behaviour of the professoriate (Xumei 2010; Nwone & Mutula 2018). Generally, professoriate in the west (Hemminger, Lu, Vaughan & Adams 2007; Meho & Haas 2001; Shpilko 2011; Engel, Robbins & Kulp 2011; Rupp-Serrano & Robbins 2013) are prone to using electronic information resources in comparison to their counterparts in sub-Saharan Africa (Nnadozie and Nnadozie 2008) and the middle east (Singh & Satija 2007; Bhatti 2010; Lalith 2010; Marouf & Anwar 2010) even though individuals differences and preferences exist (Xumei 2010; Sharhzad 2013; Rupp-Serrano & Robbins 2013). Studies have also shown that younger professoriate are more comfortable using electronic information resources in comparison to older faculty (Xumei 2010). Professoriate of Arabic are constrained to using print sources due to lack of online databases in Arabic language (Marouf & Anwar 2010). The professoriate in science (Lumande and Mutshewa, 1999; Shpilko 2011; Kumar, Salmani and Baweja, 2014), engineering (Engel, Robbins and Kulp 2011) and social science (Meho & Haas 2001; Hannah 2005; Akinola 2009; Folorunso 2014) are more accustomed to using electronic information resources than their counterparts in humanities and law (Thanuskodi 2009; Aforo & Lamptey 2012) and male faculty have been shown to embrace information technology and can resolve information related issues faster than their female counterparts (Cheong, 2002).

Professoriate in the universities play a vital role in knowledge creation and delivery, however, studies that have specifically examined their information behaviour remain few (Meho and Haas 2001; Singh and Satija 2007; Nwone & Mutula, 2018). Quite a number of studies (Xumei 2010; Marouf and Anwar 2010; Hemminger, Lu, Vaughan and Adams 2007; Engel, Robbins & Kulp 2011; Thanuskodi 2009; Hannah 2005; Rupp-Serrano and Robbins 2013; Sharhzad 2013) have examined the information behaviour of university faculty that included the professoriates in their study population. Specific studies targeting the professoriates are needed to better understand their information behaviour in today's complex information environment. Any study focus on the professoriate will require a contextual, theoretical understanding of their background. Therefore, this review of literature is highly significant as it documents information behaviour studies with specific attention to the professoriate, thereby filling this obvious gap in library and information science literature. It provides a contextual and theoretical background for researchers embarking on information behaviour and related studies that focus on the university professoriate. Therefore, the aim of this paper is to provide a rich source of information behaviour literature whose background included the professoriate with regards to their information needs, purposeful information seeking, and their information sources preferences.

## **Methodology**

The study used a literature review approach to review empirical literature on information behaviour with special preference to literature with professoriate in their population. This approach involved searching various databases that host empirical studies on information behaviour. The search for literature covers scholarly journals in major electronic databases and search engines such as: ERIC, Social Science Citation Index, ProQuest, Google and Google Scholar. The scope of the literature review covers scholarly journals, monographs, conference proceedings, and peer reviewed abstract. The geographic coverage of the literature review is world view, Africa and Nigeria respectively. The retrieved literature were then sifted in line with the context of the review and those with professoriate in their population were given preference.

## **Literature Review**

Empirical literature were reviewed following the themes; information needs, purposeful information seeking and information source preferences of university faculty with special attention to literature with the professoriate in their population. The literature review covers scholarly journals in major electronic databases and search engines such as: EBSCOhost, ERIC, Social Science Citation Index, ProQuest, Google and Google Scholar.

