KOME – An International Journal of Pure Communication Inquiry Vol. 12. No. 1. (2024) • 19–34.
DOI: 10.17646/KOME.of.8

Examining Trends and Effectiveness of Academic Institutions' Website Contents

Amare Tesfie Birhan*

* English Language Education, Bahir Dar University (Ethiopia), e-mail: amaretesfie@gmail.com

This research aimed to examine the trends in and effectiveness of website content on the websites of selected Ethiopian academic institutions. The data was gathered through content analysis and questionnaire and analysed through descriptive statistics (mean), One-Way ANOVA, and narration. The results confirmed that academic and research content were the strongest content categories compared to the other issues covered on the selected websites; and that program and office related content were the weakest (μ = 0.125). According to the data, Addis Ababa, Hawassa, Bahir Dar and Harmaya universities respectively had better content management trends than the other universities. The data also demonstrated that there were significant statistical differences among the website content offered by different universities. Poor navigation systems, inadequate content, empty menus and sub-menus, inconsistent branding, spelling and grammatical errors, as well as untargeted content were some of the observed limitations of the selected website content. Moreover, the data confirmed that the majority of universities updated their websites infrequently. Thus, the study recommends that universities manage their websites well in order to enhance their visibility and reputation.

Keywords: effectiveness, communication, institutional promotion, trend, website

Introduction

The advancement of Information Communication and Technology (ICT) has contributed to shifting paradigms in management style, communication, and organisational working culture, and has had an impact on the way we live, act, perceive, and observe the world. Various researchers (e.g. Peattie & Peters, 1997) mention that ICT has influenced organisations and their communication approaches, and contributed to information being disseminated to target groups in the easiest and most rapid ways. Mierzecka and

Suminas (2018) stated that the digital revolution has influenced the flow of information, making it a major cause of change in our lives (Adigwe, 2012).

Higher education institutions are among the organisations that have been impacted by the advancement of ICT. These institutions have been using various platforms, which include repository systems, journals, and magazines to disseminate research activities, facilitate teaching and learning processes, support community engagement activities, connect with their target audiences, and strengthen their partnerships. Currently, blogs, social media networks (Facebook, Telegram, Twitter, LinkedIn, Instagram, TikTok, and YouTube), websites, and professional networks are commonly used by higher education institutions to reach their target audiences. These platforms have also been used to support teaching and learning processes and to disseminate research projects (Delello et al., 2015; Csordás et al., 2014).

Websites are one of the technological platforms commonly used by experts and organisations to communicate their ideas, reach their target audiences, and attract partners, stakeholders, and other customers. They form the virtual face of institutes (Leite et al., 2016) and promote their identities and achievements (Birol & Hasan, 2014; Campoverde-Molina et al., 2021). It is also crucial to make informed decisions and to support and communicate the institute's missions, visions, and scholarship opportunities. Partners use websites to decide on partnership opportunities (Leite et al., 2016). Programs and faculties create websites to promote specific activities, initiatives, research projects, program educational objectives, student outcomes, services, and various types of engagements.

Websites are also used to earn the trust of partners and attract international and national students. It is understood that research based commercialization and partnership depend on the efficient flow of information. Accordingly, websites are labelled as the primary channel that higher education institutions have used to communicate with their audiences.

Currently, various kinds of websites are being designed and deployed by individuals and both governmental and non-governmental institutions, which use a variety of layouts, based on their interests, objectives, and target audiences. Some websites incorporate registrations, course management systems, and department selection information to make the processes easy and flexible. Likewise, other organisations use their website to enhance their credibility and help establish long-term relationships with their customers. This helps present a positive image and maintain a good reputation (Derani & Naidu, 2016), and is crucial in image-building and branding the institute's specific activities. According to Leite, Gonçalves, Teixeira and Rocha (2016), websites are important in understanding the needs of users and providing relevant information.

It should be noted, however, that having a website is not an end goal; institutions should attain their designed objectives, connect with their target users, and share their vision, mission, and values. To achieve the above-mentioned goals, website content has to be managed properly. Studies have indicated that there are a variety of contributors to an effective website, including the type of software that is used, the content, and its layout. According to Snell (2023), having high quality content, a clear purpose, simple and attractive design, easy navigation, fast loading, mobile-ready, and fresh content, and

user-friendliness are some of the factors that determine a website's success or otherwise. Garett, Chiu, Zhang and Young (2016), on the other hand, indicated that navigation systems, graphical representations, content utility, purpose, simplicity, and readability determine the effectiveness of website content.

