

# The online information behaviour of first-year PhD students: addressing SDG 4

Edna Owusu- Bempah

University of Education Winneba

Department of Management Sciences, Winneba- Ghana

## Abstract

**Purpose** – The aim of this paper is to contribute to sustainable development in higher education by exploring the online information behaviour (OIB) of first-year full-time PhD students. In the case of first year PhD students, there is a high demand for information to complete their tasks and to finalise their studies. The quality of the education these postgraduate students acquire is dependent on their ability to access quality information devoid of barriers. In other words, there seems to be a lack of research on the online information behaviour of postgraduates in their first year of doctoral studies.

**Design/methodology** – The study examined this phenomenon through the case study method, using the interpretivism paradigm and the quantitative approach. Using convenient and purposive sampling methods, 10 first-year PhD students were sampled from the University of Ghana's student population for 2023. A structured interview schedule was used as the instrument for data collection from the participants of the study.

**Findings** – First-year PhD students are faced with online information-seeking barriers such as poor internet connectivity, limited access to online databases and resources, inability to access the needed paid online resources due to financial constraints, information overload, difficulty in acquiring requisite information and lack of information literacy skills and financial resources. These challenges tend to influence the quality of education they receive negatively given the inequalities in their information literacy skills against the literacy skills of second to final-year PhD students.

**Practical Implications and Conclusion** – The study will contribute to literature on the information-seeking behaviour of first-year PhD students. The lack of information on the subject in Ghana is an issue this study seeks to address. The study has shown that postgraduate students at the University of Ghana do not understand their information needs, although they depend heavily on information for their work and survival.

## Keywords

First - year PhD students,  
Information need,  
Information seeking Behavior,  
Online Ghana, Postgraduate students,  
Quality education

Corresponding author: Edna Owusu- Bempah

Email address for the corresponding author: ednaobempah@gmail.com

The first submission received: 11<sup>th</sup> June 2024

Revised submission received: 6<sup>th</sup> August 2024

Accepted: 30<sup>th</sup> August 2024

## Introduction

One of the widely accepted ideas in information science is the behaviour of information seekers. Researchers have been interested in the idea of information-seeking behaviour, and stakeholders are quite concerned about it. Numerous studies on information-seeking behaviour (ISB) have been conducted in various university settings, concentrating on multiple student demographics and academic fields. Nonetheless, because contemporary academic libraries are growing and providing an extensive selection of information in electronic formats, this field of study continues to be a vital and significant research

subject (Farashi, 2022; Mohammed, 2020). Beyond academic libraries using electronic formats to provide information to students, there are other online search engines and electronic databases useful for accessing relevant information by students which is worth investigating.

### **Problem Statement and Research Objectives**

The importance of highly qualified academics is emphasised by Horta (2009), who notes that these individuals will comprise the next generation of university faculty members who will be at the forefront of knowledge production, helping to form a skilled and educated workforce, enhance living conditions across all societies, and establish ethical and professional standards for all social stakeholders. The pursuit of self-regulated learning is a necessary aspect of this obligation, especially in the early phases of doctorate study. Doctorates literature (Lowery et al., 2019; Budd, 2015; Russell et al., 2022) discuss this development as important, but they don't fully explain how this happens. Some studies (Mohammed, 2020; Asogwa and Daniel, 2021) have been done but not specifically first-year PhD students in Ghana. This research aims to partially solve these deficiencies by concentrating on first-year doctorate students, that is, doctoral students in their first year of study in any PhD programme. The 2010 OECD report, "New Millennium Learners: Initial Findings on the Effects of Digital Technologies on School-aged Learners," found that providing students with a quality education is essential in the twenty-first century (OECD, 2010; Van & Kärkkäinen, 2011). First-year PhD students' online information behaviour is a crucial subject, especially when considering Sustainable Development Goal 4 (SDG 4): Quality Education. SDG 4 seeks to guarantee inclusive, equitable, high-quality education and to encourage opportunities for lifelong learning for all. It might be useful to improve educational practices and gain insights into the learning processes of first-year PhD students by analysing how they interact with online content. The United Nations set SDG 4 as a critical objective to guarantee that everyone has access to high-quality education and opportunities for lifelong learning. It is essential to creating resilient, inclusive, and sustainable societies. To achieve SDG 4, (Bexell and Jönsson, 2017) global education-related concerns must be addressed, and effective global citizen education must be promoted. Reducing inequality, advancing gender equality, and stimulating economic growth are just a few of the ways that high-quality education affects people's lives and is crucial for sustainable development. This study is very relevant in many ways. It highlights the information needs of first-year PhD students and the challenges they face when seeking information. The findings of this study inform policymakers on how to satisfy the information needs of first-year postgraduate students in the country. The objectives of the study, therefore, were as follows:

