ACCESSIBILITY ASSESSMENT OF HALAL CERTIFICATION BODIES' WEBSITE

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Abstract

In the Islamic worldview, justice relates to placing things in their rightful place. It also denotes giving equal treatment to everyone irrespective of rank, race and ability. In the case of websites accessibility, these principles should also apply. The World Wide Web Consortium (W3C) has developed the Web Content Accessibility Guidelines (WCAG) which guides web developer to develop websites that are accessible by all users including those with disabilities to perceive, understand, navigate, and interact effectively. However, despite the availability of these guidelines, many websites including those that provide Islamic contents and services, still did not cater users with certain disabilities. Driven by this scenario, a study was conducted with the aim to assess the website accessibility of Halal certification bodies across the world. A total of 41 websites was evaluated based on the WCAG 2.0 criteria. The results suggest that the majority still did not fully comply to the guidelines as specified in WCAG 2.0. Among the aspects that warrant immediate attention include text alternatives, adaptable, distinguishable, keyboard accessible, enough time, navigable, readable, input assistance and compatible. Given the results, the authorities concerned should consider taking necessary actions so as to ensure that their websites are accessible by all types of users including those with certain disabilities.

Keywords: Website, accessibility, halal certification, disabilities.

1 INTRODUCTION

Today, websites has become the most critical source of getting information and knowledge. Because of its importance and significance, the accessibility of the websites cannot be compromised. Shawn, (2006) stated that accessibility represents one of the web-quality aspects that ensures effective use of the website, ease of navigation and understanding its structure despite having physical disabilities or other constraints such as people with different skills, preferences and needs. Individual who have slow Internet connection, suffer from temporary or age-related disabilities and have different technological capabilities such as browser type, screen sizes, or device should also be covered when addressing accessibility.

The World Wide Web Consortium (W3C) (2009) states that an accessible website supports people with disabilities to perceive, understand, navigate, and interact effectively for equal chances to contribute to the web communication activities. Unfortunately, despite the advances in Internet technologies and stronger non-discrimination legislation that focuses on equal rights, much of the Internet or websites contents remain inaccessible for many people with physical disabilities (Scholz, Yalcin, & Priestley, 2017). The literature

indicates that researchers have conducted numerous studies examining websites accessibility (Abdul Latif & Masrek, 2010; Adepoju & Shehu, 2014; Lujan-Mora, Navarrete & Penafiel, 2014; Ahmi & Mohamad, 2016). These studies have definitely increased our knowledge on the status of websites accessibility in diverse setting. However, none has ever attempted to examine the website accessibility by halal certification bodies or authorities. Driven by this scenario, a study was conducted with the aim to assess the website accessibility of Halal certification bodies across the world.

2 LITERATURE REVIEW

In the Islamic worldview, justice relates to placing things in their rightful place. It also denotes giving equal treatment to everyone irrespective of rank, race and ability. In the case of websites accessibility, these principles should also apply. Unfortunately, empirical studies have shown that many websites are still not accessible by people with disabilities (Abdul Latif & Masrek, 2010; Adepoju & Shehu, 2014; Lujan-Mora, Navarrete & Penafiel, 2014; Ahmi & Mohamad, 2016). According to Duverge (2016), there are numerous ways that a website can be inaccessible to a user with disabilities. As shown in Figure 1, these obstacles differ according to the individual and the disability.

Type of Disability	Description
Auditory	Those who are deaf or hard of hearing are unable to fully interact with some websites, especially ones that capitalize on sound. Common auditory barriers include media players without captions, lack of sign language to supplement information and interactions that rely on use of voice.
Cognitive and Neurological	Both cognitive and neurological disabilities involve the nervous system or brain, impacting how people see, hear, move, speak and interpret information. Disabilities in this category include autism spectrum disorder, learning disabilities and mental illnesses. Complex page navigation, moving content that cannot be turned off and other mechanisms that cannot be easily turned off are common web issues that affect these individuals.
Physical	Often referred to as "motor disabilities," physical limitations can also lead to web inaccessibility. Websites without full keyboard or mouse support, ones that require time limits to complete tasks and others that require certain orientation cues can cause issues for those with physical disabilities.
Speech	People with mutism, apraxia or cluttering often struggle with web accessibility, especially when services include speech interaction. When a website only offers a phone number or voice interaction method as its contact information, those with speech disabilities are unable to fully interact with the website.
Visual	Individuals with blindness, color-blindness and deaf-blindness especially struggle with many websites. Images without text alternatives, missing non-visual cues and websites that do not offer custom color combinations can be huge barriers to those with visual disabilities.

