CENTER for RETIREMENT RESEARCH at BOSTON COLLEGE

NAVIGATING THE DIGITAL DIVIDE: ASSESSING THE WEB ACCESSIBILITY OF ABLE PROGRAM WEBSITES FOR PERSONS WITH DISABILITIES

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Abstract
This study investigates the accessibility of websites for the Achieving a Better Life Experience (ABLE) account program for people with disabilities, which is critical for ensuring individuals can fully benefit from ABLE accounts. Utilizing the Wave Evaluation Tool, Adobe Pro DC's Accessibility Checker, and the Flesch-Kincaid (FK) readability formula, this study comprehensively analyzes 44 ABLE websites, and their program disclosure documents, for compliance with the Web Content Accessibility Guidelines (WCAG), for clarity in communicating fees and risks, and for readability for individuals with disabilities.

Key findings include:

Prevalence of Low Web Accessibility

- Significantly, 94 percent of ABLE program websites evaluated did not fully comply with WCAG standards.
- The most common violation (75.2 percent of websites) involved insufficient contrast between text and background, hindering legibility for individuals with vision impairments.
- Around 9.5 percent of sites failed to use alternative text for hyperlinks, and 8.5 percent neglected descriptive link text, impairing navigation for users relying on screen readers.
- Violations also included a lack of alternative text for non-text content on 7.5 percent of sites, affecting accessibility for blind or visually impaired users.
- Additional concerns were noted for less prevalent issues, such as content reliance on visual or auditory cues, keyboard navigation, and descriptive headings.

Non-compliance in Disclosure Documents

- Analysis of program disclosure documents revealed an average of 12 accessibility violations per form, ranging from 1 to 19 violations.
- The disparity in accessibility adherence among ABLE programs indicates a broad non-compliance issue, potentially limiting individuals with disabilities from accessing crucial financial information.
- A significant association was found between the number of WCAG violations on websites and the accessibility issues in their financial disclosure PDFs, suggesting a relationship between web and document accessibility within ABLE programs.

Low Levels of Readability among ABLE Disclosures

- The average Flesch-Kincaid readability score of disclosure documents was 33.1, indicating complexity at the college to graduate school level and classifying the material as "difficult to extremely difficult" to comprehend (note: the Flesch-Kincaid readability score evaluates the ease with which text can be read, with lower scores indicating more complex texts requiring higher education levels for understanding, and higher scores representing simpler, more accessible texts).
- This complexity presents a significant barrier, especially for individuals with cognitive or learning disabilities, as the average American adult reads at a 7th-grade level (which is around an 80 on the Flesch-Kincaid readability scale).

Discussion and Implications

- The study underscores the critical need for comprehensive reform to address web and document accessibility issues in ABLE programs and to ensure financial empowerment and inclusion for individuals with disabilities.
- It also highlights the digital divide affecting individuals with disabilities, emphasizing the necessity of accessible web design and document creation to enable full participation in digital and financial resources.
- The interconnectedness of digital accessibility across platforms and documents within ABLE programs calls for a broad approach to ensure that all eligible individuals can access these financial tools effectively.

Federal- and State-level Policy Suggestions based on these findings:

Federal-level policy suggestions:

1. Stricter Compliance Standards: Legislation could require strict compliance with Web Content Accessibility Guidelines (WCAG) for all ABLE account program websites and associated digital documents. This could include specific benchmarks for accessibility and timelines for existing platforms to meet these standards.
2. Federal Oversight Body: A federal oversight body could be established to monitor and enforce accessibility standards for ABLE programs. This body could be responsible for conducting regular audits of ABLE websites and documents, providing technical assistance, and imposing penalties for non-compliance.
3. Accessibility Improvement Initiatives: Federal funds could be allocated specifically for the purpose of improving digital accessibility on ABLE account websites. This could include grants for states to redesign websites, create accessible PDFs, and other necessary modifications to meet or exceed WCAG standards.

The state-level policy suggestions based on these findings include:

1. Regular Training and Resources: States could provide regular training for ABLE program administrators and technical staff on the importance of digital accessibility, how to achieve it, and how to maintain compliance with evolving standards. Additionally, states could develop and share resources on best practices for digital accessibility in ABLE programs.
2. Readability Standards for ABLE Disclosures: Consider a mandate that all ABLE plan disclosures and related documents adhere to a specific readability standard that is accessible to the general population, such as the Flesch-Kincaid Grade Level suitable for an 8th- to 9th-grade reading level. This will help ensure that information is accessible to a broader audience, including those with cognitive disabilities.
3. State-Level Monitoring and Accountability Mechanisms: Consider developing state-level mechanisms for monitoring ABLE website and document accessibility, including regular audits and feedback loops with users with disabilities. States could also establish clear penalties for non-compliance and procedures for addressing grievances related to accessibility.