### **Information Needs of the Professoriate**

Information needs describe the intended use of information to satisfy a goal. Information needs often precede information seeking (Marchionini, 1995), and describes a vacuum that is to be filled in an information space and within a specific context. The context that pre-empts information needs is very broad and includes the need of information for teaching and research, suggesting that information needs vary across lines of disciplines. Many studies (Xuemei, 2010; Marouf & Anwar, 2010; Thanuskodi, 2009; Aforo & Lamptey, 2012; Bitso, 2012; Hemminger, 2007; Al-suqri, 2011; Meho & Haas, 2001; Meho & Tibbo, 2003; Singh & Satija, 2007; Hannah, 2005; Engel, Robbins & Kulp, 2011; Shpilko, 2011; Shahzad, 2013; Bhatti, 2010; Kumar, Salmani & Baweja, 2014; Lumande & Mutshewa, 1999; Kadli & Kumbar, 2011; Nnadozie & Nnadozie, 2008; Akinola, 2009; Folorunso, 2014; Zawawi & Majid, 2001; Majid & Kassim, 2000) on information behaviour of faculty suggest that faculty needs information mainly for teaching and research. The recognition of an information need marks the beginning of a search to satisfy the information need. Upon retrieval, the result is checked to determine its relevance to the search query and if the result meets the information need, the search ceases, and if not, the search continues iteratively till the information need is satisfied or is abruptly ended by the information seeker (Wilson, 1996). Studies on information needs of faculty in different fields of study abound in empirical literature. Thanuskodi (2009), while studying the information seeking behaviour of Law faculty at Central Law College in India, observed that law faculty need information for preparing for lectures and teaching. Out of the 56 respondents of his study, five were professors, seven were senior lecturers, and nineteen were lecturers. Others (25) were guest lecturers. Another study of law faculty in Ghana observed that law faculty need information for research, background reading, and keeping up-to-date with knowledge in their field of specialisation (Aforo & Lamptey, 2012). Law faculty relied more on print than on electronic information resources. Marouf & Anwar's (2010) study on information behaviour of social science faculty at Kuwait university shows that faculty members need information for teaching and research purposes. Their respondents included ten professors, twenty five associate professors, and nineteen assistant professors. Even when information need of faculty is not explicitly stated in some of the empirical studies, it can be generally assumed that since faculty engage in teaching, and research activities as their key role, their need for information invariably will be to meet their primary objective. Xuemei's (2010) study on information seeking behaviour in the digital with a focus on social science faculty depicts this evidence, making no clear distinction on their information needs but buttresses on other dimensions of information seeking. The demography of their study included eight assistant professors, five associate professors, and eight professors. Wang's (2006) interdisciplinary study of academic researchers in the internet era in university of Tennessee in the United States took a similar pattern, suggesting that while the focus of the study was on research, information need of faculty also extend to teaching. Bitso (2012) study on information behaviour of geography teachers in a developing African country of Lesotho found that information need was primarily used for teaching purposes. In addition, the scope of their information need cover contents in geology and geomorphology, plate tectonics, marine erosion, map reading and volcanism. There was no mention of professors in the study demography. Hemminger et al. (2007) studied the information seeking behaviour of academic scientists, consisting of 30 professors and 20 lecturers at University of North Carolina USA. The study observed that the respondents of their study relied on electronic information resources such as e-journals, web pages and databases to meet their research and teaching needs. Since 91 % of the respondents had access to the internet, it was easier for them to satisfy their information needs electronically. Considering that the study population is made up of 97 professors, sixty four associate professors, eighty six assistant professors and ninety nine research staff, the need for information is ultimately for teaching and research. A study on social science faculty studying stateless nations by Meho and Haas (2001), likewise suggests that respondents of their study made use of World Wide Web and e-mail in meeting their information need. Singh and Satija (2007) while studying the information behaviour of agricultural scientists in India, found that the professoriate of the study need information for teaching, research and keeping up to date in their field of study. Hannah (2005) examined the information behaviour of social science at the University of West Indies in Jamaica. The outcome of their investigation reveals that faculty needed information for teaching, research, and keeping abreast of developments in their field. They relied on both print and electronic resources to satisfy their information needs.