Figure 1: Type of Disability (Adapted from Duverge, 2016)

The World Wide Web Consortium (W3C) has developed the Web Content Accessibility Guidelines (WCAG) which guides web developer to develop websites that are accessible by all users including those with disabilities to perceive, understand, navigate, and interact effectively. Web content accessibility is usually described in terms of conformance to WCAG. The W3C is an international community where member organizations, a full-time staff, and the public work together to develop Web standards. The goal of WCAG is to provide "a single shared standard for web content accessibility that meets the needs of individuals, organizations, and governments internationally" (W3C, 2008) According to W3C (2008), the WCAG is primarily intended for Web content developers (page authors, site designers, etc.), Web authoring tool developers, Web accessibility evaluation tool developers and others who want or need a standard for web accessibility, including for mobile accessibility (W3C). To date, there are two versions of WCAG which are WCAG 1.0 and WCAG 2.0. ISO standard has approved WCAG 2.0 WCAG 2.0 (ISO/IEC 40500:2012. ISO/IEC 40500). WCAG is organized around 12 Guidelines based on the following four major principles:

    i. Perceivable-Information and user interface components must be presentable to users in ways they can perceive (i.e. access process and understand content). For instance, any images or graphics

that cannot be perceived by visually impaired people must be provided with text alternative.

ii.   Operational-User interface components and navigation must be operable. The website needs to work no matter how it its being accessed. For instance, a user may want to access the website using speech recognition.

iii. Understandable-Information and the operation of user interface must be understandable. The language of the page should be clearly specified so that appropriate speech technologies can easily detect. Language should be clear and simple and understood by as many users as possible.

iv.   Robust Web content should work on as many devices along with assistive technologies such as screen readers etc.

There are three conformance levels A (mandatory / must support), AA (should have / should support) AAA (desirable/may support) and the aim is to be at least accessible to level AA.

3   METHODOLOGY

Figure 1 presents the steps involved in conducting the research. The list of Halal certification bodies was obtained from the Department of Islamic Development (JAKIM). The list was last updated 1st November 2018 and contained a total of 75 bodies or organizations. Several countries such as Australia, Canada Brazil and Japan have more than one body or organization. Several organizations did not have any specific or dedicated website. For any given countries that have more than one certification body, only one will be chosen and selection was either randomly or based on the availability of websites. Instead of assessing multiple webpages, thi study only assessed the homepage. This is because the homepage denotes the entrance to any website, hence it could be the most up-to-date section of the website (Providenti & Zai III, 2011). Similar approach was also used by previous studies such as Abdul Latiff & Masrek (2010) and Ahmi & Mohamad (2016). The list of the chosen certification bodies is shown in Table 1.

