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ADVANCES IN GLOBAL SERVICES AND RETAIL MANAGEMENT

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# **Inclusion of Disabled Consumers in Online Retail Landscape: Web Accessibility Conformance of Turkish Organized Food Retailers' Web Sites**

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## **Abstract**

In 2020 with the outbreak of Covid-19, the world has been forced a very rapid digital transformation. Within this period, the retail sector achieved in keeping pace with inevitable changes and began to strengthen their operations in online channels. The dramatic change in consumers' online shopping behavior caused a sharp rise in retail e-commerce sales and it's anticipated to continue in the following years. Under these circumstances, providing digital accessibility has a significant effect on disabled-especially visually impaired consumers' lives in order to enable them both to feel consumer normalcy and self-reliance and decrease the risk of being infected during shopping in physical stores. In Turkey 6,9% percent of the population suffers from visual impairment. With this study, it's aimed to explore the organized food retailers' conformance operating in Turkey to web accessibility standards. The sample of the study, which was determined by purposive sampling method, consists of four organized food retailers operating in Turkey. The web sites were analyzed via an automatic tool named "WEBaccessibility by Level Access". The conformance level of each retailer is above 70% but there's a need to increase the awareness about disabled consumers' needs and measures to be taken in order to increase accessibility.

**Keywords:** web accessibility, consumer normalcy, disabled inclusion, online retailing

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## **Introduction**

The reality of business world after the pandemic has become adopting a more digitalized business model and expanding their presence in online retail platforms. The main reason of that is the dramatic change which occurred in consumers' online shopping behavior, and the statistics related to online retailing also support this fact. According to the data released by Statista, retail e-commerce sales reached up to 4,280 billion USD in 2020 from 3,354 billion USD in 2019 on global scale. This remarkable rise is anticipated to continue in the following years. The projections are 4,891 billion \$ for 2021, 5,424 billion\$ for 2022, 5,908 billion \$ for 2023 and 6388 billion \$ for 2023 (Statista, 2021). The UNCTAD's (2021) survey entitled "Covid-19 and E-commerce" analyzing the effects of pandemic on consumers' buying behavior enlightens the accelerated online shopping in nine developed and developing economies, especially with the significant effect of home delivery service, but draws attention to especially Turkish consumers' ongoing tendency for online shopping.

Under the severe circumstances of pandemic, consumers with disabilities have been affected disproportionately. While it is difficult for able-bodied consumers to protect themselves from the virus with social distance and masks in the community, this situation is more difficult for disabled consumers, especially for the visually impaired ones. Consumers with disability constitute the largest niche market segment in the world waiting for being taken into consideration by the companies in order to get proper service designed for their needs. Almost %15 percent of the world population suffer from some forms of disability (Worldbank, 2021), and those consumers deserve to experience and feel consumer normalcy in their shopping routines. Moreover, not just people with disabilities, but the elder consumers seek for independency and self-reliance while they do shopping. Both on the macro basis to meet the requirements of The United Nations Convention on the Rights of Persons with Disabilities, and on micro basis to increase the contribution of businesses to SDG 2030 and make an impact, complying with the accessibility standards in online platforms will benefit the governments, companies and consumers as well. Therefore, digital accessibility in retailing via accessible web sites or applications will both satisfy the consumers and help build up customer loyalty. In other words, with an accessible online retail platform, disabled consumers will have the opportunity to achieve consumer normalcy. And those customers, having experienced an optimized service for them, will also promote the retailer's service and create positive word-of-mouth in the market. Besides, in the pandemic period buying from accessible online retailers on their own will protect them from the virus risk in brick-and-mortar stores. If an action is taken for the consumers for an accessible online retail landscape, a huge amount of people who suffer from blindness, deafness, color blindness or senior consumers can visit and purchase from the retailer's virtual store. Additionally, this move helps the retailers commit to corporate social responsibility and empower their competitive position in the market (Martinez, et.al., 2014).

