The Role of Social Media Tools: Accessible Tourism for Disabled Citizens

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ABSTRACT

Knowledge sharing becomes important to accomplish digital citizenship. Social media tools become popular to share and diffuse the knowledge in the digitalization. This social media learning and knowledge sharing platforms provides accessibility to the services within societies especially for disabled citizens. This research study aims to evaluate the role of social media tools on tourism services of the country in respect to the perceptions of disabled people. Furthermore, the research study examines the web usability and accessibility of the services to the citizens within the society. In this respect, mixed method was conducted to gain reflections of disabled people on tourism services and social media tools for equality of life standards. For evaluating the current situation of the web usability and accessibility of the societal and institutional networking, analysis was done to set standards of the research context. Orthopedically disabled people participated in this research study that they were selected purposively due to having skills on using social media. This research study showed that orthopedically disabled people used social media and networking for expanding their knowledge. They have a firm belief that social media and networking is the facility for removing barriers of social and institutional activities in society. In addition, there are little facilities on tourism services to be used in social media and networking. Furthermore, web pages of the societal and institutional services are not satisfactory and accessible for the all disabled citizens. The study puts forward to provide extended report on web usability and accessibility of services for the welfare of the disabled citizens within the society.

Keywords

Accessibility, Social media tools, Tourism services, Web accessibility

Introduction

Information and technology becomes bridge to foster usability, accessibility and equality of the citizens. Societies has intensified need to gain services for accessibility to the travel and tourism opportunities that this requires information, effort and desire. Especially, people with disabilities in the world need for easy access to proceed their lives in equality and usability standards. As travel is a key for continuing globalization to gain information for the development, tourism activities of the societies play a great role in providing accessibility and broadening accessibility for all citizens. For the welfare of the society, accessibility is crucial element for the disabled citizens where literature pays attention on physical and web accessibility for societal and institutional services (Chadwick et al., 2013). In a concrete practice of tourism services and accessibility, in 1980 Manila (Philippines), tourism and accessibility were first merged through Manila Declaration, and later pursued by the World Tourism Organisation. This indicates that tourism become an essential right and crucial for human development. It is a way of social development of disabled citizens and welfare of the society upon tourism economy. This significant right should be supported by governmental policy and needs to be recommended as a regulation for tourist services. There is a concrete attempt for the tourism services accessibility for all citizens. Significantly, web technologies and services within a term of unobstructed information technologies services for social and academic development of disabled citizens become vital empowerment of caring the needs and expectations of those citizens for gaining benefit from societal and institutional services within the society. Facilitating access in terms of infrastructure and tourism services for disabled people is the part of accessible tourism (Alén, Domínguez, & Losada, 2012). In this respect, activities with technology enhanced environment are crucial for the accessible tourism.

Accessible tourism covers a variety of activities within free time to tourism. It relies on making people with restricted capacities and fully integrate their functional and psychological thoughts and actions for the individual satisfaction and social development (Alén, Domínguez, & Losada, 2012). Those accessible activities and technology enhanced services provide inclusion and socialisation which are very significant development indicators for disabled people. Being part of the society and active involvement to the societal and institutional services becomes primary right of the disabled citizens within all societies. In addition, UNWTO (2005) points out that accessible tourism is a collaborative process that provides people with access and mobility. This makes equity and dignity through the

delivery of tourism services. Within the digital age, technology supported attempts also effect preferences and choices of all individuals which technology and social media also shape choice. Furthermore, changes through information technology and global world standards activate the travellers to become more independent, experienced, and flexible for accessible and reliable information (Buhalis, 1998; Buhalis et al., 2011).

Domínguez et al. (2015) adds a value on the work to incorporate disability within tourism policy, planning and development. In addition, developing countries need creation of policy to support tourism services and institutional services through proactive implementation on web accessibility within a master plan.

The report of the European Union argues that tourism industry has started to pay attention on a significant consumer group as disabled tourists. Furthermore, social media and networking tools create alternative platforms where people interact freely and easily exchange information (Buhalis et al., 2011; Fotis et al., 2012; Gretzel et al., 2008). Tourists are having more control over their travel decision making process and shaping the tourism related businesses through online tools (Cox et al., 2007). Social media plays a great role to establish a travel product for the disabled people.

