

# Web Information-Seeking Behaviour of Undergraduate Students in a Private University in Malawi

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## Abstract

*This study aimed to investigate students' web information-seeking behaviour at Malawi Adventist University (MAU). A mixed methods approach was employed and underpinned by Wilson's (1996) Model of Information Behaviour. The sample size of the study was 166 level four undergraduate students at MAU. A questionnaire and an interview guide were used to collect data. The results of the study revealed that undergraduate students have web information needs for academic information 91(77%) and major web information sources were scholarly journals, scholarly databases, and Google Scholar 51(43%). Students mostly use simple search strategies such as keywords in searching for information 51(43%). The major challenge experienced by students was information*

*overload 53(45%). The study has demonstrated that Web information is important for students at MAU for academic, personal, and health purposes. Therefore, the library at MAU should conduct tailor-made information literacy training sessions targeting undergraduate students to raise awareness of the existence of Web information sources and improve access and use.*

**Keywords:** Information Needs, Web Information-Seeking Behaviour, Undergraduate Students, Malawi.

## Introduction and Background

Higher education institutions invest in technologies to help students meet their web information needs. One such technological innovation is the provision of Internet services to facilitate access to information available on the World Wide Web (WWW) or simply the web. Wu et al. (2017) are of the view that the Web has grown into an important vehicle for information provision, dissemination and retrieval among students in universities. Nowadays, information seeking is not restricted to print-based sources only, as students have a selection of print and non-print sources for accessing a variety of information for academic and other uses (Tella et al., 2020).

## Concept of Web Information-Seeking Behaviour

Information-seeking behaviour is a term used to describe ways in which human beings interact with information, especially how they seek and utilise

information (Olalekan et al., 2015). Wu et al. (2017) point out that the dominant sources of information for undergraduate students have been print sources. However, Wu et al. (2017) argue that there has been a huge shift in undergraduate students' preference for information sources used and their information-seeking behaviour from print to web-based information. This has been due to the availability of web information at the click of a button and its accessibility at any time. Gama, Chipeta and Chawinga (2022) argue that web information-seeking behaviour is one of the most popular web activities for undergraduate students, which provides an additional information channel and enhances learning and research in universities. Therefore, Makondo et al. (2018) state that web information-seeking behaviour is the totality of all sorts of behaviour portrayed by information seekers on the web or networked information sources.

### **Problem Statement**

The web is positioned as the main source of information for students in universities (Makondo et al., 2018). Web information has been touted to be very important to students, as it provides up-to-date information, accessed at any time and allows concurrent access to the information resources (Makondo et al., 2018). Despite the numerous benefits of web information seeking, students experience some challenges when accessing information on the web due to poor computer and information searching skills (Tlakula and Fombad, 2017; Makondo et al., 2018). The library at Malawi Adventist University, Lakeview Campus, subscribes to various online resources, compiles print resources in open access and provides free Internet to students to facilitate their access to web information sources. The University Library, also provides information literacy sessions to equip students with information-searching skills. Despite these initiatives, students still over-rely on librarians and academic staff for their information searches, due to lack of time for teaching information literacy, students' lack of computer skills, and inadequate computers among others (Chaputula and Mutula, 2018; Chawinga and Zinn, 2015).

Through interactions with undergraduate students at MAU, the researchers noted that students

struggle to search for information on the web and rely on library staff to assist. The challenges listed could have justifiably led the researchers to speculate that undergraduate students do not effectively use credible information sources to meet their information needs. These observations were made in public university libraries. Studies in private universities in Malawi are not known. Also, there are no known studies on the web information-seeking behaviour of undergraduate students in Malawi, as studies by Chipeta et al. (2019) and Thindwa et al. (2019), focused on the information-seeking behaviour of undergraduate students in general. Notwithstanding these observations, the study sought to gain a deeper understanding of the web information needs and web information-seeking behaviour of undergraduate students at MAU Lakeview Campus. The observations also made the researchers pose several questions: Are students aware of the information sources available on the web? Do they possess the necessary web information searching skills? What barriers do students face to accessing web information? To address these questions, the study sought to investigate the web information-seeking behaviour of undergraduate students at MAU Lakeview Campus to come up with interventions.