Introduction

It is well documented that people with disabilities in the United States face persistent economic challenges, and a substantial income and wealth disparity exists among people with and without disabilities. Households with an adult with a work-limiting disabilities require 28 percent more income to maintain the same standard of living as households without disabilities (Goodman et al., 2020), The median net worth of household with disabled adults is also far less than the net worth of those without (Shuey and Wilson, 2022). The 113th Congress marked a significant milestone in addressing financial inequalities among people with disabilities with the passage of the Stephen J. Beck, Jr., Achieving a Better Life Experience Act of 2014 (26 U.S. Code § 529A) – commonly known as The ABLE Act. This major piece of legislation permitted people with disabilities to open tax-advantaged investment accounts that are exempt from federal tax and earn interest over time. A defining feature of the ABLE Act is its relaxation of the stringent $2,000 asset limit that many people with disabilities who rely on public welfare programs such as Supplemental Security Income (SSI), Temporary Assistance for Needy Families (TANF), or Supplemental Nutrition Assistance Program (SNAP), previously faced (Weathers, Kelly, and Hemmeter, 2022). Funds in ABLE accounts are exempt from the means tests of these social programs and can be used for a range of disability-related expenses, from education to health care and housing (H.R. 647, 2015). However, given that these accounts can only be opened online, the question remains: are ABLE accounts truly accessible to their target audience?

Web accessibility plays a crucial role in ensuring that the benefits of ABLE accounts are fully accessible to their intended beneficiaries. The digital-first nature of ABLE accounts necessitates that web platforms and services comply with accessibility standards, such as the Web Content Accessibility Guidelines (WCAG), to accommodate users with a variety of disabilities, including visual, auditory, motor, and cognitive impairments. This means designing websites and online services that are navigable and usable with screen readers, offering alternative text for images, ensuring keyboard navigation, and making text content accessible for those with learning disabilities (Caldwell et al., 2008). The significance of web accessibility in this context extends beyond mere compliance with legal standards and should embody the spirit of the ABLE Act by promoting empowerment and inclusion for people with disabilities. By prioritizing accessibility, the implementation of the ABLE Act can achieve its full potential,

removing not just financial, but also digital barriers to independence for people with disabilities, fostering an environment where
everyone has equal opportunity to manage their finances and invest in their future without facing undue hardship or exclusion.

Background

Defining Digital Accessibility

While the concept of traditional accessibility for people with disabilities primarily focuses on physical spaces and services, digital accessibility introduces a new set of challenges and opportunities for inclusion. Digital accessibility encompasses an array of considerations that ensure equitable access to online content for all users. The cornerstone of this inclusivity is the Website Content Accessibility Guidelines (WCAG), developed by the Web Accessibility Initiative (Shawar, 2015). These guidelines offer a framework for creating web content that is perceivable, operable, understandable, and robust—often abbreviated as POUR (Ribera, 2009). Accessible content is designed to cater to a broad range of disabilities, including visual, auditory, physical, speech, cognitive, language, learning, and neurological disabilities (Raja, 2016). Adhering to WCAG standards means that websites can be used effectively by people with assistive technologies such as screen readers, which convert text to speech or Braille, and input devices tailored for varying physical needs (Moreno et al., 2015). By meeting these guidelines, web developers and content creators can ensure that their digital offerings are not only compliant with legal requirements but are also more usable and navigable for a diverse audience.

Beyond websites, electronic document accessibility is equally critical in digital accessibility. An accessible electronic document, such as a downloadable PDF, should be structured so that it can be navigated and understood by all users, regardless of their ability to see, hear, or use a pointer device (Campoverde-Molina, Luján-Mora, and García, 2019). This includes providing alternative text descriptions for images and other visual content, which allow screen readers to convey the information that the visuals contain (Mettrop and Nieuwenhuysen, 2001). Complex documents require a clear hierarchy and structure with appropriate headings and subheadings that serve as signposts for navigation, enabling users to move through the document with ease (Cakir, 2016). Cognitive accessibility also plays a vital role, especially in larger documents. The clarity of language, logical progression of ideas, and consistent layout are

essential. These elements help users with cognitive or learning disabilities to maintain orientation within the document and grasp the information presented (Miesenberger, Edler, Heumader, and Petz, 2019). By incorporating these accessibility features, websites and electronic documents can become tools for inclusion, empowering all individuals with the ability to access and utilize information effectively.

Federal Legislation and the Digital Divide

The Americans with Disabilities Act (ADA) of 1990 represented significant progress for civil rights, aiming to eliminate discrimination against people with disabilities by removing barriers that limit their full participation in society. The ADA encompasses not only physical spaces but has evolved to include digital spaces as "places of public accommodation," thus making web accessibility a legal requirement (Department of Justice, 2022). Despite this, the advancement of standards for accessible web content has faced challenges. Research has highlighted a digital divide, where people with disabilities are less likely to have access to computers or online services, further compounded by socioeconomic factors and a lack of technology-based knowledge or skills (Kumm, Viljoen, Vries, 2021). This gap in digital accessibility underscores the urgent need for creating web content that is accessible to all, ensuring equality and addressing delays between the creation of new technology and the availability of accessible versions.

Despite the progress ushered in by the ADA, a significant majority of websites remain non-compliant with ADA standards, reflecting a broad issue of accessibility across the digital landscape (Babin and Kopp, 2020; Petrila, 2009). The Department of Justice (DOJ), responsible for enforcing Titles II and III of the ADA, has been slow in setting speific technical standards for web accessibility (Scaglione, 2020). Although there has been a recent shift towards a more focused approach on web accessibility under the Biden Administration (United States Office of Management and Budget, 2008), the reality remains that most government and private websites do not fully meet these requirements. A recent study pointed out that the average government website contains numerous accessibility issues, like poor color contrast and inaccessible online forms, highlighting a persistent shortfall in making digital spaces truly accessible to people with disabilities (Kesswani and Kumar, 2021). The enforcement of the ADA in the digital realm via legal cases brought by the DOJ upholds the necessity of web accessibility under ADA

protections. Yet, the continued prevalence of accessibility issues on government websites underscores the ongoing struggle to fully implement and enforce standards that can combat discrimination effectively.

