

WEBSITE USABILITY FOR TERTIARY EDUCATIONAL INSTITUTIONS IN BOTSWANA: AN EXPLORATORY ANALYSIS

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Abstract

Technology has greatly affected people's ways of life across the globe. Under the education sector, technology continues to play a significant role in the curriculum development, thereby, promoting growth in use of the Internet. A further consequence of this development has been an increased the development and ownership of websites by various organizations. The growth of technology around the world has influenced institutions to develop websites of their own through the Internet, as a way of selling their service to the audience. A website contains unique information that is to be shared to any user having access to it. Across educational institutions, the aim of a website is to provide accurate and up to date information to the lecturers, students, staff, alumni, guests and other users in a well organized and resourceful manner. Tertiary schools in Botswana are amongst the institutions around the world that have realized a gain in owning a website. The paper sought to analyze the website content of the selected tertiary schools in Botswana. The aim was achieved by a desktop research where an analysis of online content of selected tertiary schools' websites was undertaken. This analysis covered several items ranging from interactivity, navigation, functionality to site marketing. The results of this study show that all of tertiary schools studied have established websites to communicate to a vast audience. In addition, it has been discovered that some institutional websites are strong on certain features and weak on others.

Keywords: Website usability, internet, educational institutions, tertiary schools

1.0 Introduction

Information communication technology (ICT) has become a topical issue in both developed and developing countries. According to Talebian, Mohammadi and Rezvanfar (2014), ICT is perceived as a new dawn in different aspects of life (e.g. ranging from politics, to the economy and education, banking, as well as tourism and hospitality). This is due to the perceived benefits it offers to the various institutions and stakeholders. Computers, the internet, phones, and other electronic delivery systems like radios and televisions have become a major driving force for different spheres of human life (Talebian *et. al.*, 2014; Sarkar, 2012:31; Motshegwe, 2018). In fact, Barikzai (2017: 1) argues that,

Information and communication technologies (ICTs) are just as essential for modern society as electricity and water networks. Modern everyday life would be utterly unthinkable without information and communication technologies. ICT is a key technology and an interdisciplinary technology; it helps enterprises to reduce costs, improve processes, boost innovation, and increase productivity. ICT also makes the public sector leaner, faster and more citizen-friendly. ICT improves the provision of educational and administrative services, medical care, increases safety and provides greater quality of life.

Talebian et, al., (2014) believe that ICT is a tool for major economic developments especially in developed countries. ICT is also a tool, which is key in the success of learners in higher tertiary education as it provides e-learning facilities for distance learning or self-study (Telebian, et, al., 2014, Motshegwe, 2018). With the advent of ICT advertising, communication and recruitment for learners and staff at institutions of higher learning have become both competitive and challenging. It has been noted that a simple newspaper advert, a printed brochure or a static (non-interactive) website is inadequate to achieve the required reach and response (Hassan, 2014). Therefore, this type of information needs to be spread far and wide through a medium with capabilities for instant access. It can be argued that this can only be truly realized through ICT technologies.

ICT is defined as the use of software and hardware devices for data acquisition, production, storage, and processing as well as reporting (Talebian et, al., 2014). In short ICT is meant to generate information which is not always available in the traditional setup. Sarkar (2012:31) defines ICT as ‘...the varied collection of technological gear and resources which are made use of to communicate’. According to Sarkar (2012), ICT is a force that has transformed many lives in different ways as it has capacity to generate, disseminate, gather and administer information.

In this 21st century, most universities around the world have realized the importance of online presence and have since invested heavily on ensuring, not only presence but also, efficiency of their online content (Hassan, 2014). In recent times, scores of researchers have begun taking interest in this very important development. Inadvertently, these scholars have undertaken to document basic components of a typical website, including inter alia; home page and site wide template design, integrated site navigation, look and feel, a logo, a site map, website search features, about page, feedback, domain name, web hosting and copyright. Most importantly, Hassan (2014) observes that the extent of interactivity and usability of the website has become a serious source of competitive advantage. While adoption and use of academic websites in Botswana’s institutions of higher learning have gained currency in recent times, research on the functionality and usability (measured in terms of various interactive variables) of these websites is still relatively negligible, if at all. Therefore, this paper seeks to contribute some knowledge towards a general appreciation of the nature, functionality and usefulness of academic websites for Botswana’s universities. Websites from seventeen institutions of higher learning (Colleges and Universities) in Botswana have been accessed and analyzed to achieve this objective.

