



The Legal Handling of Digital Accessibility: a Comparison of Evaluation and Policy Approaches in Federal-Level Cases in Brazil and the United States

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Abstract Countries in the Global South still have less well-established procedures and resources to enact public policies and surveillance of digital accessibility. This paper presents a comparative study on the legal handling of digital accessibility in one country in the Global North and one in the Global South – the United States and Brazil. The study analyzed federal-level procedures handled by government surveillance bodies concerning public and private organizations, involving 26 cases in Brazil and 124 in the United States. The results showed that most cases in Brazil were finalized based on automated accessibility evaluations and with little evidence of long-term actions for sustained accessibility. All cases analyzed from the United States resulted in settlement agreements leading to medium to long-term initiatives, which covered continuous verification of conformance to accessibility standards and, in many cases, demanded inspections by accessibility specialists and tests with users with disabilities. The paper discusses the implications of including effective accessibility evaluation methods and long-term solutions in legal cases.

Keywords: Digital Accessibility, Public Policies, Surveillance

1 Introduction

Digital accessibility in interactive systems to people with disabilities has been an important goal in Human-Computer Interaction. To help in that pursuit, countries around the globe have regulated norms for digital accessibility, such as the Web Content Accessibility Guidelines [Kirkpatrick *et al.*, 2018] or other standards.

Law enforcement and surveillance are essential to putting those regulations into play. Several countries have enacted legislation and regulation bodies to oversee the accessibility of systems. The United States, for example, has a long record of surveillance and investigation of private and public organizations concerning web accessibility [Lazar *et al.*, 2017]. The United Kingdom also has placed processes in government agencies to perform surveillance and evaluate the digital accessibility of government websites and resources [Gov.UK, 2021].

Despite intense research and advocacy for improving digital accessibility, studies in different parts of the globe have continued to show problems in the accessibility of digital systems [Jaeger, 2006; Silva *et al.*, 2019; Freire, 2012; Harrison and Petrie, 2007; Galkute *et al.*, 2020; Vigo *et al.*, 2013; Power *et al.*, 2012; Rømen and Svanæs, 2012; Yi, 2020; Acosta-Vargas *et al.*, 2019; Mounika *et al.*, 2019;

Wentz *et al.*, 2019; Doush and AlMeraj, 2019]. The improvement of this situation depends on the development of appropriate techniques and technology and the advancement of policies and law-enforcement [Lazar, 2019b; Lazar *et al.*, 2015; Kirkham, 2016; Gov.UK, 2021]. Addressing such challenges demands important contributions from Human-Computer Interaction as a field, as a key area to inform public policy making [Lazar *et al.*, 2016; Kirkham, 2016; Kisselburgh *et al.*, 2020].

Significant research has advanced the understanding of accessibility policies in countries such as the United States. Research has investigated the role of consumer law concerning digital accessibility in private-sector organizations [Lazar, 2019a], the adoption of negotiated rulemaking [Moroney, 2020] and limitations in current legislation, and the conflicts in using national standards such as Section 508 or international standards such as WCAG [Lazar, 2018].

However, the understanding of issues surrounding digital accessibility implementation and policies in developing countries is still more limited than in more developed countries [Gallegos *et al.*, 2021; Brewer and Abou-Zahra, 2021; Beaumon, 2021; Kelly *et al.*, 2010]. Developing countries have different levels of digital accessibility policies and law-enforcement procedures to help promote digital accessibility. A previous study [Luján-Mora *et al.*, 2014] showed that,

compared to Spain, many countries in Latin American countries were lagging behind in terms of accessibility legislation. A previous study [Mateus *et al.*, 2022] performed an initial analysis on the evaluation methods used by the Brazilian Federal Public Ministry, but did not compare it with other countries. Comparing how countries in the Global South perform digital accessibility surveillance with more well-established practices from countries in the Global North can help understand challenges to overcome and define strategies to advance policy making in developing countries.

Considering the Global South, in the particular case of Brazil, law enforcement and surveillance of collective rights (such as disability rights) are performed by the Federal Public Ministry (*Ministério Público Federal* - MPF¹). There has been slow growth in formal complaints regarding digital accessibility [Siqueira *et al.*, 2022b]. However, MPF has handled many complaints in Brazil concerning digital accessibility. Analyzing the handling of these cases provides an excellent opportunity to understand how digital accessibility policies and law enforcement have been enacted in Brazil.

A previous study by the authors of this paper proposed a first study aiming to investigate the accessibility evaluation methods used in legal procedures conducted by the Brazilian Federal Public Ministry [Mateus *et al.*, 2022]. However, the previously published paper did not allow further comparison of the practices applied in Brazilian legal procedures and those of other countries with well-established surveillance procedures to oversee digital accessibility.

