

Evaluating the Accessibility of Digital Government Services for Family Law in the U.S. during the COVID-19 Pandemic

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Abstract

The COVID-19 pandemic forced state courts to more fully embrace electronic filing, access to forms, and remote hearings. As a result, individuals navigating the legal system during this transition had to rely on digital access to court forms. While the courts have been praised for their ability to adapt, the extent to which online court forms are accessible for individuals with disabilities remains an open question. In this preliminary study focused on the policy implications of inaccessible court forms, we evaluated the accessibility of PDF divorce forms used in 10 states. The study revealed that that none of the forms were completely accessible, suggesting that individuals with disabilities may find it challenging -- if not impossible -- to independently complete and fill out family law courts forms. This lack of accessibility is more than a technical issue, as it also raises concerns about "accessibility to justice."

Keywords: Access to justice, accessibility, electronic court forms, PDF/UA

1. Introduction

In the two years since the onset of the ongoing COVID-19 pandemic, impacts on personal and professional lives - both anticipated and unanticipated - have abounded. One such impact has been an increase in the number of people considering divorce (Rubin, 2021).

For some couples and families, the stress of a global health crisis, coupled with a significant increase in time spent at home due to remote work and school, has intensified underlying tensions. According to the National Law Review, by April 2022, the interest in divorce had already increased by 34% in the U.S., with newer couples being the most likely to file for divorce.

While divorce is a profoundly personal matter, it is also a legal matter and so an increase in couples considering divorce has broader implications for the

legal system. Divorce actions are part of the broader legal practice area commonly referred to as family law, which also includes child custody/support, paternity, adoption, and emancipation. Like many attorneys whose work involves litigation, those who specialize in family law have had to adapt their practices, as courts quickly pivoted to electronic filing and remote hearings at the start of the pandemic when in-person court operations ceased in many jurisdictions. Prior to the pandemic, online forms were an alternative to, rather than a replacement for, traditional paper-based court forms.

Arguably, however, these changes have had an even more significant impact on self-represented litigants (i.e., individuals who are navigating the legal system without the assistance of any attorney). Whereas defendants in a criminal proceeding have a constitutional right to an attorney, parties in a family law case have no right to counsel. They too have had to take a crash course in electronic filing and the procedures to follow during remote hearings. The impact is particularly significant in family law cases, where at least one party is a self-represented litigant in approximately 80% of cases (Mansfield, 2016). From the perspective of the access to justice community, this has always been troubling as the myriad issues involved in divorce proceedings – particularly when there are children involved – can be incredibly difficult for an individual without legal training to navigate.

The COVID-19 pandemic, however, has shed light on yet another access to justice issue, namely the extent to which courts operating in a remote environment are accessible to all who need them. It is estimated that 80% of people with disabilities face at least one legal problem each year, the majority of which likely are related to health concerns and costs; and most of these same individuals will be unable to afford the costs of professional help when dealing with these legal problems (Legal Services Corporation, 2017). Thus, as courts shifted to remote operations, many self-represented litigants with disabilities had to

figure out how to electronically access, fill out, and file court documents on their own. In family law matters, parties can find themselves having to file not only a petition or response but also a variety of other requests for relief – each of which may require a separate form.

In a July 2020 report, the National Center for State Courts (NCSC) praised the response of state courts during the early part of the pandemic, specifically their ability to improvise “in-the-moment solutions built upon existing continuity plans” that reflected “remarkable creativity, resourcefulness, and willingness to embrace new technologies.” (National Center for State Courts, 2020). Notwithstanding these accomplishments, the NCSC urged courts to apply a thoughtful approach to the adoption of new technologies and processes. In particular, the NCSC recommended courts focus on user experience and, more specifically, accessibility: “Courts should...comply with the Americans with Disabilities Act, applicable state laws and regulations and commonly accepted accessibility guidelines...This requires ensuring the compatibility of online platforms with screen-reading software, confirming that web pages can be easily magnified, and using video technology that integrates closed captioning.” What the NCSC does not specifically mention, however, is the importance of ensuring that online forms – the only option available to litigants during parts of the pandemic – are accessible. The lack of accessibility of PDF forms is a known issue; however, there has been limited research on how this issue intersects with access to justice. Because filing forms is a preliminary step in gaining access to the courts, form accessibility can be seen as even more important than general web accessibility during a pandemic. When the alternative (i.e., paper forms) is not available, the inaccessibility of court forms can effectively close the doors to the legal system options for people in need.

The pandemic created a situation in which the technical issues of accessibility and the policy issues of access to justice have intersected, raising serious concerns about the ability of individuals with disabilities to navigate the U.S. legal system. As such, this policy research seeks to explore the role of PDF accessibility in providing equal access to family law through an evaluation of the accessibility of PDF divorce forms using in a sample of 10 states.