2.0 OverviewA of ICT

The advent of ICT has made access to information so easy that users have coined some captions such as ‘the world being a global village’ and ‘information being at your finger tips’ in order to appropriately express this phenomenon. In light of this, academic institutions around the world have been investing in the setting up of websites.

A website is defined as a tool developed to contain unique information about the organization (Barikzai, 2009). In other words a website is a combination of web pages interconnected in various forms and ways for an individual, institutions, etc. for a particular purpose and target audience (Barikzai, 2009). An academic website is viewed as a technological tool to disseminate information with lecturers, students, faculties, alumni, stakeholders and other guests (Jabar, Usman and Awal, 2013). Two common types of websites may be identified from existing literature. These are the static type, denoting a website that remains constant) and non-changing as well as the dynamic type which refers to a website that changes frequently. Literature reviewed shows that academic website cannot only be used for information dissemination. In addition to this important function, websites may also be used to build university brand. This is particularly so because universities worldwide are constantly striving to increase their own institutional brand visibility in the so called global village (Mentes and Turan, 2012; Anctil, 2008; Frazier, 2003; Kittle and Ciba, 2001; LeFauve, 2001; Rigol, 2003; Urciuoli, 2003). Put differently, universities constantly work towards leveraging on academic website capabilities with the view to delivering their services to a great number of viewers, thus uplifting the name of the university.

The general purpose of a website has been seen by various authors as informing, promoting a product, as well as educating and entertaining the audience. It has been argued that, in order to satisfy the target audience and serve the purpose, the academic website must build a positive representation of the institution. This should take into account the following factors; space and balance, color, font type and size, textures, special effects as well as loading time. A purposeful website should also consider organization of information content (Ford, 2011), active links and consistency (Ping, Small, von Dran and Barcellos, 1999; Saichaie2011; Barikzai, 2009). Hassan 2014) and Ping et. al., (1999) suggest five categories to be used in evaluating the effectiveness of an academic website. These are; content organization and readability, navigation and links (hygiene features), user interface design, performance and effectiveness, as well as educational information.

2.1 Adoption of ICT and website technology in Botswana’s institutions of higher learning

Use of ICT has been widely embraced in different sectors of life in Botswana (Isaacs, 2007). According to vision 2016, ICT was considered to be key component of the National Development Policy (Ibid). In her bid to become the ICT hub for the SADC region, the Government of Botswana rolled out the Maitlamo National ICT Policy. Some of the key tenets and principles of the said policy include implementation of ICT policy, e-Government, Thuto Net, e-Health, ICT and economic diversification, as well as Connecting Botswana. The primary aim of Maitlamo Policy is to provide universal access to credible information and learning

platform. A major transformation has been particularly pronounced in education sector where the government provides schools with modern PCs and internet, support e-Education research and development and also source funds to sustain ICT use in education (Isaacs 2007).

Isaacs (2007) observes that most schools and colleges are connected and have ICT infrastructures. In fact, the same scholar asserts that the establishment of many private institutions in the country have coincided with this technological era with the result that almost all recognizable institutions have some kind of website. Subsequently, therefore, this has resulted in the expansion of education and reach of higher education institutions in the country (Isaacs, 2007). Isaacs (2014) further notes that many institutions of higher learning in the country have since accepted, albeit in principle, the need to embrace 'a paperless approach' to student and staff recruitment. Essentially, some universities no longer produce application forms in paper form. Prospective applicants are advised to visit the academic websites and follow some steps to complete their applications. This is said to be the direction that many institutions around the globe are taking.

Achimungu, Oluwagbemi and Oluwaranti (2010) and Sarkar (2012) outline the role played by ICT in institutions of higher tertiary education such as improving the quality and quantity of educational provision, managing assignments to detect and avoid plagiarism, motivating to learn, facilitating the acquisition of basic skills and enhancing teacher training. While this has many benefits, including; cost effectiveness on the part of the university, it also has its own challenges such as high cost of acquisition, installation, operation, maintenance and replacement of ICT equipment. It becomes even more particularly prudent to note given this gravitation towards paperless communication and the need to reach prospective applicants from far and wide places, that universities websites intended to achieve these should have certain types of capabilities.