Rupp-Serrano and Robbins (2013) observed that education faculty in the USA needed information to prepare for lectures, remain current within their field of study, for research publication, conference presentation, to prepare research proposal and grant application. Majority of the respondents in their study were professors, associate professors and assistant professors. Engel, Robbins, and Kulp (2011) found that engineering faculty in a US university relied heavily on scholarly journals and internet resources to meet their information needs. The authors noted that reliance on and demand for electronic journals has increased exponentially over the past five years. Faculty meet their information needs in their offices, suggesting that their use of physical library space has equally decreased. The study further shows that engineering faculty use current and archived scholarly journals to satisfy their information need. Archived journal is highly crucial for engineering faculty, since every technological development is dependent on previous developments. Same cannot be said of social science research that finds human behaviour to change over time and in a different context and environment. Shpilko (2011) assessed the information seeking patterns and needs of nutrition and food science faculty in New York, USA, and found that nutrition faculty use electronic resources for research, and print resources for teaching. Bhatti (2010) reports on information seeking behaviour of faculty members at Islamia University of Bahawalpur, Pakistan, that social sciences and humanities faculty need information for preparing for lectures and keeping their knowledge up-to-date and conducting research. The respondents of the study include forty assistant professors, ten associate professors, and ten professors. Shahzad's (2013) findings on information seeking behaviour of faculty in a university in Lahore, Pakistan show that faculty needed information for teaching and conducting research. Use of internet search engines was mainly to satisfy their information needs. Of the respondents, 16.6% were assistant professors, 15.3% were associate professors, while 17.8% were professors. In examining the information behaviour of health sciences faculty and the impact of new technologies in a university in Illinois, Curtis, Weller & Hurd (1997) found that faculty need information mainly for teaching and research. For their information needs, they relied on journal articles via personal subscription and made heavy use of the internet to search for information. While investigating the information seeking behaviour of research scholars and faculty members of life science faculty in India, Kumar, Samani, and Baweja (2014) found that they need information primarily for teaching, writing research papers and updating knowledge. The authors observed that the use of online journals was very prominent amongst the faculty members. The respondents were ten professors, eight associate professors and seventy one research scholars. Lumande & Mutshewa (1999) study on information seeking behaviour among university of Botswana science faculty found that their information need was mainly for teaching and research. They make use of mainly journals, textbooks, and online databases for teaching and research. The respondents of their study include seven professors, eight assistant professors, thirty one senior lecturers, and fifty nine lecturers. Nnadozie and Nnadozie (2008) in investigating the information needs of faculty members in a Nigerian private university found that they need information for teaching and research, health and social welfare, and community service. Respondents from their study include three professors, five associate professors, eight senior lecturers, twenty five lecturers, and ten assistant lecturers. Another study in Nigeria by Akinola (2009) on information seeking behaviour of lecturers in faculties of education in Obafemi Awolowo University and University of Ibadan showed that faculties in both universities need information for updating knowledge, conducting research and preparing for class lecture. They make use of periodicals and textbooks to satisfy their information needs. The use of electronic journals to meet their information needs was high. Folorunso's (2014) study on information seeking behaviour of social science scholars in Nigeria revealed that the research scholars need information for research and keeping abreast of developments in their field of study. To meet their information needs, they rely on journals, online sources and attend conferences. The respondents comprise of ten professors, eleven associate professors, thirteen senior research fellows, fourteen research fellows, and two junior research fellows.

### **Information Seeking of the Professoriate**

Active information seeking is the purposeful seeking of information to satisfy a goal (Wilson, 1999). It is an intentional search for information with the aim of satisfying an information need. It is also referred to as information seeking behaviour. Wilson (2000, p. 49) defines information seeking behaviour as "the purposive seeking for information as a consequence of a need to satisfy some goal". Wilson emphasises that in the course of seeking, "the individual may interact with manual information systems such as a newspaper or a library, or with computer-based systems such as the World Wide Web". Wilson (1999) defines information behaviour as those 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 that information. Information-seeking behaviour as explained by Wilson arises as a consequence of a need perceived by an information user, who, in order to satisfy that need, makes demands upon formal or informal information sources or services, which could result in success or failure to find relevant information. If successful, the individual then makes use of the information found and may either fully or partially satisfy the perceived need or, indeed, fail to satisfy the need and have to reiterate the search process. Information seeking behaviour may involve other people through information exchange and information perceived as useful may be passed to other people or used by the person himself. The result of information seeking is the use of the retrieved information to fulfil a goal.

Information seeking is central to our daily lives most especially in an increasingly digital environment where mobile computing and the internet have eased access to information resources. Information seeking among the academia is more traditional than habitual, since the core task of every academia warrants a demand on information resources. In the academia however, several studies have focused on the information seeking behaviour of faculty in different fields of study. Since the literature review focused on the professoriate, in reviewing empirical literature on information seeking behaviour, attention was given to literature with professoriate in their demography.

