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Research Paper

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Abstract

The government of Tanzania has been embracing information systems specifically websites to enlarge access to government services, lower administrative costs, and to increase public participation in decision making. As a result, almost every ministry, department, and agency (MDA) has developed a unique website. However, most of existing websites were developed without sufficiently considering users' needs which indicates that they do have some usability and accessibility problems. This study used the SortSite tool to evaluate accessibility and usability of government websites taking a sample of 22 websites. The report from the SortSite tool was then checked against the W3 WCAG accessibility standards and Section 508 guidelines, and usability issues based on the US Federal (Usability.gov) guidelines. The results show that most of websites have many accessibility and usability problems that hinder citizens from using them. This study provides recommendations on how to improve usability and accessibility of these websites.

Keywords

Usability, accessibility, egovernment, website.

INTRODUCTION

The government of Tanzania has been embracing information systems in an effort to increase access to government services, lower administrative costs, increase public participation in decision making, and to increase transparency and accountability. Moreover, the government has been using information systems to smoothen communication between the government and its citizens. Given these advantages, thousands of dollars have been spent to deploy and implement various information systems.

To ensure smooth coordination amongst e-government initiatives and projects, the e-government agency was established. The agency is responsible for integration of various information systems to avoid duplications and redundancy of data amongst government institutes and organizations. The most notable successful deployed e-government systems include the National Payment System, Electronic Clearing House, Integrated Financial Management System, and Retail Payment System (MWTC, 2016; Sæbø, 2012). Other systems include integrated Human Resource and Payroll system, Land Management System, Geographical Information System, and government web portal.

The implementation of these systems has improved service delivery and increased public participation in various decisions making processes. For instance, bills collection systems have enabled citizens to pay utility bills such as water, electricity etc. directly to the suppliers through mobile phones and the web. The land ownership system has enabled citizens to obtain basic information of their surveyed plots online and avoid multiple plots allocations and citizens' complaints about those allocations.

Additionally, almost every government ministry, department, and agency (MDA) has developed a website of different kind (Sæbø, 2012). These websites act as an interface between the government and citizens as they enable citizens to communicate directly with their government. They are also used as a means for the government to disseminate information to the public. The information includes circulars, announcements, employment opportunities, policies, rules, new tariffs, conferences and seminars, and many others. These services and many others have helped the government to reduce costs, improve service delivery, and to increase citizen participation in government decision making.

Despite increased implementation of various websites, most of them suffer from accessibility and usability problems which hinder citizens from accessing them (Magayane, Mokua, & Lanrong, 2016). Websites with poor usability are perceived to be difficult to navigate and

therefore users spend more time learning how to use them than accessing the required information (Ardito et al., 2005; Flavián, Guinalíu, & Gurrea, 2006). Such websites not only waste users' time and network resources, but also hinder citizens from accessing information (Nielsen, 1995). If it is a commercial website, another website offering similar services is likely to be available, but that is not the case with a government website (Johnson & Lazar, 2010). Similarly, websites that suffer from accessibility issues hinder citizens with disabilities to access services offered via these websites. According to the National Bureau of Statistics (NBS), approximately 9 per cent of Tanzanians have disabilities of different kinds such as sight and hearing impairment (NBS, 2008).

Therefore, it is important to ensure that government websites meet both usability and accessibility requirements. To the best of our knowledge, no usability and accessibility evaluation of government websites has been made available so far in Tanzania. This study evaluated accessibility and usability of government websites taking a sample of 22 websites using the SortSite tool. The report from the SortSite tool was then checked against the W3 WCAG accessibility standards and Section 508 guidelines, and usability issues based on the US Federal (Usability.gov) guidelines. The main research question of this study is:

- How are usable and accessible government websites in Tanzania?

LITERATURE REVIEW AND RELATED WORKS

Literature Review

Usability and accessibility are important factors that have a direct impact on how users are using a given technology. Usability is the extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency, and satisfaction in a specified context of use (ISO, 1998). Usability considers many factors such as: the ease of understanding the website structure, interface, and content observed by the user, and the speed with which the users can find items they are looking for (Flavián et al., 2006).

Given the number and diversity of users as well as the variety of devices they use when interacting with government websites, conforming with usability and accessibility issues is important. A usable website enables users to quickly navigate through it and enables infrequent users to navigate again after some period of not having used it, without having to learn everything all over again (Nielsen, 1994). In addition, users do not make many errors when

navigating through a usable website, and in case they make some errors when interacting with the website, those errors can easily be recovered.