Section 508 of the Rehabilitation Act of 1973 also plays a crucial role in furthering accessibility for people with disabilities, specifically regarding federal information technology. Enacted to eliminate barriers in information technology, ensure new opportunities for people with disabilities and encourage the development of technologies that will help achieve these goals, Section 508 mandates that all federal electronic and information technology (EIT) be accessible to people with disabilities (Vernon and Lynch, 2003). This includes websites, software, and hardware used by federal agencies, requiring that they are designed in such a manner that individuals with disabilities have access to and use of information and data that is comparable to the access and use by those who are not disabled (Taylor, 2019). To that end, Section 508 has been instrumental as a legal basis for lawsuits aimed at compelling organizations to make necessary accessibility improvements, thereby enforcing compliance, and fostering a more inclusive digital environment for people with disabilities. (see Table 1 for a list of Section 508 accessibility lawsuits).

The significance of Section 508 lies not just in its legal requirements but in its role as a catalyst for change, influencing not only government websites and technologies but also setting a standard that the private sector often follows. By establishing clear guidelines for digital accessibility, Section 508 has become a key tool in bridging the digital divide for individuals with disabilities, pushing both public and private entities to prioritize accessibility in their digital offerings (Grant, 2021). While Section 508 has been a powerful force in advancing digital accessibility, it has not fully ensured that the internet is accessible to all individuals with disabilities. Despite its comprehensive guidelines and the progress made, gaps in enforcement and compliance, along with the rapid pace of technological change, mean that many websites and digital tools still fall short of being fully accessible, leaving a portion of the population at a disadvantage in the digital age (Boucher et al., 2021).

The Rise of E-Government and the Need for Accessible Citizenship

The rise of electronic government, commonly referred to as e-government, represents a transformative shift in the way citizens interact with and access government services (Jaeger,

2004). The E-Government Act of 2002 was a pivotal piece of legislation in this transformation, laying the groundwork for leveraging electronic and information technology, predominantly the Internet, to enhance government functions and services (P.L. 107-347). This act was not merely about digitizing existing services; it was about fundamentally improving governmental efficiency, expanding access to public information, and fostering greater citizen participation in the democratic process (Seifert and Relyea, 2008). As of 2019, the vast network of e-government encompasses over 400 web domains and 5,700 websites under federal control, collectively drawing an impressive 25 billion visits each year (General Services Administration, 2019). This remarkable expansion underscores the importance of e-government in today's digitally interconnected world.

The digital revolution brings with it a critical challenge of ensuring accessibility for all citizens, including those with disabilities. Currently, about one in four U.S. adults, or roughly 61 million individuals, live with some form of disability (Varadaraj et al., 2021). This demographic is not static; the number of Americans with a disability is expected to grow to more than 71 million by 2029 as the Baby Boomer generation ages (Ettinger and Marchini, 2023). The rising prevalence of disabilities, combined with the ever-increasing reliance on e-government, makes the accessibility of these digital platforms more than a convenience—it becomes a necessity for ensuring an engaged, well-informed, and socially integrated disability community. Without adequate attention to accessibility standards, there is a risk that a significant portion of the population could be disenfranchised, unable to fully participate in the digital age of governance. Therefore, the onus is on government agencies to not only expand their digital presence but to do so in a way that is inclusive and accessible to all, particularly those living with disabilities.

The State of ABLE Accounts

The ABLE Act has paved the way for a diverse number of savings programs across the United States, with 43 states plus the District of Columbia implementing such initiatives. The number of accounts—as well as the amount of assets under management—has grown steadily since inception (see Figure 1) and represents a concerted effort to provide people with disabilities a means to secure their financial futures without compromising eligibility for essential benefits. Many states have entered ABLE collaboratives—or partnerships/alliances among different states that pool their resources and efforts to provide ABLE account services (see Table 2). The

establishment of ABLE collaboratives is a strategic response to the challenge of scale; by combining their resources, states can theoretically deliver more cost-effective offerings. These collaboratives also enable smaller states to compete with larger ones by offering equally attractive savings options with lower fees (Kennedy, 2019). This aggregation of resources is designed to maximize the benefits to account holders, facilitating a more inclusive financial environment for people with disabilities.

Despite the growth of ABLE accounts, a significant gap remains between the potential and actual utilization of these savings accounts. The federal government permits a substantial annual contribution limit to these accounts, yet the average deposits fall short of this threshold (Weathers, Kelly, and Hemmeter, 2023). This discrepancy points to underlying issues that may include a lack of awareness about the programs, perceived complexity in managing the accounts, or possible apprehension about investing among the target population. The variance suggests that while the framework to support financial growth for people with disabilities is in place, there is a need for enhanced education and support to ensure that the potential of these accounts is fully realized. Addressing this gap is not just about increasing account balances but is also about empowering people with disabilities to take full advantage of the opportunities provided by the ABLE Act to improve their financial independence and quality of life.

While the ABLE Act represents a substantial advancement in supporting financial independence for individuals with disabilities, the exclusive online accessibility of ABLE accounts introduces significant a barrier. The requirement to open these accounts solely through digital platforms can be problematic, given the digital divide that disproportionately affects people with disabilities. This divide is not just about the lack of physical access to technology but also encompasses challenges related to digital literacy, the accessibility of online content, and the overall usability of web platforms for people with various disabilities.