Customers with visual impairments find online shopping useful and convenient, not just because of the time and energy they will save, but the accessibility of online marketplaces compared to physical shopping market. On the other side, for visually impaired consumers, hedonic motivations lying under the online shopping should also be kept in mind that the consumers with disabilities consider the independent achievement of their shopping goals as a source of enjoyment (Childers and Kaufman-Scarborough, 2009, p. 577).

It is obvious that serving via accessible websites is very significant for social inclusion of the visually impaired consumers. According to Turkey Health Survey conducted by TUIK, the percentage of visually impaired consumers in total population is 6,9% in 2016. To meet the demands of those consumers, retailers' web accessibility should be analyzed. With this study, it is aimed to explore the conformance of organized food retailers' operating in Turkey to web accessibility guidelines described by the World Wide Web Consortium (W3C).

## **Literature Review**

Shopping is one of the ritual activities and accepted as normal/ordinary for the one who are capable of doing it. But for the disabled consumers, it requires extra effort and may generally necessitates a companion that make the person recede from the idea of being self-reliant and independent. Shopping provides not only utilitarian benefits, but also has symbolic meaning for people. As Solomon (1983) stated that the marketplace, and all of the consumer behaviors that occur within the marketplace, help to formulate a person's identity, that is, who I think I am and how I think

others view and judge me (from Baker, 2006, p. 38). So, in order to construct self-image, the products one chooses and her capability of doing the shopping on her own have a meaning to reflect her normalcy in the marketplace (Baker, 2006). It can be defined as “desire to live like other consumers, while being accepted as other consumers are and being acceptable oneself” (Kaufman-Scarborough and Childers, 2009, p.18). Giving the message of “I am here” by participating in the marketplace directly, achieving the distinction by emphasizing their individuality and unique needs with the words of “I am me” and having the primary control by being actively involved in the process and minimizing assistance during shopping and finally perception of equality without being exposed to any discrimination in the marketplace are the key findings about the visually impaired consumers feeling about “consumer normalcy” in the marketplace (Baker, 2006). From the point of online marketplaces, the web sites designed well enough with its content in order to increase the performance of assistive technologies, will help the consumer achieve the desired outcomes and contribute the perception of consumer normalcy and feeling of freedom, independency, autonomy. For instance, Flash, pop-ups, moving information on the web sites or web designs which require the mouse click into a table, make that web site inaccessible for the consumer and feel herself disappointed (Kaufman-Scarborough and Childers, 2009).

As the consumer normalcy is accepted as “perception”, anything that will empower this perception in the minds of consumers are beneficial both for the consumer and the company aiming to build up loyalty. Accessibility becomes quite important for the sense of consumer normalcy and inclusion of disabled people in the online marketplace. Accessibility concept has been comprehended mostly as the necessary accommodations in physical areas until the common-wide use of internet both for the citizens'/consumers' interactions with government and companies. The U.S. American Disability Act (ADA), the EU Web Accessibility Directive are comprehensive accessibility efforts on the global scale. For instance, EU Web Accessibility Directive covers public sector bodies like states, regional or local authorities; bodies governed by public law, and organizations providing public service just as ADA does (Siteimprove, 2020). However, ADA also entails reasonable accommodations not only in public sector but also in private sector especially in the subject of employment of disabled people without being exposed to discrimination. Businesses like banks, hotels, bakeries and grocery stores, retail outlets, healthcare providers, theaters, public transportation, shopping centers, etc. that regularly serve the public are considered as public accommodations and they are required to comply with accessibility rules. Title III of the ADA assures the disabled consumers to access such “public accommodations” without any discriminations (Baker, et al., 2002). But for web accessibility both EU and U.S. follow the guidelines of World Wide Web Consortium (W3C), full conformance to Web Content Accessibility Guidelines 2.1 (WCAG 2.1). WCAG 2.1 are published by the World Wide Web Consortium (W3C) under their Web Accessibility Initiative (WAI). In Turkey, the legislation related to disabled people, mostly covered the regulations in physical environment until the entry into force of Communication Act No. 5809 in 2008. This law emphasizes positive discrimination in information services not only for disabled people, but also the elder and other groups in need of social protection. Then in 2010 with a decree of the Council of Ministers came into force and the web sites of public organizations were required to conform accessibility standards (Kalaç and Kılınc, 2020). Today e-government services and public institutions' web sites can be accessible by all parts of the society, but there is no legal obligation to conform with WCAG by private organizations in Turkey yet.