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┌────────────────────┐     ┌────────────────────┐     ┌────────────────┐
│ Obtaining the list │     │ Enter websites     │     │ Interpretation │
│ of Halal           │ ──► │ address for        │ ──► │ of Results     │
│ certification      │     │ accessibility      │     │                │
│ bodies from Jakim  │     │ assessment based   │     │                │
│ websites           │     │ using AChecker     │     │                │
└────────────────────┘     └────────────────────┘     └────────────────┘
                                    │
                                    ├──► ┌────────────────────┐
                                    │    │ Analysis Based on  │
                                    │    │ WCAG 2.0 Level A   │
                                    │    └────────────────────┘
                                    │
                                    ├──► ┌────────────────────┐
                                    │    │ Analysis Based on  │
                                    │    │ WCAG 2.0 Level AA  │
                                    │    └────────────────────┘
                                    │
                                    └──► ┌────────────────────┐
                                         │ Analysis Based on  │
                                         │ WCAG 2.0 Level AAA │
                                         └────────────────────┘
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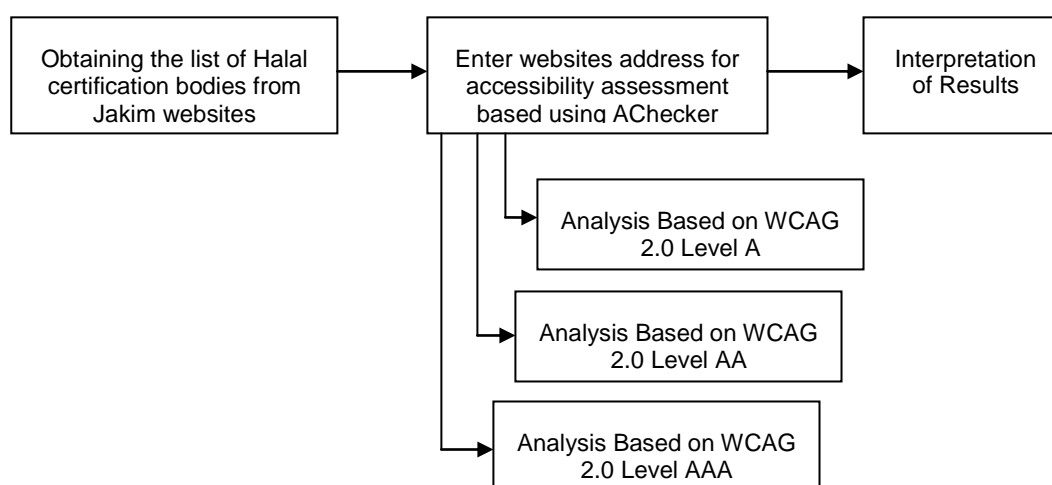
Figure 2: Research activities

The results of the assessment can be categorized into any of the three: namely, fail, conditional pass, pass. Fail is set when there is/are known problem(s) while conditional pass is set when there is/are no known problems but there is/are likely or potential problem(s). Pass is set when there is/are no problems discovered, or is no known problems and likely/potential problems have pass decisions made on.

Table 1: List of Selected Halal Certification Bodies Included in the Study

No	Country	Organization	Websites
1	Australia	Halal Certification Authority Australia (HCAA)	https://halalauthority.org/
2	Austria	Islamic Information & Documentation Center	http://www.iidc.at
3	Bangladesh	Islamic Foundation Bangladesh	http://www.islamicfoundation.gov.bd/
4	Belgium	Halal Food Council of Europe	http://www.hfce.eu/
5	Bosnia & Herzegovina	Agency for Halal Certification	http://www.halal.ba

6	Brazil	Fambras Halal Certificaco LTDA	http://fambrashalal.com.br
7	Brunei	Lembaga Mengeluarkan Permit Halal	http://www.kheu.gov.bn/SitePages/Lembaga%20Mengeluarkan%20Permit%20Halal.aspx
8	Canada	Halal Monitoring Authority	http://www.hmacanada.org
9	China	Shandong Halal Certification Service	http://www.ehalal.cn
10	Chile	Centro Islamico De Chile	https://www.islamenchile.cl
11	Egypt	Egyptian Organization for Standards and Quality	http://www.eos.org.eg/en
12	France	Ritual Association of Lyon Great Mosque	http://www.mosquee-lyon.org/
13	Germany	Halal Control GmbH Inspection and Certification Body	http://www.halalcontrol.eu
14	India	Halal India Pvt Ltd	http://www.halalindia.co.in
15	Iran	Islamic Chamber Research & Information Center	http://www.halalworld.org
16	Ireland	Islamic Foundation of Ireland	https://islamicfoundation.ie/
17	Italy	Co.Re.Is Halal Italia	http://www.halalitalia.org/index.php?p=chi_siamo_en
18	Japan	Japan Halal Foundation	https://www.japanhalal.or.jp
19	Kazakhstan	Association of Halal Industry Kazakhstan	http://halal-kz.kz/
20	Kenya	Kenya Beureau of Halal Certification	http://www.kbhc.info/
21	Lithuania	UAB Halal Control Lithuania	http://www.halalcontrol.lt
22	Malaysia	Department of Islamic Development (JAKIM)	http://www.halal.gov.my/v4/
23	Maldives	Ministry of Islamic Affairs	http://islamicaffairs.gov.mv/
24	Morocco	Institut Marocain De Normalisation	http://www.imanor.ma
25	Netherlands	Control Office of Halal Slaughtering B.V. & Halal Quality Control	http://www.halaloffice.com
26	New Zealand	Federation of Islamic Associations of New Zealand	https://fianz.com/
27	Pakistan	Jamea Markaz Uloom Islamia Mansoora (JMUIM)	https://halaljmuim.com/
28	Philipines	Islamic Da'wah Council of The Philippines (IDCP)	https://www.idcphalal.com
29	Poland	Muslim Religious Union in Poland (MRU)	https://www.halalpoland.pl
30	Singapore	Islamic Religious Council of Singapore (MUIS)	https://www.halal.sg
31	South Africa	National Independent Halaal Trust	https://www.halaal.org.za
32	South Korea	Korea Halal Industry Association	http://koreahalal.org/
33	Spain	The Halal Institute of Spain	http://www.institutohalal.com/
34	Sri Lanka	Halal Accreditation Council (Guarantee) Limited	http://www.hac.lk
35	Switzerland	Halal Certification Services	http://www.halalcs.org
36	Taiwan	Taiwan Halal Integrity Development Association	http://www.thida.org/
37	Thailand	The Central Islamic Council of Thailand (CICOT)	http://www.cicot.or.th/
38	Turkey	Kas Uluslararasi Sertifikasyon Goz. Tek. Kont. Hizm. Ltd. Sti. (Kascert International)	http://www.kascert.com/
39	United Arab Emirates (UAE)	Emirates Authority for Standardization & Metrology	https://www.esma.gov.ae/ar-ae/Pages/default.aspx
40	United Kingdom	Halal Certification Europe (HCE)	http://www.halalCE.com
41	United States of America	Islamic Services of America (ISA)	http://www.isahalal.org