2.2 Capabilities essential for a fully functional academic institutional website

Hassan (2014) postulates that an effective academic website should be navigable, personalized and customized, easy to use and accessible to users. Literature points out that ease of use and navigation are the most important functions a website must possess (Hassan 2014). Academic website must enable students and lecturers to interact, transact, upload and download documents at any time and from wherever they are. Hassan (2014) and Ping et. al (1999) note that academic website design can take one of two forms, that is, hygiene (live and broken links whose absence causes user dissatisfaction) and motivators' factors (enhance user satisfaction and enhance user return). Ping et. al (1999) assume that the academic website is usually attractive based on the web environment, user's information seeking task and information seeker characteristics. These (factors) and others may result in user's satisfaction or dissatisfaction (Ibid). Literature identifies a number of characteristic in the web environment such as brightness of the screen, screen size, color and patterns, eye catching image, live or broken links, robustness of the web interface, stability of the site, length of procedure to complete a task, access restriction, identification of sight owners, download speed, organization by function topic, friendliness, distinctiveness, graphics, interestingness of the browsing task, meaningfulness of the

browsing task, understandable information, familiar terminology, quality of task result and new skill gained (Ping et. al., 1999). For any academic institutional website to remove the traditional inconvenience of prospective applicants having to travel long distances to university campuses to complete transactions and other application procedures, it follows that the website in question should be usable for many activities. For starters, such a website should provide adequate information about the institution as well as the facilities and services on offer. This information should also be up to date and easily comprehensible. In other words, the website should allow the user to take a virtual tour of the university. It has been argued that, in as much as a website has to be well designed to attract the guests, the content of the website too has to be recognized as the key credential of every quality website. Hassan (2014) stated that assessment of a website deals with whether a site includes the information users require.

To this end, Hassan (2014) identifies a number of the key characteristics of a good academic institutional website. These include interactivity, which relates to ease of use of the website and the existence of basic information which facilitate communication with the institution in different ways. Important feature of interactivity include, among others; calendar, request form, contact us, online chat, online application form and connect with us. Another important aspect of an academic website is navigability. Hassan (2014) notes that, this component assesses whether a site includes main tools and links, which facilitates the navigation of users through a site, enabling them to reach the required information quickly. The key features of navigability are; links to other institutions, search, news-letter, frequently asked questions and quick links. In addition, a good and usable academic website is expected to be functional. According to Hasan (2014), functionality captures such aspects of the website as background image, video, audio, campus virtual tour, banner advertising, download capabilities, multi- lingual capabilities, latest news and events, campus map and gallery. Finally, a good academic website may be judged on the basis of site marketing capability. Characteristics of site marketing include whether or not the site provides description of products and services offered (Millar and Summons, 2006). Attributes of this component include; about us, admissions, departments, students services, research, library, administration and job center. Almost summatively, Ooi, Ho and Amri (2010: 8) posit that

As a promotional medium, changes to the Web can be quickly implemented and with limited cost. Websites that are dynamic are those that get the hits. The Web enables the display of photos, sound and short movie clips at lower costs. Frequently Asked Questions on websites can address typical admission questions from customers, freeing up a lot of time for office staff. Websites serve customers 24 hours a day, seven days a week, without additional costs. Websites can efficiently reach target customers by presenting the right branding message at the right time, at the right place, to the right person - for optimum results.

Thus, investing in a good website may, despite the high initial costs, prove a very intelligent undertaking by a tertiary institution which wishes to compete successfully in the ever so changing tertiary education market landscape.

3.0 Methodology

This paper gathered data through documentary analysis (literature review) and website visits. For this paper, a list of all known and registered institutions of higher learning was obtained. The list included both public and private institutions. For purposes of inclusion in the final sample, only those institutions that owned a website were considered. In the end, a total of seventeen (17) institutions (Table 1) were investigated. The website for each of these institutions was then accessed and analyzed. Analysis of these websites included finding out the features that were supported within the website. The number of features as well as frequencies and percentages of their occurrence were recorded. This information was analyzed by running figures on spreadsheet to produce graphs and tables. The decision to analyze websites according to interactivity, navigability, functionality and site marketing was informed by the categorization proposed by Hasan (2014). The following results of this exercise are presented in the following sub-section. In this case, a websites is expected to contain several elements that assist the user on how to use the website to view the information they may need. Seventeen (17) websites for academic institutions of higher learning based in Botswana were considered.