The usability of a website can be evaluated in two ways. First, it can be evaluated using usability test methods which involve direct users who interact with the website. The main advantage of this method is that it provides direct information about how users use the website (Holzinger, 2005). These usability test methods include focused thinking aloud, field observation, and questionnaires.

The second method is by usability inspection methods where the website is checked against established standards. These methods include heuristic evaluation, cognitive walkthroughs, and action analysis. Due to the diversity of government websites and the type of users who are accessing these websites it would be difficult to evaluate usability of government websites using usability test methods. Therefore, usability inspection methods were preferred for this study.

In addition to usability, accessibility has positive influence on the usage and acceptance of a website. Accessibility ensures websites are universally accessible to all users regardless of any impairment e.g. blindness, low vision, deafness, hard of hearing, physical disabilities or cognitive disabilities (Abanumy, Al-badi, & Mayhew, 2005). In other words, web accessibility entails that people with disabilities can perceive, understand, navigate and interact with the websites (Ismailova, 2015). Moreover, accessibility enables users to access e-government websites in all devices such mobile phones, laptops, and any other handheld devices without distortion.

The accessibility property is evaluated based on the Web Content Accessibility Guidelines (WCAG) that are published by Worldwide Web Consortium (W3C). So far, many tools have been developed to check if accessibility of website conform with the WCAG.

Related Works

Given the benefits of usability and accessibility attributes, many studies have evaluated government websites in a bid of uncovering usability and accessibility violations and to provide recommendations that will enable a government to improve their websites. For instance, Asiimwe and Lim (2010) evaluated usability of four Ugandan government websites according to three criteria namely design layout, navigation, and legal policies. Through these three criteria framework a fourteen-website usability measure was developed and used to evaluate the selected websites. Results from this study indicated that most of Ugandan government

websites were partially usable in the design layout and navigation, but were weak in stating legal policies.

Kinuthia (2013) evaluated usability and user experiences of Kenyan government websites through lab-based usability testing followed by a simple post-test survey. The study revealed several usability problems that hindered citizens from accessing them. Some of the usability problems included outdated information and their way of handling personal details compromised individual privacy.

Ismailova (2015) evaluated usability and accessibility of government websites in the Kyrgyz Republic. The study covered 55 websites listed in the state information resources of the Kyrgyz Republic and five government websites which were not included in the list. Analysis was conducted using several automated evaluation tools. It was found that websites had a usability error rate of 46.3 % and an accessibility error rate of 69.38 %.

Makoza and Chigona (2013) assessed accessibility of e-government websites in Malawi using the Web Content Accessibility Guidelines 1.0 (WCAG 1.0), A-Checker, and TAW testing tools. Using a sample of 28 websites, the study found that the majority websites did not meet accessibility features.

Another similar study was conducted in Malaysia to evaluate the usability and the accessibility of e-government websites using Nielsen heuristics and Web Content Accessibility Guidelines (WCAG) respectively (Mohd Isa, Suhami, Safie, & Semsudin, 2011). A sample of 155 government websites were studied. The authors found that most of government websites had several issues on usability and accessibility that hindered users from accessing them more effectively.

While there has been a lot effort to evaluate usability and accessibility of government websites in various countries within the East-Africa region and elsewhere, to the best of our knowledge, such kind of studies have not been conducted in Tanzania. With the increased Internet use, citizens demand more e-services and reliable information from their government. Therefore, there is an urgent need to conduct usability and accessibility evaluation of government websites to improve on user experiences and make services accessible to all citizens.

METHODOLOGY

Sampling of the Government Websites

The government websites were selected on convenient basis ensuring that all ministries websites were included. In addition, some departments which are closely related to the ministries were also included in the sample. A total of 18 ministries and 4 departmental websites were sampled as shown in Table 1.

Table 1. A sample of websites selected for evaluation.