According to the World Wide Web Consortium (W3C), definition of web accessibility shows the intention of facilitating the lives of disabled people by enabling them to perceive, understand, navigate, interact, and contribute to website with properly designed websites, tools that people with disabilities can use. This is an easy but a very significant move to support social inclusion of disabled people in a digitalized world where internet access and adoption are growing rapidly (Dudharejia, 2020). The retailers, which have accessible web sites supporting the assistive technologies, can encourage the disabled consumers who can utilize their screen readers, voice recognition or alternative point devices, etc. without any problems encountered (Lazar, et.al, 2004).

The philosophy of W3C is built on providing equal access to web and equal opportunity to everyone without discriminating anyone according to their abilities as a basic human right ([www.w3.org/standards/webdesign/accessibility](http://www.w3.org/standards/webdesign/accessibility)). The disabled consumers want to be treated equally and feel the comfort of independence by the accessible facilities of the retailers which are aware of their distinct needs can pursue the advantage of accessibility in the websites of retailers following the guidelines of W3C (Baker, et al., 2002). The four main principles to design an accessible website are defined by W3C as being “perceivable operable, understandable and robust” (W3C, 2021). In that way the assistive technologies can be used effectively, and the communication efficiency can increase for the disabled consumer. The key measures which can be taken depending on the form of disability are defined as follows (Kamoun and Al Mourad, 2014):

- Visual impairment refers to total/partial vision loss and color blindness that may necessitate the usage of screen readers or screen magnifier tools
- Hearing impairment is deafness or limitations on hearing that may necessitate sound caption
- Cognitive disability refers to difficulties in reading or understanding, dyslexia, memory loss that may need to use easy-to-understand and simple language
- Motor skills impairment regards to incapability to use keyboard/mouse, make fine movements that may necessitate assistive technology like a voice browser, special joysticks and trackballs, and special keyboards that can be manipulated by fingers or using a head-wand.

Sohaib and Kang (2017) described the main barriers that the disabled consumers encountered while wandering on a website as visual objects, audio objects, language difficulty and objects interactions. Visual objects embedded on the website with flashing images, animations, or navigational buttons cannot be read by screen readers. That barrier is one of the most mentioned complaints of visually impaired consumers (Celik, et. al., 2019).

On the other hand, for color-blinded consumers, it is important to be informed about the colors of a product on the screen with an explanation. Lack of audio objects containing the product information is another set to be overcome by blind consumers especially. A complicated language or too many technical terms or product features will make it hard to comprehend the attributes/benefits of the product for consumer. The devices which make the website attractive and different like 3D virtual models, 360o rotation view may cause difficulty for the consumers with motor impairments (Sohaib and Kang, 2017). Finally for consumers with hearing impairment, lack of text transcripts synchronized with a video content or inadequate use of sign language for live

contents lead to non-inclusion of those consumers to the web (Popescu, 2018). In the literature, there are several studies subjecting the conformity of web accessibility standards in e-government (Uyar, et.al., 2020, Acosta, et.al., 2018, Al-Khalifa, et al., 2017, Akgül and Vatansever, 2016, Abu-Doush et al., 2013, Al Mourad and Kamoun, 2013), universities (Kous, et.al., 2019, Serefoglu and Henkoglu, 2019, Celik, 2020), municipalities (Kous, et.al., 2020, Akgül, 2016), and public organizations or private sector companies like internet banking (Martinez, et.al., 2014, Akgul, 2018), e-commerce (Alshamari, 2016, Sohaib and Kang, 2017, Gonçalves, et.al., 2018).

## **Methods**

In order to reveal companies' performances in complying with web accessibility standards, some of the researchers in the literature preferred to use automatic or special designed evaluation tools to evaluate the public or private organization's web sites (Uyar, et.al., 2020, Acosta, et.al., 2018, Al-Khalifa, et al., 2017, Akgül and Vatansever, 2016, Abu-Doush et al., 2013, Al Mourad and Kamoun, 2013, Kous, et.al., 2019, Serefoglu and Henkoglu, 2019, Celik, 2020, Kous, et.al., 2020, Akgül, 2016, Martinez, et.al., 2014, Akgül, 2018, Alshamari, 2016, Sohaib and Kang, 2017, Gonçalves, et.al., 2018).