Research Questions

Accessibility is critical to the full participation of the ABLE program, yet no known research has investigated whether and how accessible the ABLE platforms and document are to people with disabilities. The aim of this current research is to evaluate the accessibility of ABLE account program websites through a comprehensive accessibility analysis. Specifically, this study aims to gauge the extent to which the ABLE websites are user-friendly and fully accessible

to people with disabilities, and whether they encompass all facets of their design and functionality. Central to our study are the following research questions:

Research Question 1: To what extent do ABLE program websites adhere to basic, widely adopted accessibility standards, like those established in the Website Content Accessibility Guidelines?

Research Question 2: To what extent are ABLE program disclosures accessible to people with disabilities?

Research Question 3: To what extent are the ABLE plan disclosures cognitively accessible to people with disabilities?

Materials & Methods

Study Sample

Our investigative framework was designed to analyze the web accessibility of ABLE program websites, focusing on their compatibility with established online accessibility standards, in communicating program-related fees and risks, and the readability of their disclosure documents for people with disabilities. The selected sample for this study comprised the entirety of operational ABLE program websites ($N = 44$), which are the initial point of contact for prospective account holders and the primary source for downloading program disclosure agreements.

Analysis

To address our first research question examining accessibility of the ABLE program websites, we assessed variations in web accessibility using the Wave Evaluation Tool, an automated checker that reports on compliance with the WCAG. This evaluation tool provided an objective measure of each ABLE program website's adherence to accessibility guidelines.

To address the second research question examining accessibility of the ABLE program disclosures, we analyzed the accessibility of downloadable ABLE program disclosure documents (downloaded as PDFs). Considering the Securities and Exchange Commission's mandate for financial transparency, it is imperative that these documents meet the accessibility needs of all potential and current account holders. The PDFs were evaluated using Adobe Pro DC's Accessibility Checker (version 2023.008) against eight defined metrics to ensure comprehensive

accessibility, including: 1) tagged PDF (to ensure the document is tagged to improve readability by screen readers); 2) alternative text for non-text elements; 3) logical reading order; 4) reliable character encoding (to ensure characters are interpreted correctly by assistive technologies); 5) document language (which specifies the natural language of the document for screen readers); 6) bookmarks (if the document is longer than 9 pages, bookmarks are recommended for easy navigation); 7) color contrast; and 8) form fields (if the document includes forms, ensuring they are labeled and accessible). Additionally, a regression model was estimated to understand the relationship between WCAG violations of ABLE websites and the accessibility of program disclosures.

To address the third research question regarding readability of the program disclosures, we coded and scored program disclosures using the Flesch-Kincaid (FK) readability formula. This FK formula is one of the most widely recognized validated metrics of readability and provides a quantitative analysis of a document's complexity, with a higher FK score indicating greater ease of comprehension (Paasche-Orlow, Taylor, and Brancati, 2003). The FK assessment of ABLE program disclosure documents aimed to ensure these disclosures were not only accessible in their physical format, but also in the simplicity and clarity of the language used, thus facilitating understanding among all people with disabilities. All analyses were conducted in December 2023, ensuring the findings reflected the current state of accessibility in these crucial financial resources.

Results

Results for Research Question 1: Prevalence of Low Web Accessibility

In assessing the web accessibility of ABLE program websites, Research Question 1 specifically addressed their adherence to fundamental accessibility standards that are widely recognized and adopted. The WAVE tool was employed to evaluate these websites against the established guidelines of the WCAG. The summarized results, detailed in Table 3, revealed a significant prevalence of non-compliance among ABLE program websites. A notable 94 percent of the websites evaluated exhibited at least one infraction of WCAG rules. The most common violation pertained to rule 1.4.3, which demands sufficient contrast between text and its background to ensure legibility for individuals with vision impairments. This standard was not

met by a significant majority, with 75.2 percent of ABLE program websites failing to satisfy this criterion.

The violations extended beyond contrast issues and involved the lack of alternative text usage—a critical component for making web content accessible to those with visual impairments. Rule 2.4.4 of the WCAG mandates that hyperlinks be accompanied by descriptive alternative text, explaining their destination and purpose. However, our analysis indicated that approximately 9.5 percent of ABLE websites neglected this requirement, leaving users who rely on screen readers without a clear understanding of where the links would lead them. Furthermore, Rule 2.4.4 concerning descriptive link text, was violated by 8.5 percent programs, and remains a substantial concern as it directly impacts the navigational experience of users relying on screen readers. Additionally, Rule 1.1.1, which requires alternative text for all non-text content, was violated by 7.5 percent of the sites. This oversight renders images and other visual media on these websites inaccessible to users who are blind or visually impaired, denying them the complete experience that their sighted counterparts receive. These findings underscore the necessity for comprehensive reform and vigilance in upholding web accessibility standards across all ABLE program websites.