### **Objectives of the Study**

- Establish the web information needs of undergraduate students at Malawi Adventist University at Lakeview Campus.
- Determine web information sources consulted by undergraduate students at Malawi Adventist University at Lakeview Campus.
- Identify web information searching strategies utilised by undergraduate students at Malawi Adventist University at Lakeview Campus.
- Find out barriers faced by undergraduate students in accessing and using web information at Malawi Adventist University at Lakeview Campus.

### **Literature Review**

Globally, several studies have been reported on the web information-seeking behaviour of undergraduate students with a focus on web information needs, web

information sources, web information searching strategies and barriers to accessing and using web information. Studies by Howlader and Islam (2019), Oluwaseye et al. (2017), Ncwane (2016), Chawinga and Zozie (2016) and Makondo et al. (2018) discussed the web information-seeking behaviour of undergraduate students in developed and developing countries. A study by Howlader and Islam (2019) at the University of Dhaka in Bangladesh found that the web information needs of undergraduate students were academic information for assignments and examinations, health information, and job and career development information. The reasons for the similarity of these findings could be because web information is current and students were comfortable using it. Similar studies by Oluwaseye et al. (2017) in Nigeria, Ncwane (2016) in South Africa, Makondo et al. (2018) in Zambia, and Chawinga and Zozie (2016) in Malawi also reported on the web information needs of students such as academic information, personal development, and general information. Undergraduate students need web information to succeed in academic and social endeavours (Chawinga, 2016; Ifinedo, 2017).

Several studies have reported on the web information sources for students such as (Kumar and Gopal, 2020; El-Maamiry, 2017; Lo and Chu, 2015); . Obasola and Agunbiabe, 2016; and Okocha and Owolabi, 2020). A study by Kumar and Gopal (2020) also revealed that students accessed web information sources, such as Google (59.9%) and librarians and friends (26.4%). Studies by El-Maamiry (2017) and Lo and Chu (2015) revealed that Google, Yahoo, and academic databases were the major sources of web information for undergraduate students. Similarly, a study by Dasgupta et al. (2017) in India also revealed that undergraduate students used the Internet as a major source of information.

In Africa, a study by Obasola and Agunbiabe (2016) in Nigeria, reported that undergraduate students mostly use Google and Yahoo as their information sources. Other sources, were Wikipedia and Facebook. Google and Yahoo were easier to use and had links to many sources of information on the Internet, while Facebook was used for current awareness and breaking news. A similar study by Okocha and Owolabi (2020) in Nigeria, also found that over 50% of undergraduate students in private

universities considered electronic databases relevant, current, accessible, accurate and authoritative. In comparison with search engines, most academic journals in scholarly databases go through a rigorous peer review process, which makes the authority of these information sources guaranteed. However, scholarly databases are difficult to use and students lack the required information-seeking skills to access them (Okocha and Owolabi, 2020).

A quantitative study by Nadzir and Puteh (2017) in Malaysia, found that undergraduate students use both basic search strategies and advanced or systematic search strategies. Similarly, In India, a mixed method study by Kadli and Hanchinal (2015) revealed that undergraduate students can use simple search strategies and advanced search strategies such as Boolean logic in their information-searching endeavours. In Tanzania, mixed-method research by Isibika and Kavishe (2018), revealed that undergraduate students used both simple and advanced search strategies. It was further revealed that senior students used advanced search strategies due to exposure to information literacy training compared to junior students, who used simple search strategies, due to a lack of training in information literacy (Isibika and Kavishe, 2018). This phenomenon is supported by Ankrah and Atuase (2018) that robust online information literacy training is important for students to successfully search for information on the web. In sharp contrast, a mixed methods study by Tlakula and Fombad (2017) in South Africa revealed that 90% of undergraduate students used basic search strategies due to a lack of training in web information searching. The importance of information literacy training was emphasised by Bushman et al. (2021) and Tlakula and Fombad (2017), that information literacy skills courses need to be embedded in the university curriculum based on the needs of students in the use of the web.