Xumei (2010) used a qualitative approach to investigate the information behaviour of eight professors, five associate professors, eight assistant professors, and nine doctoral students in social science and humanities in the US. The result revealed that while social scientists tend to rely heavily on periodicals, humanities researchers rely more on books and primary sources. Overall, the professoriate used electronic resources to satisfy 58 percent of their research needs and print sources to satisfy 42 percent of their research needs. In spite of the general preference for electronic information resources, individual differences exist amongst the professorial ranks and discipline. A Teaching and Learning professor already comfortable with using print resources in his academic career was not at ease with emerging technologies and found electronic information resources hard to understand and use. A professor in history was worried about the accessibility to older historic materials. According to him "six thousand years of human history is not available online...if you think about local history, court records, and deeds, none of them are available online" (p. 443), thereby, justifying the relevance of print sources to history as a discipline. In Africa Studies programme, a professor admitted not being familiar with using the library's electronic resources and found it hard to use electronic resources on the web, since his research relied heavily on field studies, having preference for print over digital data. The study also shows usage of electronic resources in accordance to academic rankings. Assistant professors were passionate users of electronic information resources, and relied on electronic resources more for their research than associate and full professors. This shows that age influences information seeking behaviour, with younger professoriate having more inclination towards electronic information resources than older professoriate. As expected, individual differences in the use of electronic resources exist, a Language and Philosophy professor used electronic resources regularly, and was concerned about the availability of electronic resources to support his discipline at the university. In general, the study data reveals diverse usage of electronic information resources. Doctoral students and assistant professors are regular users of electronic information resources for their research than associate and full professors. The junior researchers are presumably younger and more comfortable with emerging technologies. Indeed, doctoral students satisfied 61.7 % of their research needs with electronic information resources, and assistant professors satisfy 70 % of their research needs with electronic information resources. Conversely, senior researchers, perhaps less comfortable with new technology, chose to satisfy the majority of their research needs with print resources, while associate professors satisfied 52% of their research needs and full professors satisfied 52.5% of their research needs with print resources.

A similar study by Marouf & Anwar (2010) investigated the information seeking behaviour of ten professors, twenty five associate professors, and nineteen assistant professors of social science in Kuwait using a quantitative approach. The outcome suggests that majority of the professoriate were heavily depended on books and journals for teaching and research purposes. Since the language of teaching in Kuwait is Arabic, the professoriate in the university were constrained to using print sources written in Arabic due to scarcity of online databases that offer scholarly information in Arabic. Their use of informal sources is comparatively less than formal sources. Among the informal sources, conferences, subject experts, and colleagues were given higher importance than librarians and government officials. Journals and books were used more frequently than raw

data, technical reports, manuscripts, and primary materials. The population of the study consisted of 88 faculty members teaching at the four departments of the college of social sciences of Kuwait University. Amongst the faculty were 10 professors, 25 associate professors, and 19 assistant professors. The study did not show differences in the use of information resources amongst the various academic ranks.

Hemminger, Lu, Vaughan and Adams (2007) investigated quantitatively the information behaviour of scientists that comprises ninety seven professors, sixty four associate professors, eighty six assistant professors, and ninety nine doctoral students in University of North Carolina in USA. The result reveals that majority of the researchers had easy access to the internet in their offices leading to increased usage of electronic resources, and their preferred information sources are online journals, web pages, databases, and personal communication. Their preference for electronic information sources could be hinged on the fact that professoriate in the sciences require current information for their research. In a similar study of engineering professoriates, Engel, Robbins & Kulp (2011) found that engineering professoriates relied heavily on online scholarly journals and internet resources. Their reliance on electronic information sources is largely because engineering professoriate, similar to their counterparts in the science require up-to-date information and innovations in their field. The author did not show analysis of data based on professorial rank, to see if older professoriates in engineering differ from other groups in their information seeking habit.

Thanuskodi (2009) used a quantitative approach to study the information behaviour of Law faculty at Central Law faculty in Salem, India. Amongst the 56 respondents were five professors, seven senior lecturers, nineteen lecturers, and twenty five guest lecturers. The result showed law faculty members relied more on text books and law reports for information seeking, while the use of online databases was significantly low, indicating that professoriate in Law relied more on print resources than electronic sources. Reliance on printed information resources (such as text books, law reports and case notes) seems to be more prevalent among law faculty, emphasising the need for the development of online databases of law resources. Thanuskodi's study failed to account for differences in resource usage across faculty ranks, and did not report the informal ways used by faculty to seek information. In a similar study of Law faculty in Ghana, Aforo & Lamptey (2012) observed that law faculty use law reports, law journals and textbooks to seek information, further buttressing the reliance on print resources than electronic resources by law faculty. Aforo & Lamptey's study made no mention of professoriate in its demography, and implies a blurred line in the information seeking behaviour of the professoriate of law and other law faculty ranks.