RO1: Identify the factors that influence the online information behavior of first-year PhD students.

RO2: Determine the information needs of first-year PhD students.

RO3: Ascertain the challenges faced by first-year PhD students when online.

RO4: Assess the perception of first-year PhD students on appropriate and inappropriate online information behaviour.

### **Literature Review**

#### **Information and Information need**

Every person is believed to have an inalienable right to information in order to both support and enjoy their life. International human rights include the freedom of expression and access to information. Mansour (2017) contends that everyone should have open access to knowledge that will enable them to contribute to society and become more educated citizens. Information literacy can raise the standard of living of a society. According to Kundu (2017), information is data that has been processed into a format that the recipient may understand and find valuable for making decisions now or in the future. An American information journalist is credited with creating the notion of information need. An inquirer uses

conscious or unconscious processes to get responses from an information system. Afzal (2017) opines that there isn't a consensus on the best way to gauge the need for information. The analysis of a few pieces of the literature reveals that there are problems with terminology when defining information need, that empirical research lacks theoretical underpinnings, and that the measurement of information need relies on flimsy proxies like information-seeking behaviour and information use (Rubinic, 2012; Afzal, 2017; Gordon et al., 2018).

### **Information-seeking behavior and Technology**

Wilson (1997) refined the general model of information behaviour in an attempt to conceptualise it. This model was based on an integrated assessment of information-seeking behaviour in a variety of fields outside information science. The model was mainly composed of two constructs that were represented in a circular, iterative system: information seeking and information processing and utilisation. This review went into great detail to discuss information seeking. The demands of information consumers appear to have a greater influence on information system development than do data or technology systems. Giving valuable further insight into how an individual's "abilities, styles, and preferences" and "knowledge structures" impact their information behaviour. Information-seeking behaviour is defined by Ajiboye (2007) as a means and style of obtaining and gathering information for one's usage, knowledge update, and development. With the development of technology, information search, information use, and information-seeking behaviour have taken on new aspects (Case and Given, 2016). Scholars and academics are interested in examining the relationship between technologies, such as social media, and information-seeking behaviour, as a result of these rapid changes. For instance, a study by Hamid et al. (2016) looked into the information demands and information-seeking habits of international students. The study brought attention to the part that social media played in providing information to certain respondents. This study spreads its focus beyond social media to any information sought depending on the Internet.

### **Information Sources and Obstacles to information access and availability**

Books, the Internet, and journals are the main sources of information. To students, books are still the most preferred source of information, followed by the Internet. He went on to say that although e-journals and e-reference books are two examples of electronic information sources available online, surfing websites and search engines are still the most popular ways to obtain information. He added that the issues were that there weren't enough books in circulation and that the newest editions weren't readily available. Most students are technophobic and some lack computer literacy, which affects their information demands. Additionally, some users disregard the importance of library orientation. Some university administrations do not allocate enough money to the purchase and processing of library items, which prevents staff and students from having access to current, necessary resources for their studies and research projects. Another barrier is inadequate electrical supply. For important and urgent research, users can visit academic libraries. This, in reality, calls for an electronic library, but he might not be able to complete the task because there won't be any energy to check the Internet. There is the issue of limited ICT connectivity in libraries (Mohammed, 2020). At the University of Botswana, students' poor information-seeking behaviour was the cause of their technological access issues to (Ajiboye, 2007) information resources.