In this study the author preferred to use an automatic evaluation tool – Web Accessibility by Level Access – to evaluate and comprehend the accessibility performance of the retailers from marketing perspective.

The sample of the study is determined by the method of purposive sampling that the organized retailers meeting the requirement of serving both offline and online. In Turkey, organized food retail sector is dominated by five retail chain stores which have nation-wide operations. The companies are ranked in the market based on their annual net sales volume as BIM, A101, Migros, Şok Market, CarrefourSA. Among those companies only BIM with its hard-discount retail format prefers to adopt the strategy of serving its customers in its physical stores. For that reason, BIM's web site is excluded from this study and remaining organized food retailers' web sites are analyzed via "WEBaccessibility by Level Access" to test the selected websites' conformance to web content accessibility guidelines version 2.0 (WCAG 2.0). A101, Migros, Şok Market and CarrefourSa have used both offline and online touchpoints (web sites, applications) as much as possible to maintain an effective channel strategy. Especially online channel alternatives have been used very actively to meet the accelerated demand in online food/supermarket category. According to the Ministry of Commerce data, the share of the food/supermarket category in e-commerce grew by 420 percent in 2020. Under those circumstances, retailers increased the investments in digitalization, and they started to get the returns on their investment quickly. For instance, CarrefourSa with its 678 stores, on online channel daily transaction volume boosted six times, or Migros with more than 2200 stores experienced increase in its mobile apps such as five times in Migros Sanalmarket, 6-7 times in Tazedirekt, 7-8 times in MigrosHemen, and Migros Sanal Market expanded its operations in 81 provinces of Turkey (Ekonomist, 2021).

## **Findings and Discussion**

Each of the organized food retailers' websites are analyzed via an automatic testing tool named "Web Accessibility by Level Access". It is an open-source tool that enables the users to evaluate the accessibility conformance of any website based on Web Content Accessibility Guidelines

(WCAG) 2.1 standards with easy-to-understand outcomes and recommended measures to be taken. 266 automated tests were run on April 12, 2021.

Each of the companies' reports were examined and the findings about the corrective measures are summarized in Table 1.

**Table 1: Retailers' Web Accessibility Compliance Scores and Corrective Measures**

Compliance	Measure	Severity	Violations Identified
<b>A101</b>	Provide a valid label for form fields	10	1
<b>Compliance Score</b>	Provide alternative text for images	10	27
<b>%74</b>	Ensure sub-lists are marked up properly	2	2
	Avoid improper nesting of form elements and links	7	155
	Ensure markup documents contain well-formed elements	6	10
	Ensure link text is meaningful within context	6	28
	Ensure markup documents contain well-formed elements	6	10
	<b>Total:</b>		<b>223</b>
<b>Migros</b>	Provide a valid label for form fields	10	18
<b>Compliance Score</b>	Provide alternative text for images	10	42
<b>%73</b>	Ensure sub-lists are marked up properly	2	2
	Ensure links or controls that open new windows or frames do not open without a warning	6	1
	Ensure the language of a document is set	3	1
	Ensure link text is meaningful within context	6	52
	Ensure markup documents contain well-formed elements	6	54
	Avoid use of placeholder values to label or explain input	8	1
	<b>Total:</b>		<b>171</b>
<b>Şok Market</b>	Provide a valid label for form fields	10	156
<b>Compliance Score</b>	Provide alternative text for images	10	1
<b>%74</b>	Ensure links or controls that open new windows or frames do not open without a warning	6	6
	Ensure containing elements allow text to resize without loss of functionality.	3	1
	Ensure link text is meaningful within context	6	12
	Avoid use of placeholder values to label or explain input	8	1
	Ensure ARIA regions, landmarks and HTML sections are identifiable	3	6
	<b>Total:</b>		<b>183</b>
<b>CarrefourSA</b>	Ensure the language of a document is set	3	1
<b>Compliance Score</b>			
<b>%90</b>			
	<b>Total:</b>		<b>1</b>

