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# User-perceived Quality of Selected Tanzanian Public University Websites

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## Abstract

*A study was conducted to assess the quality of websites of five selected public universities in Tanzania. The main purpose of the study was to understand the quality of university websites from users' perspectives. This study employed a 22-item instrument measuring four dimensions of web quality namely technical adequacy, information quality, service ability and web appearance. Data were collected through email survey and they were analyzed using SPSS and Ms Excel. The study findings show that, of the five university websites evaluated, the SUA website ranked the highest followed by that of UDSM. The websites of SUZA, OUT and MU were ranked in the third to fifth positions respectively. Service ability is a construct that was highly supported in the five websites evaluated whereas web appearance is the construct that required improvements in all five websites. It is recommended that improvements should be done in some of the quality dimensions such as appearance in order to ensure that these websites deliver information to intended audience. Regular updating of websites is also essential to make them effective and meet the changing needs of users.*

**Keywords:** website, university, web quality, Tanzania

## Introduction

The major purpose of any website is to provide information to the wider community without geographical barriers. This is possible because websites reside in cyberspace and they are not restricted by geographical location. Organizations create websites for many purposes such as marketing, promoting, transacting products or services, or delivering content to the target audience (Djajadikerta and Trireksani, 2006). Hence, websites are gateways to organizations' information, products and services. As such, it is important for organizations to have websites that live up to the expectations of the target audience so as to achieve the intended goals (Iwaarden, 2004). In addition, organizations are required to provide high quality websites because there is no human contact offered through websites; the interaction is through technology. Organizations try to emulate human behaviour with technology but some aspects of human interaction such as courtesy, helpfulness and flexibility cannot be achieved with technology. Furthermore, since customers have ever changing expectations, it is necessary for organizations to improve the quality of their website continuously (Cox and Dale, 2001).

University websites are often informational and promotional as they provide information to current students and staff about courses, timetables, and other relevant contents, and notify prospective

students and other users about a particular university and its programs. University websites can also be used for transacting services such as online applications and access to library services. These websites are expected to enhance the core functions of universities which are teaching, research and consultancy. Universities should therefore ensure that their websites help the target audiences to meet their information and communication requirements in relation to the universities' core functions. In view of this, some universities have developed guidelines that help units such as faculties and departments design proper websites/webpages and post relevant information the websites.

Ideally, website structures are supposed to be informative and their contents should be adequate, complete and relevant with respect to the needs of the expected users. Websites should also have interactive environments that communicate contents in a satisfactory way to users (Marsico and Levialdi, 2004). As such, the value of a website includes several elements such as its performance, availability, security and accessibility. Consequently, evaluation of website quality has been approached from many different viewpoints. Computer and information specialists often focus on the technical aspects such as how to retrieve information from the web or how to make a website work properly (Arasu *et al.,* 2001; Kleinberg, 1999; Nel *et al.,* 1999). Behavioural scholars are more interested in the issue of why and what users use the web for or how web technologies affect the behaviour of users (Burnett and Marshall, 2003; Rogers and Marres, 2000; Wellman *et al.,* 2001). Managers are often interested on how organizations make the most of the emerging web technologies and their applications (Huang, 2005; Liu and Arnett, 2000; Norton and McGovern, 2001; Wakefield, 2002; Wan, 2000).

Traditionally, the quality of websites has been evaluated based on the characteristics of its information (Xu and Koronios, 2005). Many of these characteristics have been consistently found to be more or less similar across various previous studies and they include accuracy, timeliness, completeness, consistency, comprehensiveness, currency and format (Ballou and Pazer, 1982; Burk and Horton, 1988; Rai *et al.*, 2002). Alexander and Tate (1999) also suggested five website evaluation criteria that focused on information quality - authority, accuracy, objectivity, currency, and coverage. In the recent years however, studies have emphasized that website quality should go beyond information quality to consider website users (van Iwaarden *et al.,* 2004; Xu and Koronois, 2004). As a result, studies have increasingly accommodated both the 'content' and 'user' perspectives in the process of evaluating website quality.

In examining the dimensions of B2C websites based on a survey of 214 online shoppers, Ranganathan and Ganapathy (2002) found four key dimensions namely information content, design, security, and privacy. Aladwani and Palvia (2002) developed and validated a 25 item instrument for measuring user-perceived business website quality by collecting responses from 101 web users. The authors came up with four variables of website quality - content quality, specific content, technical adequacy, and web appearance. Studying the consumer perceptions of internet retail service quality, Janda *et al.* (2002) identified five dimensions - performance, access, security, sensation and information. Cao *et al.* (2005) asked 71 university students to express their

perceptions of three online bookshops - amazon.com, biggerbooks.com, and half.com. This study found four constructs that relate to website quality - information quality, service quality, playfulness, and system quality. Educational websites have also been studied from different perspectives. For instance, Zhang and Dran (2001) developed a theoretical framework for evaluating website quality from a user satisfaction perspective. Lautenbach *et al.* (2006) developed a framework to measure usability of websites whereas Yoo and Jin (2004) investigated and evaluated the design of university websites. Osborne and Rinalducci (2002) designed criteria to evaluate web resources for utilization within the context of scholarly research in history.