Writing assignments and preparing for exams were determined to be the main duties for which students needed data. Books, videos, lecture notes, handouts, the internet, projects, CD-ROM databases, and journals were the most often used information sources (Chikonzo and Aina, 2006; Kerins et al., 2004).

## Research Methodology

Adopting a grounded theory design, the study used a qualitative approach and the constructivist paradigm to study the online information behavior of first-year PhD students at the University of Ghana. The grounded theory design permitted the researcher to qualitatively investigate the phenomenon. The constructivist approach to research is directed (Cohen and Manion, 1994) toward gaining an in-depth understanding of “the world of human experience”. Implying also that “reality is socially constructed” (Mertens, 2005). The researcher gained access to the first-year PhD students through rapport building since the researcher is also a First-year PhD student. The Course Representative of the PhD class was informed about the study to gain access to the group and meet the ethical requirements for the study. The challenge encountered however was the unavailability of the sampled participants due to their busy schedules which led to several interview schedule changes. A total of ten First year PhD students were sampled from the First-Year PhD students’ population of the University of Ghana through the use of convenience and purposive sampling techniques. Merging the convenience non-probability sampling technique with the purposive non-probability sampling technique creates room for choosing participants with attributes (Lu and Franklin, 2018) closely related to that of the population being studied which comes with the merit of lower costs of data collection. For this study, the 10 sampled first-year PhD students were drawn from the class of all first-year students on a PhD programme at the University of Ghana. The data collection instrument used to gather responses from the participants of the study was a semi-structured interview schedule. According to Creswell and Poth (2016), the semi-structured interview schedules afforded the interviewer much control over the line of questioning, also it gave the interviewees the ideal platform to explain themselves in detail if the need arose.

## Sample Distribution

Sampling is a method adopted by an investigator to methodically choose a comparatively smaller number of representative objects or persons from a specified population to act as subjects for observation or experimentation against the objectives of his (Sharma, 2017) study. This research used non-probability sampling techniques of purposive and convenient sampling. A non-probability sampling technique is entirely founded on judgment. Out of a total of about 90 PhD students, 10 of them were sampled for the study based on the researcher’s judgment. The table below shows the distribution of the sample size.

<b>Programme</b>	<b>Number of Interviewees</b>
Political Science	1
Information Studies	3
Sociology	1
Population Studies	1
History	1
Geography and Resource Development	3
<b>Total</b>	<b>10</b>

**Table 1 Sample Size Distribution**

The purposive sampling technique was used to include the 3 PhD Information Studies students in the research since the researcher believes they are exposed to information behavior theories while the convenience sampling technique was for including the remaining 7 participants in the study.

## Results

The qualitative research systematic approach implemented for this study was the inductive approach. The adopted approach was deemed suitable for several reasons, the chiefest among them being how small the sample size is. Four themes were developed following the arduous analysis of the responses by participants. The identified themes were developed as objectives and research questions for this particular study. 10 respondents were sampled in total for the study. 6 (60 percent) of the participants were men and 4 (40 percent) were women. The study found that almost all the participants (80 percent) had a Master of Philosophy in their fields of expertise.

## Demographics

### Sex

Out of the 10 participants interviewed, 6 (60 percent) of the participants were males and 4 (40 percent) were females.

Sex	Number of Participants
Male	6
Female	4

**Table 2 Sex Distribution**

## RO1: The factors that influence the online information behavior of First-Year PhD students at the University of Ghana.

The analysis of the data gathered showed that a greater proportion of the respondents believe that the online information behavior of first-year PhD students is different. First-year PhD students are saddled with assignments that requires them going online to gather relevant information for their work. Almost all 10 participants either said a big "Yes" or "of course" when asked if the online information behavior of first-Year PhD students was different. They sometimes have difficulty navigating to get the needed information. The data that was analyzed confirmed this finding:

*"Of course, because they are curious about certain information to do their assignment and certified the requirement of reading some articles of the program, they are pursuing should inform them what they go online to look for. What they do is to access materials being educative and informative to enhance their research work basically" (a female PhD student opined).*