No.	Name of Institution
1.	ABM University
2.	BA ISAGO University
3.	Boitekanelo College
4.	Botho University
5.	Botswana Accountancy College (BAC)
6.	Botswana University of Agriculture and Natural Resources (BUAN)
7.	Botswana College of Distance and Open Learning
8.	Botswana International University of Science and Technology (BIUST)
9.	Flying Mission Services
10.	Gaborone Academy of Education
11.	Gaborone Universal College of Law
12.	Imperial School of Business and Science
13.	Institute of Development Management Botswana (IDM)
14.	Limkokwing University College of Creative Technology
15.	Management College of Southern Africa (MANCOSA)
16.	New Era College of Arts Science and Technology
17.	University of Botswana (UB)

Table 1: *A list of selected tertiary schools owning a website in Botswana*

4.0 Findings

4.1 Interactivity

The performance of websites studied was almost balanced in this area. Of the six (6) features considered here, websites performed well on three (3) and poorly on the other half. Websites under study performed particularly well on the contact us feature shown in figure 1. All institutional websites studied carried this feature. Consequently, all websites carried institutional telephone numbers and email addresses. The online application feature also appeared prominently (82%) in the websites considered. This can be seen to corroborate Isaacs' (2007) observation that institutions of higher learning in Botswana are progressively moving towards a paperless approach to staff and student recruitment. Another feature that quite occurred frequently was the calendar of events appearing in more than half (53%) of the websites visited. However, less than half (40%) of all websites under consideration had the 'connect with us' feature. Another feature on which institutional websites performed badly was the availability of a request form. Only 29% (5 out of 17) of the websites provided the users with this feature. This feature can be used to ask for the information need at that time and the institution can use same to provide feedback.

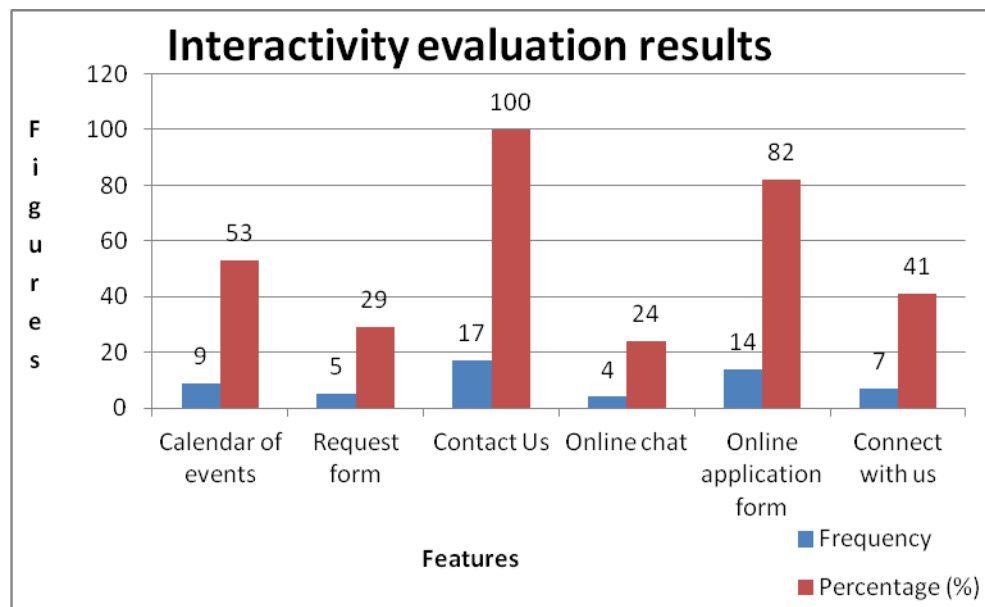


Figure 1: Interactivity evaluation results

The online chat feature appeared the least number of times in comparison to all other features. Only 4 out of 17 (24%) of the websites carried this feature. This feature allows users to stay in touch with the university in case they want to make inquiries or any other topic they would like to discuss online. It is an important tool as it gives the user an immediate response.

While we note a somewhat balanced performance in this area, it is worth noting that at least all the necessary features in the area were represented in more than one institutional websites. In other words, if one chooses to disregard the numbers, the mere existence of these

features in almost every website can be seen as a positive. Therefore, at the barest minimum, it stands to reason that the investigated websites are generally interactive. Essentially, and in line with Hassan's (2014) argument, the investigated websites have inbuilt capabilities that do allow users to communicate with the universities to a certain extent.