Upon the limitations on accessibility of tourism, societal and institutional services for disabled citizens (Eichhorn et al., 2008), this study aims to reveal the role of social media in accessible tourism for disabled citizens. Furthermore, the study aims to reveal the current practice of societal and institutional services in terms of web accessibility for disabled citizens which could be the base for the welfare of the society in developing policies and regulations towards unobstructed society.

Web accessibility in Europe and how web content can be made more accessible for disabled people is explained in the Web Content Accessibility Guide (WCAG) 2.0 developed by W3C. Accessibility involves many disabled people as well as visual, hearing, physical, speech, perception, linguistic, learning and neurological disabilities. Although, this guide is as comprehensive as possible; it does not provide any possible solutions for the needs of people from all groups and with different levels of disabilities. Additionally, the information provided in the guidebook enable a more accessible content for the elderly and general population.

People with disabilities face various problems in their social life because they cannot be added to an adequate extent. The context of Northern Part of Cyprus has many barriers to provide services of enhancing life standards. The reports of Ministry of Education showed that disabled people are living limited in both using societal and technological facilities. Education for the awareness and applications will become strategic actions to remove barriers of disabled people. In this respect, efforts to increase participation of disabled people in social life through evaluating tourism regulation and accessing web services.

Web accessibility is not only dependant on accessible content but also on the accessibility of Web browser and other user interfaces. Software tools also have an important role in web accessibility. The analysis of websites based on four main principles and suggestions are provided (See Appendix I). In this respect, WCAG 2.0 has been used to evaluate current situation of practices in Northern part of Cyprus for considering as a result of working with people and organizations to form common standards in web content accessibility.

This research aims to evaluate the role of social media tools on tourism services of the country in respect to the perceptions of disabled people. It is examined the web usability and accessibility of the services to the citizens on societal and institutional services. The following research questions were revealed within the research process:
- How do disabled citizens perceive the role of social media tools on tourism services?
- To what extend are web pages and services of societal and institutional levels usable and accessible?

Methodology

The research has mix method nature which it has sense of qualitative and quantitative patterns. In this respect, the procedure of the research process cover mix research framework. Upon real world practice; social and historical construction, patterns and process of interaction among individuals provide a framework of research procedure (Creswell, 2005, p. 9). The voice of participants provides raising consciousness and meanings, patterns as part of inquiry to construct a picture of issues that investigated. Within a transformative process, there is convergence, integrated, combined nature of qualitative and quantitative manner.

Research procedure

In quantitative sense of this research process, questionnaire was implemented. The questionnaire included; demographics, work status, hours spent using social media, frequency of travelling and holiday planning to reveal the support of technology in travel and tourism activity of the disabled citizens. The SPSS 17 were used for data analysis which frequencies, t-test and ANOVA are considered to give detailed analysis on how disabled citizens perceive the role of social media tools on tourism services. In line with questionnaire and the framework of quantitative procedure, qualitative research included open ended questions through self reports which cover asking about benefits using social media and role of the social media for using tourism services were employed. This procedure supports how disabled citizens perceive the role of social media tools on tourism services. Thematic analysis was used to analyze qualitative data based on key themes (Creswell, 2005).

Furthermore, the web usability and accessibility checklist was implemented to state the current situation of societal and institutional services including higher education institutions, municipalities, post offices, etc. Web Content Accessibility Guide (WCAG) 2.0 developed by W3C was used to set the current situation of services. Nine web sites were analyzed and report was revealed upon international standards.

Research context and participants

The research context covers Northern part of Cyprus as a small island. In this context, although initial stage has been started, world standards are being tried to be followed for the welfare of the disabled citizens. Tourism and education are the fundamental economic support for the country which has untouched beauty, security however there are limited infrastructure for the disabled citizens in all aspects of the society. Increasing the welfare of the society relies on equality, opportunity in all services for all citizens. Therefore, there is significant need to consider development and improvements in tourism and education for disabled citizens. Although there is a need to do further attempt on welfare of those citizens, there is also limited evidence and academic report, studies in relation to that research focus. Unobstructed technologies in education and also in tourism help social inclusion of those citizens which those academic activities are held from 2013 up to date. In 2015, the higher education consortium was done to discuss and propose solutions upon the use of technology in social and academic life of the disabled citizens. Although there are limited studies even in academic agenda, this study will be the first practical implication within the country and it will also contribute to extend knowledge on technology supported services in tourism and education for disabled learners. Significantly, web usability and accessibility of the services were not designed upon considering disabled citizens that this study becomes a milestone step to set the situation and delegate how web services can be accessible and useable.