Studies by Wang and Shah (2017) and Hong and Injeong (2017) in the USA, found that most undergraduate students lack user perseverance, navigational or query formulation, and skills to evaluate information and hence fail to use information from the web effectively. Umaru et al. (2018) suggested the need for qualified and friendly library personnel to support online users of e-library services with skills in navigating the web. Similarly, a

quantitative study by Jan et al. (2016) in Pakistan established that lack of information searching skills, due to inadequate information literacy sessions, was the major barrier undergraduate students faced when searching for information on the web. Information literacy training is focused on postgraduate students (Jan et al., 2016). In Malaysia, a quantitative study by Nadzir and Puteh (2017), also revealed that the majority of undergraduate students lacked training in searching the web, search query formulation, and evaluating web information. Similar findings were reported in a study by Bhat and Ganaie (2016) that lack of awareness and information evaluation skills were some of the impediments which affected the use of web-library services by students at the Parmar University of Horticulture and Forestry in India.

In Africa, studies by Thindwa et al. (2019), Chipeta et al. (2018), Ncwane (2016), and Okocha and Owolabi (2020), also revealed several barriers faced by students in accessing and using web information, such as information overload, inadequate computers in the library, power outages, lack of information seeking skills, lack of awareness, user

unfriendliness of laboratory or library assistants and insufficiency of Web amenities. The barriers of lack of information-seeking skills and lack of awareness of web information could be attributed to a lack of exposure to ICTs early in life. Other barriers faced by students, were obsolete computers in the library, lack of information and communication skills of librarians to support students, slow Internet, lack of help from librarians and lack of minimal information literacy classes (Isibika and Kavishe, 2018).

### Theoretical Framework

The study adopted Wilson's (1996) Model of Information Behaviour to explore the web information behaviour of undergraduate students at MAU Lake View Campus (Figure 1). The main principle in Wilson's (1996) Model of Information Behaviour, is that satisfying an information need, depends on feedback from information processing and use (Wilson, 2016). The 1996 model presents four information-seeking activities, such as passive attention, passive search, active search and ongoing search.