4.2 Navigation

Figure 2 shows results from an analysis exercise concerned with the function of navigation. Hassan (2014) reminds us that navigation is a function containing features and tools that enable the user to reach required information quickly. For our study, we considered five (5) features here. Of those the most commonly occurring feature was the frequently asked questions. This provided a 100% return indicating that it did appear in all websites under consideration. This was followed, rather closely, by the quick links feature which was present in 71% of all websites considered. The newsletter and search features were present in 59% and 53% of the websites, respectively. The only feature on which websites performed dismally was links with other institutional sites registering a mere 18% percent occurrence. As was the case with the previous function of interactivity, navigation all five (5) navigation features were present in at least one website. Put differently, even though not all features were present in all websites in equal measure, there was none which was missing from all websites altogether. This is an encouraging development given the urgency with which users often require information on institutions. A case in point was on the feature of frequently asked questions where institutions try to provide answers to the most common and basic questions about them. Availability of this information often saves users the hassles of even having to contact the institution in order to acquire certain information. Admittedly, the result is that those that eventually contact the institution would be those with more questions beyond what the list of answers provided answers.

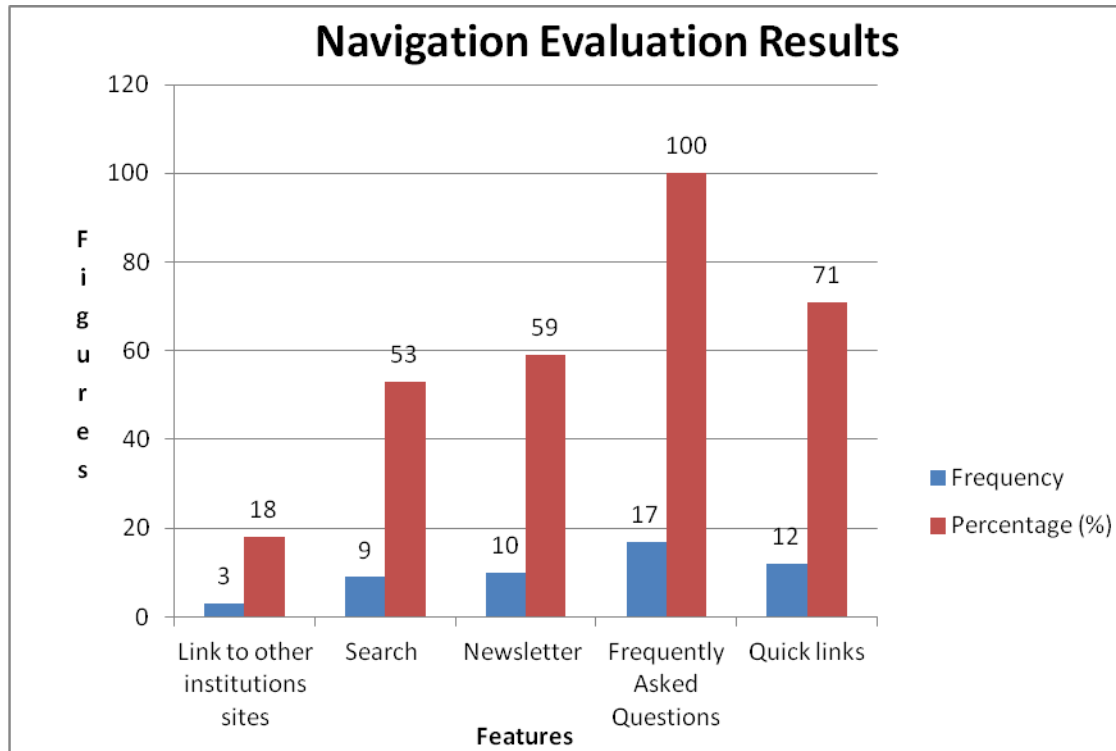


Figure 2: Navigation evaluation results

While the foregoing is encouraging about the usefulness of the websites under review, it is equally concerning that the feature on links with other institutional sites appeared only three (3) times out of 17 websites. This situation, undoubtedly, serves to deprive the user an opportunity to quickly and conveniently run through various sites, make comparisons and possibly arrive at decisions without wasting time. It also highlights the extent to which institutions of higher learning are so prepared to work in silos with very little room for collaborations and cross fertilizations. While acknowledging that institutions are generally in competition, it may in the same vein be argued that a healthy environment of competition should give a potential customer some choice and options so that the most attractive and competitive offer prevails.