In sum, increasingly studies call for website evaluation methods that take the values of users into consideration. However, many previous studies on the quality of websites have mainly focused on business websites with only a few on academic websites. In Tanzania, there is limited research that focuses on the quality of websites, particularly educational websites. This study was therefore set out to evaluate the quality of websites of selected public universities in Tanzania. The main purpose of the study was to evaluate the quality of websites that provide academic information in the country from users' perspectives. Measuring the quality of website can provide feedback to the organization so as to take corrective actions and improve its website. The findings of this study would provide information about the status of the evaluated websites and such information could assist in improving on the deficiencies.

**Methods**

Five websites of public universities in Tanzania were purposively selected for this study. These universities were the Mzumbe University (MU), Open University of Tanzania (OUT), Sokoine University of Agriculture (SUA), State University of Zanzibar (SUZA), and the University of Dar es Salaam (UDSM). These universities were selected based on the fact that they are the major public universities in the country and that their websites were accessible during this study. The study was carried out between September and October 2012 and it adapted a 23-item instrument developed by Djajadikerta and Trireksani (2006) for measuring four dimensions of web quality namely *technical adequacy*, *information quality*, *service ability* and *web appearance* (Table 1). However, fine-tuning was made to the adopted instruments whereby an item on customization of websites in meeting one's information needs was excluded as it was considered unnecessary. The final instrument was therefore made of 22 items.

**Table 1: Web site quality constructs and indicators**

| Construct | Indicators |
|---|---|
| Technical adequacy | Ease of navigation, search facilities, availability, valid links, speed of page loading, interactivity, ease of accessing the site |
| Information quality | Usefulness, completeness, clarity, currency, conciseness, accuracy |
| Service ability | Finding contact information, general information, courses/subjects details, academic policies, research information |
| Web appearance | Attractiveness, organization, proper use of fonts, proper use of colours, proper use of multimedia |

The instruments were distributed to 50 students pursuing Bachelor of Science in Informatics at SUA based on the fact that these students had computer skills that enabled them to explore the websites based on the provided criteria. The instruments were sent via their emails during their vacation. Each respondent was asked to evaluate all five websites using a 22-item instrument measured on a five-point scale (1 = strongly agree and 5 = strongly disagree) (Table 2). A total of 41 instruments were received back and data analysis was done using Statistical Product and Service Solutions (SPSS) and MS Excel. Of the 41 respondents, 30 (73.2%) were males and the rest were females. It is worth noting that there were some limitations to this study. Firstly, data were collected from a limited number of visits to each website at a certain time despite the fact that the web is highly dynamic. Secondly, all respondents were selected from one university (SUA), something that might lead to biasness in evaluating the websites. Thirdly, since all respondents were current students, it is possible that their views would favour constructs that are likely to meet their information and communication requirements.

**Table 2: The user-perceived university Web site quality instrument**

| | | Strongly agree | Agree | Neutral | Disagree | Strongly disagree |
|---|---|---|---|---|---|---|
| 1 | The Website looks easy to navigate through | 1 | 2 | 3 | 4 | 5 |
| 2 | The Website has good search facilities | 1 | 2 | 3 | 4 | 5 |
| 3 | The Website is always up and available | 1 | 2 | 3 | 4 | 5 |
| 4 | The Website has valid links (hyperlinks) | 1 | 2 | 3 | 4 | 5 |
| 5 | Web pages load fast in the Website | 1 | 2 | 3 | 4 | 5 |
| 6 | The Website is easy to access | 1 | 2 | 3 | 4 | 5 |
| 7 | The content of the Website is useful | 1 | 2 | 3 | 4 | 5 |
| 8 | The content of the Website is complete | 1 | 2 | 3 | 4 | 5 |
| 9 | The content of the Website is clear | 1 | 2 | 3 | 4 | 5 |
| 10 | The content of the Website is current | 1 | 2 | 3 | 4 | 5 |
| 11 | The content of the Website is concise | 1 | 2 | 3 | 4 | 5 |
| 12 | The content of the Website is accurate | 1 | 2 | 3 | 4 | 5 |
| 13 | There is contact information in the Website | 1 | 2 | 3 | 4 | 5 |
| 14 | One can find general information (e.g. goals, academic and administrative staffs, facilities, etc) | 1 | 2 | 3 | 4 | 5 |
| 15 | One can find details about courses and/or subjects | 1 | 2 | 3 | 4 | 5 |
| 16 | One can find information related to academic policies | 1 | 2 | 3 | 4 | 5 |
| 17 | One can find information related to research | 1 | 2 | 3 | 4 | 5 |
| 18 | The Website looks attractive | 1 | 2 | 3 | 4 | 5 |
| 19 | The Website looks organized | 1 | 2 | 3 | 4 | 5 |
| 20 | The Website uses fonts properly | 1 | 2 | 3 | 4 | 5 |
| 21 | The Website uses colours properly | 1 | 2 | 3 | 4 | 5 |
| 22 | The Website uses multimedia features properly | 1 | 2 | 3 | 4 | 5 |