Among the above mentioned determinants, content is the major issue with a crucial role in the effectiveness of a website. In their research, Flavian, Gurrea and Orús (2009) stated that content should be clear, timely, and accurate, satisfying the information needs of customers. Moreover, the effectiveness of a website is also determined by visual consistency and language. Researchers, Merwe and Bekker (2003), Das and Turkoglu (2009) added that website content effectiveness is determined by usability, content quality, and navigation system (number of clicks). Besides this, Musante, Bojanic and Zhang (2009) also stressed that content includes all the features presented on the website. These proved that content uploaded on websites should be well-written and strategically managed. Content can also be deemed effective when it meets the information needs and expectations of the target group it is aimed at (Ford, 2011).

García, Carrillo-Durán and Tato-Jimenez (2017) have suggested that online communications should be handled strategically to reach the target partners and stakeholders. During the internationalisation period, universities have to handle their websites properly since they enhance visibility and reputation. Consequently, the aim of this research was to examine the trends of content coverage on the websites of Ethiopian public higher education institutions. It also focused on investigating the effectiveness of the content presented on various public university websites.

Website content management

Content refers to anything that is uploaded to a website or other communication platforms. According to Barker (2016), "content is information produced through an editorial process and ultimately intended for human consumption via publication" (Barker, 2016, p. 35). It is modelled, authored, edited, reviewed, and approved by experts. Quality content helps to attract and retain customers. Elsayed (2017) also stated that content quality is more important than quantity. Therefore, it is suggested that content should be managed through a software package or manually. Public higher education partners strengthen their engagement and support based on information and activities that are disseminated through websites and other social media platforms.

Thus, it is believed that content needs to be planned, drafted, and edited, and particular attention has to be given to the corporate content that is designed and transferred (Taiminen et al., 2015). Thelwall (2000) also asserted that poorly managed website content gravely limits the usefulness of the website in question.

As stated above, various organisations create websites to promote their services and products. In Ethiopia, there are more than 50 public higher education institutions that have designed websites with the assumption they will reach their target groups; and recently, various public universities have been working towards internalisation visibility and program accreditation. It is believed that websites have a major role in disclosing

the institutes' activities, program-level facilities, program educational objectives, and other related information.

Through the differentiation principle, universities are grouped into research, applied, comprehensive, technical and vocational, and technology universities. In their strategic document (2020) the Federal Democratic Republic of Ethiopia's Ministry of Education, formerly known as the Ministry of Science and Higher Education (MOSHE), stated that the differentiation of public higher education institutions was done to meet the growing and diversified needs, to minimise the duplication of efforts, and to enhance innovation and technological development through the creation of specialised centers of excellence. Accordingly, these differentiations have encouraged public universities to reach partners and other stakeholders more than previously, and allowed them to attract international and domestic students to enrol. Khwaja et al. (2020) indicated that websites impact applicants and fellowship programs. Hence, websites have an indispensable role in reaching their target groups and communicating institutional activities.

However, it was observed that most universities have not managed their website content well; the absence of targeted, reliable, and purposeful content has contributed to the shift of readers' attention to various social media platforms (Facebook, LinkedIn, Telegram, X [formerly Twitter], etc.), which create bad experiences for users as a result of various factors. Firstly, these platforms did not provide adequate information. Secondly, the content that was presented on social media was not trustworthy, nor did it fulfil various standards for high quality content. Most higher education institutions have used these social media platforms to make various announcements, and to share news and short articles.

Consequently, the researcher argues that these universities should carefully design their website content according to their mission, vision, and target groups. García, Carrillo-Durán and Tato-Jimenez (2017) also mentioned that the simple existence of a website does not guarantee that it will achieve any of the objectives. Difficulties in obtaining information about programs deter potential partners and stakeholders (Cheng et al., 2023). In Ethiopia, while the conceptions of the importance of websites have changed, gaps can still be observed; the designed content has not satisfied the information needs of the intended target groups. Jeong, Oh and Gregoire (2003) stated that information satisfaction was a major focus of attention for consumers, hence the shift in their attention to the social media platforms.

Accordingly, investigating the content that is embedded in websites and its effectiveness seemed crucial; and consequently, this research was aimed at examining trends in Ethiopian public higher education website content coverage. The research also examined the effectiveness of that content on the websites. Although recently, various researchers (e.g. Mueller, 2015; Elsayed, 2017; Kent et al., 2003; Gomez & Chalmeta, 2011) have investigated the effectiveness of website content; they did not observe the trends in coverage and the effectiveness of public university website content. This research, therefore, was conducted to add some ideas to the limited literature on content coverage trends and the effectiveness of Ethiopian public higher education website content.

With that objective in mind, this research attempted to answer the following research questions.