Electronic information resources usage is widely used by science faculty as proofed by Hemminger's study. Hemminger (2007), while studying the information seeking behaviour of academic scientists in university of North California, USA found that science faculty access the internet in their offices or lab. Having such convenient access to the internet is critical to increased usage of electronic resources. Environmental factors could also be a possible contributor to usage of electronic resources, since it is expected that academic faculty in developed countries like the US, are better exposed to internet and electronic information resources than their counters in developing countries where access to the internet and other facilitating technological infrastructure are clouded with structural impediments. The outcome also revealed that access to computers in their offices limited visits to the library since they can search online resources directly from their computers. The most frequently used resources by the academic researchers are journals, web pages, databases, and personal communication in that order. This finding according to the author is a significant change in practice since previous research indicated that journals/books were the most popular source followed by personal communications for academic researchers (Jirojwong & Wallin, 2002). Researchers in Hemminger's study utilised general web pages and online databases much more frequently than previously reported, almost as much as they use journal articles. This trend is likely attributed to convenience and easy access to internet, as researchers can quickly and easily search for information from the web rather than depend on colleagues. Searching for research materials in online databases is becoming more convenient as researchers increasingly utilise a single interface to search across multiple platforms of resources. Searching and retrieving information is now done primarily at the researcher's desktop, resulting in a dramatic decrease in the number of visits to the library. Personal communication is often reported as the most popular source for non-scholarly information. The demography of the study participants includes 97 professors, 64 associate professors, 86 assistant professors, 99 research staff, 83 doctoral students, and 425 master's degree students. The outcome of the research was not differentiated across faculty ranks,

hence it is difficult to ascertain precisely how the professoriate measure against the information behaviour parameters.

Meho and Haas (2001) in a study on the information seeking behaviour of social science faculty studying stateless nations across countries of US, UK, Germany, Canada, Australia, France, Italy, Netherlands, Switzerland and Turkey, showed that besides using traditional methods, social science professors use the world wide web and e-mail for locating relevant information; suggesting that these faculty members are aware of and utilise new information technology to support their research. The participants of the study were 6 assistant professors, 9 associate professors and 5 professors. Environmental variables seem to play a crucial role since faculty in developed countries are more conversant with technology than those in developing countries. Since the data was not analysed along age categories, there is no evidence to suggest differs usage patterns between younger and older professoriate.

In a similar study, Singh and Satija (2007) used a quantitative approach to study the information seeking behaviour of agricultural scientists with particular reference to their information seeking strategies in India. The study participants consist of 131 professors, 128 associate professors, and 73 assistant professors. The outcome showed that most of the agricultural science professoriate preferred journal, discussion with colleagues and experts, books, and references, while reading literature, technical reports and periodicals in that order seeking information. For keeping up to date, they depend mainly on journals, attending conferences and seminars, books and annual reviews. The findings are consistent with Jirojwong and Wallin's (2002) study that indicated faculty preferred journals as their main formal source and discussion with colleagues as the major informal source of information. It differs from Hemminger's (2007) study on the information seeking behaviour of academic scientists in university of North California, where faculty rated web pages as their second order information preference. Again, environmental variables seem to be the differentiating factor in Singh and Satija (2007) and Hemminger (2007) studies. In spite of the significance of electronic information resources in today's information age, Singh and Satija's study did not account for this important dimension in their study.

Hannah (2005), while using a quantitative approach to study the information seeking behaviour of social science faculty at the University of West Indies, Jamaica, observed that textbooks were the preferred source of information for teaching followed by journals and monographs. For current awareness, respondents used current issues of journals followed by online database searches. Information sources used for teaching and research included citations at the end of journal articles and citations at the end of chapters of a book. On the use of online databases, EbscoHost was shown to have the greatest use followed by Emerald, OCLC first search and Proquest. The respondents of the study include professors (8%), senior lecturers (61%), lecturer (61%), and assistant lecturer (11%).

Rupp-Serrano and Robbins (2013) used a mixed method to examine the information seeking habits of education faculty in the US. The outcome revealed that scholarly journals topped the list as the most preferred resource for research, followed by internet resources, and books. Face to face with colleagues is the informal means of obtaining information by the faculty. Scanning current issues of journals, attending professional conferences, following references or leads from an article, and personal communication were the most frequent means of staying current. This trend appears to be consistent with studies conducted in the US. The Professoriate in the US seems to be more at ease with the use of internet, and this suggests the contribution of environmental factor on the information behaviour of professoriate in that region. The respondents consist of 26% professors, 25% associate professors, and 23% assistant professors, while 13% were adjunct faculty, instructors, and lecturers.