We also highlight other findings beyond the most prevalent violations. While violations such as insufficient contrast and missing alternative text are indeed critical, addressing less prevalent but still notable issues is crucial for a comprehensive understanding of accessibility challenges. It is important to acknowledge violations like Rule 1.3.1, which focuses on ensuring that web content does not solely depend on visual or auditory cues for understanding, that had a prevalence of 3.1 percent. Although not as prevalent as contrast issues, neglecting to provide metadata for visual effects can lead to confusion or misinterpretation of content for users relying on accessibility tools. Additionally, violations related to keyboard navigation (Rule 2.1.1) and descriptive headings (Rule 2.4.6) may have lower prevalence rates of 1.6 percent, but they are nonetheless significant in ensuring a seamless browsing experience for users with motor or cognitive impairments. By addressing these less prevalent but still impactful WCAG violations, we gain a more nuanced understanding of the specific areas where improvements are needed across ABLE program websites.

Results for Research Question 2: A Wide Range of Non-compliance in Disclosure Documents

Research Question 2 addressed the accessibility of information provided by ABLE program disclosures, specifically regarding the transparency of fees and risks associated with program participation, a crucial aspect for potential and current account holders making informed decisions. The accessibility standards in question are those established as basic and widely implemented, ensuring that all individuals, regardless of ability, can access and comprehend this essential financial information. Our analysis evaluated the program disclosure forms available across all ABLE program websites. These forms are fundamental documents that typically outline the terms, conditions, and critical information pertaining to the accounts.

The findings from the accessibility analysis of the program disclosure forms paint a concerning picture. On average, each form was found to have 12 accessibility violations, demonstrating a broad non-compliance with the established accessibility standards. The range of violations observed across different forms was from as few as 1 to as many as 19, indicating a significant disparity in the level of accessibility adherence among the ABLE programs. This variability not only reflects inconsistencies in the application of accessibility guidelines but also highlights a widespread issue within the framework of these programs, potentially impeding people with disabilities from fully engaging with the financial tools intended to empower them. The prevalence of such violations necessitates immediate attention and rectification to ensure equitable access to all pertinent information for current and prospective ABLE account holders.

Following the accessibility analysis of the program disclosure PDFs, a regression was conducted to understand the relationship between WCAG violations of ABLE websites in RQ1 and the accessibility of ABLE program disclosures in RQ2. The findings indicated a significant association between WCAG violations, and the number of violations present in their PDF program disclosures ($p = 0.004$). This suggests that states with more accessibility issues on their ABLE websites also tend to have a higher number of violations in their financial disclosures. Such a correlation underscores the interconnectedness of digital accessibility across different platforms and documents within the ABLE program infrastructure.

Results for Research Question 3: Low Levels of Readability among ABLE Disclosures

Research Question 3 investigated the level of accessibility of the ABLE plan disclosures with regard to the readability of the materials for people with disabilities. This examination centered on the FK readability scores of these disclosure documents, which are crucial for people

with disabilities to understand the fees and risks associated with ABLE program participation. The analysis yielded an average FK readability score of 33.1, with a standard deviation of 3.8 and a median of 32.9, indicating that the documents are generally written at a college to graduate school level of complexity. The range of FK scores spanned from a low of 21.9 to a high of 39.4. According to FK readability standards, an average score of 33.1 is classified as "difficult to extremely difficult" to comprehend. To provide context for this score, the 906-page Patient Protection and Affordable Care Act of 2010 has an FK readability score of 38 (Snow, 2015). Consequently, the average ABLE disclosure scores 5 points lower, indicating it is approximately 15 percent more challenging to read. This level of complexity poses a significant challenge for the average reader and can be particularly daunting for people with disabilities who may have cognitive or learning disabilities that make complex texts less accessible.

The implications of these findings are profound, considering that the average American adult reads at a 7th-grade level, equivalent to an FK score of 75. The disconnect between the average American's reading ability and the complexity of ABLE disclosure documents is stark. The disclosures' average readability grade level was determined to be 14.1, with a standard deviation of 0.87 and a median also at 14.1, displaying a range from a 12.5 to a 16.6-grade level. This discrepancy is not trivial—it indicates a potential barrier to the full utilization of ABLE accounts by all intended users, especially people with disabilities. For a more comprehensive understanding of how ABLE account plan disclosures compare in readability to other standard texts, Figure 2 offers additional context and reference points. These findings underscore the need for creating financial documents that are not only accessible in format but also in language, ensuring that all individuals, regardless of their educational background or cognitive abilities, can access and utilize the information necessary for making informed financial decisions.

Discussion

The results of this study evaluating the accessibility of ABLE account program websites offer significant insights into the current state of accessibility for people with disabilities in accessing crucial financial resources. The significance of these results lies in their implications for the fulfillment of the promise of the ABLE Act in providing financial empowerment and inclusion for people with disabilities. The ABLE Act was designed to alleviate financial inequalities by allowing individuals with disabilities to open tax-advantaged investment accounts

exempt from federal tax, but the exclusive online accessibility of these accounts poses a critical barrier. Our study reveals that the majority of ABLE program websites exhibit significant non-compliance with basic accessibility standards outlined in the WCAG. These standards are essential for ensuring that web platforms and services are navigable and usable for individuals with a variety of disabilities.

The findings highlight several key areas of concern. First, a significant proportion of ABLE program websites fail to meet WCAG standards related to contrast between text and background, as well as the provision of alternative text for images and hyperlinks. These violations render the websites inaccessible or difficult to navigate for individuals with visual impairments who rely on screen readers or other assistive technologies. Secondly, the study reveals shortcomings in the accessibility of program disclosure documents, which are crucial for individuals to understand the fees and risks associated with ABLE program participation. These documents often contain complex language and lack proper tagging and formatting, making them difficult to comprehend for individuals with cognitive or learning disabilities.