The model was chosen because previous studies by

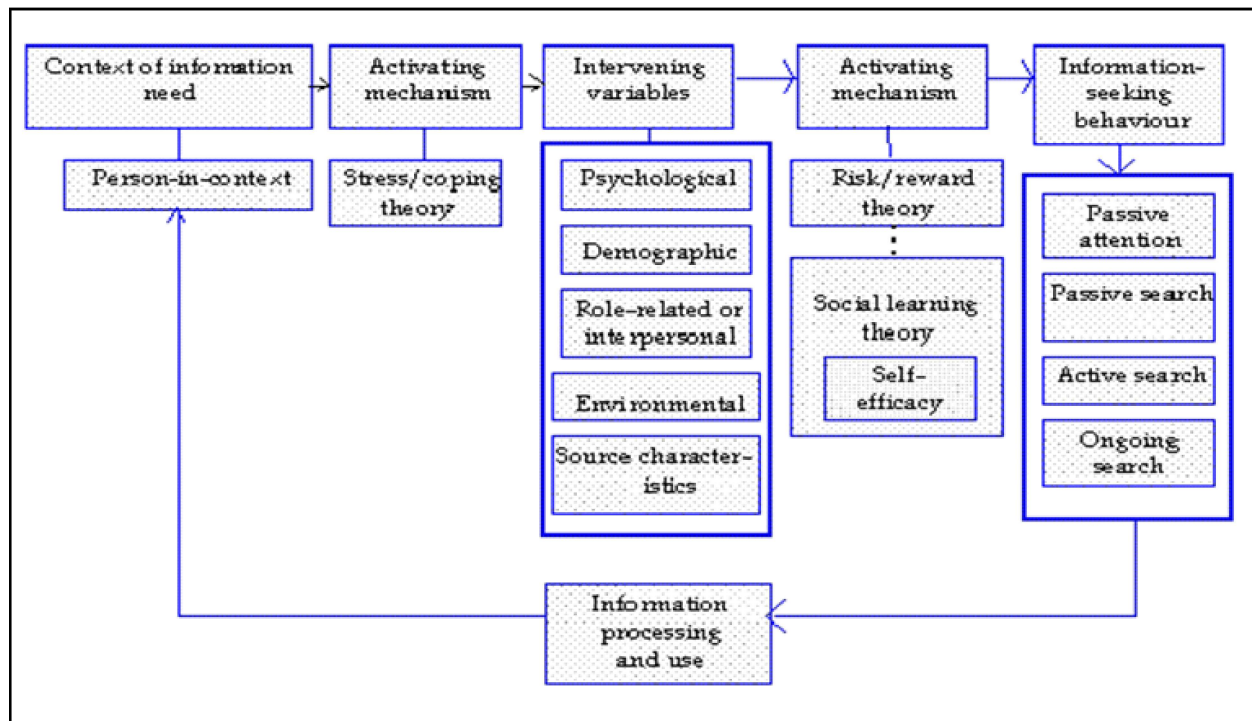


Figure 1. Wilson's (1996) Model of Information Behaviour

Oladunjoye (2018) and Azadeh and Ghasemi (2015) adopted the model to study the information-seeking behaviour of undergraduate students in countries, such as Nigeria and Iran. Secondly, the variables of the model, such as the context of information need, intervening variables, information-seeking behaviour, and information processing, and use, are directly related to the themes of the study, namely information needs, information sources, information search strategies and barriers to information seeking.

## Methodology

The study was guided by a mixed methods approach, with a convergent design. Creswell and Creswell (2018) define convergent design, as a mixed methods study design, where both quantitative and qualitative data collection and analysis, are done in one phase and followed by merging and interpreting results. Both forms of data were collected at the same time from the undergraduate students at MAU and were merged in the interpretation of the results. The rationale for this approach was to collect qualitative data to complement quantitative results to provide a comprehensive understanding of the web information-seeking behaviour of undergraduate students at MAU. The study targeted 166 fourth-year undergraduate students from the Departments of Business, Education, Agriculture and Theology at Malawi Adventist University (MAU), Lake View Campus. The study focused on final-year undergraduate students, because they are at a stage that demands more services from the library to meet their information needs for research, assignments, and final examinations. A sample size of 166 was determined through a census approach, and if the population is less than 200, the entire population should be sampled (Israel, 2013).

A questionnaire with open-ended and closed-ended questions, was administered to 166 undergraduate students. In addition, fifteen (15) undergraduate students were conveniently interviewed, using an open-ended interview guide and the interviews lasted between 12 and 16 minutes. Similar results began to emerge at interviewee number 13, called data saturation. The questionnaire and the interview guide were divided into five sections: Section A collected data on the

demographic profile of respondents, such as gender and programme of study; Section B collected data on web information needs; Section C collected data on web information sources, Section D collected data on web information search strategies, and Section E collected data on barriers in accessing and using web information. Validity and reliability of the findings, were achieved through triangulation of instruments and peer checking. Quantitative data were analysed using IBM Statistical Package for Social Sciences (SPSS) version 20, to generate descriptive and inferential statistics such as frequencies, percentages, and the chi-square test. Qualitative data were transcribed and analysed thematically, to generate themes and sub-themes as part of the major findings of the study (Denzin and Lincoln, 2018). The study was carried out between May and August 2022.