2. Background

“Accessibility” as a term is used in different ways by different communities. For instance, in the community of researchers studying the digital divide, accessibility may mean whether everyone has equal access to network connections and digital content. We

use the narrower, legal definition of accessibility, which covers only people with disabilities. Within the Americans with Disabilities Act (42 U.S.C. § 12102 (1)), coverage is provided to individuals with:

- (A) a physical or mental impairment that substantially limits one or more major life activities of such individual;
- (B) a record of such an impairment; or
- (C) being regarded as having such an impairment.

State and local government are covered by Title II a of the Americans with Disabilities Act (42 U.S.C. § 12132). While Title II of the ADA does not specifically mention court forms in PDF format, the U.S. Department of Justice (DOJ), for 25 years, has maintained the position that the ADA covers technologies regardless of whether the ADA statute or regulations mention a specific type of technology, as it is impossible to predict and codify in advance, every type of technology and format (Patrick, 1996; U.S. Department of Justice, 2014).

In addition to the coverage of Title II of the ADA, many states also have state-level laws that specifically require the accessibility of digital technologies and content by state government. Known as “mini-508s,” these statutes are modeled on Section 508 of the Rehabilitation Act, which requires that the Federal Government ensure accessibility “when they develop, procure, maintain, or use electronic and information technology” (29 U.S.C § 794 (d)). Regardless of whether a state has a “mini-508,” the state courts are still required not to discriminate against people with disabilities under Title II of the ADA.

2.1. COVID-19 and digital accessibility

The upsets of the pandemic offered opportunities for every sector of society – education, governance, commerce – to rethink and reconfigure their operations to promote equity and inclusion, including accessibility for persons with disabilities; unfortunately, in many sectors, we saw decreases in accessibility that made participation for persons with disabilities even more difficult than it was before the pandemic (Olsen et al., 2022). Because organizations had to pivot so rapidly to fully online operations during the COVID-19 pandemic, often accessibility was tossed aside in the rush to pivot, for instance, completely ignoring accessibility requirements in procurement processes (Lazar, 2021). In the past two years, a significant amount of research and scholarship has been published detailing courts’ response to the COVID-19 pandemic. This is most likely due to the fact that “remote court”, a term coined by Richard

Susskind, represented a radical shift from traditional court operations (Bannon & Keith, 2021). Before the pandemic, in the United States, the adoption of e-filing practices and policies proceeded in a patchwork manner throughout state courts. And, at both the state and federal levels, remote hearings only occurred in extraordinary circumstances.

This body of research indicates a widespread acknowledgement that the rise of remote court creates both new opportunities and new challenges for litigants, attorneys, and court personnel. The various impacts on litigants, in particular, has been well-documented: “On the basic measures of time saving and convenience, remote court has been a sea change for many court users. At the same time, the expansion of remote court during the pandemic has also laid bare the so-called digital divide” (Bannon & Keith, 2021, p. 1887). Much of this research has emphasized the extent to which the digital divide can exacerbate longstanding access to justice concerns (Baldwin et al., 2020; Nir & Mussial, 2022), particularly for self-represented litigants (Cypher, 2021). While there has been some discussion about the specific challenges that online court systems can cause for individuals with disabilities (see, e.g., Larson (2020) and Sourdin et al., 2020)), there have also been vague assurances that remote court, in theory, could offer benefits to individuals with disabilities. As described by McIntyre et al, “[o]rdinary courts have well-developed protocols to accommodate parties, witnesses and lawyers with specific access needs relating to mobility, visual and audio assistance and translation. Here, again, online courts may have advantages over their physical counterparts” (2020).

2.2. Access to justice and disability

Access to justice for people with disabilities has been discussed internationally in a number of important ways. Some works have examined the issue in terms of a specific population of disabled people, such as people who are deaf (Elder & Schwartz, 2018), people with cognitive impairments (Benedt & Grant, 2012), refugees with disabilities (Addaney et al., 2019), and disabled victims of crime (Edwards, 2013; Edwards et al., 2012). Others have focused on access to justice for disabled people in specific locations, including the European Union (Flynn & Larson, 2013), Ireland (Schwartz & Elder, 2018), Indonesia (Colbran, 2010), New Zealand (Manning, 2018), Nigeria (Arimoro, 2019), Northern Ireland (Byrne et al., 2021), and Australia (Cammilleri, 2019).

Typically, these studies have focused on limitations to physical access to structures and basic rights to participate in processes. The broader picture

of long-term barriers to participation in the justice system have been explored in a number of other works. Several authors have explored legal strategies and human rights arguments to promote equitable access to justice for disabled people (Flynn, 2013; Geary & Brodie, 2020; A. Larson, 2016, D. A. Larson, 2014). Others have argued for promoting access to justice for people with disabilities through intersections with other populations (Mor, 2017), through employment rights law (Harwood, 2016), and through healthcare laws (Nobleman, 2014). There have even been several excellent book-length engagements with the myriad issues surrounding access to justice for disabled people internationally (Beqiri et al., 2017; Flynn, 2016).