- Which content frequently occurs on Ethiopian public higher education websites?
- Was the content coverage on the universities' websites effective?
- Is there any significant statistical difference among the quality of the content on the websites of universities?

Methodology

Research design

The main aim of this research was to investigate the trends in content of public higher education institution websites. Additionally, the research examined the effectiveness of the content of those websites. Accordingly, cross-sectional design was used for the research in which data were gathered within a set period. Cross-sectional research design is used to collect current attitudes, opinions, and beliefs (Creswell, 2012), and is thought to describe the existence of certain conditions. Thus data were collected from university websites based on the information available at the time of the data collection.

Data source and instrument

Data source

As indicated above, university websites were the main sources for this study. Website contents were collected from 16 Ethiopian universities, and they were grouped into four categories based on their year of foundation: first generation, second generation, third generation, and fourth generation; as in the classification outlined by Manaze and Ford (2021), with first-generation universities having been established before 2007, second-generation universities in 2007, third-generation universities in 2011, and fourth-generation universities in 2016.

For each generation, four universities were selected through a random sampling technique. In addition, users (in this research, students) who were selected through the availability sampling technique were also used as a source of data for the study. Accordingly, 24 students (18 male and 6 female) were selected to review the sampled university websites and to reflect their views based on certain criteria (see the appendix section).

These students were taking part in various education programs while this study was being conducted. Participants were also oriented regarding the purpose of and procedures for reviewing the selected websites, and of the criteria used. The review was performed in the 2022–2023 academic years.

Instrument

Questionnaire and content analysis were used as data-gathering instruments. The questionnaire was used to gather data regarding the effectiveness of university website content. This instrument was prepared through a five-point Likert scale ranging from 5 to 1 (5 strongly agree, 4 agree, 3 slightly agree, 2 disagree, 1 strongly disagree). This instrument focused on the navigation system, adequacy of content, branding consistency, availability of informative content, date contents are updated, presence of particular content, and so on.

The items were adapted from researchers such as Veríssimo et al. (2022) and Leite, Gonçalves, Teixeira and Rocha (2016). As stated above, the researcher gave a brief orientation to participants concerning the websites and the criteria they would use to evaluate the selected websites. In this research, the effectiveness of the websites was determined by the presence of adequate, precise, objective, recent, error-free, and downloadable content. Whether the websites included an easy navigation system and easily accessible information was also taken into account.

The second instrument was content analysis, which was used to examine the trends of website content coverage at Ethiopian public universities. Major trends were taken and coded into 1 or 0 in which 1 was given if a website included contents in the menu and sub-menus and 0 if the menus were empty (there was no content uploaded). Besides this, a code sheet was prepared to categorise items of content as adequate, consistent, and various other qualities.

Data analysis

Quantitative data were analysed using descriptive statistics (mean) and One-Way ANOVA through IBM SPSS version 21. The mean was employed to investigate the significant trends in the website content and the frequency with which they occurred. First, the major website content categories were identified according to their occurrence. Second, a comparison of the selected content was made based on the generation of the university. The second data analysis technique was One-Way ANOVA. This test was used to analyse the effectiveness of Ethiopian university content. The qualitative data was analysed qualitatively. The qualitative data were familiarised, coded, thematized, and analysed through narration.

Results and discussion

Results

In this section, the results that were found through the questionnaire and content analyses are presented. The results are addressed based on the themes of major trends, and effectiveness.

Major trends in Ethiopian university website content

The principle purpose of this research was to examine the major trends in website content. Table 1 indicates that university websites showed some elements of commonality, despite the inadequacy of the content coverage.

As can be seen in the table, *about us* (μ = 1) was the first content to be covered in the majority of university websites, which indicated that universities communicated their vision, mission, and values through their website. Similarly, *research* content was the other major trend (μ = 1) to be commonly implemented by universities. Universities used this menu to promote their thematic areas, ongoing projects, publications, and technology-transferred issues. Other content areas that occurred frequently were *news* (μ =.937) and *academics* (μ =.937). Based on these results, it can be inferred that universities gave much attention to communication activities, including events that were staged. The data also attested to the use of websites by universities to promote their extant colleges, institutes, and faculties.

Table 1:
Major trends of content on university websites

Content	Mean (μ)
News	**.937**
Announcements	.75
About us	**1**
Academics	**0.937**
Program	0.125
Admission	0.312
Research	**1**
Service	0.687
Partnership	0.4
Library	0.467
Offices	0.125
Administration	0.466
Students	0.1875

Source: Compiled by the author.