20 orthopedically disabled citizens participated to the research that they were selected purposively upon having skills on using social media. These participants volunteered to be part of this study and researchers give guarantee to keep confidentiality during the research process. Furthermore, web services were analysed to represent all institutional and social services for disabled learners within this study. Therefore, nine web pages were selected purposively which includes ministries, municipalities, higher education institutions and post offices, etc.

Findings

Participants in the scope of research are given in Table 1. The distribution of demographic characteristics are as follows: Participants who participated in the study 52.6% of female, 47.4% were men, and 18 -25 years of age of 31.6%, 36.8% between 26-35 years of age, 21.1% of the 36-45 years, 5.3% of the 46-55 and 5.3% is located in the 56-64 years.

When the participants who enrolled in the study are examined education they are enrolled; 10.5% of master's degree, 26.3% of bachelor's degree, 36.8% of high school. It is seen that the junior high school of 26.3%.
In the study, 89.5% of the participants from North Cyprus, 10.5% of Turkish citizens. 36.8% of participants are married and 63.2% single.

Table 1. Participants' socio-demographic characterises

	Frequency (*n*)	Percent (%)
Gender		
Male	9	47.4
Female	10	52.6
Age		
18 -25	6	31.6
26-35	7	36.8
36-45	4	21.1
46-55	1	5.3
56-64	1	5.3
Education		
Master's Degree	2	10.5
Bachelor's Degree	5	26.3
High School	7	36.8
Junior High School	5	26.3
Nationality		
North Cyprus	17	89.5
Turkey	2	10.5
Marital status		
Married	7	36.8
Single	12	63.2

Data were analyzed in three headings; Travel behaviors, using social media and role of the social media and networking for using tourism services

Travel behaviours

For analyzed participants travel behaviors, two points were gaining importance. These are frequency of travelling, reasons if they do not travel (see Table 2).

Table 2. Travel behaviors

	Frequency (*n*)	Percent (%)
Frequency of travelling		
None	3	15.8
1 times	1	5.3
2 times	9	47.4
4 times and over	6	31.6
Reasons not to travel		
Income levels	3	15.8
Transportation difficulties	2	10.5
Unable to travel alone	3	15.8
None	11	57.9

47.4% of participants travelling in a year two times. Additionally, 57.9% participants stated that they don't have obstacle for travelling to the stresses. Second high percentages are income levels and unable travel alone. Both of them have 15.8%. The other interesting point is 84.2% travelling at least once times in a year. Upon responses of participants, over of the half prefer mass tourism (sea, sun, sand) in their holiday.

According to Table 3, it is determined that there is a statistically significant difference between total points of travel frequency and gender. The effect of diversity is then made with the purpose to determine, according to Tukey test results, when the time spent increase social media, effect of social media using increasing for holiday choice.

Table 3. Comparing travel frequency and gender					
	N	$\overline{X}$	S	F/t	p
Gender					
Female	10	1.50	0.70	0.000	.00
Male	9	5.00	0.00		

Table 4.Comparing age and duration of travel					
	Sum of squares	df	Mean square	F	Sig.
Between groups	48.812	4	12.203	12.457	.000
Within groups	13.714	14	0.980		
Total	62.526	18			

According to Table 4, it is identified that there is a statistically significant difference between total points of scale according to participants' age and duration of travel ($p < .05$). This difference arisen between those participants, who ranging between 18-25 and 36-45 age groups.

Using social media

First of all, the questions for use social media were collected in two points. Most used social media sites and spending time in these sites. 63.2% participants use Facebook, twitter and Instagram in their life. 42.1% participants spend approximately 2 hours in a day on social media sites. This also shows a considerable amount of time spent on social media (Table 5). Participants clarified what they knew about social media and what their perceptions from social media. Almost all participants considered social media and networking as a support to experience of their self-development and education. When asking their information and knowledge level about social media using, most of them indicated that they have a good level of information and knowledge.