The role of equitable access to the technological elements of the justice system for people with disabilities, however, has not been a primary focus of any of this work. When the access to justice literature discusses accessibility, it is using the term to mean availability rather than technology that can be used by people with disabilities (e.g., Barendrecht, 2011; Bloch, 2008; Farrow, 2013; Hurder, 1998). Thus, while the justice system has become more and more reliant on information technology, the majority of access to justice discussions around disability are not devoting a great deal of attention to huge barriers that inaccessible technologies can create for people with disabilities trying to access the justice system. These issues have become even more significant throughout the pandemic, as many court systems have relied heavily or entirely on electronic means to continue to conduct legal business. These changes have raised concerns about access to justice generally during the pandemic (Sourdin et al., 2020); for people with disabilities, these concerns are especially pressing and merit a focus on issues that might best be described as accessibility to justice.

3. PDF Accessibility

It is challenging to track the number of PDF documents being created and actively in use today on websites, Adobe estimates that 2.5 trillion PDF documents are created every year (Kapoor, 2021). PDF documents are prevalent on websites, and they are commonly used for fillable forms that must be filled out by typing in the form fields, or printing and writing on the document, which then must be scanned, emailed or printed to submit via mail or in person.

PDF documents require certain metadata to be provided in the document for it to be accessible to people with disabilities, e.g., correctly structured tables with headings and form fields that are adequately labeled. Unfortunately, a lot of PDF

documents on the Web do not contain this metadata. This is a topic that has been discussed as an issue for more than a decade (Devine et al., 2011). When researchers recently reviewed over 800 PDF forms downloaded from the web, they found out that most of these forms had accessibility issues that hindered their usage (Uckun et al., 2020). This lack of accessibility is not because PDF documents cannot be accessible, but rather because PDF documents are often created without any thought of the document's accessibility (Bigham et al., 2016). It is similar to the challenge of encouraging and requiring website content to be more accessible. Because so many PDF documents are posted on web pages, PDF accessibility should be viewed as an integral part of that accessibility process. The most extreme example of PDF inaccessibility is when PDF documents that are scanned as images, which means that there is zero accessibility for that content; it is simply an untagged image.

For family law issues, these forms often need to be filed at the court clerk's office. For a legal form, the most accurate way to ensure the information on the form is legible and accurate is to fill in the data in a digital way—by typing in the form fields. Given the growing use and reliance on the PDF format for legal forms, it is important to ensure that PDF documents are created in an accessible way or, if not initially created to be accessible, are remediated to become accessible.

PDF/UA (Universal Accessibility) is a technical standard that was first initiated in 2004 that has become the ISO (International Organization for Standardization) standard for accessible PDFs, with the support of Adobe (dominant source of PDF creation software) (Adobe, 2022 -a). For PDF/UA's ease of use by document authors, a set of 136 failure conditions were created to check the accessibility of a PDF document (PDF Association, 2022). PDF documents can be made accessible by following the technical requirements mentioned in PDF/UA. The goals of the PDF/UA standard are to make PDF documents accessible without assistance and to the same level of quality for all users, including users with disabilities (Drümmer & Chang, 2013). While PDF/UA provides the most detail for PDF accessibility, other more general recommendations can be found for PDF accessibility in W3C's WCAG (Web Content Accessibility Guidelines) which provides PDF accessibility recommendations within its WCAG 2 guidance (W3C, 2022), and the Section 508 website (GSA, 2020). It is important to acknowledge that different barriers according to PDF/UA, impact users with different disabilities at different levels of severity. For instance, many of the key conditions of PDF/UA, if not followed, have the

greatest impact on Blind users who utilize screen reader software to interact with the PDF forms.

Despite the existence of PDF/UA and other recommendations, it can be challenging at times to make some PDF documents accessible. This is due to the immature and inadequate state of PDF accessibility tooling (Jembu Rajkumar et al., 2020). A recent study of PDF accessibility tools discovered that the tools themselves were full of usability issues, and the amount of time needed to make PDFs accessible was another demotivating factor for users of those tools (Jembu Rajkumar et al., 2020). Another study that examined why PDF documents were not accessible highlighted the limitations of existing tools for PDF creation (Bigham et al., 2016). They give various causes of these barriers such as Microsoft Word software not sharing accessibility metadata for exported PDFs and Adobe Acrobat Pro not providing basic usability functions such as undo while making PDFs accessible.

Typically, a content creator may create content in a tool, frequently a word processor, such as MS-Word. When saved, that file can be "printed" or "converted" to a PDF format. Depending on the type of tool creating the content, and in some cases depending on the platform, much of the existing markup for accessibility may not carry over into the PDF file (Jembu Rajkumar et al., 2020). So, if you add accessibility markup in MS-Word, some of it will transfer over to the PDF document, but one must still remediate the PDF document for accessibility using Adobe Acrobat Pro. Many users do not have a full version of Acrobat Pro, and instead only have the Acrobat Reader, which is free, but does not allow for accessibility remediation. Even if one has Acrobat Pro, these features are not easy to use, and the process of remediating a PDF file can be laborious (Jembu Rajkumar et al., 2020). There are some free open-source tools (such as PAVE) that may help content creators address some aspects of PDF accessibility. While there is current research and development focusing on the improvement of tools (Pradhan et al., 2022), there are not yet any tools available on the market that have these new features.