Given that there are multiple software assessment tools (e.g. WAVE, AChecker, Total Validator, Bobby, TAW, WEBACT, EvalAccess 2.0, KwCAG 1.0 and HERA) the researchers had to determine the most appropriate to be used in the study. As of 2016, W3C listed a total of 122 software assessment tools for checking accessibility. Ahmi & Mohamad (2016) analyzed all previous studies on accessibility and concluded that AChecker and Bobby as the most frequently used tool. On that premise, the present study also decided to use AChecker as the tool for analyzing the website accessibility.

AChecker is a Web accessibility evaluation tool that is designed to help Web content developers and Web application developers ensure their Web content is accessible by everyone. AChecker provides nine options of guidelines when assessing any given websites, which are BITV 1.0 (Level 2), Section 508, Stanca Act, WCAG 1.0 (Level A), WCAG 1.0 (Level AA), WCAG 1.0 (Level AAA), WCAG 2.0 (Level A), WCAG 2.0 (Level AA) and WCAG 2.0 (Level AAA). This study analyzed the websites according to WCAG 2.0 (Level A), WCAG 2.0 (Level AA) and WCAG 2.0 (Level AAA) only. The results produced by AChecker will identify three

types of problems (i) known problems which are problems that have been identified with certainty as accessibility barriers and to be addressed immediately, (ii) likely problems which are problems that have been identified as probable barriers, but require a human to make a decision to fix these problems, and (iii) potential problems which are problems that AChecker cannot identify and requires human intervention. The overall results of the assessment can be categorized into any of the three: namely, fail, conditional pass and pass. Fail is set when there is/are known problem(s) while conditional pass is set when there is/are no known problems but there is/are likely or potential problem(s). Pass is set when there is/are no problems discovered, or is no known problems and likely/potential problems have pass decisions made on.

4 FINDINGS

Table 2 presents the AChecker results summary of the selected Halal certification bodies based WCAG 2.0. The majority of the websites did not pass at any of the three levels. Out of 41 websites, only three (3) or 7.3% passed at all three levels, A, AA and AAA. Three (3) or (7.3%) websites were graded as conditional passed at Level A. As for Level AA, only one (1) or (2.4%) achieved conditional passed. The same website also achieved conditional passed for level AAA.