4.3 Functionality

Under functionality, ten (10) features were considered. These include, in no particular order; background image, video, audio, campus virtual tour, banner advertising, download capabilities, multi-lingual capabilities, latest news and events, campus map and gallery. Of these, background image, banner advertising, download capabilities, latest news and events and gallery returned favorable percentages ranging between 71% and 82%. In other words, five (5) out of the 10 features investigated appeared in more than 50% percent of the websites. The feature with the highest percentage occurrence was the download capabilities at 82%. Perhaps and even more interestingly result here is that, no feature under this function registered a 100% occurrence. However, one should also hasten to point out that no feature returned a zero percent (0%) occurrence.

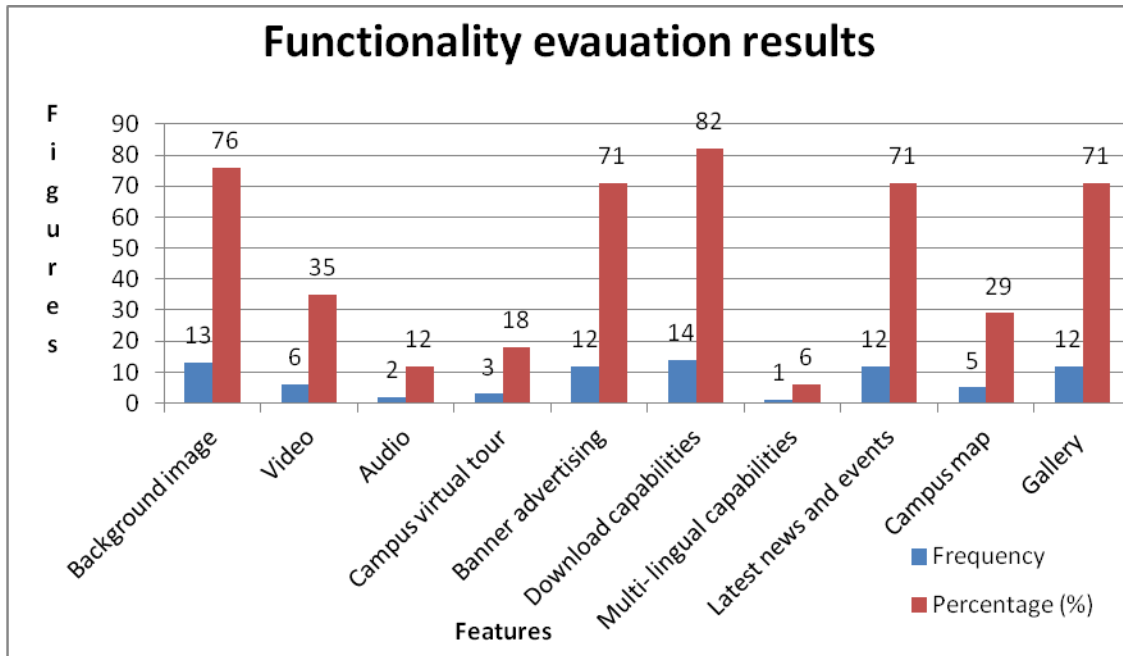


Figure 3: Functionality evaluation results

Of the other five (5) features where websites performed below expectations the lowest percentages were recorded for multi-lingual capabilities (6%), audio (12 %) and campus virtual tour at 18%. Multi-lingual capability gives any user an opportunity to browse through the website in the language of their choice. Even in instances where there is no provision for a specific language where a user is fluent, multiple languages capability may provide options so that the user may settle for that language in which they have some level of proficiency. Being able to work with a language in which the user has some level of proficiency is both empowering and attractive to users since it demonstrates inclusivity and empathy from the part of the institution. Be that as it may, and while we observe that institutions in Botswana still have room for improvement in this area, we also note that steps have been taken by some in the right direction.

4.4 Site Marketing

According to Millar and Summons (2006), site marketing is concerned with the extent to which the website carries descriptions of products and services on offer. For purposes of our study we considered eight (8) features, namely; about us, admissions, departments, students services, research, library, administration and job center (figure 4).