Moreover, the table confirms that the majority of the universities used their website for *announcements* (μ = 75) of various events and *programs*. The other trend that occurred frequently concerned *service* related content (μ = 0.687). This menu is used to help promote services (ICT, legal aid, registrar, etc.) that are offered by the universities. It can also be seen that universities had the lowest coverage of content in relation to *partnership* (μ = 0.4) and *admission* (μ = 0.312). This demonstrated that university websites paid less

attention to promoting partnerships and admission criteria to enhance their reputation and attract customers.

Furthermore, contents such as *programs* (μ = 0.125), *offices* (μ = 0.125), and *students* (μ = 0.1875) had low mean values respectively. This showed that universities did not promote student facilities, support, and activities. Although universities are expected to promote program-related content, the websites pay less attention to promoting the specific educational objectives, expected outcomes, internship and career opportunities of programs.

The researcher also computed descriptive statistics to observe the trends in content among the universities of particular generations. Table 2 indicated that first-generation universities had better trends in *news* (μ = 1), *announcements* (μ = 1), *about us* (μ = 1), and *academic issues* (μ = 1); whereas, the second-generation universities had trends in *news* (μ = 1), *announcements* (μ = 0.5), the institute's *mission, vision,* and *values*: *about us* (μ = 1), and *academics* (μ = 0.75).

Table 2:
Trends in university website content by generation

Contents	First-generation universities M	Second-generation universities M	Third-generation universities μ	Fourth-generation universities μ
News	1	1	0.75	1
Announcement	1	0.5	0.75	0.75
About us	1	1	1	1
Academics	1	0.75	1	1
Program	0.25	–	–	–
Admission	0.5	0.25	0.25	0.25
Research	1	1	1	1
Service	0.75	0.75	0.75	0.5
Partnership	0.66	0.25	0.25	0.5
Library	1	0.66	–	0.25
Offices	–	0.25	–	0.25
Administration	0.25	0.5	0.33	0.75
Students	0.05	–	0.25	–
Mean	0.705	0.659	0.52	0.604

Source: Compiled by the author.

Regarding the third-generation universities, the table demonstrates that *news content* (μ = 1), *announcement* (μ = 0.5), *about us* (μ = 1), and *academics* (μ = 0.75) were the common trends. Concerning fourth-generation universities *news* (μ = 1), *announcement* (μ = 0.75), *about us* (μ = 1), and *academics* (μ = 1) content occurred frequently.

In these four content categories, first-generation universities had better trends than other-generation universities.

Another content category found on the universities' websites was *program* related content. However, as Table 2 indicates, this was only a trend at first-generation universities (μ = 0.25). Likewise, concerning *admission,* first-generation universities had a better trend (μ = 0.5) than second, third, and fourth-generation universities (μ = 0.25). The table shows that universities had similar trends in research content management (μ = 1). The other focus was content related to *services.* The result showed that apart from fourth generation universities (μ = 0.5), all other generations (first, second, and third) had (μ = 0.75), indicating that their coverage was similar for *service*-related contents.

Regarding *partnership,* first-generation universities (μ = 0.66) and fourth-generation universities (μ = 0.5) respectively had better content coverage trends. However, second-generation and third-generation universities had the lowest (μ = 0.25) partnership content coverage. These showed that while universities had experience (related to foundation history), they did not give attention to content related to *partnership.* Concerning libraries, first-generation universities had a stronger trend (μ = 1) than other-generation universities. Likewise, second-generation universities had (μ = 0.66) trends that were better than fourth and third-generation universities. However, third-generation universities did not have any trend regarding *library*-related content.

With regard to promoting the *services* offered by universities, with the exception of second (μ = 0.25) and fourth generation (μ = 0.25) universities, the others did not show any trend. Contents related to *administration,* fourth generation universities had a more marked trend (μ = 0.75) than second-generation (μ = 0.5), third-generation (μ = 0.33), and first-generation (μ = 0.25) universities.

Effectiveness of university website content

The other objective of this research was to examine the effectiveness of university website content. As indicated in the literature, currency, navigation system, consistent branding, language, adequacy of contents and so on, contribute to the effectiveness of the website content.

Table 3 revealed that Addis Ababa had mean values of (μ = 4.54) which proved that it managed the contents more effectively than other first-generation universities. Next, Hawassa (μ = 4.22) and Bahir Dar (μ = 4.19) universities had the highest mean values respectively. Based on the descriptive statistics results, it is clear that selected first-generation universities managed more effectively than the universities of other generations. The One-Way ANOVA result indicated that (F (3, 15.63) = 5.46, p =.002) there was a significant statistical difference among websites in content management.