Table 2: AChecker Results Summary of Selected Halal Certification Bodies Based on WCAG 2.0

No	Websites	WCAG 2.0 (Level A)				WCAG 2.0 (Level AA)				WCAG 2.0 (Level AAA)			
		KP	LP	PP	R	KP	LP	PP	R	KP	LP	PP	R
1	https://halalauthority.org/	0	0	0	P	0	0	0	P	0	0	0	P
2	http://www.iidc.at	326	1	289	F	49	1	310	F	49	1	315	F
3	http://www.islamicfoundation.gov.bd/	3	0	747	F	8	0	819	F	8	0	824	F
4	http://www.hfce.eu/	6	0	58	F	7	0	67	F	9	0	73	F
5	http://www.halal.ba	70	0	466	F	72	0	516	F	72	0	521	F
6	http://fambrashalal.com.br	169	0	803	F	199	0	806	F	206	0	819	F
7	http://www.kheu.gov.bn/SitePages/Lembaga%20Mengeluarkan%20Permit%20Halal.aspx	16	0	475	F	19	0	484	F	19	0	492	F
8	http://www.hmacanada.org	34	1	542	F	104	1	559	F	104	1	522	F
9	http://www.ehalal.cn	0	0	112	CP	0	0	124	CP	0	0	132	CP
10	https://www.islamenchile.cl	2	0	13	F	2	0	17	F	2	0	22	F
11	http://www.eos.org.eg/en	14	7	342	F	15	8	362	F	15	2	386	F
12	http://www.mosquee-lyon.org/	109	0	455	F	74	0	482	F	81	0	487	F
13	http://www.halalcontrol.eu	9	6	87	F	42	6	91	F	84	6	69	F
14	http://www.halalindia.co.in	32	2	227	F	41	2	252	F	62	2	283	F
15	http://www.halalworld.org	21	0	32	F	5	0	45	F	6	0	52	F
16	https://islamicfoundation.ie/	25	1	295	F	62	1	328	F	73	0	333	F
17	http://www.halalitalia.org/index.php?p=chi_siamo_en	3	1	122	F	51	1	125	F	51	1	132	F
18	https://www.japanhalal.or.jp	1	0	13	F	3	0	19	F	3	0	24	F
19	http://halal-kz.kz/	15	1	315	F	15	1	322	F	15	1	335	F
20	http://www.kbhc.info/	34	2	179	F	35	2	198	F	38	0	189	F
21	http://www.halalcontrol.lt	24	0	366	F	24	0	376	F	24	0	408	F
22	http://www.halal.gov.my/v4/	29	1	171	F	33	1	189	F	33	1	193	F
23	http://islamicaffairs.gov.mv/	11	0	178	F	17	0	191	F	18	0	200	F
24	http://www.imanor.ma	0	0	0	P	0	0	0	P	0	0	0	P
25	http://www.halaloffice.com	0	6	163	CP	7	6	167	F	7	6	172	F
26	https://fianz.com/	39	0	551	F	44	0	579	F	44	0	585	F
27	https://halaljmuim.com/	9	1	196	F	21	1	220	F	21	1	226	F
28	https://www.idcphalal.com	0	0	0	P	0	0	0	P	0	0	0	P
29	https://www.halalpoland.	3	0	10	F	6	0	13	F	6	0	18	F

	pl												
30	https://www.halal.sg	4	2	271	F	4	3	280	F	4	3	285	F
31	https://www.halaal.org.za	49	0	123	F	8	0	130	F	8	0	136	F
32	http://koreahalal.org/	43	0	760	F	64	0	783	F	68	0	788	F
33	http://www.institutohalal.com/	0	0	429	CP	1	0	444	F	1	0	452	F
34	http://www.hac.lk	4	0	178	F	4	0	186	F	4	0	196	F
35	http://www.halalcs.org	39	2	435	F	59	2	469	F	59	2	474	F
36	http://www.thida.org/	0	0	138	F	58	1	149	F	58	1	155	F
37	http://www.cicot.or.th/	45	0	604	F	100	0	637	F	102	0	644	F
38	http://www.kascert.com/	417	2	855	F	593	2	938	F	593	2	1120	F
39	https://www.esma.gov.ae/ar-ae/Pages/default.aspx	542	2	1641	F	358	5	1791	F	358	4	1796	F
40	http://www.halalCE.com	2	0	303	F	2	0	317	F	2	0	322	F
41	http://www.isahalal.org	107	0	588	F	109	0	602	F	109	0	607	F
		2256				2315				2416			