Another participant also said this about the way first-year PhD students behave online (a male participant opined):

*"As a first-year PhD student, depending on the institution you are coming from there is a possibility that you will go online, and you are unable to navigate your way to get whatever you are looking for".*

6 out of the 10 participants were of the view that the digital information literacy skills of the first-year PhD student played a pivotal role in the online information behavior of the individual. Thus, it informs how the student will be able to navigate and get the needed information. The other 4 participants are of the view that first-year students are hunters for information because they need the information to meet their study programme expectations. From the analysis, it could be further stated the majority of the

participants of the study believe that the working conditions of the first-year PhD students influences their online behavior:

*“Yes, for instance, you are having a Zoom class, and you are at the office and also overwhelm with other activities definitely you wouldn’t be able to participate fully, and your work will be affected and access to information online” (a male first year PhD student mentioned).*

Other factors such as health, age, people’s past online experiences, emotional state, and beliefs among other factors which could be based on the given situation or context can also influence their online behavior as first-year PhD students.

*“For the age when your brains are weak, you don’t expect to be at par with someone who is younger and has more skills and couple with your other responsibilities and other factors also count” (a female participant retorted).*

Again, a participant still speaking on other factors that affect the online information behavior of first-year PhD students intimated:

*“I think once somebody has had a bad experience with the use of the internet, definitely, they are more careful in handling the use of internet and they wouldn’t want to explore more” (a male participant stated).*

Factors that influence the online information behavior of first-year PhD students based on the analyzed data could be described as distinct. Due to the quantum of academic demands on a first-year PhD student, he is likely to be online most of the time to get scholarly documents which will aid in the completion of his academic tasks. Also, the digital literacy skills of a PhD student can either put him in an advantaged position or a disadvantaged position (i.e. inability to navigate, hence unable to search the appropriate online platforms for the needed information). Moreover, the working conditions (good or bad) can affect the online behavior of the first-year PhD student, specifically, his availability will be minimal provided his workload is high. Data obtained from the first-year PhD students interviewed in this study showed. The findings of the study suggest that first-year PhD students are saddled with other activities other than schooling, however, they still put in their best efforts to go online and search for information for their assignments and other related tasks. Arguably, some first-year PhD students have challenges navigating when online, but they try to manage to perform their academic duties successfully.

## **RO2: Information needs of First-Year PhD Students of the University of Ghana**

Upon analyzing the data, it was figured that the information needs of first-year PhD students were not highly segregated. Most respondents could relate to the pivotal role information played in their lives as first-year PhD students. Also, the need for information resonated well with them, and the relevance of acquiring that information through the right online scholarly portals most of the time could not be overemphasized.

Analyzed data revealed this interesting inclination concerning the reliance of participants on information:

*“For instance, with the University of Ghana most lecturers post their information on the SAKAI so anytime I go to the portal I login to the SAKAI to see if there are materials for the program that am doing and look for any information of students in that department. I also do check my emails to see if some lecturers have sent information to my email because there are some lecturers that don’t want their information to be posted on the SAKAI” (a male First year PhD student responded).*

The majority of the participants mentioned they go online for academic purposes and sometimes for entertainment:

*“It depends. I seek different information at a different time especially when I work for so long, I go online to watch some funny videos and laugh to release some stress. And for academics to I go online to get articles with relevant publications in relation to whatever am doing at a particular moment” (a male respondent opined).*

Another respondent said this when asked of her information needs:

*“Anything concerning academics or my kid’s homework” (a female participant retorted).*

All 10 participants demonstrated an appreciation of their information needs when online as first year PhD students. Their responses suggested they had information needs that bordered around almost every interesting issue of life:

*“Anything and Everything once it has an interesting caption or something which can develop my interest. So, it could be things from academic, entertainment, sports, religion, current issues and political issues” (a male participant opined).*

It is therefore evident that the information needs of first year PhD students range from academic, entertainment, politics, religion, kids’ homework, and other related social issues. All 10 participants go online for one information need or the other. The online platforms used by first-year PhD students tend to be varied with some commonalities and were purposefully selected by participants.