4. Research Methods

The goal of this research is to inform policymaking related to equal access to family law. Therefore, this research is more similar to Wentz et al.'s legal research (2021) on requirements for PDF accessibility than Pradhan et al.'s research (2022) on the creation of tools to remediate PDF documents for accessibility. To obtain exploratory data regarding the

accessibility of digital family law forms, we evaluated the accessibility of PDF divorce forms. We identified a sample of 10 states across the U.S. that provide access to such forms through their state court website. It is a diverse group of states, in terms of geography, population, and demonstrated commitment to access to justice. In each case, the court website provides updated information about family law cases and, more specifically, access to the form(s) required to initiate a divorce proceeding. We tested PDF forms from each state for PDF accessibility. Two research methods were considered for this: 1) Testing PDF/UA compliance, 2) Section 508 PDF Accessibility Testing

4.1 PDF/UA Compliance

To verify if PDF/UA compliance can be used for our work, we used the “gold standard” accessible PDF forms provided by the Internal Revenue Service (IRS) and one other renowned disability rights organization, which is highly familiar with digital accessibility. During our test, we found out that the forms did not satisfy the 136 failure conditions from PDF/UA. Thus, other federal government agencies would not satisfy all the failure conditions from PDF/UA, which essentially means that no (or almost no) PDF document is truly accessible according to PDF/UA. Accordingly, we did not test PDF/UA compliance for this set of PDF documents because, in addition to being extremely time-consuming, it was implausible that the family law forms would perform better than the “gold standard” documents.

4.2 Section 508 PDF Testing

Next, we tried PDF accessibility testing methods recommended by the U.S. Section 508 website. This approach worked well for evaluating the “gold standard” PDF forms. It is a two-step process involving a manual inspection and followed by an automated check. For the manual inspection, the following properties were used as instructed in the PDF accessibility training videos on the Section508.gov website (GSA, 2020):

1. Document Properties - PDF documents should have a title. The title helps users identify what's present inside a document without reading the content of the document.

2. Not a Scanned document - Often physical forms are scanned and uploaded to websites as PDF forms. Unfortunately, these scanned images do not contain any metadata required by disabled users to use them. While less than ideal, there are ways by using OCR that these documents can be made accessible.

3. Tagged Elements - Information and relationships that can be identified visually should also be accessible when assistive technologies are used. Markups called tags are associated with all elements present on a PDF document. These markups help screen reader software (and other assistive technologies) identify and tell their users the different elements (headings, lists, tables) that are present in the document.

4. Headings – Headings help users to understand the kind of information present in a document. Further, the proper use of heading levels (h1, h2, h3...) helps users to understand the organization of that information.

5. Logical Reading Order - Assistive technologies read out tags in the order defined in the PDF document. It is the responsibility of PDF authors to arrange tags in a meaningful order.

6. Alt Text - All images, figures, and graphical elements should contain an alternative descriptive text that defines its function or purpose. When the screen reader encounters any of these elements it uses alt-text to describe the element.

7. Data Tables - Similar to tagging, all the properties that can be identified in a table visually should also be accessible when using assistive technology. Thus, tables in a document should be identified with a table tag. The header of the table should be provided with TH tags and all data elements should be given a TD tag.

8. Form fields - All form fields should have a tooltip description that matches their label and provides any extra instruction (format requirement for the field) if needed. When a user enters a form field, the tooltip is read out loud to them.

9. Tab Order – All interactive elements (only form fields and buttons) should be able to be accessed in a logical order by tabbing through the form fields.

10. Links – Links should be meaningful and not something like “click here” used multiple times on a form. It also should follow the logical tab order for the form context (link should follow the associated form field or text).

11. Sensory Characteristics – The primary characteristic on most PDF forms would be color contrast. This can be evaluated in the same way that contrast is evaluated with WCAG criteria for websites. In our evaluations, we denoted this as “contrast.”

If a PDF form met the conditions for a property, it was considered to “pass” that inspection condition. For ease of reading, the complete condition text is not included, here, in the property descriptions. For example, document properties involve not only document title, but also specifying other things such as

the language of the document and setting the value of “is this a tagged document” option to a “Yes.” Once the manual checks were completed, the Adobe “Accessibility Check” tool (“Check accessibility” option) is used to perform automated tests on the PDF (Adobe, 2022b). The automated test helps us to identify issues we might have missed during the manual check and performs additional checks such as looking for bookmarks which are useful for navigation in large documents.

The automatic check generates a report containing a list of accessibility issues and remediation suggestions based on WCAG. For the study, we tested PDF forms from each of the ten states in the same way. If the auto check fails on any of its multiple criteria we considered it as a Fail, if it passes on all of them, we consider it as a Pass, for the study.