Engel, Robbins and Kulp (2011) used a mixed approach to study the information seeking habits of engineering faculty in the US. The survey found that engineering faculty relied heavily on scholarly journals, internet resources, and face to face discussions with colleagues for their research. It is not surprising that scholarly journals and internet resources are the two most important resources for engineering faculty in the US, just as observed in education and science faculties in Rupp-Serrano & Robbins (2013) and Hemminger et al (2007) studies in the US respectively. This outcome buttresses the existing trend in information behaviour studies (Rupp-Serrano & Robbins 2013; Hemminger et al 2007) in the US. The reliance on and demand for electronic journals has increased exponentially in the last five years (Engel, Robbins & Kulp, 2011). Many of the respondents (professoriate) indicated visiting the physical library fewer than five times in the past year. Because engineering

faculty increasingly use electronic resources and services, their use of the physical library space has decreased. Another important trend in these studies are personal and face to face communication, which upholds the fact that although faculty depends on electronic databases and internet resources for their research needs, the human element in information communication remains crucial. Communication and interaction with colleagues is an important part of information behaviour and shows how information sharing enhances research output. The respondents of the study consisted of professors (35%), associate professors (24%), assistant professors (23%), while the remaining (17%) were adjunct faculty, instructors, lecturers, and professor emeriti.

Shpilko (2011) conducted a study on assessing information seeking patterns and needs of nutrition and food science faculty in New York, US, and observed that more of the faculty members preferred electronic resources over print resources and read scholarly journals on a regular basis. Majority of the nutrition faculty made use of proceedings from conferences and seminars, use search engines like Google, and access authoritative nutrition web sites. Only few use government sources, newspapers, books and communicated with colleagues via listservs. The respondents indicated that resources differed depending on the task. The respondents were mainly doctoral degree (63.1%) masters (15.8%) and bachelor degree (5.3%) holders. There was no report of professors in the demography. However, the result is consistent with similar studies conducted in the US, indicating a wider acceptability and use of electronic resources in that region in comparison to studies in the Middle East and sub-Saharan Africa.

Sharhazad (2013) used a quantitative approach to survey the information seeking behaviour of members of university faculty in science and technology, social science, arts and humanities in Lahore, Pakistan. The demographic profile of respondents consisted of lecturers (50.3%), assistant professors (17.8%), and professors (15.3%). The study reported that faculty preferred electronic resources when seeking urgent information, and preferred internet search engines for seeking information.

Bhatti (2010) carried out a survey using a mixed method to investigate the information needs and seeking behaviour of social science faculty at university of Bahawalpur, Pakistan. The demography of the study participants includes 40 lecturers, 40 assistant professors, 10 associate professors, and 10 professors. The study reported that majority of the participants were not satisfied with the current stock of books related to their fields as they find them inadequate in meeting their research needs. It also revealed that faculty used books, periodicals, indexes, abstracts for teaching and research. It is surprising that journals are not mentioned as part of the information resources used, and neither was there any mention of electronic resources. The location of the study may likely be a major factor and implies that the university has not fully embraced the necessary technology that provides access to electronic resources. Discussion with seniors and colleagues is supported in this study as a major, but informal source of information seeking has been noted in similar studies to play a vital role in seeking information for teaching and research. Discussion entails seeking and sharing information for the purpose of gaining knowledge needed to satisfy an information need. In spite of the significance of consulting subject specialist and experts in the field, only few (27%) of the respondents engaged in this practice. In addition, few used seminar, workshops, and conferences as their informal sources of gathering information. Seminars, workshops, and conferences are an integral part of the academic community and provide a forum for intellectual engagement and a platform for information sharing and dissemination. The study also reported that social science and humanities faculty visit the library for their research. This trend further buttresses the non-availability of internet and electronic information resources in the university that could allow faculty to easily and conveniently access electronic resources in the comfort of their office as reported in studies (Engel, Robbins & Kulp, 2011; Rupp-Serrano & Robbins, 2013; Hemminger, 2007) carried out in the USA.

Curtis, Weller and Hurd (1997) conducted a study on information seeking behaviour of health sciences faculty at the University of Illinois, with a particular focus on the impact of new information technology on faculty information behaviour. The demographic profile of the respondents included 91 professors, 102 associate professors, and 185 assistant professors. The outcome suggests the use of internet and World Wide Web is prominent among health science professors and explains their high use of electronic information resources. Studies on information seeking behaviour conducted in the US show strong inclination towards internet technologies as opposed to similar studies in developing countries. Moreover, science faculty tend to be very conversant with internet technologies due to current information requirement of science discipline. Findings

also showed that faculty relied heavily on personal journal subscriptions to access online journal articles. This shows a personal resolution to access information in the face of failure to subscribe to databases at the institutional level.