No	Name of the website	Abbreviation	URL
1	Government Website	GoVT	http://tanzania.go.tz
2	Higher Education Students Loan Board	HESLB	http://www.heslb.com
3	Ministry of Agriculture, Livestock and Fisheries	MALF	http://www.agriculture.go.tz
4	Ministry of Defence and National Service	MDNS	http://modans.go.tz
5	Ministry of Education and Vocational Training	MoEVT	http://moe.go.tz
6	Ministry of Energy and Minerals	MEM	http://mem.go.tz
7	Ministry of Finance and Economic Affairs	MFEA	http://www.mof.go.tz
8	Ministry of Foreign Affairs, Regional and International Cooperation	MFARIC	www.foreign.go.tz
9	Ministry of Health, Community Development, Gender, Seniors and Children	MHCDGSC	www. moh.go.tz
10	Ministry of Home Affairs	MOHA	www. moha.go.tz
11	Ministry of Industry and Trade	MIT	www.mit.go.tz
12	Ministry of Information, Culture, Arts and Sports (MICAS)	MICAS	http://habari.go.tz
13	Ministry of Justice and Constitution Affairs	MJCAS	www.sheria.go.tz
14	Ministry of Lands, Housing and Human Settlements Developments	MLHHSD	www.ardhi.go.tz
15	Ministry of Natural Resources and Tourism	MNRT	www.mnrt.go.tz
16	Ministry of Water and Irrigation	MWI	www.maji.go.tz
17	Ministry of Works, Transport and Communication	MWTC	http://mow.go.tz
18	National Social Security Fund	NSSF	http://nssf.or.tz
19	Prime Minister's Office	PMO	http://pmo.go.tz
20	Public Procurement Regulatory Authority	PPRA	www.ppra.go.tz
21	Tanzania Revenue Authority	TRA	http://tra.go.tz
22	President's Office Public Service Management	POPSM	http://utumishi.go.tz

Evaluation Process

The accessibility and usability evaluation was conducted using SortSite, an automated website testing tool. The tool has been developed to determine whether a website adheres to Web Content Accessibility Guidelines (WCAG) and Section 508 guidelines, and usability issues based on the US Federal (Usability.gov) guidelines. The WCAG is published by the Worldwide Web Consortium (W3C). The guidelines provide a series of checkpoints for web content development which are broken into three priorities depending on their impact on accessibility.

The three priority levels are: A (Priority 1), AA (Priority 2), and AAA (Priority 3). Table 2 shows WCAG priorities and the description of each priority.

Table 2. Web content accessibility guidelines (WCAG) Priority

Priority	Description
A (Priority 1),	A web content developer must satisfy this checkpoint. Satisfying this checkpoint is a basic requirement for some groups to be able to use web documents.
AA (Priority 2)	A web content developer should satisfy this checkpoint. Satisfying this checkpoint will remove significant barriers to accessing web documents.
AAA (Priority 3)	A web content developer may address this checkpoint. Satisfying this checkpoint will improve access to web documents

Source: Adapted from (Chisholm, Vanderheiden, & Jacobs, 1999)

Through these guidelines, researchers have developed online software tools that can be used to determine whether a website adheres to WCAG guidelines. These tools include Wave, SortSite, InFocus, A-Checker ,Bobby, EvalAccess, and TAW (Makoza & Chigona, 2013). There is no universal agreement on which tool is more suitable for an accessibility evaluation (Al-Soud & Nakata, 2010). Therefore, this study adopted the SortSite tool.

A total of 22 publicly available websites (18 ministries and 4 departments) were scanned using the SortSite tool. For each website, a maximum of 100 pages were scanned. In every page, different resources making up the page was analysed for usability and accessibility issues. This included the HTML content, dynamically generated pages (ASP, ASPX and PHP), images (PNG, GIF and JPEG), links to third party websites and other miscellaneous related resources (CSS, JavaScript, PDF, Flash and RSS feeds).

The values for the three priority levels were recorded (values of each priority and description of the outcomes) and a detailed report for each test was generated. The evaluation yielded both quantitative and qualitative data. The quantitative data was summarized while content analysis was applied to highlight description of the qualitative results.

FINDINGS

Accessibility

In every website, 100 pages were scanned and the number of pages with accessibility issues were recorded. The results show that, nearly 50% of websites (10 websites out of 22) had more than 50 pages with accessibility issues. The POPSM is leading with 87 pages followed by MWI with 79 pages and MFARIC with 76 pages.

On the other hand, the results indicate that the PPRA website has the smallest number of pages (1 page) with accessibility issue followed by the MOHA website (20 pages) and the HESLB website (with 27 pages). Figure 1 shows number of pages with accessibility issues for each website.