Table 5. Using social media		
	Frequency (n)	Percent (%)
Most used social media sites		
Facebook / Twitter / Instagram	6	31.6
Google / YouTube	3	15.8
Diger	1	5.3
Time spend in social media		
0-1 hours	3	15.8
1 hours	4	21.1
2 hours	8	42.1
3 hours	1	5.3
4 hours and over	3	15.8

Table 6. Comparing subscale points of using social media according to gender of participants					
	N	$\overline{X}$	S	F/t	p
Gender					
Female	10	2.00	0.81	0.205	.00
Male	9	3.77	0.97		

Note. $^{*}p > .05$.

In Table 6, comparison of using social media and gender subscale points regarding socio-demographic characteristics of community within the scope of this research were given.

It is stated that there is no statistically significant difference between total points of public service and environment subscale regarding gender ($p > .05$).

There is a statistically significant difference between age and time spending in social media in Table 7. Young participant spend more time than middle age and older group of participants.

Table 7. Comparing age and time spent in social media				
	Sum of squares	*df*	Mean square	*F*	Sig.
Between groups	23.419	4	5.855	16.050	.000
Within groups	5.107	14	0.365		
Total	28.526	18			

Role of the social media tools on tourism services

Upon comparison on participants' travel behaviour and rate of the using social media, they spend at least one hour at social media in a day. So, they easily access travel services and opportunities from social media. For analyzed that role of the social media and networking for using tourism services asked questions (Table 8).

Table 8. Role of the social media and networking for using tourism services

	Frequency (*n*)	Percent (%)
Awareness of travel programs		
Travel Agency Web Sites/Facebook Pages	11	57.9
From friends and Relatives	6	31.6
Official Organizations /Associations	2	10.5
Booking of travel		
Travel Agency	5	26.3
Internet	7	36.8
Friends/Relatives Help	7	36.8

Table shown that 57.9% participants give their decision for arrange travel programs, they follow travel agencies web sites and Facebook pages. Afterwards, they book their holiday from travel agencies and web sites. Most of participants are active use of social media but they do not have enough knowledge and information using for tourism services.

Upon the quantitative research findings, qualitative research findings supported the same consensus on the role of social media tool for tourism services and preferences.

Web accessibility and usability

Upon WCAG test based on W3C (See Appendix I for principles), 211 potential problems were detected as a result of web services analysis for the disabled citizens. Nine web services are evaluated in relation to reveal the importance of technology supported services as a path in helping to disabled citizens to access and use societal and institutional services. Within a frame of social learning theory within the research process, web services were evaluated how they are effective and accessible to provide social inclusion of those citizens with the support of technology. Nine web services were considered as part of this study to reveal general spectrum and insights of services. Higher education institutions, post offices, municipalities are part of this analysis which listed statements reveal as common problems in web services:

- Image texts are not empty but texts are not defined appropriately;
- The name of the visual is same with descriptive information;
- Image title information and the image are not decorative;
- Indicator information in the tables were missed;
- Indicators are not appropriate;
- Check box closing positions are not appropriate;
- Radio buttons are not appropriate;
- Tables needs introduction elements;
- Some introductory statement used colours only;
- JavaScript were used alone;
- Script screens cannot be accessed via keyboard;
- Flashes involves flickers;

- Link colours and link descriptions are insufficient;
- Site maps are not provided;
- H1 and H2 titles were not defined; and
- There are problems with navigations.

Discussion and conclusion

Social media tools provide web based practice that fosters engagement (Lu & Churchill, 2014). Social networking is used a tool in different fields and practices (Hayes, Ruschman, Walker, 2009; Priestley, Waddington, & Bessozi, 2010; van Riper et al., 2013; Rohn, 2013). The common merits of social media in different studies that it provides participation, learning and connection. In this respect, it plays a great role for disabled people to provide inclusion and development in their life.

Knowledge sharing can be accomplished by the use of social media tools and create an atmosphere of connection on the diffusion of knowledge. Social media is a source of support and awareness on the lives of disabled people and enhances their life based on equality. Citizenship becomes shaped by digitalization. This provides development for all citizens and requires right to reach all services within the society, especially for disabled people. In this respect, social media tools put forward to raise awareness on the issue of accessibility for disabled people in different aspects.