5. Results

Overall, the results of the accessibility evaluations revealed that none of the digital PDF court forms available from the 10 states were fully accessible for people with disabilities. In light of the growing

reliance on electronic legal resources since the pandemic, it should be of concern that even such basic forms such as a filing for divorce are not yet accessible, across a range of states.

The results of the study can be found in Table 1 below. It should be noted that the not applicable (N/A) notation on Table 1 for ALT text is due to the lack of images requiring the use of alternative text on these forms. Similarly, the N/A notation is also used when forms did not contain any links. Of the 10 states whose family court divorce forms were evaluated for PDF accessibility, no state forms were completely accessible as per the 11 properties evaluated. The single positive note among all the inspected properties was the “scanned” criteria. Only one of the sampled state forms contained a scanned document, which made it unusable by screen readers. All states failed accessibility inspections on half or more of the 11 properties tested for the forms, and one state (New York) failed on every aspect. Pennsylvania was more accessible than the others with four criteria passing. It should be noted that all the accessibility failures that were identified could be corrected using the Adobe Acrobat Pro software.

Table 1. Results of the Court PDF Accessibility Evaluations

State Abbrev.:	AK	CA	GA	IL	ME	MD	NJ	NY	PA	WV
Auto Check	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail
ALT Text	N/A	N/A	N/A	N/A	N/A	Fail	N/A	Fail	N/A	Fail
Contrast (Sensory Characteristics)	Fail	Fail	Pass	Pass	Fail	Pass	Fail	Fail	Pass	Pass
Form Fields	Fail	Pass	Fail	Pass	Fail	Fail	Fail	Fail	Pass	Fail
Headings	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail
Links (including link tab order)	Fail	Fail	N/A	N/A	Fail	Fail	N/A	Fail	N/A	N/A
Scanned?	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Fail	Pass	Pass
Tables	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail	N/A	Fail
Tab Order (Form fields, buttons)	Pass	Fail	Fail	Fail	Fail	Pass	Fail	N/A	Pass	Pass
Tagged Elements	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail
Reading Order	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail
Document Properties	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail

The accessibility issues on the evaluated court forms could impact someone with a disability as they attempt to fill out the form. A few examples from the state forms will provide insight on the range of potential accessibility-related barriers. One example was a PDF form that has poor contrast that could impact a user with low vision. The black text was hard to read against dark grey background and would not be easily read by people with low vision.

Figure 1 presents a table on a form that is not tagged properly as a table, which would make it almost impossible for screen reader users to correctly enter data. An accessible PDF table would have header cell IDs for “Creditor,” “Balance,” and “Who Should Pay,” with any fillable lines below formatted as cells that are associated with the respective header cell IDs, so the user knows what information needs to go where on the form. In its current state, each row of the table is a single text input, which means after adding information for Creditor, Balance and Who Should Pay. Users would have to manually add spaces for aligning information. This is a bad user experience for non-screen reader users as well.

<i>Creditor</i>	<i>Balance</i>	<i>Who Should Pay</i>

Figure 1. Table on a Form that is Not Tagged Properly

Figure 2 shows a table on a form that lacks tooltips, and the content of the table that requires names, date of births, and Social Security numbers for the minor children highlights yet another reason why accessibility is so vital for people with disabilities. The tooltips for Figure 2 should describe each field such as “Full name,” “Date of Birth,” “Gender,” and “SS Number Disclosure,” so that the user is clear as to what data goes where on the form. Without accessible access to these forms, an individual with a disability might have to ask for assistance in filling out the form, and in this case would have to provide that other person with social security numbers. It has already been established that security and privacy concerns are connected to a lack of accessibility (Wentz et al., 2017), and this also has a connection to a lack of personal independence (Madden, 2014).

Minor Children (of above parties):

Full name	Date of Birth (mm/dd/yyyy)	Gender	
			SS Number Disclosure Required
			SS Number Disclosure Required
			SS Number Disclosure Required
			SS Number Disclosure Required
			SS Number Disclosure Required
			SS Number Disclosure Required

Figure 2. Table on a Form that is Lacking a Tooltip

Many state forms such as Georgia and West Virginia do not have a document title, which means that screen reader users would need to enter the document and go through its content to identify its purpose. This could become even more problematic when users work with multiple documents at the same time.

6. Discussion

In areas of law such as family law in which there are a high percentage of people who are representing themselves, it is especially essential that people with disabilities have equal access to justice. During the COVID-19 pandemic, equal access to courts meant

“accessible forms for filing.” Based on the data collection presented, there do seem to be multiple barriers to accessing the courts for people with disabilities. What are some potential reasons for these inaccessible court forms?

Web accessibility receives more research focus than document accessibility, even though some websites contain PDF documents (Jembu Rajkumar, et al., 2020). Accessibility of PDF forms is a topic that many, both in the public and in the courts, are not yet aware of. This is different from web accessibility, where there are strong advocacy organizations (such as the Web Accessibility Initiative), features to encourage accessibility in web development tools and content management systems, and even thousands of lawsuits on the topic (Launey & Vu, 2021).