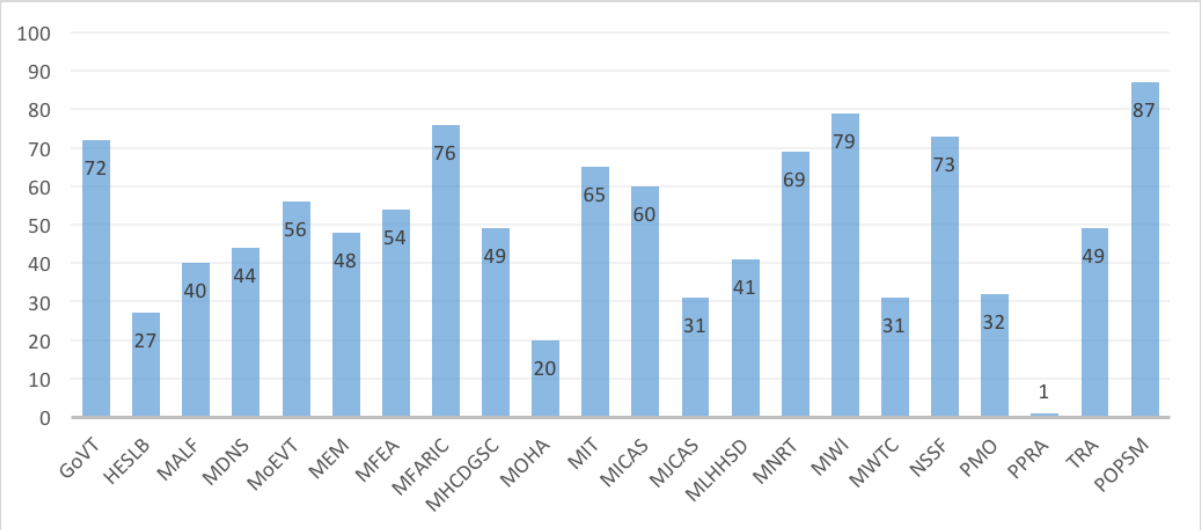

Figure 1. The number of pages with accessibility issues per website

For each website, the total number of issues was identified. The results show that 82% of websites (18 out 22 websites) had more than 100 accessibility issues with GoVT and MALF having more than 200 accessibility issues each. Table 3 shows a total number of issues for each website.

Table 3. Total number of issues for each website

GoVT	258
HESLB	66
MALF	231
MDNS	141
MoEVT	121
MEM	141
MFEA	125
MFARIC	156
MHCDGSC	114
MOHA	47
MIT	145
MICAS	145
MJCAS	116
MLHHSD	117
MNRT	175
MWI	75
MWTC	101
NSSF	180
PMO	166
PPRA	33
TRA	114
POPSM	113

For every page scanned, accessibility issues were categorized according to the three priority levels set by WCAG 2.0 guidelines depending on their impact on accessibility. The majority of websites had accessibility issues of priority 1 followed by priority 3, and priority 2.

On average, every website had 38 issues of priority 1, 5 issues of priority 2, and 11 issues of priority 3. The GoVT and MALF websites had the highest number of priority 1 issues amounting to respectively 61 and 75. Figure 2 shows the summary of accessibility issues per website per priority.