Legend: R=Result, K=Known problems, L=Likely problems, P=Potential problems, F=Fail, P=Pass, C=Conditional pass

Table 3 showcases the known problems of selected halal certification bodies' websites as per WCAG 2.0. At level A, the majority of the problem lies in "*text alternatives: provide text alternatives for any non-text content*" (72.3%). Other problems are "*distinguishable: make it easier for users to see and hear content including separating foreground from background" (10.7%)* and "*navigable: provide ways to help users navigate, find content, and determine where they are*" (7.6%). The results for Level AA are almost consistent with that of Level A, being the main problem related to text alternative (41.7%) followed by distinguishable (34.3%) and navigable (3.4%). At Level AAA, the majority of the problems was on "*distinguishable: make it easier for users to see and hear content including separating foreground from background"* (44.6%). Other profound problems are on text alternatives (32.2%), key accessible (10.2%)

Table 3: Known Problems of Selected Halal Certification Bodies' Websites as per WCAG 2.0

		WCAG 2.0 (Level A)		WCAG 2.0 (Level AA)		WCAG 2.0 (Level AAA)	
		Total	%	Total	%	Total	%
1.1	Text alternatives: Provide text alternatives for any non-text content	1632	72.28	966	41.73	779	32.22
1.2	Time-based media: Provide alternatives for time-based media.	0	0.00	0	0.00	0	0.00
1.3	Adaptable: Create content that can be presented in different ways (for example simpler layout) without losing information or structure.	101	4.47	77	3.33	82	3.39
1.4	Distinguishable: Make it easier for users to see and hear content including separating foreground from background.	242	10.72	794	34.30	1078	44.58
2.1	Keyboard accessible: Make all functionalities available from a keyboard.	13	0.58	312	13.48	247	10.22
2.2	Enough time: Provide users enough time to read and use content.	2	0.09	3	0.13	4	0.17
2.3	Seizures: Do not design content in a way that is known to cause seizures.	0	0.00	7	0.30	0	0.00
2.4	Navigable: Provide ways to help users navigate, find content, and determine where they are.	171	7.62	79	3.41	145	6.04
3.1	Readable: Make text content readable and understandable.	23	1.02	23	0.99	23	0.95
3.2	Predictable: Make web pages appear and operate in predictable ways.	0	0.00	2	0.09	0	0.00
3.3	Input Assistance: Help users avoid and correct mistakes.	65	2.88	44	1.90	51	2.11
4.1	Compatible: Maximize compatibility with current and future user agents, including assistive technologies.	7	0.35	8	0.35	7	0.33
		2256	100	2315	100	2416	100

5 FINDINGS

Out of the 12 problems outlined in WCAG 2.0, nine turned out to be presence in the assessed websites which are text alternatives, adaptable, distinguishable, keyboard accessible, enough time, navigable, readable, input assistance and compatible. Text alternative relates to "any non-text content so that it can be

changed into other forms people need, such as large print, braille, speech, symbols or simpler language" (W3C, 2008). According to W3C (2008), providing text alternative in the halal websites will provide benefits to (i) people who have low vision, blind, or who are having trouble reading text (ii) people who have difficulty in hearing, deaf or who are having trouble to comprehend audio information. Text alternatives support the ability to search for non-text content and to repurpose content in a variety of ways.

Adaptable is concerned with creating content that can be presented in different ways without losing information or structure. According to W3C (2008), "users who are blind, will benefit when information conveyed through colour is also available in text (including text alternatives for images that use colour to convey information)". In addition, "users who are deaf-blind using braille (text) refreshable displays may be unable to access colour-dependent information" (W3C, 2008). Distinguishable relates to making it the halal websites easier for users to see and hear content including separating the foreground and background. This is because individuals with visual and hearing disabilities have much greater difficulty separating foreground and background information. Hence, for visual presentations, it is imperative that information presented on top of a background contrasts sufficiently with the background. As for audio presentations, the halal website developers have to make sure that foreground sounds are sufficiently louder than the background sounds.

Keyboard accessible is concerned with making all functionality of the halal websites available from a keyboard. W3C (2008) stated that "if all functionality can be achieved using the keyboard, it can also be accomplished by a wide variety of assistive technologies (AT). Users of the halal websites who have disabilities need more time to complete tasks compared to normal users. These types of users normally take longer time to respond, take longer time to read things, take longer time to find things. Under certain circumstances, they may be accessing content through AT that requires more time. Hence, the halal websites need to be developed in such a way that will ensure that disabled users are able to complete the tasks required by the content according to their own individual response times.