Table 3:
One-Way ANOVA results of website content management

Items	Universities	Mean	Df	between groups	Within the groups	f	Sig.
First-generation universities	Bahir Dar	4.19	3	15.63	80.1	5.46	.002
	Addis Ababa	4.54					
	Hawassa	4.22					
	Harmaya	4.18					
Second-generation universities	Samara	2.97	3	5.19	73.5	2.25	.088
	Wollo	3.59					
	Jigjiga	3.00					
	Dire Dawa	3.00					
Third-generation universities	Wolkite	1.81	3	16.9	73.1	6.48	.001
	Arsi	2.91					
	Assosa	2.60					
	Debre Tabour	2.35					
Fourth-generation universities	Werabe	2.72	3	1.67	82.40	.568	.638
	Injibara	2.79					
	Debark	2.42					
	Bonga	2.74					

Source: Compiled by the author.

The content analysis also proved that though these universities had good content management trends, several gaps were found in the content on their websites. For instance, the following statement was found from one of the above mentioned universities, published in the latest news section: "*It was a big moment of togetherness finding big names of xxx at a wedding ceremony organized by one of their colleague. ....Some of them came from abroad and some from distant places for the event. Almost all of them have served xxxx for over 25 years diligently in upbringing qualified graduates at the former xxxx College and the latter xxx*." In addition to the grammatical issues, it was also not significant enough to be put as a headline or as news.

Moreover, there were various outdated items of news that had been posted on the front page of the website in 2017, 2018, and 2019. Additionally, among the other failings observed were outdated content, an empty menu, inconsistent branding; repetitive, inadequate, and inappropriate content, and awkward navigation systems.

Concerning second-generation universities, the data showed that Wollo University ($\mu = 3.59$) had the best content management trends among the selected universities. Jigjiga and Dire Dawa universities had similar mean values ($\mu = 3.00$). In this category, Samara University showed the lowest *content management* mean ($\mu = 2.97$). Based on these results, apart from Samara University, the other universities had moderate content management trends. However, the One-Way ANOVA results also showed that (F (3, 1.67), = 2.25, p =.088 there was no significant statistical difference between the universities.

The content analysis data also demonstrated that these university websites had various content coverage problems. The results confirmed that the selected universities had difficult navigation systems, empty menus and sub-menus, inappropriate (unfocused) messages, spelling and grammatical errors, unfocused and unarticulated content. In addition, it was also observed that the hyperlinks given in the websites were not working properly. The following excerpts are taken from the websites. Look at the following message which was taken from the university website.

Excerpt 1: *Sponcership* [sic] *application*

Excerpt 2: "*It is my gratitude to deliver my message in such historical and unforgettable graduation ceremony, as of which it is a special occasion when you see a sense of accomplishment mixed with no small measure of relief too...*" [sic]

This excerpt was labelled as a message from the academic vice president. However, they were not edited well and lacked proofreading.

Regarding third-generation universities, as can be seen in Table 3, Arsi University had ($\mu = 2.91$) which was the highest of all the universities. Next, Assosa University had ($\mu = 2.60$) which was the second highest mean. From this generation, Wolkite University and Debre Tabour Universities had the lowest mean values ($\mu = 1.81$) and ($\mu = 2.35$) respectively. It is thus evident that these universities had poor content management trends. It can be also seen that there was a great difference among the second-generation universities. The One-Way ANOVA results also showed (F (3, 16.9), = 6.48, p =.001 which confirmed that there was a significant statistical difference among these universities.

Concerning the content analysis data, the results revealed that the universities had very similar content management gaps, for example, inconsistent branding and a lack of adequate information about the educational objectives and outcomes of programs were observed on the Arsi University website. Besides that, admission and graduation criteria were not mentioned and some of the main menus (e.g. students) had no content. At Wolkite University, most of the main menus had no content; there were poor navigation systems and inadequate content. Most of the content was outdated, and the typeface used was inconsistent. The Debre Tabour University website had the same limitations. In general, these university websites were not effective in attracting users.

Related to the fourth-generation university websites, the table shows that three of them, Injibara ($\mu = 2.79$), Bonga ($\mu = 2.74$), and Werabie ($\mu = 2.72$) had similar mean values. However, Debark University showed the lowest mean value ($\mu = 2.42$) which demonstrates that the content was not effectively managed. The descriptive statistics also indicate that fourth-generation universities did not manage their websites well. The One-Way ANOVA results also indicated that (F (3, 82.40), =.568, p =.638 there were no significant statistical differences among the universities.

The content analysis also affirmed that university website content was inadequate, outdated, and irrelevant, and that various menus and sub-menus did not have any content. For instance, the Bonga University website had an inconsistent typeface, inadequate program-related content, an empty menu and submenus, and repetition of

content. Likewise, untargeted and inadequate content, empty menus, and inconsistent branding were some of the gaps that were identified on the Werabe University website,

Whereas, the Injibara University website had inadequate, outdated, and mixed-up (*announcement* and news) contents, and lack of *searching box (option)* on the front page was the other identified gaps. The other website was Debark University website. This website could be accessed easily, but it had inadequate and outdated content like other university websites Most of the menus had no content. Based on the content analysis and questionnaire results, these universities did not manage their website contents effectively.