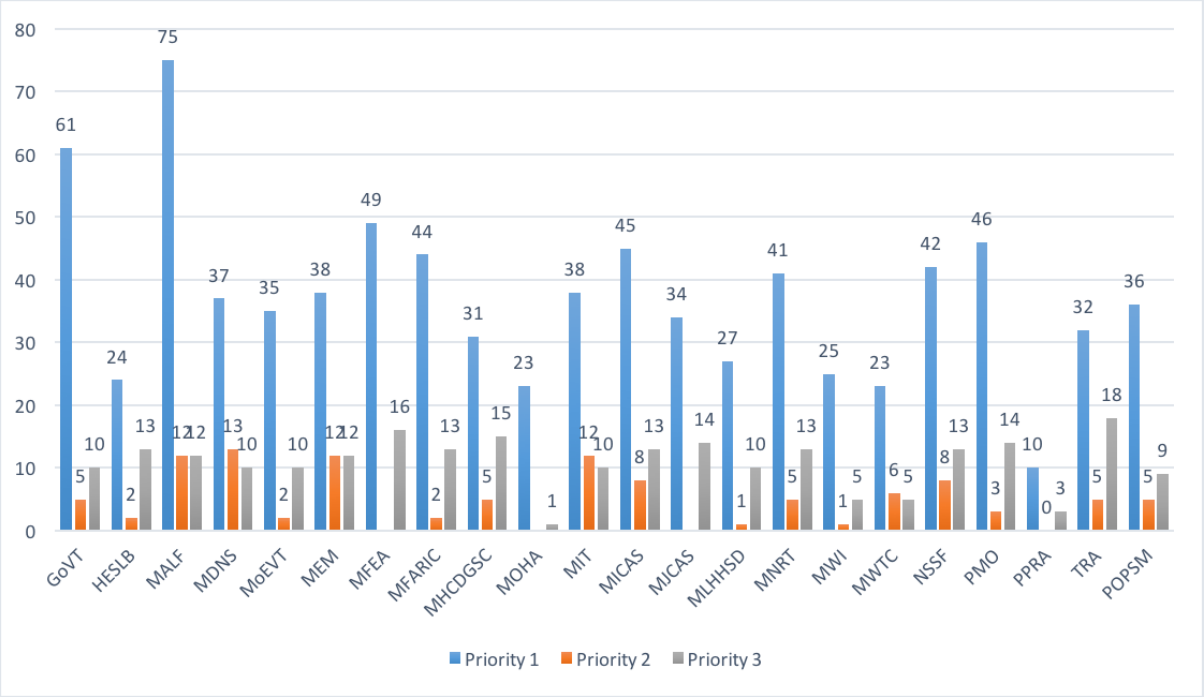

Figure 2. A total number of accessibility issues per website per priority.

A detailed analysis was conducted to examine more closely what kind of checkpoints were violated. The results show that the most common checkpoint (issue) violated by many websites was WCAG 2.0 AAA F22. This violation means unexpected openings of new windows, which takes the focus away from users, was happening in many government websites. This issue affects users especially non-sighted and mobile users as some screen readers and mobile devices give very little indication a new tab or window has been opened. There were 363 total occurrences of this issue in all websites.

Similarly, WCAG 2.0 A F89 checkpoint was mostly violated by many websites. This occurs when a link contains only non-text content and thus cannot be identified by an accessible name. Moreover, the issues of Section 508 1194.22 (m) were mostly violated with 183 occurrences. This occurs when the page has links to PDF files, but does not provide a link to download Acrobat Reader. So, users who do not have PDF readers cannot access such documents.

Some accessibility issues violations caused readers to miss content (WCAG 2.0 A F70), while others had to do with the contrast between text and background. For instance, some users find it hard to read light grey text on a white background, dark gravy text on a black background and white text on a red background. Table 4 shows some of the selected type of issues and their number of occurrences.

Table 4. Type of accessibility issues and their occurrences

Priority Level	Checkpoint (issue)	No. of occurrence	Description
A	Section 508 1194.22 (a) WCAG 2.0 A F30	49	Provides for text alternatives of images and other non-text content, including user interface components
A	Section 508 1194.22 (a) WCAG 2.0 A F65	203	Blind users can't see pictures, so each AREA should have an ALT attribute describing the function of the link, which is read aloud by screen readers.
A	Section 508 1194.22 (g) WCAG 2.0 A F91	126	Identify row and column headers in data tables using TH elements, and mark layout tables with role= 'presentation'.
A	Section 508 1194.22 (i) WCAG 2.0 A 2.4.1	36	No TITLE attributes found for the frames on these pages.
A	Section 508 1194.22 (m)	183	This page has links to a PDF file, but does not provide a link to download Acrobat Reader
A	Section 508 1194.22 (n)	119	This form control has no programmatically determined name.
A	Section 508 1194.22 (o)	42	A mechanism is available to bypass blocks of content that are repeated on multiple Web pages.
A	WCAG 2.0 A F25	43	Some pages have the same title, so the title cannot be used to distinguish pages.
A	WCAG 2.0 A F49	75	This page uses nested tables, which do not make sense when read in a screen reader.
A	WCAG 2.0 A F63	65	This link uses general text like «Click Here» and has no surrounding text to make the context clear.
A	WCAG 2.0 A F68 Section 508 1194.22 (n)	138	This form control has no programmatically determined name.
A	WCAG 2.0 A F70	167	This page has mark-up errors, causing screen readers to miss content
A	WCAG 2.0 A F77	48	This page has duplicate IDs which cause problems in screen readers.
A	WCAG 2.0 A F89	242	This failure condition occurs when a link contains only non-text content, such as an image, and that link cannot be identified by an accessible name.
A	WCAG 2.0 A H2	59	Using ALT text which duplicates link text in the same link or the following link results in screen readers stuttering as the same text is read out twice.