**Results and discussions**

The findings in this study indicate that the SUA website ranked the highest with an overall mean of 1.94 followed by that of UDSM that had an overall mean of 1.98. The MU website ranked the

lowest with an overall mean of 2.46 (Table 3). In terms of the four quality constructs (i.e. technical adequacy, information quality, service ability and web appearance), the SUA website was consistently ranked in the first position, except for the technical adequacy construct where it was ranked in the second position. The UDSM website was ranked in the first position in the technical adequacy construct. It was ranked in the second positions in the service ability and web appearance constructs and third position in the information quality construct. The MU website was ranked in the last position in two constructs (technical adequacy and web appearance) and the fourth position in other two constructs (information quality and service ability). The websites of SUZA and OUT were ranked in the third to fifth positions in most constructs, except for the information quality construct where the SUZA website was in the second position (Table 4).

**Table 3: Ranking of the university websites**

| Rank | University website | Overall mean |
|------|-------------------|--------------|
| 1 | Sokoine University of Agriculture | 1.94 |
| 2 | University of Dar es Salaam | 1.98 |
| 3 | State University of Zanzibar | 2.21 |
| 4 | Open University of Tanzania | 2.28 |
| 5 | Mzumbe University | 2.46 |

The findings in Table 4 show that all website quality dimensions had the mean range of 1.58 - 3.16 across all university websites. This suggests that many respondents agreed with most of the provided items and some were neutral. The mean range for the service ability construct was 1.58 – 1.87, meaning that most respondents strongly supported this construct across all universities. The information quality and technical adequacy constructs had means ranging from 1.90 – 2.51, meaning that most of the respondents agreed with these constructs across all universities. On the other hand, the mean range of the web appearance construct was 2.13 – 3.16, suggesting that some respondents agreed whereas others were neutral about this construct across all universities.

**Table 4: Ranking and descriptive statistics of the university websites**

| University website | Technical adequacy | | Information quality | | Service ability | | Web appearance | |
|-------------------|--------|------|--------|------|--------|------|--------|------|
| | Mean | Rank | Mean | Rank | Mean | Rank | Mean | Rank |
| SUA | 2.13 | 2 | 1.90 | 1 | 1.58 | 1 | 2.13 | 1 |
| UDSM | 1.98 | 1 | 2.03 | 3 | 1.69 | 2 | 2.23 | 2 |
| SUZA | 2.39 | 4 | 2.02 | 2 | 1.74 | 3 | 2.67 | 4 |
| OUT | 2.33 | 3 | 2.40 | 4 | 1.87 | 5 | 2.49 | 3 |
| MU | 2.51 | 5 | 2.33 | 4 | 1.84 | 4 | 3.16 | 5 |

The user perceptions in this study indicate that the studied websites were generally of good quality as most respondents either "strongly agreed" or "agreed" with majority of the quality items. Only a few respondents were neutral on the presented quality items. However, some of these websites require improvements in some of the quality constructs. Web appearance is the construct that required improvements in all five websites because its mean scores ranged between 2.13 and 3.16

meaning that it was not strongly supported. This implies that there are some weaknesses in aspects such as attractiveness, organization, proper use of fonts, proper use of colours as well as proper use of multimedia. Service ability is the only construct which was found to be strongly supported in the five websites evaluated. This means that there were proper aspects such as contact information, general information, courses/subjects details, academic policies, and research information.

## Conclusion and recommendations

The findings in this study indicate that the studied websites were generally of good quality as many respondents agreed with most items provided. The SUA and UDSM websites were consistently ranked in the first and second positions in most constructs. The MU website ranked the lowest and it ranked in the last position in two constructs (technical adequacy and web appearance) and the fourth position in information quality and service ability. The websites of SUZA and OUT were ranked in the third to fifth positions in many constructs. Service ability is the only construct which was strongly supported in the five websites evaluated and web appearance is the construct that required improvements in all five websites. To ensure that these websites are effective in delivering information to the intended audience, improvements are required in terms of web appearance and other quality dimensions. It is also recommended that regular updating of websites is essential to make them effective and meet the changing needs of users.

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