Lalith (2010), while studying the information behaviour of management and commerce faculty in Sri Lanka universities found that academics used the library more when doing research paper than they use for preparing for lectures. The reason for use of the library for research by faculty members in Sri Lanka could imply a lack of access to electronic information resources in their offices on one part, and availability of current print resources in the library on the other hand. On the contrary, studies (Engel, Robbins & Kulp, 2011; Rupp-Serrano & Robbins, 2013; Hemminger, 2007) in the US shows faculty seldom visited the library probably due to easy access to electronic information resources at the comfort of their offices. This shows library usage pattern is influenced by availability and accessibility of electronic information resources. Respondents in Lalith's study ranked electronic and printed information sources high as their main source preferences. The respondents include senior lecturers (65.5%), lecturers (33.3%), and professors (1.14%).

Kumar, Salmani and Baweja, (2014) reported the outcome of information seeking behaviour of research scholars and faculty members in life sciences in India using a quantitative technique. Result of the study showed that faculty used information for teaching, research, writing research papers, and updating knowledge. Use of online journals was prominent among the faculty members. The demographic profile of the respondents comprised 10 professors, 8 associate professors and 71 research scholars. This study indicated that professoriate in the sciences are more likely to use electronic information resources more than their counterparts in the humanities regardless of geographic location. Phenomenon in science is universal and research in the sciences depends heavily on current information.

Lumande and Mutshewa, (1999) used a quantitative approach to study the information seeking behaviour of university of Botswana science faculty. The outcome reveals that information sources used by faculty were mainly journals, textbooks, and online databases. The result however, did not show an analysis of differences in the use of these information sources by faculty ranks. Therefore, it is difficult to know how professoriate differ in the use of these sources. However, the prevalence of online database usage indicates high patronage of electronic information resources by science faculty and further reinforces electronic information resources usage in the sciences globally.

Nnadozie and Nnadozie (2008) studied the information needs of faculty members in a Nigerian private university. The findings reveal that faculty need information mainly for teaching and research, social welfare, community service and health related purposes. The major sources of information are library (53.6%), print media (23.2%), electronic media (17.9%), and discussion with colleagues (5.3%). The respondents consisted of 3 professors, 5 associate professors, 8 senior lecturers, 12 lecturers, 13 lecturers II, 10 assistant lecturers, and 5 graduate assistants. The faculty in this study makes more use of the library, and tend to rely more on print sources than electronic sources. This is probably due to the fact that faculty members in some locations in developing countries have limited access to internet and electronic information resources in their offices. Some universities in developing countries, especially those with limited funding, do not subscribe or have very limited subscription to online databases due to cost. This limits faculty's ability to access electronic information resources in the comfort of their offices. The result did not show analysis of data based on faculty ranks.

Akinola (2009) surveyed the information seeking behaviour of lecturers in faculties of education in Obafemi Awolowo University and University of Ibadan, Nigeria. The result of the study revealed faculty members from both universities seek information for updating knowledge, conducting research, and preparing lectures. They use periodicals and text books for research. The use of electronic journals for seeking information for educational purposes was high among the faculties of both universities. The high use of electronic resources shows that even within the same geographic location, contextual factors play a part in information seeking. For instance, within Nigerian universities, there are very wide gap in information infrastructure amongst the universities. The first generation universities are better equipped in terms of technology infrastructure, expertise and research output, and enjoy higher ranking than the second and third generation universities. This explains the apparent differences in outcomes of similar research conducted in different universities in Nigeria. For this reason, electronic information resources usage is reportedly low in a research carried out at Madonna University (a

fourth generation university) but high in the University of Ibadan and Obafemi Awolowo University (first generation universities).

Folorunso's (2014) study on information-seeking behaviour of social sciences scholars in a research institute in Nigeria demonstrate diverse usage patterns for electronic information resources among users in different academic ranks. Junior research fellows, research fellows, senior research fellows, and associate professors are more enthusiastic users of electronic information resources, relying on electronic resources more heavily than print resources. In particular, junior research fellows use electronic resources about twice (70%) as much as research professors (36%) to satisfy their research needs. Presumably, these junior researchers are younger and more comfortable with emerging technologies. The result revealed that scholars not more than 50 years approached electronic information resources much more than their older counterparts. These findings are consistent with Xumei's (2010) study, where the author found younger professors more attuned with technology than their older counterparts.