*“For academic purposes I use Science Hub, Google scholar and outside academic I go to TikTok, WhatsApp, Facebook and Twitter. I have account on all social media handles, but I use WhatsApp more” (a male respondent mentioned).*

4 participants mentioned they do not use certain online platforms for personal reasons and others due to doubts about the authenticity of information on those platforms.

*“I hardly use Wikipedia though it gives me a broad idea of what am going to look for from other online platforms” (a female participant stated).*

Another participant recounted an ordeal:

*“Yes, Wikipedia for instance made me nearly fail a course. Only for the lecturer to call and tell me that Wikipedia and some online platforms are not for scholarly work. Then I learnt to center the places or sites I use” (a female participant recounted).*

All 10 participants consented to the fact that they acquired useful information from online platforms. However, they intimated that they sometimes do not get the information needed.

*“Yes, but for me not always that I get information online. Examples, I was working on some satellite images, and I wanted to know the plan image of that particular satellite sensor and I searched severally I couldn’t get it, so I had stop searching and contact friends who had some information about that particular image” (a male participant opined).*

The online information needs of first-year PhD students, based on the analyzed data could be seen as ideal. Considering their level of usefulness; information on matters surrounding academic, political, entertainment, family and other social based issues were mostly sought after from online sources by first-year PhD students. The findings of the study further highlight that online platform such as Google Scholar, Google, Sakai, Sci- hub, PDF drive.com Facebook, Twitter, TikTok (Social Media Platforms), some Academic databases and online journals (JSTOR, EBSCOhost, Agora, Emerald) are the most popular online platforms used by first-year PhD students when they are online. It can be deduced that not all information on some online platforms is credible so users of online platforms should double-check the information they gather online, Wikipedia was mentioned as an online platform that could provide questionable (non-academic) content.

### **RO3: Barriers to the access of online information by First-Year PhD Students of the University of Ghana.**

Moreover, the findings of this study depict that first-year PhD students are faced with the following challenges while searching for information; poor network connectivity, information overload, limited internet bundle due to the high cost of internet, unwarranted online adverts, and poor digital literacy skills were identified as barriers to accessing information online as first-year PhD students. Internet instability is a big problem in Ghana, hence while searching for information online, the network could be disconnected or the system could be entirely slow, impeding productive work and studies.

*"Yes, sometimes the network is so bad. And also, when your machine is not in a good shape though I have not encountered that" (a female participant stated).*

Other issues like not having adequate internet bundles could also negatively affect the access to needed information while online as first year PhD students.

*"A lot of challenges. For examples the internet access, cost and accessibility of data, the equipment like laptop and phones are all challenges and also the information seeking for could be misleading itself" (a male participant lamented).*

Also, the digital information literacy skill of a first-year PhD student played a critical role in his ability to access the needed information while online. Sometimes the information needed may be online but without the requisite online information search skills, the first-year PhD will not be able to access and use that information.

*"Yes, you face challenges with your data, other times to the search itself because you are not able to get what you want. It could be either you are not searching well, or you don't have the skills to search appropriately" (a female participant posited).*

#### **RO 4: Appropriate and Inappropriate online behaviour of First year PhD Students of the University of Ghana**

Findings revealed that what is deemed either appropriate or inappropriate behavior is subjective. But generally appropriate behavior emphasizes online behaviors that are ethically right whereas inappropriate online behavior highlights online behaviors that are classified as unethical in nature. Some appropriate behaviors identified as part of the findings of the study included: acting responsibly, not visiting unapproved websites, having high digital literacy skills, reading before going online to research, and being tolerant of other people's opinions while online.

*"It depends on what you are doing. For academics, as we are speaking as students the first and foremost is to go there to learn and build on knowledge that you do not have. And be a bit responsible especially the use of social media" (a female participant retorted).*

Avoidance of harmful behaviors like cyber fraud, and hacking is appropriate:

*It depends on the context, but the appropriate online behaviour is that you do not use online activities for anything malicious like spreading viruses, hacking other websites or documents. Appropriate is also that you are decorum in what you post, you are conscious that what you post are not offensive and try not to put the university name or any other person's name into disrepute (a male respondent indicated).*

Findings from the study indicate that inappropriate behavior includes visiting pornographic sites, disclosing confidential information to unknown sites and individuals, lack of concentration during lectures because of one's presence on social media at the time, plagiarizing content obtained from online sources, and engaging in malicious online activities.