Social media tools facilitate accessibility to reach out information, people through networks and make encouragement for disabled people to put their voices on their personal and professional development. Societies have started to provide accessibility to disabled people in their education and tourism facilities. This shows how the integration of technology makes life easier especially for disabled people for the welfare of the society. In addition this shows how technology crosses borders on differences among the features of people.

This research study sheds light on the accessibility of tourism services by social media tools and gives insights on perceptions of disabled people on accessible tourism. Furthermore, study reveals the current situation of societal and institutional services on web usability and accessibility to further set policy and improvement. As there is a gap in practice and theory about accessible tourism and the role of social media tools, this research study underlines the experiences of disabled people to set situation analysis of context for the welfare of the society. It is seen that individualistic efforts was done for tourism services where there is an intensified need to focus on accessibility in web services and tourism services of the country within the participatory manner.

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Appendix I

Four main principles should be implemented in order for website content to meet accessibility criteria. These principles are: "Perceptibility"; "Usability"; "Intelligibility" and "Validity." Each principle has its own sub-titles. Let's briefly review those sub-titles:

1. *Perceptibility:* The most important feature on a page is its perceptibility by the user. Text, links, tables, images and other components of a page should be easily understood by the user.

    1.1. The non-text content of the page should provide alternative texts and users should be allowed to turn these sections into speech, Braille, large letters, symbols or a more simple language. In other words, everything that is non-text format should be provided with an electronic equivalent.
        1.1.1. Non-text content: If the non-text content is a form that needs to be filled by the user, it should have a name. If it is an image or a logo, it should have text explanation beneath the image or the logo. If the content is only a video or an audio feature or a test or exercise that cannot involve text; it should have a text tag explaining what it is. If the aim of the web content is to make sure it is read by a person and not a machine, like entering the code in the image; alternatives that appeal to different senses should definitely be provided. In other words, if it is asked to enter the characters in the image; an alternative that allows listening these characters or numbers should be provided.
        1.1.2. Figure and graphic definition: Text definitions called longdesc should be put on the page for graphics and figures. At least, sub or titles text definitions of such components should be provided.
    1.2. Alternatives for multimedia should be offered. Alternative ways for visually or hearing impaired people to understand audio or visual components should be used. Using subtitles or sign language in audio components for people with hearing disabilities; using audio or textual descriptions for videos can be beneficial.
    1.3. Content should be introduced in alternative ways without losing any meaning.
        1.3.1. If information is shown with a different colour or symbol; its text alternative should be provided as well. For example, required fields to be filled should be indicated with "*" symbol.
        1.3.2. If the function of a button is determined by its dimension and location; this should also be indicated with text tag. For example, if the forward link on a research is indicated with a green arrow on the bottom right corner of the page, this should also involve a text tag saying "forward" or "next."
    1.4. It should be made easier for disabled people to differentiate the fore and background of the page.
        1.4.1. If the text and links on a page are differentiated by colours; other visual tools for people who experience problems with seeing colours should also be used.
        1.4.2. If there is an automatic sound that goes on for more than three seconds once a page is opened; a mechanism for stopping or reducing that sound without disrupting the system should be provided.
        1.4.3. There should be colour contrast between the links to be read, text and text image and the background of the page. This will allow more perceptibility for users with low-visual abilities.
        1.4.4. The text that is difficult to see on the page should be enlarged or made smaller to a certain degree without needing an assisting technology.

2. *Usability:* In addition to the perceptibility of the page content; being able to click the desired spots easily, access the desired section of the page; or filling in a form on the page freely is also equally important.
    2.1. All functions should be accessible through the keyboard.
        2.1.1. All content on the web page should be allowed to be done with the keyboard. In other words, the spaces that could be clicked, links and form fields should be accessible via the keyboard.
    2.2. Disabled people should be given sufficient time to read the page content easily.
        2.2.1. Timing: If the content of a page is automatically updated at certain intervals, or is there is a given time for filling in a form; users should be allowed to turn off this timing or increase the timing to its ten times.
        2.2.2. Pausing: Users should be able to pause the moving, blinking, floating or automatically updated content.
        2.2.3. When the user is not able to complete a process due to time limitations and returns to the form; the previously filled information should not be lost. Disabled users can be slower with filling in various forms and thus, get timed out. Once a process cannot be completed due to such conditions, time problems will not be experienced if the previous data is not lost.