#### **Information Source used by the Professoriate**

In a survey of 350 academic faculty members in Technological Educational Institute (TEI) of Thessaloniki Greece, Korobili et al., (2006) observed that majority of the faculty used printed sources than other sources and also used e-sources quite frequently. They made use of books, websites and printed journals. It was also found that the use of e-sources was higher in the School of Business Administration and Economics among those who hold a PhD degree and among younger members of the faculty. In addition, the results indicated that the use of e-sources was positively influenced by the respondents' perceived usefulness of sources, the convenience of access to the sources, and their academic productivity. Nnadozie and Nnadozie (2008) in a survey of information needs of faculty members in a Nigerian private university found that Journals/periodicals and monographs/textbooks were the sources of information consulted by faculty members. Some of the non-book information sources consulted by faculty members included the Internet and other online databases. Furthermore, some respondents admitted that television, and telephones were their non-book sources of information. Khan & Bhatti (2012) analysed the use of information sources by faculty members and research scholars in a university in India and found that faculty members as well as research scholars use journals for getting their required information. They accessed printed journals/periodicals in the central library while most of the faculty members personally subscribed to printed journals/periodicals. The study shows that faculty consulted Emeraldinsight.com and Science Direct.com for accessing required online information. Ehikhamenor (2003) conducted a study to investigate the use and non-use of the internet facilities by academic scientists in ten Nigerian Universities. The findings of the study indicated that the scientists were still heavily dependent on printed sources, although some of the faculty members had access to, and were using, the internet in teaching/research. More and more faculty are moving from using printed sources to using e-sources, and more specifically the Internet, as a major source of information. There is a large body of literature that focuses on the use of e-resources, especially on the Internet. The results of a user survey at the University of Hong Kong Libraries (Woo, 2005) showed that 68.8% of the respondents preferred to use journals online compared to 31.2 % who preferred to use printed journals. It has been identified that discipline has a major influence on usage patterns and preferences, and that faculty members in science or agriculture tend to use the Internet more intensively than faculty members of humanities or social sciences (Lazinger et al., 1997; Bar-Ilan et al., 2003). Age also plays an important role in usage; the younger the faculty members are, the more the use of electronic sources (Bar-Ilan et al., 2003). It has also been reported that men are heavier users of the Internet and make most use of the complicated services (Busselle et al., 1999; Teo, 2001; Cheong, 2002). Bar-Ilan et al. (2003) also found that gender and academic rank have only a minor influence on the usage of e-resources and the Internet. Bayugo and Agbeko (2007) reported on a survey of convenient access to, and use of, electronic databases (CDROM and online) with full-text journals and their effect on information seeking behaviour of health sciences academics at the College of Health Sciences in the University of Ghana. The survey documented academics preferences for print and electronic resource, and the specific databases and full-text journals. The results showed that academics were unaware of the two full-text journal databases (HINARI and PERI) available at the Library. Hence, they resorted to PUBMED as their source of access to full-text articles. They concluded that most academics now prefer information in electronic format to traditional print resources. Erdamar and Demirel's (2013) study on electronic source preferences of education faculty at Gazi University found majority of faculty

prefer e-journals to print journal. It was found that those younger than 40, research assistants, lecturers and associate professors used e-sources more commonly; and that increased age and academic title meant decreased frequency of e-source use. According to (Bar-Ilan, Peritz, & Wolman, 2003) the most active users of electronic journals are the younger members of the teaching and research staff. While studying the dependency on e-resources (e-books, e-journals, e-tutorials, online databases, CD-ROM databases and e-reports) usage among social science faculty in Iranian universities, Negahban and Talawar (2009) found that social science faculty depended on all forms of e-resources for teaching and research. The source preferences of social sciences faculty at Kuwait University reveals that they heavily depended on books and journals for teaching and on a larger variety of materials for research purposes (Marouf & Anwar, 2010). In a similar study of social science faculty, Bandi and Ramakrishnegowda (2015) observed that their information preference pattern cuts across both print and online resources. Attending conferences and workshops, and browsing the Internet were also preferred sources for seeking information. Mučnjak (2009), in a comparison of usage data between social science and humanities faculty in a university in Croatia, found that preference for e-resources was higher among social science faculty than humanities. The explanation according to the author was hinged on the fact that literature becomes outdated in social sciences faster than in humanities. Overall, the study found that social sciences and humanities faculty preferred e-journals more than print books. Brennan et al., (2002) in studies that centred on how the adoption of electronic information resources had affected academics' information behaviour, revealed that academics made fewer visits to the library and read more e-journals than print materials.

### **Conclusion**

The paper reviewed empirical literature on information behaviour of the professoriate in various academic disciplines. The reviewed literature suggest that patterns in information behaviour is influenced by differs factors such as academic discipline, age, environmental and individual characteristics and preferences. While print resources continue to be relevant in most disciplines, the general trend revealed an increased usage of electronic information resources in the academia that is fast embracing information technology in accessing and sharing information.

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