## Results and Discussion of Findings

A total of 166 copies of the questionnaire were administered to fourth-year students and 118 responded, representing a response rate of 71%. According to Babbie (2020), a response rate of 60% is acceptable and is considered good for data analysis. Based on the benchmark above, the response rate attained in this study was considered adequate to continue with data analysis. Fifteen students were interviewed to obtain qualitative data, which was analysed thematically. The two datasets were then merged and quantitative results were presented, first followed by qualitative results in the form of narratives. Narratives from qualitative data were followed by a comment specifying how the qualitative results either confirm or negate the quantitative results.

### Demographic Profile

The results show that the majority of undergraduate students were male 61(52%) while 57(48%) undergraduate students were female. As regards the programme of study, the most of the students enrolled in a Bachelor of Business Administration and Accounting 29 (25%) while the least number of students were enrolled in Bachelor of Art Theology 7 (%) degree programme. The results are displayed in Table 1.

### Web Information Needs

**Table 1: Demographic Profile (n =118)**

Category	Frequency (f)	Percentage (%)
<b>Gender</b>		
Male	61	52
Female	57	48
<b>Programme of study</b>		
Bachelor of Business Administration and Accounting	29	25
Bachelor of Arts Education	21	21
Bachelor Science Agribusiness	17	14
Bachelor of Business Administration Marketing	14	12
Bachelor of Business Administration Management	14	12
Bachelor of Science Agriculture	12	10
Bachelor of Art Theology	7	6

The results presented in Table 2, show that the major web information need of undergraduate students was academic information 91(77%). The least information need was health information 3 (3%). According to gender, the results reveal that both male

students 61(100%) and female students 57(100%) searched the Web for information to meet their information needs.

However, results from the interviews revealed

**Table 2: Web Information Needs (N =118)**

Web Information Need	Gender				Total	
	Male		Female		f	%
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)		
Academic information	47	77	44	77	91	77
Personal development information	3	5	6	11	9	8
Leisure and entertainment	5	8	0	0	5	4
Just for knowledge on general issues	1	2	7	7	5	4
News and current affairs	4	7	2	2	5	4
Health information	1	2	4	4	3	3
<b>Total</b>	<b>61</b>	<b>100</b>	<b>57</b>	<b>100</b>		

that female students were hesitant to search the web for entertainment information, because it is addictive, thereby making them spend more time on some information, which they can get through social media groups. Results of the interview, further confirmed the results from the questionnaire that academic information is the major web information need of the students, followed by health information need. One of the respondents observed that:

“When I am searching the Web, it is to find academic information and I usually also search information on health like nowadays most information about Covid-19 I get it from the Internet” (Participant C).

The findings attest to the fact that students have academic tasks to accomplish, hence they engaged in web information seeking to accomplish those tasks. It has been established from the findings that students have web information needs that predominantly relate to their studies and current affairs of the country and the world at large. According to Wilson's (1996) Model of Information Behaviour, the environment (context) determines

their information needs (Wilson, 2016). Therefore, determining students' information needs within the context of their environment is an important step in addressing their information needs through the provision of relevant information sources. Therefore, MAU library personnel must understand the environment surrounding the students, as it is directly related to their information needs. The results are similar to the findings by Howlader and Islam (2019), Oluwaseye et al. (2017), Ncwane (2016), Chawinga and Zozie (2016) and Makondo et al. (2018) that undergraduate students' major web information needs, were assignments and examinations, health information, and job and career development information. Undergraduate students need web information to succeed in academic and social endeavours (Chawinga, 2016; Ifinedo, 2017).

### Web Information Sources

The results presented in Table 3 show that the major web information sources of undergraduate students, were scholarly journals, Google Scholar and scholarly databases and minor information sources, were personal blogs spots or Webpages 3 (3%) and YouTube 2 (2%).