2.3. Web content should not cause any seizures. Research shows that content which blinks more than twice in a second leads to seizures on people who have difficulty concentrating.

2.4. Arrangements should be made for users to browse through the page freely, easily access the sections they want and understand where exactly they are.

   2.4.1. Skipping the repeating sections: The user should be able to skip the repeating sections once he clicks different links on the same page and access the main content. For example, when a user clicks a news link, he should be able to access the news heading directly through the keyboard. A link that would skip the repeating can be put in order to enable this feature. Sections on a page can be rightly titled or main page links that would lead directly to the sections can be put on top of the page.

   2.4.2. Descriptive page titles: The titles on the pages should clearly describe the page content. For example, the title of this document is Web accessibility.

   2.4.3. Descriptive Link Tags: The tag of a link that we click on the page should be appropriate for the content we would reach once we click the link. Thus, users can decide whether to open a page or not by looking at the name of the link among the link list provided by the assisting technologies. Also, it is better to use a descriptive tag statement like "click to download web accessibility document" rather that only "click" on any section of the page.

   2.4.4. Alternative ways: It would be beneficial to use more than one way to reach page contents such as using links, list of contents or site map.

   2.4.5. Descriptive tag: The tags of the titles, frames and tables on a page should give clues to the user about the content of those sections.

   2.4.6. Table accessibility: The row and column relation of the tables on a page should be arranged correctly and within logic. Table summary should be provided by using "summary=" code at the beginning of the tables.

   2.4.7. Section titles: If the long documents, especially, involve various sections, sub-sections and topics, these parts should be organized hierarchically at levels starting from H1 to H6. For example, main section titles can be at level 1; sub-section titles can be at level 2 and the topic titles of these sections can be at level 3.

3. *Intelligibility:* In addition to perceptibility, it is also very crucial that web content and its codes are understandable by the user and the assisting technologies.

   3.1. The language of the web page should be defined by the page writer with codes. Also, if there are main sections with a different language on a page; these should also be identified by the page author. Hence, user tools understand the language of the page by looking at the web code and the necessary synthetic sound for the user is provided.

   3.2. Web pages should look and be used in the way assumed by the users. Unexpected automatic changes on the page when a form is being filled or a choice button is clicked can make it more difficult to complete the process.

   3.3. A help mechanism should be provided for users to realize and show how to correct their mistakes when filling in forms. Disabled users, especially, have higher chances of making mistakes as they cannot control the whole page. Mistakes during an application, making reservations or payment processes can lead to negative outcomes. Thus, users should be informed about what mistakes they made and how they can correct it before submitting the form. Additionally, users should be allowed to review the form before submitting and given a chance to correct their mistakes.

4. *Validity:* Web content should be reliably interpreted by the user tools involving assisting technologies.

   4.1. Adaptability with the user tools of today and future involving assisting technologies should be at the highest level. At this point, it is important that web contents use the standards defined today and not use the traditional codes unknown to the assisting tools of today and the future.

      4.1.1. Reviewing: The starting and finishing points of the codes on web pages should be defined according to formal regulations. If a code has been opened for a list or title level, it must be closed. That is the only way to allow user tools to review and page and inform the user accurately.

      4.1.2. Name, Roles and Values: The names, values and functions of the form sections on a page, frames and all components of user interface should be presented in a standard way that could be interpreted and programmatically notice changes by the user tools.

The following results have been gathered after reviewing the 60 features under the instructions of the 4 principles in the WCAG guidelines.

Principle 1: Perceptibility – Information and user interface components should be easily perceived by the individuals.

12 features in terms of accessibility have been reviewed and 3-4 features have been mentioned although they were not sufficient. However, many instructions regarding the perceptibility of the web page for visually-disabled people could not be applied.

Principle 2: Usability – The user interface components and navigation should be usable.
When the site was reviewed according to the instructions under this title; it was observed that none of the instructions of this principle were applied.

Principle 3: Intelligibility – User interface components and information should be understandable.
When the site was reviewed according to the instructions under this title; it was observed that none of the instructions of this principle were applied.

Principle 4: Validity – The content should be valid enough to be perceived by several user software as well as the user assisting technologies.