*"Inappropriate behaviour is looking for things which are not beneficial to you like going online to watch a porn or cyber bullying" (a female participant mentioned).*

Generally, issues of verifying your online sources of information and being mindful of disclosing confidential information are consensual. However, to a large extent, what is appropriate and inappropriate while searching for information online is highly subjective but has common themes.

#### **Discussions and Conclusions**

This study investigated the online information behaviour of first-year PhD Students at the University of Ghana. The contribution of this study to research in terms of the methodology used and context gap cannot be overemphasized. However, it must be acknowledged that this study gave minimal consideration to demographics and how they affect or influence first-year PhD students' information-seeking activity. A glance at the population description for this specific study provides some insight into



the demographic characteristics of University of Ghana first-year PhD candidates. The subjects of this study were discovered to be people with varying levels of literacy and gender. Males predominate among postgraduate students, as is evident.

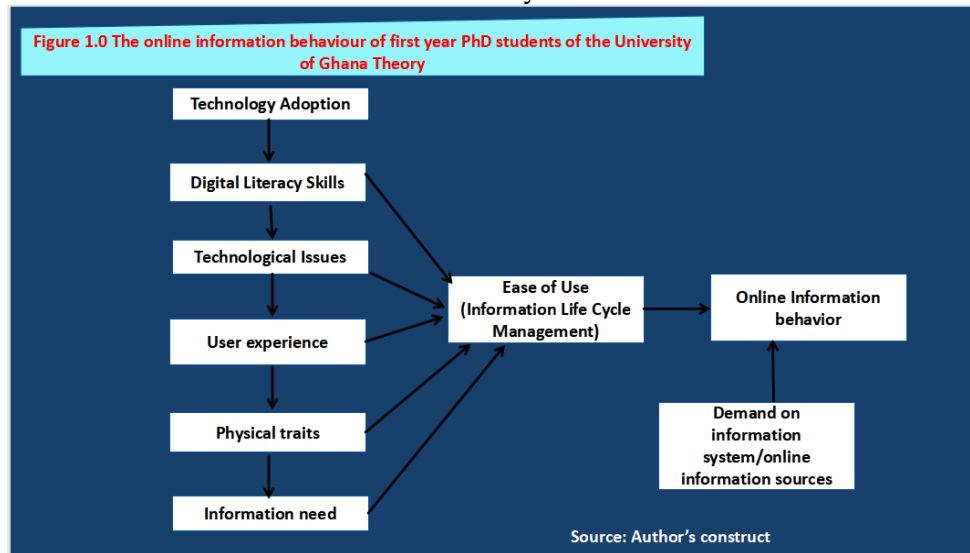
Findings from the study suggest that the factors that influence the online information behavior of first year PhD students are well-defined ranging from the quantum of academic demands, the digital literacy skills of the PhD student, and their working conditions (good or bad). The findings of the study suggest that first-year PhD students are saddled with other activities other than schooling, however, they still put in their best efforts to go online and search for information for their assignments and other related tasks. Some first-year PhD students had challenges navigating when online, but they tried to manage in order to perform their academic duties successfully.

Also, additional findings of the study suggest that the online information needs of first-year PhD students are ideal. Their information needs revolve around academic, political, entertainment, family, and other social issues which information was mostly sought after from online sources by first-year PhD students. The findings of the study further highlight that online platform such as Google Scholar, Google, Sakai, Sci- hub, PDF drive.com Facebook, Twitter, TikTok (Social Media Platforms), some Academic databases and online journals (JSTOR, EBSCOhost, Agora, Emerald) are the most popular online platforms used by first-year PhD students when they are online. It can be deduced that not all information on some online platforms is credible so users of online platforms should double-check the information they gather online, Wikipedia was mentioned as an online platform that could provide questionable (non-academic) content.