**Table 3: Web Information Sources (N= 118)**

Web information source	Frequency ( <i>f</i> )	Percentage (%)
Scholarly Journals, Google Scholar, scholarly databases	51	43
Instructional sites like Dummies and How Stuff	29	25
Articles on online news sites like BBC, The Nation, Times 360	13	11
Google Books	9	8
Online Discussion forum	6	5
Wikipedia/online encyclopaedia	5	4
Personal Blog spots or Webpages	3	3
YouTube	2	2
<b>Total</b>	<b>118</b>	<b>100</b>

The results revealed that students used a variety of

web information sources to meet their web information needs with scholarly journals, Google Scholar, scholarly databases, instructional sites and articles on online news as the major sources. A chi-square test was computed to establish the significant difference between students' Web information needs and Web information sources. The chi-square test

results are presented in Table 4. The results show that students' web information needs were statistically significant at a 1% significant level ( $N=118$ ,  $df = 35$ ,  $X^2 = 101.470^a$ ,  $p = .000$ ). This implies that the web information needs of students were directly related to their information sources.

text academic documents with international standard

**Table 4: Chi-square Test on Information Needs and Information Source**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	101.470 <sup>a</sup>	35	.000
Likelihood Ratio	64.483	35	.002
Linear-by-Linear Association	1.719	1	.190
N of Valid Cases	118		

MAU undergraduate students' use of various scholarly academic web information sources could be attributed to user awareness campaigns facilitated by the library. According to Wilson's model, an individual can interact with different systems during the search for information such as online and other sources of informal information that include consulting colleagues on social networks, family members, teachers or a specialist in an area to exchange information (Wilson, 2016).

Students often mentioned the advantages of the web as being its ability to present a wide variety and diverse information. The findings are in agreement with those of a qualitative study by Okocha and Owolabi (2020) who focussed on the web information-seeking behaviour of undergraduate students in Kwara State Nigeria, which found that undergraduate students were using various scholarly journals and databases. Similar findings were also reported in a study done by Currie et al. (2010) at the University of Kansas in the USA, which established that the major web information sources of undergraduate students were eBooks, Google, Google Scholar, Yahoo, library databases and commercial academic databases.

The interview conducted with the students confirmed the findings obtained through the questionnaire. Students mostly mentioned scholarly journals as their main source of web information sources, because they were easier to use and cite as most of the time, they have complete bibliographic

details compared to other sources. A chi-square test to establish the significant difference between students' web information needs and their web information sources, revealed that the web information sources were related to the web information needs of students at MAU. This entails that students mostly access academic information through scholarly journals to address their academic information needs.

According to the Stress and Coping Theory highlighted in Wilson's (1996) Model of Information Behaviour, information needs make individuals seek information from similar sources to minimise stress or failure and the greater the stress the greater the motivation to seek information from sources that will guarantee satisfying expectations. Academic assignments are demanding, and students would want to do well at all costs. As such, they search for information from scholarly databases, with a great reputation which influences the type of sources used. Wilson's (1996) Model of Information Behaviour also posits that the environment of an information seeker influences the information needs and the particular sources to address those needs.

The findings of the interview revealed that students preferred scholarly articles on Google Scholar, because they found it easier to use and cite the articles for academic purposes such as writing research project proposals. This was attributed to the fact that journal articles in academic databases have complete bibliographic details, and options to download full-



citation styles (APA, MLA, and Chicago), reference manager's options (Endnote, Refworks, Bibtex), and links to reputable publisher pages such as Sage, Elsevier, Emerald and Springer. Similar findings were reported in the studies by Kumar and Gopal (2020), El-Maamiry (2017), Lo and Chu (2015), Dasgupta et al. (2017), Obasola and Agunbiabe (2016), Okocha and Owolabi (2020), and Isibika and Kavishe (2018), which found that students accessed information sources such as electronic databases (Google Scholar, Scopus and Ebscohost), journal articles, digital libraries, open access repositories,

Google, Yahoo, Wikipedia, Facebook, librarians and friends, for writing assignments, preparing for class discussions, and writing final-year research papers.