Furthermore, our study highlights the broader issue of the digital divide, where people with disabilities are disproportionately affected by barriers to accessing online content and services. This digital exclusion not only limits access to financial resources but also perpetuates inequalities in society and limits full participation for people with disabilities. Addressing these accessibility issues is essential for ensuring that individuals with disabilities can fully participate in the digital age and exercise their rights to financial independence and inclusion. The association between WCAG violations on ABLE websites and the number of violations in their financial disclosures underscores the importance of a holistic approach to digital accessibility. Deficiencies in web design may extend to other areas, impacting the accessibility of crucial financial information provided in disclosure documents. Consequently, individuals with disabilities may encounter challenges accessing essential information necessary for making informed financial decisions, exacerbating existing disparities in financial inclusion.

These findings highlight the need for comprehensive reform to improve the accessibility of ABLE program websites and associated documents. By prioritizing accessibility and inclusive design principles, policymakers, website developers, and financial institutions can ensure that ABLE accounts are truly accessible to all eligible individuals, thereby fulfilling the

promise of the ABLE Act in promoting financial empowerment and inclusion for people with disabilities.

Policy Suggestions

Federal-Level Policy Suggestions

This research underscores the critical need for systemic changes at the federal level to enhance the digital accessibility of ABLE account programs. In response, we suggest a set of targeted federal-level policy options aimed at establishing a robust framework to ensure consistent adherence to accessibility standards across all ABLE account program websites and their associated documents.

1. Stricter Compliance Standards: Legislation could mandate strict compliance with Web Content Accessibility Guidelines (WCAG) for all ABLE account program websites and associated digital documents. This could include specific benchmarks for accessibility and timelines for existing platforms to meet these standards.
2. Federal Oversight Body: A federal oversight body could be established that is dedicated to monitoring and enforcing accessibility standards for ABLE programs. This body could be responsible for conducting regular audits of ABLE websites and documents, providing technical assistance, and imposing penalties for non-compliance.
3. Accessibility Improvement Initiatives: Federal funds could be allocated specifically for the purpose of improving digital accessibility on ABLE account websites. This could include grants for states to redesign websites, create accessible PDFs, and other necessary modifications to meet or exceed WCAG standards.

State-Level Policy Suggestions

At the state level, the findings highlight a significant opportunity to improve the accessibility and comprehensibility of ABLE account information and services. To address these challenges, we outline a series of state-level policy options designed to foster a more inclusive and accessible digital environment for ABLE account holders, particularly focusing on training, readability standards, and monitoring mechanisms.

1. Regular Training and Resources: States could provide regular training for ABLE program administrators and technical staff on the importance of digital accessibility, how to achieve it, and how to maintain compliance with evolving standards. Additionally, states could develop and share resources on best practices for digital accessibility in ABLE programs.

2. Readability Standards for ABLE Disclosures: Consider a mandate that all ABLE plan disclosures and related documents adhere to a specific readability standard that is accessible to the general population, such as the Flesch-Kincaid Grade Level suitable for an 8th to 9th-grade reading level. This will help ensure that information is accessible to a broader audience, including those with cognitive disabilities.
3. State-Level Monitoring and Accountability Mechanisms: Consider developing state-level mechanisms for monitoring ABLE website and document accessibility, including regular audits and feedback loops with users with disabilities. States could also establish clear penalties for non-compliance and procedures for addressing grievances related to accessibility.

Limitations

This study, while comprehensive in its evaluation of ABLE account program website accessibility, encounters several limitations that merit acknowledgment. First, the reliance on the Wave Evaluation Tool for assessing web accessibility, though effective for identifying clear-cut WCAG violations, may not capture the nuanced user experience of people with disabilities navigating these sites. Automated tools can overlook contextual and qualitative aspects of accessibility that affect actual usability. Second, the analysis of program disclosure document readability and accessibility focused solely on quantitative measures without considering the qualitative understanding or engagement of users with these materials. This approach does not account for the diverse ways in which individuals with different disabilities might interact with or interpret the content.

Moreover, the study's scope was limited to the digital accessibility of ABLE accounts and did not encompass the broader financial, social, or psychological impacts of these accounts on people with disabilities. As such, the findings do not reflect potential disparities in access and outcomes based on geography, socioeconomic status, or the severity of disability. Additionally, the cross-sectional nature of this research provides a snapshot in time but lacks the longitudinal perspective necessary to observe changes in accessibility and user experience over time as technologies and regulations evolve.

Another significant limitation is the generalization of results across all states and territories without delving into the specificities of each program's design and implementation.

This broad approach may mask regional variations in accessibility and effectiveness of ABLE programs. Lastly, the study did not engage directly with users of ABLE accounts to gather firsthand accounts of their experiences, which could provide deeper insights into the practical challenges and opportunities these accounts present for financial independence and inclusion. Addressing these limitations in future research could enhance our understanding of the accessibility and utility of ABLE accounts for individuals with disabilities, offering a more holistic view of how these financial tools serve their intended purpose.

Future Directions

The insights gleaned from the current research on ABLE account program websites underscore the critical need for future studies to not only deepen our understanding of web accessibility issues but also to expand our exploration into the broader impacts of these accounts on the financial independence and quality of life of people with disabilities. Future research directions should include longitudinal studies to assess the long-term financial outcomes for ABLE account holders, exploring how these accounts affect their ability to save, invest, and plan for the future without jeopardizing eligibility for essential public benefits. Additionally, qualitative studies that capture the experiences, challenges, and successes of individuals using ABLE accounts can provide valuable insights into the practical usability of these platforms and the real-world impact of policy on people's lives.