AA	WCAG 2.0 AA 1.4.3	75	The visual presentation of text and images of text has a contrast ratio of at least 4.5:1,
AA	WCAG 2.0 AA 1.4.4	109	Except for captions and images of text, text can be resized without assistive technology up to 200 percent without loss of content or functionality
AAA	WCAG 2.0 AAA 1.4.6	87	Ensure that foreground and background colours have a 7:1 contrast ratio.
AAA	WCAG 2.0 AAA F22	363	Displaying new windows without warning can be very confusing to non-sighted and mobile users. Some screen readers and mobile devices give very little indication a new tab or window has opened.
AAA	WCAG 2.0 AAA F84	75	Don't use generic text like «Click Here» or «Read More» in link text, because it says nothing about the link target when read out by a screen reader.
AAA	WCAG 2.0 AAA F88	190	Many people with cognitive disabilities (including dyslexia) find justified text very hard to read (text aligned to both the left and the right margins).

Usability

Every website was scanned to check for possible usability violations using the SortSite tool. For each website, a total of 100 different pages were scanned. The results show that 82% of websites (10 out of 22 websites) had more than 50 pages with usability problems of various kinds. The GoVT, MFARIC, MWI, NSSF, and POPSM had more than 70 pages with usability problems. However, the PPRA and the HESLB websites had the smallest number of pages with usability problems with respectively 1 and 22 issues. Figure 3 shows the number of pages with usability issues for each website.

We were also interested to determine a total number of usability problems per each website. Generally, the average number of usability issues found per website was approximately 60. To be ~~M~~ore specific, the results show that 73% of websites (16 out of 22 websites) had more than 50 usability violations of various kinds. Moreover, 5 websites had more than 70 usability problems. The GoVT, MALF, and PMO websites are leading with the higher number of usability problems with respectively 95, 130, and 84 issues. The single most striking observation to emerge from the result was that MALF had an unusually high number of usability issues i.e. 130. Figure 4 shows a total number of usability issues per website.

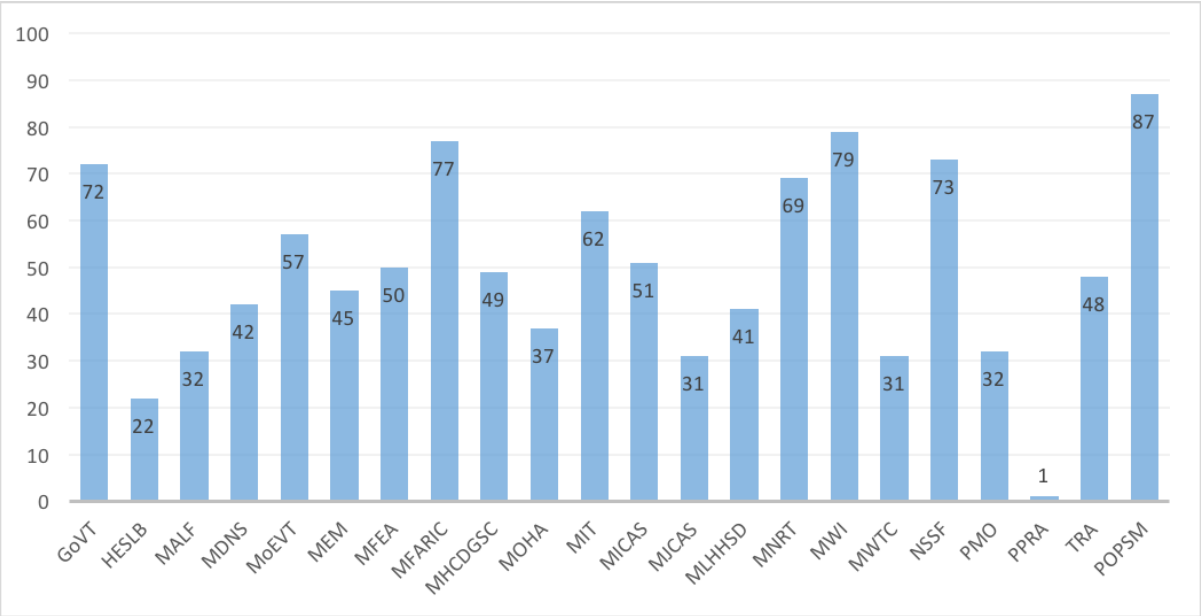

Figure 3. Number of pages with usability issues for each website

Looking more closely into the specific usability issues, the most common problem observed in terms of the total number of occurrence, corresponded to the Usability.gov 14:3 checkpoint. This guideline checks to make sure that images do not slow down the loading speed of pages beyond a standard mark of 5 seconds. Therefore, the findings from this study show that many websites had large images that affected download speeds of websites.