Furthermore, the researcher also ran the same test (One-Way ANOVA) to observe if there was any significant statistical difference between universities of different generations. Accordingly, Table 4 indicates that first-generation universities had a better mean value ($\mu = 4.089$). Second, universities that are found in the second generation had the next highest mean value (= 3.14). The fourth- and third-generation universities had ($\mu = 2.64$) and ($\mu = 2.35$) had the lowest mean values respectively.

Table 4:
One-Way ANOVA results for website content across different generations

Items	N	Mean	Df	Between groups	Within group	F	Sig.
First-generation universities	22	4.089	3	34.221	38.205	31.260	.000
Second-generation universities	22	3.14					
Third-generation universities	22	2.35					
Fourth-generation universities	22	2.64					

Source: Compiled by the author.

Based on the table, it is evident that first-generation universities managed their content more effectively than the others. Although the third generation had better foundation years and experience in teaching, research, and community service engagement, they managed content ineffectively. The One-Way ANOVA result also proved that there was a significant statistical difference (F (3, 38.205), = .31.260, p = .000) among websites of the different generations of universities.

Discussion

The aim of this research was to examine the trends in the content coverage and effectiveness of Ethiopian public higher education institution websites. To achieve these objectives, data were gathered through a questionnaire and content analysis. Accordingly, the data confirmed that websites were covered by twelve (12) major content categories. Among these content items, those related to *mission, vision, values* (about us) and *research* were the most common trends on the public university websites. The other contents which had the highest mean values were *news* and *academics*. Based on these,

it can be inferred that universities commonly promoted their institutions and academics (colleges, faculty, institutes, and schools) and gave coverage to new events.

In addition, only a few universities mentioned admission policies and criteria, and content related to partnerships and libraries were also below average. The data also revealed that universities rarely communicated detailed program objectives, outcomes, facilities, and offices. Besides this, the selected websites did not have an adequate trend in promoting student-related issues (clubs, extracurricular engagements, facilities, etc.). A study conducted by an institution called Hanover Research (2014) supported this finding and mentioned that content related to students was less effective. The findings of this research were also consistent with other research studies. For instance, Ford (2011) reported that among college websites included in that study, six websites had no navigation bars. The researcher also added that the majority of the websites presented general academic information. Manzoor et al. (2012) also reported that students were unable to access various items of information.

The other focus of this research was on comparing the content coverage trends among universities of different generations. As shown in Table 2, first-generation universities had better content coverage than other universities. With the exception of two categories of content (*administration*, *students*), universities which are found in this generation had better content coverage. The data also showed that second- and fourth-generation universities had very similar content coverage trends. However, the third-generation universities had the lowest content coverage trends. These findings were consistent with Katirci's (2016), who mentioned that websites belonging to different universities had different content coverage trends. Nevertheless, this result was inconsistent with Ertuğrul and Özcil's (2018) study in which they concluded that there was no differentiation between the universities.

Another aim of this research was to examine the effectiveness of website content. The mean values of third and fourth-generation universities proved that there was a lack of trends in controlling and managing website content. Nevertheless, universities that are found in the first- and second-generation university categories had relatively better website content management trends. The data also confirmed that there were significant statistical differences among universities belonging to the second- and third-generation universities. The findings revealed that inadequacy and outdated content, empty menu and sub-menus, unfocused content, spelling and grammar mistakes, and inconsistent branding were some of the gaps that were identified on the selected websites. In conjunction with this finding, university websites had discrepancies in their level of effectiveness (Manzoor et al., 2012). In a similar manner, other research (e.g. Katirci, 2016; Hasan & Abuelrub, 2013) studies also confirmed that university websites had comparable limitations.

Finally, this research had the following implications. First, this study showed that universities paid less attention to contents related to students, admission, and partnership. Consequently, it is recommended that higher education institutions pay attention to content that helps to attract national and international students. Second, there was an observable difference among website content at the various universities. Thus, it is suggested that universities should incorporate content that gives information

about the given university's research, community engagement, technology transfer, and teaching-learning practices. The research also indicated a number of gaps in the universities' websites. This research therefore recommends that special attention should be paid to content, layout, and navigation systems because these contribute to the lack of visibility for universities.