Moreover, investigating the effectiveness of various outreach and education programs designed to increase awareness and understanding of ABLE accounts among potential beneficiaries is crucial (e.g., like those available from the ABLE National Resource Center). This includes evaluating strategies to overcome barriers to enrollment and utilization, particularly among underserved populations within the disability community. Research should also examine the role of technology in enhancing accessibility, such as the development of mobile applications or other innovative solutions that make managing ABLE accounts more user-friendly for individuals with diverse disabilities.

Furthermore, policy analysis research is needed to explore the implications of potential legislative changes on the accessibility and utility of ABLE accounts. This includes assessing the impact of proposed amendments that may expand eligibility, increase contribution limits, or offer additional tax incentives. Finally, comparative studies between states or regions that

analyze the effectiveness of different program models in promoting financial independence can inform best practices and guide future policy development. By pursuing these future research directions, stakeholders can better understand the barriers to and opportunities for enhancing the financial wellbeing of individuals with disabilities through ABLE accounts. Such efforts will contribute to the broader goal of promoting inclusivity, equality, and empowerment for all members of the disability community.

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Table 1. *List of Accessibility Lawsuits Brought Under Section 508*

Lawsuit/Complaint	Case Summary
Leiterman v. *Homeland* Security (2014)	Leitermanan, a blind employee of the Department of Homeland Security, alleged multiple Section 508 violations because the agency failed to make accessible communications tools available to him, and that these issues caused damage to his career. The court granted summary judgment in favor of Leitermanan on his claim that the agency failed to promote him based on his disability and on his claim the agency violated Section 508.
Stinnett v. *Small Business Association* (2009)	Stinnett, a blind small business owner in Hawaii, filed an administrative complaint under Section 508 alleging that the Small Business Association website was not accessible. Stinnett uses assistive technology (AT) to access digital information, and because the SBA's website was not coded for accessibility, people who use AT were unable to access information, fill out forms, or otherwise take advantage of the benefits offered by the SBA. Stinnett and the SBA reached an agreement resolving an enforcement action against the SBA.
Downey v. *Social Security Administration* (2009)	Downey, a blind Social Security beneficiary, filed an administrative complaint against the SSA, alleging it violated Section 508. Because the SSA website was not coded for accessibility, assistive technology users like Downey are unable to fill out forms or access information about their benefits on the website. As a government agency, SSA is governed by Section 508. Downey and the NFB are requesting the SSA update its website to make it accessible to all users.
Mora v. *US Department of Education* (2009)	Mora, a blind resident of Baltimore, filed an administrative complaint with the US Department of Education. The plaintiffs assert that one of the department's websites, U.S.A. Learns, violates Section 508 because it is inaccessible to blind Internet users.

Table 2. *ABLE Collaborative Structures*

National ABLE Alliance	Ohio Partners	Oregon Partners	Nebraska Partners	Independent States
Alaska	Arizona	Maryland	Alabama	California
Arkansas	Georgia	Oregon[ab]	Nebraska[a]	Florida
Connecticut	Kentucky	Washington		Louisiana
Colorado	Missouri			Massachusetts
Delaware	New Hampshire			Michigan
D.C.	New Mexico			New York
Illinois[a]	Ohio[a]			Tennessee
Indiana	Oklahoma			Texas
Iowa	South Carolina			Virginia[b]
Kansas	Vermont			
Minnesota	West Virginia			
Mississippi	Wyoming			
Montana				
Nevada				
New Jersey				
North Carolina				
Pennsylvania				
Rhode Island				

Source: Table reproduced using data from Feirstein (2020).
a = indicates lead state in collaborative; *b* = indicates states with two plans