The study also found that Usability.gov 10:11 was widely violated in most the scanned websites. This means, many websites had links based on a single word or several lines. A single word text link may not give enough information about the link's destination while a link that is several words may be difficult to read quickly, particularly if it wraps to another line.

The study also found that many websites violated Usability.gov 10:6 which is using images as links which had direct impact on the downloading speed of the website. Text links usually download faster, are preferred by users, and should change colours after being selected. Table 5 shows the types of usability issues and their occurrences that haves occurred more than 40 times.

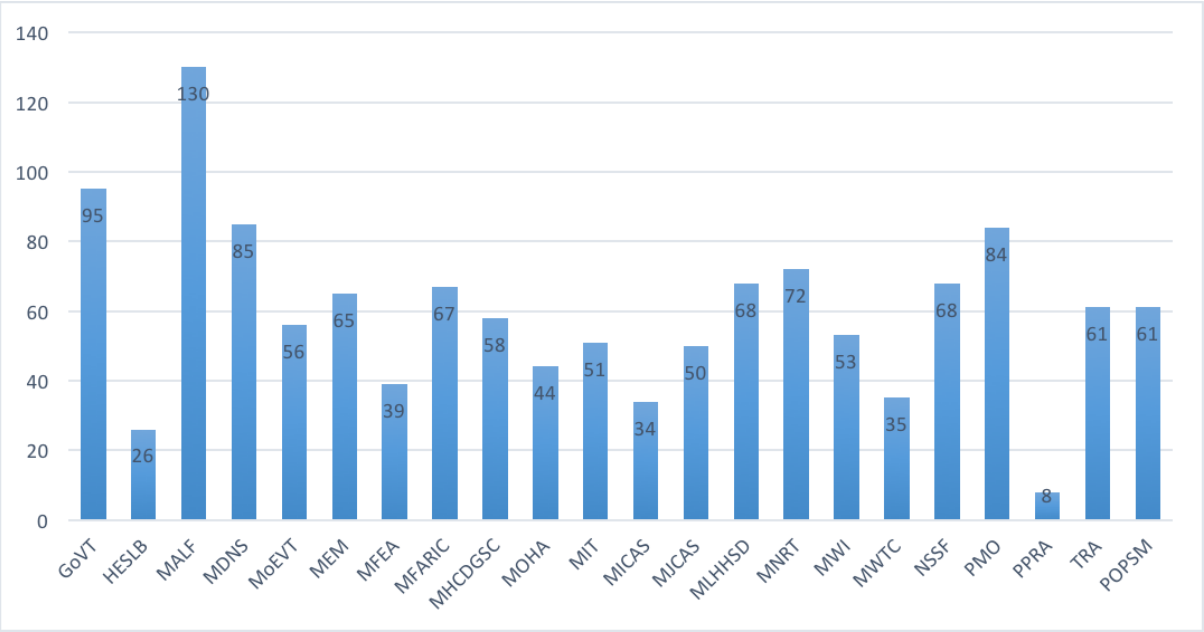

Figure 4. Total number of usability issues per website

Table 5. Types of usability issues and their occurrences

Issue	**No. of occurrences**	**Description**
Usability.gov 10:1	75	Use link labels and concepts that are meaningful, understandable, and easily differentiated by users rather than designers.
Usability.gov 10:11	142	Make text links long enough to be understood, but short enough to minimize wrapping.
Usability.gov 10:6	67	Use text links rather than image links.
Usability.gov 11:10	43	Change the font characteristics to emphasize the importance of a word or short phrase.
Usability.gov 11:5	96	Use bold text only when it is important to draw the user's attention to a specific piece of information.
Usability.gov 11:8	53	Use at least a 12-point font (e.g., typeface) on all Web pages.
Usability.gov 12:9	43	Capitalize the first letter of only the first word of a list item, a list box item, check box labels, and radio button labels.
Usability.gov 13:23	40	Never use one radio button alone.
Usability.gov 13:5	119	Display an associated label for each data entry field to help users understand what entries are desired.
Usability.gov 14:3	273	Take steps to ensure that images on the Web site do not slow page download times unnecessarily.

DISCUSSION

The government has been spending thousands of dollars to implement websites to speed-up access to government services, lower costs for administrative services, and to increase transparency and accountability of government activities. Websites are also touted as drivers of e-democracy as they help to boost democratic practices such as voting, deliberation or decision-making by providing opportunities for individuals and communities to interact with government, as well as for the government to seek input from the community (Asiimwe & Lim, 2010). According to Basu (2004), e-governance is more than just a government website on the Internet. It is impossible ~~to~~ for citizens to access such information and services if the developed websites suffer from accessibility and usability problems (Asiimwe & Lim, 2010).