Moreover, the findings of the study depict that first-year PhD students are faced with the following challenges while searching for information online; poor network connectivity, information overload, limited internet bundles due to the high cost of the internet, unwarranted online adverts and digital information illiteracy were identified as barriers to accessing information online as first-year PhD students. Internet instability is a big problem in Ghana, hence while searching for information online, the network could be disconnected or the system could be entirely slow, impeding productive work and studies. Students are technophobic, and some lack computer literacy skills, which affects their information demands this validates the findings of this study (Mohammed, 2020). Mansour (2017) posits that an individual's educational attainment influences their information requirements, as well as how they interact with and utilise information systems. This suggests a positive association between educational attainment and information accessibility. Participants' access to and utilisation of material was somewhat hampered by their low reading levels (Mooko and Aina, 2006). Since all of the participants were first-year PhD students, they were not able to properly utilise or investigate the majority of formal information sources, such as online academic databases. Given the abundance of information available in today's world, information literacy is very crucial. Proficiency in information literacy is recognised as assisting everyone, including first-year PhD students, in finishing their academic obligations and tasks. Again, findings from the study revealed that from the perspective of first-year PhD students, appropriate or inappropriate behavior while online is subjective. Some inappropriate behaviors identified as part of the findings of the study included: acting irresponsibly, not visiting unapproved websites, having high digital literacy skills, reading before going online to research and being tolerant of other people's opinions while online. Confidentially handling information is seen as appropriate behavior and cyberbullying as well as cyber fraud is seen as inappropriate. As first-year PhD students, they are expected to behave appropriately while online. Libraries are also expected to protect the privacy of library patrons with first-year PhD students included.

This theory was developed based on the findings of the study by the author.

**Figure 1.0 The online information behavior of first-year PhD students at the University of Ghana Theory**



### Limitations and Directions for Future Research

Information literacy is crucial due to the volume of information available in today's society, as noted by Mooko and Aina (2006) and Agosto and Hughes-Hassel (2005). People cannot become knowledgeable by merely being exposed to a large amount of information. Therefore, the study suggests that authorities take action to give first-year PhD candidates opportunities for training and education and access to relevant high-index journals that are closed. It was evident from the study that first-year PhD students were faced with several barriers in their quest to access information. Dominant among these obstacles included digital information illiteracy, financial resources, poor network connectivity, information overload, and unwarranted online adverts were identified as barriers to accessing information online as first-year PhD students which should be addressed by governments and authorities through improved internet service provision and subsidised platforms for internet access by these students on and off campus. Again, Librarians should protect the privacy and confidentiality of Library patrons and cyber bullies, and cyber fraudsters should be tracked by authorities and sanctioned.

This study focused on the online information behavior of first-year PhD students at a Public University in Ghana. Future studies could look at the online information behavior of first-year PhD Students of a different Tertiary institution or do a comparative study across institutions or countries.

### References

- Afzal, W., 2017. Conceptualisation and measurement of information needs: a literature review. *Journal of the Australian Library and Information Association*, 66(2), pp.116-138.
- Agosto, D.E. and Hughes-Hassell, S., 2006. Toward a model of the everyday life information needs of urban teenagers, part 2: Empirical model. *Journal of the American Society for Information Science and Technology*, 57(11), pp.1418-1426.
- Ajiboye, J.O. and Tella, A., 2007. University Undergraduate Students' Information Seeking Behaviour: Implications for Quality in Higher Education in Africa. *Turkish Online Journal of Educational Technology-TOJET*, 6(1), pp.40-52.
- Asogwa, C. and Daniel, T.M., 2021. Information needs and information seeking behaviour of the postgraduate students at the National Institute for Legislative and Democratic studies, Abuja. *Information Impact: Journal of Information and Knowledge Management*, 12(2), pp.62-72