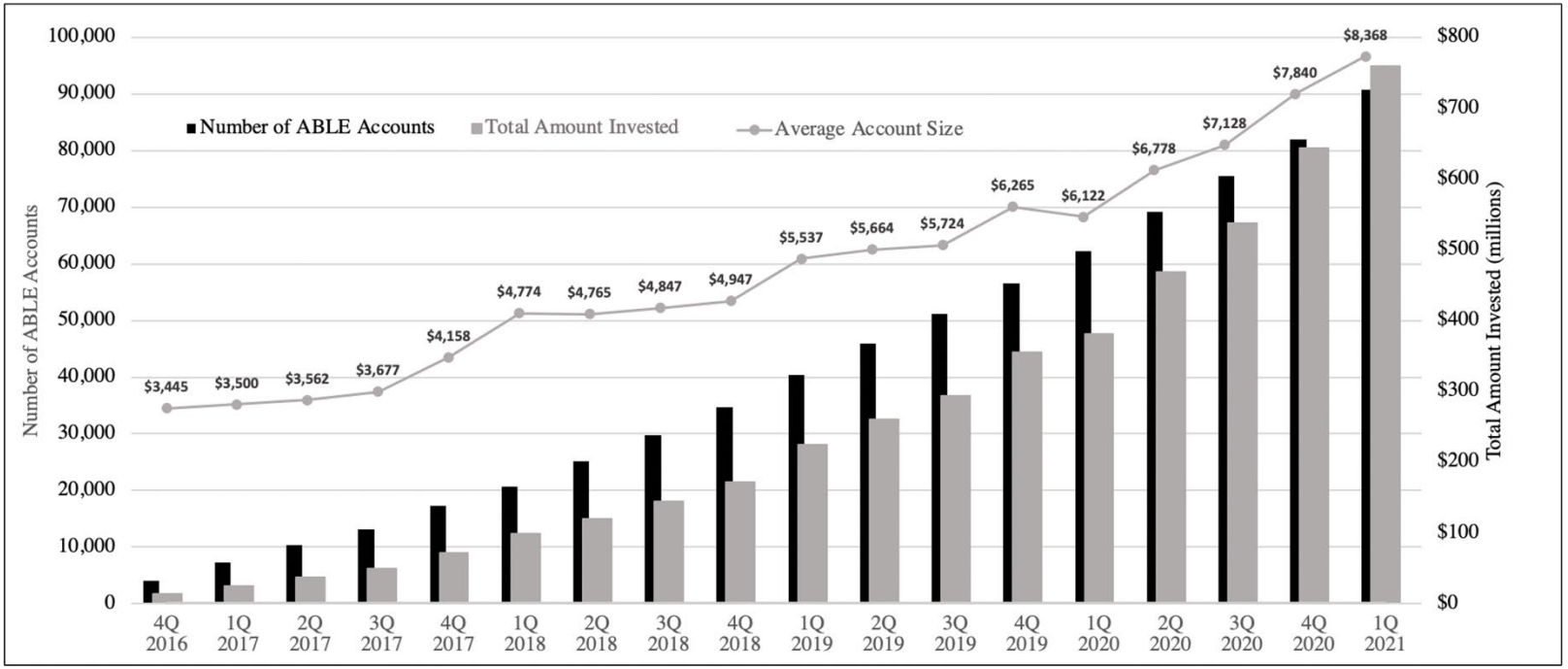
Table 3. *Percentage of WCAG[1] Violations by Rule Type Across All ABLE Websites*

WCAG Rule ID	WCAG Rule	Percentage of WCAG Violations Across All ABLE Sites
1.1.1	All non-text content must have a text alternative, such as alt text.	7.5%
1.3.1	Any visual effect used to indicate meaning (e.g. indentation) must have metadata to convey that meaning to accessibility tools.	3.1%
1.4.3	Meaningful text must have a sufficiently high contrast with the background.	75.2%
2.1.1	The website must be navigable using only a keyboard.	1.6%
2.4.1	It must be possible to bypass blocks of repeated text.	0.7%
2.4.4	A link's text must describe what it links to.	8.5%
2.4.6	Headings and labels must be descriptive.	1.6%
3.3.2	Any field that accepts user input must have a label to describe its purpose.	0.9%
Average WCAG Violations per ABLE Site		29.8

[1] WCAG = Web Content Accessibility Guidelines.

Figure 1.

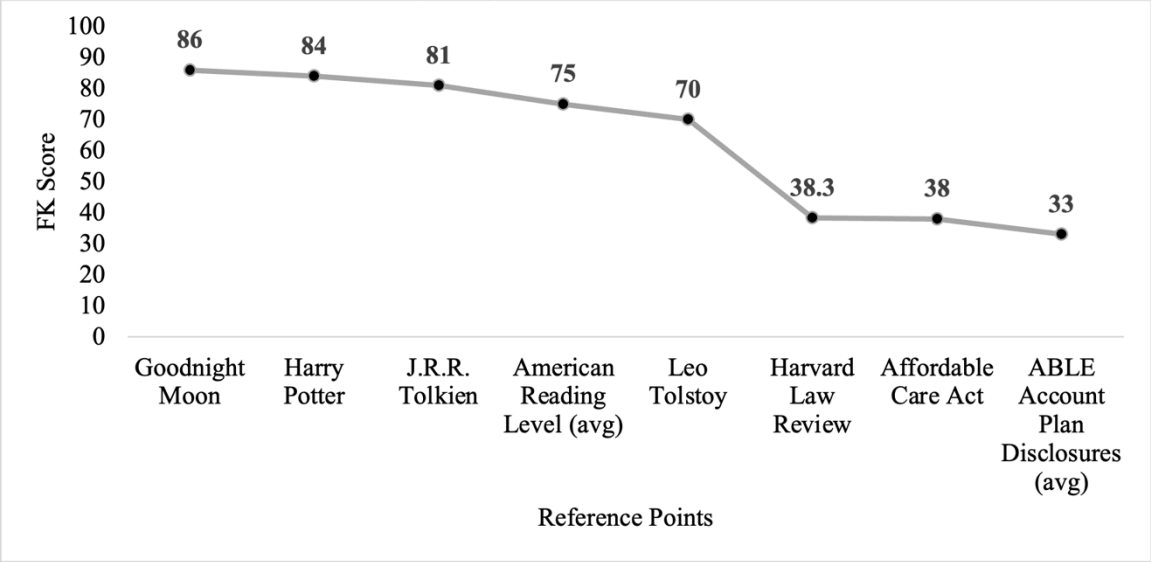
ABLE Account Data From 2016 – 2021



Source. Data from ISS Market Intelligence.

Figure 2.

Flesch-Kincaid Readability Scores for Reference Points vs. ABLE Plan Disclosures



Note. Documents with higher the Flesch-Kincaid scores are easier to read and vice versa.
Source. Data used in this chart are summarized from Snow (2015), plus calculations made by the author.

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