Comparatively, there are few if any lawsuits related to PDF accessibility (Wentz et al. 2021), the PDF/UA guidelines are not well known, the tools for PDF accessibility are insufficient (Jembu Rajkumar et al., 2020), and there is an overall low awareness of the topic. It is likely that the largest barrier to improving PDF accessibility is the tools, because even if people were more aware of PDF accessibility and wanted to make their PDF files accessible, the existing tools simply would not allow them to do so in a reasonable amount of time. While PDF accessibility is clearly an important topic, the lack of existing infrastructure, both in terms of human knowledge and awareness, and also of the tools, means that the road to increased PDF accessibility may be challenging.

While improved tools are clearly needed, it is possible that clearer, stronger legal requirements (at either the U.S. federal or state level) that specifically require accessibility of PDF documents and describe tools and processes to ensure accessibility, could spur increased awareness, encouraging technology companies fill an identified market need. While there are no U.S. states (or the Federal government) that mandate PDF/UA by law, many states have accessibility policies for state websites that specifically require web accessibility, which in turn could potentially cover PDF documents. So, the road to increased PDF accessibility involves tools, but also may need a strong component of law and policy.

7. Conclusion

The COVID-19 pandemic served to spotlight the necessity of providing accessible and usable legal and government services. There are a variety of yet to be addressed challenges with access to remote services, including availability and affordability of technology

and Internet access. However, addressing those challenges is the only the first step, and the bigger hurdle may be ensuring the universal accessibility of end point services (in this case the online legal forms). Creating new forms and modifying existing forms to meet a core subset of PDF/UA standards would provide more equitable remote access to such information and services. Future research could potentially involve interviewing those tasked with managing PDF documents in government, to learn more about the reasons why those documents are or are not accessible and the extent to which their needs differ from other groups (e.g., scientists) working to make their PDF documents accessible.

Particularly for issues relating to family law where it is likely that someone may be submitting some of their own information to a court, and where privacy and security of personal information is paramount, individuals with disabilities should be able to participate in the legal system via web-based means. They will not be able to do so, however, if courts do not make a commitment to ensuring that a broad claim of “we want to enhance access to justice for people with disabilities” actually converts into the operational “our PDF forms that you must file conform to existing technical standards for accessibility.” Future research into the accessibility of family law could explore the broader concerns of people with disabilities and their access and experience within the family court system. Future research on PDF accessibility should consider the findings of this research, in particular the use of the 11 evaluation properties as potential “gold standards” for evaluating form accessibility. As illustrated by the results of this study, there is clearly a need for increased attention towards the accessibility of digital legal forms as an issue of technology, policy, and human rights. The results of this study also illustrated the current state of digital inaccessibility that people with disabilities experience when attempting to use those court forms and other resources that act as a gateway to the courts, highlighting the reality that equitable access in this context is a goal that remains frustratingly unmet more than 30 years after the passage of the ADA.

8. References

- Addaney, M., Umeh, N. C., & Moyo, C. G. (2019). Legal capacity of and access to justice for refugees with disabilities in Africa. *De Jure Law Journal*, 52(1), 335-357.