Although various attempts were made to answer the research questions, the study had the following limitations. The first limitation of this study was that the sample size was small–the research was self-funded, and it was difficult to include additional students who enrolled at the selected universities. The other limitation was that this study did not consider website designers and other computer science experts. The nature of the website for which it is designed affects the effectiveness of a particular website's content. The researcher therefore recommends that other researchers consider the above limitations when conducting further research.

References

Adigwe, I. (2012). The Impact of Information and Communication Technology on News Processing, Reporting, and Dissemination on Broadcast Stations in Lagos, Nigeria. *Library Philosophy and Practice (e-journal),* 861. Online: https://digitalcommons.unl.edu/libphilprac/861

Barker, D. (2016). *Web Content Management: Systems, Features and Best Practices.* Sebastopol: O' Reilly Media, Inc.

Birol, B., & Hasan, G. (2014). The Using of the Websites of the Universities for Universities for Prospective Students for the Purpose of Institutional Promotion. In *Proceedings of the International Social Sciences Congress,* Hopa, Turkey, October 2014, 15–17.

Campoverde-Molina, M., Luján-Mora, S., & Valverde, L. (2021). Accessibility of University Websites Worldwide: A Systematic Literature Review. *Universal Access in the Information Society,* 22, 133–168. Online: https://doi.org/10.1007/s10209-021-00825-z

Cheng, B., Kim, A., Zhu, I., & Mirza, R. (2023). Characterizing the Accessibility and Content of Surgical and Medical Retina Fellowship Program Websites. *Journal of Vitreo Retinal Diseases,* 7(1), 43–48. Online: https://doi.org/10.1177/24741264221120138

Creswell. J. (2012). *Educational Research: Planning, Conducting and Evaluating Quantitative and Qualitative Research.* Boston, MA: Pearson.

Csordás, T., Markos-Kujbus, É. & Gáti, M. (2014). The Attributes of Social Media as a Strategic Marketing Communication Tool. *Journalism and Mass Communication,* 4(1), 48–71.

Das, R. & Turkoglu, I. (2009). Creating Meaningful Data from Weblogs for Improving the Impressiveness of a Website by Using the Path Analysis Method. *Expert Systems with Applications,* 36(2), 6635–6644. Online: https://doi.org/10.1016/j.eswa.2008.08.067

Delello, J., McWhorter, R. & Camp, K. (2015). Using Social Media as a Tool for Learning: A Multi-Disciplinary Study. *International Journal on E-Learning,* 14(2), 163–180.

Derani, N., & Naidu, P. (2016). The Impact of Utilizing Social Media as a Communication Platform during a Crisis within the Oil Industry. *Procedia Economics and Finance,* 35(4), 650–658. Online: https://doi.org/10.1016/S2212-5671(16)00080-0

Elsayed, A. (2017). Web Content Strategy in Higher Education Institutions: The Case of King Abdulaziz University. *Information Development,* 33(5), 479–494. Online: https://doi.org/10.1177/0266666916671387

Ertuğrul, İ. & Özçil, A. (2018). The Content Analysis of the Internet Pages of the University's Faculty of Economics and Administrative Sciences. *Journal of Internet Applications and Management,* 9(1), 58–74. Online: https://doi.org/10.34231/iuyd.406125

Flavian, C., Gurrea, R. & Orús, C. (2009). Web Design: A Key Factor for the Website's Success. *Journal of Systems and Information Technology,* 11(2), 168–184. Online: https://doi.org/10.1108/13287260910955129

Ford, W. (2011). Evaluating the Effectiveness of College Websites for Prospective Students. *Journal of College Admission,* (212), 26–31. Online: https://eric.ed.gov/?id=EJ939063

García, G., Carrillo-Durán, M. & Tato Jimenez, J. (2017). Online Corporate Communications: Website Usability and Content. *Journal of Communication Management,* 21(2), 140–154. Online: https://doi.org/10.1108/JCOM-08-2016-0069

Garett, R., Chiu, J., Zhang, L. & Young, S. (2016). A Literature Review: Website Design and User Engagement. *Online Journal of Communication and Media Technologies,* 6(3), 1–14. Online: https://doi.org/10.29333/ojcmt/2556

Gomez, L., & Chalmeta, R. (2011). Corporate Responsibility in U.S. Corporate Websites: A Pilot Study. *Public Relations Review,* 37(1), 93–95. Online: https://doi.org/10.1016/j.pubrev.2010.12.005

Hanover Research (2014). *Trends in Higher Education Marketing, Recruitment, and Technology.* Online: www.hanoverresearch.com/media/Trends-in-Higher-Education-Marketing-Recruitment-and-Technology-2.pdf

Hasan, L. & Abuelrub, E. (2013). Common Usability Problems on Educational Websites. In *Proceedings of the International Conference on Education and Educational Technologies,* 172–177. Online: https://doi.org/10.46300/9107.2022.16.5