This study was set out with the aim of evaluating accessibility and usability of government websites taking a sample of 22 websites using the SortSite tool. The report from the SortSite tool use was then checked against the W3 WCAG accessibility standards and Section 508 guidelines, and usability issues based on the US Federal (Usability.gov) guidelines. The detailed analysis revealed that many websites suffered from priority 1 usability problems, which are basic requirements for some groups to be able to access and use websites.

Generally, the study found that many government websites suffer from accessibility and usability issues that hinder users from accessing information and services. Nearly 50% of websites (10 out of 22 websites) had more than 50 pages with accessibility issues out 100 scanned pages. A detail analysis indicated that 82% of websites (18 out 22 websites) had more than 100 accessibility issues out of 100 scanned pages.

These findings show that many services and information are not accessible to citizens. For instance, some pages have PDF documents without Acrobat Reader being provided. Obviously, such documents will not be accessible citizens. Moreover, many websites are not accessible in various small and handheld devices such as mobile phones and tablets. The study also found there is a lack of contrast between text and background in many websites. For instance, some pages had dark grey text on a black background and white text on a red background which hinders citizen with sight disorders to access information and services.

It should be noted that the government of Tanzania has moral obligations to ensure that government websites do not discriminate citizens based on their disabilities. This is in line with equal access to public information and e-services, as it is considered today a universal human

right per United Nations Convention on the Rights of Persons with Disabilities (United Nations, 2006) which Tanzania has signed. Therefore, it is important for all government websites to conform with accessibility guidelines.

The study also found that many government websites suffer from usability problems. The average number of usability issues found per website was approximately 60 with 73% of evaluated websites having more than 50 usability violations of various kinds. In terms of occurrences, three usability issues namely Usability.gov 10:11, Usability.gov 13:5, and Usability.gov 14:3 had occurrences of more than 100 times in various pages, with Usability.gov 14:3 occurring more than 250 times.

These usability problems have an impact on how citizens access information and use various services. For instance, the study found that many webpages use large images as links which increase download speed. It should be noted that user frustration increases as the website takes more time to load the websites. Moreover, good usability enables users to find the desired information and complete their tasks more effectively, choosing the right actions, and navigating to the right pages (Al-Soud & Nakata, 2010).

SUGGESTION FOR FUTURE RESEARCH

Despite the findings obtained from this study, some limitations are worth noting. In evaluating usability and accessibility of government websites, the coverage and depth of information provided was not considered. Due to the nature of government websites, it would be impossible for one to evaluate the coverage and depth of information and services provided in each website. Accessibility and usability are important attributes toward making websites accessible to all users regardless of their devices, age, and background. However, websites without required information to citizen will be meaningless. Future research should focus on determining coverage and depth of information in government websites.

Our study used an automated testing software i.e. the SortSite tool to evaluate accessibility and usability of government websites. Although automated testing software are useful in terms of identifying accessibility and usability problems, one weakness of this method is that ~~they~~ it does not address the issues related website functionalities. For instance, it was revealed that many government websites use the English language rather than the Swahili language even though English is our second language. Such kind of usability problems cannot be captured by automated testing software. Further research could make use of a multi-method approach

combining automated testing software with other methods as each method has its own strengths and provides a different perspective of a website evaluation.

CONCLUSION

With the increased Internet use in Tanzania, citizens demand more e-services and reliable information from the government. In turn, almost every MDA has a website of a different kind to meet citizens' demands. Therefore, it is important for such websites to be accessible and usable to all citizens to meet the intended objectives. The findings from this study have clearly shown that many government websites have many usability and accessibility problems. This is a worrying situation as more government services have continued to develop and be put online.

It should be made clear that it is the responsibility of the government to design websites that are easy to use and are accessible to each type of citizen. Implementing the simple principle of having a website that works well and doesn't confuse users or get them frustrated~~,~~ will help to reduce the abandonment of the websites by visitors. Great effort is needed from MDAs in Tanzania to improve their websites so that they can be accessible and usable to all citizens. Due to the availability of several ~~plenty of~~ tools to check these issues, the results from this study may imply a lack of policies and regulations that make sure that accessibility and usability issues are taken into consideration during the website design and implementation.

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