- Bexell, M. and Jönsson, K., 2017, January. Responsibility and the United Nations' sustainable development goals. In *Forum for development studies* (Vol. 44, No. 1, pp. 13-29). Routledge.
- Budd, J.L., 2015. Self-Regulation in the Doctoral Research Context: Exploring Students' Responses to a Self-Monitoring Process during PhD Candidature.
- Case, D.O. and Given, L.M., 2016. Looking for information: A survey of research on information seeking, needs, and behavior.
- Chikonzo, A. C. & Aina, L. O. (2006). Information Needs and Sources of Information Used by Veterinary Students at the University of Zimbabwe. *Quarterly Bulletin International Association of Agricultural Information Specialists (IAALD)*, 46(1-2), 24-28
- Cohen, L., Manion, L. and Morrison, K., 2002. *Research methods in education*. Routledge.
- Creswell, J.W. and Poth, C.N., 2016. *Qualitative inquiry and research design: Choosing among five approaches*. Sage publications.
- Farashi, B. I., 2022. exploring the information seeking behavior of colleges of education students in northeast Nigeria. *International Journal of Innovative Information Systems*.
- Gordon, I.D., Meindl, P., White, M. and Szigeti, K., 2018. Information seeking behaviors, attitudes, and choices of academic chemists. *Science & Technology Libraries*, 37(2), pp.130-151.
- Hamid, S., Bukhari, S., Ravana, S.D., Norman, A.A. and Ijab, M.T., 2016. Role of social media in information-seeking behaviour of international students: A systematic literature review. *Aslib Journal of Information Management*, 68(5), pp.643-666.
- Horta, H., 2009. Holding a post-doctoral position before becoming a faculty member: does it bring benefits for the scholarly enterprise? *Higher Education*, 58(5), pp.689-721.
- Kerins, G., Madden, R. and Fulton, C., 2004. Information Seeking and Students Studying for Professional Careers: The Cases of Engineering and Law Students in Ireland. *Information Research: An international electronic journal*, 10(1), p.n1.
- Kundu, D.K., 2017. Models of information seeking behaviour: A comparative study. *International Journal of Library and Information Studies*, 7(4).
- Lowery, K., Geesa, R.L. and McConnell, K., 2019. Self-regulated learning of mentees and mentors in an education doctorate peer mentoring program. *Mid-Western Educational Researcher*, 31(2), pp.186-209.
- Lu, T. and Franklin, A.L., 2018. A protocol for identifying and sampling proxy populations. *Social Science Quarterly*, 99(4), pp.1535-1546.
- Mansour, E., 2017. An explanatory study into the information seeking-behaviour of Egyptian beggars. *Journal of Librarianship and Information Science*, 49(1), pp.91-106.
- Mertens, D.M., 2023. *Research and evaluation in education and psychology: Integrating diversity with quantitative, qualitative, and mixed methods*. Sage publications.
- Mohammed, R.N., 2020. POSTGRADUATE STUDENTS' INFORMATION SEEKING BEHAVIOUR IN THE FACULTY OF MANAGEMENT SCIENCES, BAYERO UNIVERSITY, KANO, NIGERIA. *American International Journal of Multidisciplinary Scientific Research*, 6(4), pp.1-14.
- Mooko, N. and Aina, L., 2006. Information needs and information seeking behaviour of artisan fisher folk of Uganda.
- Rubinić, D., 2014. Information behaviour of university students: a literature review. *Libellarium: časopis za istraživanja u području informacijskih i srodnih znanosti*, 7(1), pp.105-118.
- Russell, J.M., Baik, C., Ryan, A.T. and Molloy, E., 2022. Fostering self-regulated learning in higher education: Making self-regulation visible. *Active Learning in Higher Education*, 23(2), pp.97-113.
- Sharma, G., 2017. Pros and cons of different sampling techniques. *International journal of applied research*, 3(7), pp.749-752.
- Van Damme, D. and Kärkkäinen, K., 2011. OECD Education Today Crisis Survey 2010: The impact of the economic recession and fiscal crisis on education in OECD countries.
- Wilson, T.D., 1997. Information behaviour: an interdisciplinary perspective. *Information processing & management*, 33(4), pp.551-572.