- Adobe (2022a). Adobe PDF Accessibility Overview. Retrieved April 25, 2022, <https://www.adobe.com/accessibility/pdf.html>.
- Adobe (2022b). Create and verify PDF accessibility (Acrobat Pro). Retrieved May 2, 2022, https://helpx.adobe.com/acrobat/using/create-verify-pdf-accessibility.html#check_accessibility_of_PDFs.
- Arimoro, A. (2019). Persons with intellectual disability and access to justice in Nigeria: challenges and the way forward.
- Baldwin, J. M., Eassey, J. M., & Brooke, E. J. (2020). Court operations during the COVID-19 pandemic. *American Journal of Criminal Justice*, 45(4), 743-758.
- Bannon, A. L., & Keith, D. (2021). Remote court: principles for virtual proceedings during the covid-19 pandemic and beyond. *Northwestern University Law Review*, 115(6), 1875-1920
- Barendrecht, M. (2011). Legal aid, accessible courts or legal information? Three access to justice strategies compared. *Global Jurist*, 11(1).
- Benedet, J., & Grant, I. (2012). Taking the stand: Access to justice for witnesses with mental disabilities in sexual assault cases. *Osgoode Hall LJ*, 50, 1.
- Beqiraj, J., McNamara, L., & Wicks, V. (2017). Access to justice for persons with disabilities: From international principles to practice. *International Bar Association*.
- Bigham, J.P., Brady, E. L., Gleason, C. Guo, A. & Shamma, D. A. (2016). An Uninteresting Tour Through Why Our Research Papers Aren't Accessible. In *Proceedings of the 2016 CHI Conference Extended Abstracts on Human Factors in Computing Systems (CHI EA '16)*. Association for Computing Machinery, New York, NY, USA, 621–631.
- Bloch, F. S. (2008). Access to justice and the global clinical movement. *Wash. UJL & Pol'y*, 28, 111.
- Byrne, B., Elder, B., & Schwartz, M. (2021). Enhancing Deaf People's Access to Justice in Northern Ireland: Implementing Article 13 of the UN Convention on the Rights of Persons with Disabilities. *Scandinavian Journal of Disability Research*.
- Camilleri, M. (2019). Disabled in rural Victoria: Exploring the intersection of victimisation, disability and rurality on access to justice.
- Colbran, N. (2010). Access to Justice Persons with Disabilities in Indonesia. *Background Assessment Report*, AusAID.
- Cypher, E. (2021). Problem solving during the pandemic: how Massachusetts has provided access to the courts and to justice during the Covid-19 pandemic. *Suffolk University Law Review*, 54(2), 183-198.
- Devine, H., Gonzalez, A., & Hardy, M. (2011). Making accessible PDF documents. In *Proceedings of the 11th ACM symposium on Document engineering (DocEng '11)*. Association for Computing Machinery, New York, NY, USA, 275–276.
- Drümmer, O. & Chang, B. (2013). PDF/UA in a Nutshell. Available at: <https://www.pdfa.org/wp-content/uploads/2013/08/PDFUA-in-a-Nutshell-PDFUA.pdf>
- Edwards, C. (2013). Spacing access to justice: geographical perspectives on disabled people's interactions with the criminal justice system as victims of crime. *Area*, 45(3), 307-313.
- Edwards, C., Harold, G., & Kilcommins, S. (2012). Access to justice for people with disabilities as victims of crime in Ireland.
- Elder, B. C., & Schwartz, M. A. (2018). Effective deaf access to justice. *The Journal of Deaf Studies and Deaf Education*, 23(4), 331-340.
- Farrow, T. C. (2013). What is access to justice. *Osgoode Hall LJ*, 51, 957.
- Flynn, E. (2013). Making human rights meaningful for people with disabilities: Advocacy, access to justice and equality before the law. *The International Journal of Human Rights*, 17(4), 491-510.
- Flynn, E. (2016). *Disabled Justice?: Access to Justice and the UN Convention on the Rights of Persons with Disabilities*. Routledge.
- Flynn, E., & Lawson, A. (2013). Disability and access to justice in the European Union: Implication of the United Nations Convention on the Rights of Persons with Disabilities. *Eur. YB Disability L.*, 4, 7.
- Geary, L., & Brodie, N. (2020). Access to justice: Disability and the justice barrier: The issues that impede access. *Proctor, The*, 40(4), 37.
- GSA. (2020). PDF Training Videos. Retrieved April 30, 2022, <https://www.section508.gov/create/pdfs/training-videos/>
- Harwood, R. (2016). Can international human rights law help restore access to justice for disabled workers?. *Laws*, 5(2), 17.
- House of Representatives, Congress. (2011, December 30). 29 U.S.C. 794d - Electronic and information technology. [Government]. U.S. Government Publishing Office.
- House of Representatives, Congress. (2010, December 30). 42 U.S.C. 12132 - Discrimination. [Government]. U.S. Government Publishing Office.
- Hurder, A. J. (1998). Nonlawyer Legal Assistance and Access to Justice. *Fordham L. Rev.*, 67, 2241.
- Jembu Rajkumar, A., Lazar, J. Jordan, J., Darvishy, A., & Hutter, H. (2020). PDF Accessibility of Research Papers: What Tools are Needed for Assessment and Remediation?. 10.24251/HICSS.2020.512.
- Kapoor, V. (2021). New Adobe Document Services APIs unlock the possibilities of PDF. Available at: <https://blog.adobe.com/en/publish/2021/07/22/new-adobe-document-services-apis-unlock-possibilities-pdf>
- Larson, D. A. (2020). ODR Accessibility for Persons with Disabilities: We Must Do Better. *Online Dispute Resolution: Theory and Practice* (2nd ed. Eleven International Publisher).
- Launey, K. & Vu, M. (2021). Federal Website Accessibility Lawsuits Increased in 2021 Despite Mid-Year Pandemic Lull, Seyfarth ADA Title III (Mar. 21, 2021) available at: <https://www.adatitleiii.com/2022/03/federal-website-accessibility-lawsuits-increased-in-2021-despite-mid-year-pandemic-lull/#more-3988>.
- Lawson, A. (2016). Disabled people and access to justice: From disablement to enablement?. In *Routledge*