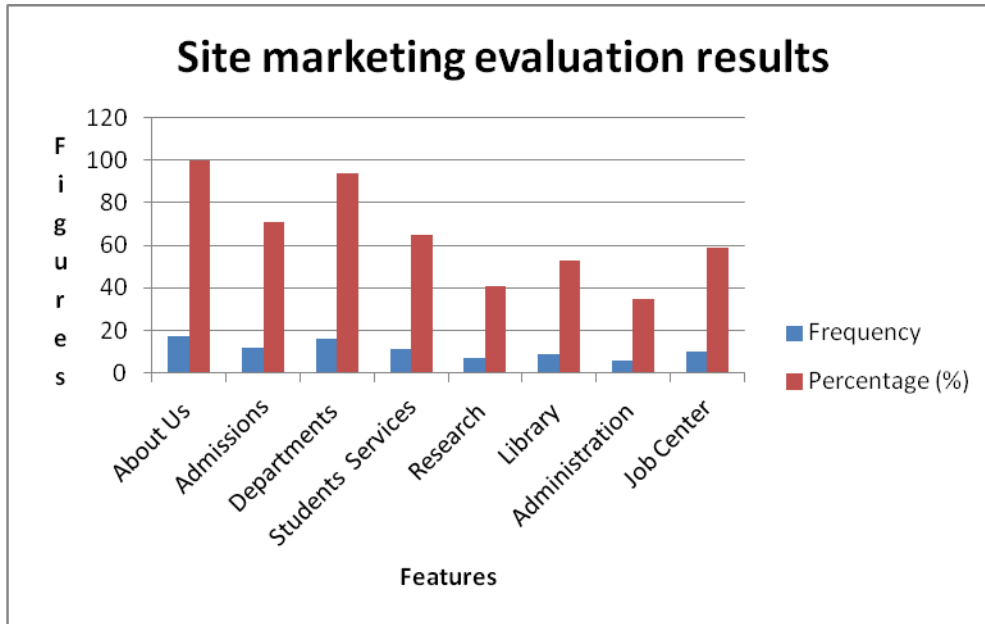


Figure 4: Site marketing evaluation results

More than half of these features appeared in more than half of the total websites investigated. The most prominent feature was the about us. This one appeared in a websites. This was followed closely by features of departments and admissions in that order. The feature occurring the least number of times was administration.

5.0 Concluding remarks

In this paper we investigated the usability of tertiary education institutional websites in Botswana. First and foremost, we acknowledge that these institutions do have websites in the first place. We do not wish to take this for granted given some observations regarding the costs of acquisition, installation and maintenance of ICT equipment as well as those of development and maintenance of a website. In other words, it would not be farfetched to think that some institutions could have simply opted to use other cheaper means and platforms such as Facebook pages, newspaper and magazine advertisements and so on so as to avoid those heavy investments associated with owning a website.

For our research we considered four (4) specific functions of interactivity, navigation, functionality and site marketing. Each of these is characterized by multiple features. We visited each website and checked for the existence of these feature as required. We followed this up by running some simple frequencies to determine performance of the websites. The results show that all the expected features were present across all websites visited. We consider this an important finding as it demonstrates that, at least, institutions and their website developers are aware of the necessary contents of websites. In three (3) out of the four (4) functions considered, there was at least one (1) feature that was present in all the websites. This finding shows that in the development of websites certain features are generally deemed more important than others with the result that they receive more emphasis.

On the other hand, there were those features which appeared the least number of times in the websites. These, obviously, are the ones that institutions and developers may have agreed that they belong to the websites but are not as critical as others. In the end, these were barely present. We argue that, each of the features found in websites has a specific use that cannot usually be substituted for by another feature. Therefore, the lack of attention given to any feature in a website may render the usability of the said website limited. A case in point is the feature of multi-lingual capabilities. This feature appeared in only one website out of the 17 under review. However, this feature is very important to the institutions for a number of reasons. For instance, many universities around the world are currently working hard towards presenting themselves as inclusive institutions which are both international in orientation and appreciative of cultural diversity. One would then argue that a university whose website still does not carry this feature would be left behind in this competitive industry.

In the wake of the foregoing results, it is important to make a few comments on the strengths and weaknesses of this paper. This paper was based on an exploratory study whose intention was to simply establish what websites for higher academic institutional websites in Botswana looked like. Therefore, these results give an idea on the usability of these websites. However, without qualitatively examining the actual usability in terms of whether these website features are static or dynamic, the study was not comprehensive enough. This means more studies aimed at undertaking this particular exercise are necessary in the future. Another point the institutions whose websites were investigated are neither of the same size, nor are they of the same age. These differentiators may have a bearing on the results if taken into consideration. We recommend further research that accounts for these differences in the future.

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