#### 5.4 Web Information Searching Strategies

The results presented in Table 5, show that most of the students 51 (43%) used keywords and 35 (30%) students use full search terms. The least information searching strategy, was combining keywords with Boolean operators 4 (3%). These results show that the majority of students use simple search strategies. However, contrasting findings were reported in the

**Table 5: Web Information Searching Strategies (N =118)**

Web information searching strategy	Frequency ( <i>f</i> )	Percentage (%)
Using Keywords to Search	51	43
Typing the full search terms in the search box	35	30
Typing in a phrase of the search	23	20
Using truncation Search	5	4
Combining Keywords with Boolean operators	4	3

The results from interviews confirmed the quantitative results that students preferred simple search techniques, because they gave them quick results and more information. The interviews further revealed that the library training mainly focused on simple search techniques and information resources available in the library. One respondent explained that:

“Even though I do not know advanced search techniques, I type a full sentence in the search box because I want information that is exactly to the question or task I have” [Participant B]

The results imply that students practically follow only the easiest possible strategies for getting information to satisfy their needs. The reason for students' preference for simple search strategies could be attributed to a lack of training on advanced information search strategies during library orientations. Wilson's (1996) Model of Information Behaviour, segments information searching into passive attention, passive search, active search and

ongoing search. It could therefore be concluded that undergraduate students at MAU follow both passive and active information-seeking behaviour. They can change the search strategies which, according to Wilson's (1996) Model of Information Behaviour, is regarded as active search. Students also change the information sources as they could consult classmates and lecturers and this behaviour is regarded as a passive search.

The findings are similar to those of a mixed methods study by Tlakula and Fombad (2017) in South Africa, which revealed that 90% of undergraduate students do not use advanced search strategies, which was attributed to a lack of information literacy training among the students. This phenomenon is supported by Ankrah and Atuase (2018), that robust online information literacy training is important for students to successfully search for information on the web. The importance of information literacy training was emphasised by Bushman et al. (2021) and Tlakula and Fombad (2017) that information literacy skills courses need to be embedded in the university curriculum based on the needs of students in the use of the web.

studies by Nadzir and Puteh (2017), Kadli and Hanchinal (2015) and Isibika and Kavishe (2018) in Malaysia, India and Tanzania respectively that undergraduate students used both basic search strategies and advanced or systematic search strategy in searching for web information. This could be attributed to continuous exposure to information literacy training among senior-level students compared to junior-level students who use simple search strategies due to a lack of training in

information literacy (Isibika and Kavishe, 2018).

### Barriers to Accessing and Using Information and their Solutions

The results presented in Table 6 revealed that the major barrier faced by students in accessing information was confusion, due to too much information on the web 53 (45%). The least barrier was a lack of information-searching skills 7(6%).

Interview findings from students established

**Table 6. Barriers to Accessing and using information (n= 118)**

Barriers to accessing and using information	Frequency (f)	Percentage (%)
Confusion due to too much information on the Web	53	45
Inadequate computers in the library and computer lab	21	18
Lack of time	17	14
Unfriendliness and unwillingness of library staff to assist	11	9
Lack of awareness of students of the existence of reliable and authentic +Web information on the Web	9	8
Lack of information-searching skills	7	6
<b>Total</b>	<b>118</b>	<b>100</b>

These results show that information overload was one of the barriers that respondents experienced in accessing information and using the information on the web. Results obtained from the interview confirmed the findings obtained through questionnaire. The following is a response from one of the students:

“I don’t know how to separate academic information from non-academic. There is just more information out there:  
[Participant G]

Information overload can be attributed to the fact that search engines such as Google rely on students, and search huge volumes of information at apparently impressive speed, but can retrieve duplicate, irrelevant and non-scholarly information as they often index information in the public domain.