- Handbook of Disability Law and Human Rights (pp. 104-120). Routledge.
- Larson, D. A. (2014). Access to justice for persons with disabilities: An emerging strategy. *Laws*, 3(2), 220-238.
- Lazar, J. (2021). Managing digital accessibility at universities during the COVID-19 pandemic. *Universal Access in the Information Society*, 1-17.
- Lazar, J., Churchill, E. F., Grossman, T., Van Der Veer, G., Palanque, P., Morris, J. S., & Mankoff, J. (2017). Making the field of computing more inclusive. *Communications of the ACM*, 60(3), 50-59.
- Lazar, J., Goldstein, D., & Taylor, A. (2015). Ensuring digital accessibility through process and policy. Morgan Kaufmann.
- Legal Services Corporation. (2017). The justice gap: Measuring the unmet civil legal needs of low-income Americans.
- Mary Madden, 2014. "Public perceptions of privacy and security in the post-Snowden era," Pew Research Center, available at <http://www.pewinternet.org/2014/11/12/public-privacy-perceptions/>
- Manning, J. (2018). "Fair, Simple, Speedy and Efficient"? Barriers to Access to Justice in the Health and Disability Commissioner's Complaints Process in New Zealand. *New Zealand Law Review*, 2018(4), 611-656.
- Mansfield, M. M. (2016). Litigants without lawyers: measuring success in family court. *Hastings Law Journal*, 67(5), 1389-1426.
- McIntyre, J., Olijnyk, A., & Pender, K. (2020). Civil courts and COVID-19: Challenges and opportunities in Australia. *Alternative Law Journal*, 45(3), 195-201.
- Mor, S. (2017). With access and justice for all. *Cardozo L. Rev.*, 39, 611.
- National Center for State Courts (2020, July). Guiding Principles for Post-Pandemic Court Technology. https://www.ncsc.org/__data/assets/pdf_file/0014/42332/Guiding-Principles-for-Court-Technology.pdf.
- Nir, E., & Musial, J. (2022). Zooming In: Courtrooms and Defendants' Rights during the COVID-19 Pandemic. *Social & Legal Studies*, 09646639221076099.
- Nobleman, R. L. (2014). Addressing access to justice as a social determinant of health. *Health LJ*, 21, 49.
- Letter from Deval Patrick, Assistant Att'y Gen., C.R. Div., to the Hon. Tom Harkin, U.S. Sen. (Sept. 9, 1996) <https://www.justice.gov/crt/foia/file/666366/download>
- Olarere, A. & Lazar, J. (2011). Accessibility of US federal government home pages: Section 508 compliance and site accessibility statements. *Government Information Quarterly*, 28(3), 303-309.
- Olsen, S. H., Cork, S. J., Anders, P., Padrón, R., Peterson, A., Strausser, A., & Jaeger, P. T. (2022). The disability tax and the accessibility tax: The extra intellectual, emotional, and technological labor and financial expenditures required of disabled people in a world gone wrong and mostly online. *Including Disability*, 1.
- PDF Association. (2022). The Matterhorn Protocol 1.1. Retrieved April 26, 2022, from <https://www.pdfa.org/resource/the-matterhorn-protocol/>.
- Pradhan, D., Rajput, T., Rajkumar, A. J., Lazar, J., Jain, R., Morariu, V. I., & Manjunatha, V. (2022). Development and Evaluation of a Tool for Assisting Content Creators in Making PDF Files More Accessible. *ACM Transactions on Accessible Computing (TACCESS)*, 15(1), 1-52.
- Rubin, C. (2021, Jan. 30). Manage Your Divorce Expectations. *The New York Times*.
- Schwartz, M. A., & Elder, B. C. (2018). Deaf access to justice in Northern Ireland: rethinking 'Reasonable Adjustment' in the Disability Discrimination Act. *Disability & Society*, 33(7), 1003-1024.
- Sourdin, T., Li, B., & McNamara, D. M. (2020). Court innovations and access to justice in times of crisis. *Health policy and technology*, 9(4), 447-453.
- Uckun, U., Aydin, A. S., Ashok, V., & Ramakrishnan, IV. (2020). Breaking the Accessibility Barrier in Non-Visual Interaction with PDF Forms. *Proceedings of the ACM on Human-Computer Interactions*, 4(80), 1-16.
- U.S. Department of Justice (2014). Statement of Interest of the United States in *New v. Lucky Brand Dungarees Stores, Inc.*, (51 F. Supp. 3d 1284) SOI available at: https://www.ada.gov/briefs/lucky_brand%20_soi.docx (citing 42 U.S.C. § 12182(b)(2)(A)(iii); 28 C.F.R. § 36.303).
- W3C. (n.d.). PDF Techniques. Retrieved April 25, 2022, from <https://www.w3.org/TR/WCAG20-TECHS/pdf.html>.
- Wentz, B., Lazar, J., Jaeger, P. T., & Gorham, U. (2021). A Socio-Legal Framework for Improving the Accessibility of Research Articles for People With Disabilities. *Journal of Business & Technology Law*, 16, 223.
- Wentz, B., Pham, D., & Tressler, K. (2017). Exploring the Accessibility of Banking and Finance Systems for Blind Users. *First Monday*. Volume 22, Number 3 - 6 March 2017.
- VP Engineering for Document Cloud. A video of the presentation can be found here: <https://www.youtube.com/watch?v=5Axw6OGPYHw>.