Harrison, S., Barlow, J. & Williams, G. (2007). The Content and Interactivity of Health Support Group Websites. *Health Education Journal,* 66(4), 371–381. Online: https://doi.org/10.1177/0017896907080123

Jeong, M., Oh, H., & Gregoire, M. (2003). Conceptualizing Website Quality and Its Consequences in the Lodging Industry. *International Journal of Hospitality Management,* 22(2), 161–175. Online: https://doi.org/10.1016/S0278-4319(03)00016-1

Katirci, H. (2016). Comparison of the Content of Web Sites of Higher Education Institutions Providing for Sports Management Education: The Case of Turkish and English Universities. *Educational Research and Reviews,* 11(8), 562–572. Online: https://doi.org/10.5897/ERR2016.2698

Kent, M., Taylor, M., & White, W. (2003). The Relationship between Website Design and Organizational Responsiveness to Stakeholders. *Public Relations Review,* 29(1), 63–77. Online: https://doi.org/10.1016/S0363-8111(02)00194-7

Khwaja, A., Du, P., & Sherman, N. (2020). An Update on Foot and Ankle Fellowship Website Content and Accessibility. *Foot and Ankle Orthopedics,* 5(1), 1–6. Online: https://doi.org/10.1177/2473011420912957

Leite, P., Gonçalves, J., Teixeira, P., & Rocha, A. (2016). A Model for the Evaluation of Data Quality in Health Unit Websites. *Health Informatics Journal,* 22(3), 479–495. Online: https://doi.org/10.1177/1460458214567003

Macancela, J. (2019). Websites as Support Tools for Learning the English Language. *Journal of Science and Research,* 4(2), 13–20. Online: https://doi.org/10.5281/zenodo.3240648

Manaze, M., & Ford, A. (2021). Campus Climate for Diversity and Students' Sense of Belonging in Ethiopian Public Universities. *Educational Planning,* 28(4), 5–24.

Manzoor, M., Hussain, W., Ahmed A., & Iqbal, J. (2012). The Importance of Higher Education Websites and Its Usability. *International Journal of Basic and Applied Sciences,* 1(2), 150–163. Online: https://doi.org/10.14419/ijbas.v1i2.73

Merwe, R., & Bekker, J. (2003). A Framework and Methodology for Evaluating e-Commerce Web Site. *Internet Research,* 13(5), 330–341. Online: https://doi.org/10.1108/10662240310501612

Mierzecka, A., & Suminas, A. (2018). Academic Library Website Functions in the Context of Users' Information Needs. *Journal of Librarianship and Information Science,* 50(2), 157–167. Online: https://doi.org/10.1177/0961000616664401

Ministry of Science and Higher Education (2020). *Higher Education Policy and Strategy.* Addis Ababa, Ethiopia.

Mueller, C. (2015). Evaluating the Effectiveness of Website Content Features Using Retrospective Pretest Methodology: An Experimental Test. *Evaluation Review,* 39(3), 283–307. Online: https://doi.org/10.1177/0193841X15582142

Musante, M., Bojanic, D. & Zhang, J. (2009). An Evaluation of Hotel Website Attribute Utilization and Effectiveness by Hotel Class. *Journal of Vacation and Marketing,* 15(3), 203–215. Online: https://doi.org/10.1177/1356766709104267

Peattie, K., & Peters, L. (1997). The Marketing Mix in the Third Age of Computing. *Marketing Intelligence and Planning,* 15(3), 142–150. Online: https://doi.org/10.1108/02634509710165948

Snell, S. (29 May, 2023). Characteristics of a Good Website: Qualities of Effective Web Design. Vandelay Design. Online: www.vandelaydesign.com/characteristics-of-a-good-website/

Taiminen, K., Luoma-aho, V. & Tolvanen, K. (2015). The Transparent Communicative Organization and New Hybrid Forms of Content. *Public Relations Review,* 41(5), 734–743. Online: https://doi.org/10.1016/j.pubrev.2015.06.016

Thelwall, M. (2000). Effective Websites for Small and Medium-Sized Enterprises. *Journal of Small Business and Enterprise Development,* 7(2), 149–159. Online: https://doi.org/10.1108/EUM0000000006836

Veríssimo, F., Raposo, D., Barradas, V., Neves, J., Silva, J., Martins, N. & Brandao, D. (2021). A Checklist Proposal to Evaluate the Quality of University Websites. *Advances in Design and Digital Communication II. International Conference on Design and Digital Communication,* 134–145. Online: https://doi.org/10.1007/978-3-030-89735-2_12