According to Wilson’s (1996) Model of Information Behaviour, the problem of information overload among students could arise from the inability

to evaluate information, due to cognitive and personal issues (psychological and emotional issues), which impact their competence in the search and use of information. The findings corroborate the findings of a qualitative study by Makondo et al. (2018) that found that undergraduates are easily confused with the abundant information online or on the web.

Insufficient facilities, especially computers, in the library and computer laboratories, were cited as a barrier to students’ web information seeking. Registered students at MAU Lake View Campus access the web mainly, through university facilities, such as the library and computer laboratories, which are inadequate, with slow Internet speeds. The expanding student population is straining the available resources and the effective use of the web is not achieved, because its use presupposes the existence and access to appropriate ICT infrastructure. Similar findings were reported in studies by Thindwa et al. (2019) and Chipeta et al. (2018), that most undergraduate students faced the challenge of a good ICT infrastructure.

that unfriendliness and unwillingness of intermediaries in the library, and computer laboratories, especially library assistants, were cited as barriers to students' accessing and using the information on the Web. One respondent stated:

“If library assistants were friendly and willing to assist students in Web information searching, many students would approach them” [Participant C].

The unfriendliness and unwillingness of library assistants at times could mean that they have created barriers in responding to patrons' queries in emerging and advanced trends in web information seeking due to knowledge gaps in web services and professionalism. Most library assistants at MAU Lake View Campus are holders of certificates in library and information science, and as such still have knowledge gaps in information services and professionalism. In line with Wilson's (1996) Model of Information Behaviour, role-related or interpersonal problems originate from interpersonal relationships between students and the library staff during the information-seeking process. Unlike machines, human beings are usually unpredictable and inconsistent in their attitude and behaviour resulting in conflicts and inconsistencies in the delivery of services to clients (Wilson, 2016). Thus, to deliver the best service, human aspects such as interpersonal relationships, should be addressed to improve access to and use of information among undergraduate students. The results are similar to those of Thindwa et al. (2019), Chipeta et al. (2018), Ncwane (2016), and Okocha and Owolabi (2020), which revealed several barriers faced by students in accessing and using web information, such as information overload, inadequate computers in the library, power outages, lack of information seeking skills, lack of awareness, user unfriendliness of laboratory or library assistants and insufficiency of web amenities. The barriers of lack of information seeking skills and lack of awareness of web information could be attributed to a lack of exposure to ICTs early in life as most students in Africa own a computer at the university level (Isibika and Kavishe, 2018).

Some students were not aware of subject-

specific databases, such as Scopus, where they could get scholarly and reliable information with all bibliographic details available, and even reference citations provided. In line with Wilson's (1996) Model of Information Behaviour, a lack of awareness of reliable and authentic web information could be classified as a personal barrier as it is related to the student's inability to deal with language issues, mainly English, and its technicalities, which is the dominant language in most scientific articles and international academic databases. In addition, the barrier could also be worsened by insufficient marketing and awareness campaigns by the MAU library.

## Conclusion and Recommendations

The study has demonstrated that web information is critical among undergraduate students at MAU for academic, personal, and health purposes. The library at MAU should support undergraduate students with access to web information resources through subscriptions to e-resources. It is also important that the library offers training sessions to students in information literacy for effective access and use of the information resources. The skills acquired through information literacy training, can assist the students in using advanced information search strategies to acquire the relevant information sources and effectively use them in their academic, personal and health needs.

It is recommended that the library management at MAU should conduct tailor-made information literacy training sessions, targeting students to raise awareness of the existence of web information sources. Students would be able to judge the quality of information on the web and they would eventually overcome information overload, and improve access to the web and use information ethically. Similarly, MAU, Lake View Campus' top management needs to encourage students to use mobile phones and tablets to access web information sources. This will greatly reduce over-dependence on the few computers available in the library and computer laboratories. Lastly, MAU Lake View Campus's top management and leadership should consider sources for funds to acquire additional computers and pay for increased Internet bandwidth to enhance access and use of web information by students.

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