The navigation aspect relates to helping users find the content they need and allow them to keep track of their location. For people with disabilities, these tasks are often more challenging and daunting. For finding, navigation, and orientation, it is crucial that the user of the halal websites can find out what the current location is. In addition, information about the possible destinations should also be available. Readable halal websites means the halal websites allow text content to be read by users and by assistive technology. The websites must also ensure that information necessary for making user understand is also available. People with disabilities experience text in many different ways (W3C, 2008). Certain users have great difficulty in recognizing written words but can understand extremely complex and sophisticated documents when the text is read aloud, or when key processes and ideas are illustrated visually or interpreted as sign language (W3C, 2008).

The input assistance for the halal wesbites "seeks to reduce the number of serious or irreversible errors that are made, increase the likelihood that all errors will be noticed by the user, and help users understand what they should do to correct an error" (W3C, 2008). People with some disabilities will normally have more difficulty creating error-free input into the halal websites. In addition, it may be equally difficult for them to detect that they have made an error. Typical error indication methods may not be obvious to them because of a limited field of view, limited colour perception, or use of assistive technology. Compatible website relates to supporting compatibility with current and future user agents, especially with assistive technologies (AT). Since technologies change quickly, and AT developers have much trouble keeping up with rapidly changing technologies, it is important that content of the websites follow conventions and be compatible so that AT can more easily work with new technologies as they evolve.

6 CONCLUSION

The objective of this research has been to examine the website accessibility of Halal certification bodies across the world. The findings of the study have clearly shown that majority of these website are still not fully compliance to the WCAG 2.0. This suggests that people with disabilities would experience some problems or difficulties in accessing these websites. Among the aspects that warrant immediate attention include text alternatives, adaptable, distinguishable, keyboard accessible, enough time, navigable, readable, input assistance and compatible. Given the results, the authorities concerned should consider taking necessary actions so as to ensure that their websites are accessible by all types of users including those with certain disabilities

ACKNOWLEDGEMENT

REFERENCE LIST

Abdul Latif, M.H., & Masrek, M.N., (2010). Accessibility evaluation on Malaysian e-government websites. *Journal of e-Government Studies and Best Practices. 2010* (2010), 1 – 11.

Adepoju, S. A., & Shehu, S. (2014). Usability evaluation of academic websites using automated tools. *Proceeding of 3rd International Conference on User Science and Engineering (i-USEr).*

Ahmi, A. and Mohamad, R. (2016). Evaluating Accessibility of Malaysian Public Universities Websites Using AChecker And Wave. *Journal of ICT*, 15(2), 193–214.

Department of Islamic Development Malaysian (JAKIM)(2018). The Recognised Foreign Halal Certification Bodies and Authorities (As At November 1st 2018).

Duverge, G. (2016). Internet For All: Web Accessibility Standards For People With Disabilities. Point Park University Online. Available At: Https://Online.Pointpark.Edu/Information-Technology/Web-Accessibility-People-With-Disabilities/

Lujan-Mora, S., Navarrete, R., & Penafiel, M. (2014). eGovernment and web accessibility in South America. *Proceeding of the First International Conference on eDemocracy & eGovernment (ICEDEG)*, 77 – 82. doi: 10.1109/ICEDEG.2014.6819953

Providenti, Zai III, R. (2007). Web accessibility at Kentucky's academic libraries, *Library Hi Tech, 25* (4), 478 – 493. doi: 10.1108/07378830710840446

Scholz, F., Yalcin, B., & Priestley, M. (2017). Internet access for disabled people: Understanding socio-relational factors in Europe. Cyberpsychology: Journal of Psychosocial Research on Cyberspace, 11(1), article 4. http://dx.doi.org/10.5817/CP2017-1-4

Shawn, L. H. (2006). *Web accessibility: Web standards and regulatory compliance*. Friends of Ed.

The World Wide Web Consortium (W3C) (2008). Understanding WCAG 2.0. Retrieved from: https://www.w3.org/TR/UNDERSTANDING-WCAG20/ensure-compat.html