Source: <https://www.webaccessibility.com/>

According to the data shown in table, it is obvious that the retailers in the sample except CarrefourSA, showed compliance to web content accessibility guidelines above %70, but CarrefourSA achieved in complying with those guidelines 90 percent. On the other hand, in the sustainability reports published by those retailers, it's found that Migros is the only retailer which has made commitment about "accessible store" complying with universal design standards to meet the needs of both disabled and elder customers in brick-and-mortar stores. Besides, Migros employs personnel who knows sign language and a ready to serve accompanying staff to disabled or elder customers in its accessible stores (Migros, 2020).

The most frequent violations are made in the field of not providing valid/accessible label for form fields and improper nesting of form elements and links that will decrease the effective usage of assistive technologies for disabled consumers. Providing alternative texts for images/visual content is very important to hear detailed information about the product via screen-reader. Because for visually impaired consumers, having those alternative texts is the only way of communicating the message of the image. Another significant point for the users is to have the links to be followed

that are meaningful and clearly defined on the website. The more well-defined links, the less need to turn back to previous location on the website, which would discourage the user to continue (WEBaccessibility, 2021). The findings mostly are consistent with the literature that the violations are mainly related to visual objects and the usage of the language which make it harder for the effective use of assistive technologies (Sohaib and Kang, 2017, Celik, et. al., 2019). So, the attributes of the web site may impede the website's usefulness because of the lack of "alt tags" – the text describing the pictures/images, that the screen readers cannot explain what the image is about (Childers and Kaufman- Scarborough, 2009), and that may make the disabled consumer feel discouraged to go on and finish online shopping.

In order to make disabled consumers achieve in experiencing consumer normalcy, it is significant to serve them with accessible web sites in the retail marketplace. In that way, the retailers can transmit the message of "you are a part of this marketplace, you belong to this community with your own unique needs, and you are competent enough to do your shopping and equal to other customers we serve without any discrimination" as stated by Baker (2006).

## **Conclusions**

In Jakobson's Model of Communication, the communication between sender and receiver is gone through following a process that includes decoding a message, choosing the proper channel/context that minimizes the noise to reduce the effectiveness of communication, and decoding of the message by receiver. In this process, consumers who have visual impairment/defect/loss will experience difficulty to decode and comprehend the message in the right way, just because of the sender's inadequacy in designing the message with an accessible infrastructure. In this case, it is not possible to overcome that obstacle for consumers with visual impairments who use assistive technologies to decode a message on the web site.

In terms of profitability, the companies may not pay enough attention to disabled consumers as a niche market segment, but it is not too difficult to serve those consumers and build up loyalty and a long-term relationship with them by communicating via an accessible website. Especially during the pandemic, those customers have been suffering from meeting their daily needs like grocery, dairy or personal care products in a safer way, and online shopping become a must for them. In order to ensure that they experience consumer normalcy, self-sufficiency and independence during shopping, all the businesses but especially the organized food retailers should review their attitude towards that customer segment and should redesign their websites and increase their conformance level of Web Accessibility Guidelines. That will help them empower their brand image in the eyes of disabled and elder consumers by fulfilling this task as a part of their business strategy, not just as a corporate social responsibility.

Even if the web site designers are well-educated and have knowledge about web accessibility, there is still a need to increase the awareness related to the special needs of disabled people in online retail platforms in order to reshape their perception of web accessibility. Thereby, they can show empathy with them and show more eagerness to create more accessible web sites. In order to increase the conformance of web accessibility guidelines by online retailers, umbrella organizations in Turkey like TAMPF - Turkish Federation of Shopping Centers and Retailers assembling the most important players of the retail sector may produce a certificate controlling the conformance to Web Accessibility Guidelines and declaring that a B2C/retailer's website is

accessible. But the most important point is, an urgent need to have obligatory regulations binding not only public organizations, but also private enterprises to communicate with people/target consumer via accessible web sites in order to expand the level of social inclusion of disabled people in Turkey.

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