The research reported in this paper aimed to compare how complaints about digital accessibility are handled by federal-level surveillance agencies in Brazil and in the United States. Considering the difficulty of analyzing the legal handling of digital accessibility in a wider range of countries, the choice for the United States is due to the country's prominence in digital accessibility policies. In regulation, for example, the country released its web accessibility standard as part of Section 508 US Government [2018] was released in 1998, before the publication of WCAG 1.0 in 1999. The present study investigated the types of systems and organizations that were surveilled, the accessibility evaluation methods used in the investigations and agreements, the outcomes from the inquiries, and specific aspects of the investigation process and recommendations.

The study analyzed 26 cases by the Federal Public Ministry in Brazil and 124 cases by the US Department of Justice. The results show the prevalence of outcomes with settlement agreements with long-term activities in the US. At the same time, Brazil had more immediate actions after the accessibility evaluations performed during the investigations, but with less evidence of long-term measures. The study also analyzed how different investigations recommended activities related to training, adjustment of websites and organization policies related to digital accessibility. From the comparison, the paper discusses implications for improving digital accessibility oversight in both countries and particular features currently employed in the US that could help enhance digital accessibility surveillance in Brazil.

2 Theoretical Background

This section describes the theoretical background of digital accessibility, standards, evaluation, legislation and surveillance.

2.1 Digital Accessibility, Standards and Evaluation

The ISO 9241-11 standard [ISO, 2018] defines accessibility as the “extent to which products, systems, services, environments and facilities can be used by people from a population with the widest range of user needs, characteristics and capabilities to achieve identified goals in identified contexts of use”, which includes contexts in which people with disabilities use assistive technologies.

Some of the most long-standing efforts to regulate digital accessibility have been targeted at the Web. The W3C (World Wide Web Consortium) recommends the Web Content Accessibility Guidelines (WCAG), which define how to make web content more accessible to people with disabilities. According to WCAG 2.1 [Kirkpatrick *et al.*, 2018], accessibility involves several disabilities, including visual, hearing, physical, speech, cognitive, language, learning, and neurological disabilities. While these guidelines are broad, they cannot meet the needs of people with all types, degrees, and combinations of disabilities [Kirkpatrick *et al.*, 2018]. Despite this, these guidelines also make web content more usable for older individuals with varying abilities due to ageing and still improve usability for users. Different governments have used WCAG and other guidelines as references for accessibility legislation and policies.

Different methods from the Human-Computer Interaction literature have been used to evaluate the accessibility of interactive systems, such as websites and mobile applications. Along with user evaluations involving people with disabilities inspection methods have played an important role in accessibility evaluation.

The need to automate exhaustive inspections has led to the development of a number of automated tools to assess a subset of accessibility guidelines [Brajnik *et al.*, 2011]. However, automated evaluation has limitations despite the benefits, as it cannot identify all accessibility issues [Freire, 2012; Petrie and Bevan, 2009; Vigo *et al.*, 2013].

A complete inspection of conformance to accessibility guidelines (such as WCAG [Kirkpatrick *et al.*, 2018], Section 508 [US Government, 2018], and eMAG [Governo Brasileiro, 2014]) needs manual checks by specialists, as it can find problems that cannot be found by automated tools alone. Despite not finding all problems that would be encountered in user evaluations, inspections by specialists play a crucial role, as they help identify significant commonly-found problems early on in the development [Freire, 2012; Petrie and Bevan, 2009].

The most comprehensive method to uncover accessibility problems in interactive systems is user evaluation [Petrie and Bevan, 2009; Power *et al.*, 2012] involving people with disabilities. Policies on accessibility surveillance need appropriate guidance on user evaluation.

¹ Available online at <http://www.mpf.mp.br> (in Portuguese)

2.2 Digital Accessibility Legislation and Surveillance

Many countries and blocks worldwide have defined legislation and agreements to address requirements for digital accessibility.

The European Commission [European Commission, 2022], in Article 9 of its Convention, to which the European Union and its Member States are a party, requires that “appropriate measures be taken to ensure equal access for persons with disabilities to information and communication technologies, including the Internet”. The European Union’s Web Accessibility Directive has been in effect since December 2016 and provides people with disabilities with better access to public service websites and mobile apps. The rules in this Directive complement the European Accessibility Act and oblige websites and applications of public sector bodies to meet specific accessibility standards.

In the United States, Section 508 is a law passed in 1998 by the US government that establishes requirements for federal e-government websites to be accessible to persons with disabilities who wish to seek information or services [US Government, 2018]. Section 508 requirements have primary guidelines for designing and implementing websites, known as the Internet and Intranet Accessibility Standards. According to Jaeger [Jaeger, 2006], these guidelines address the accessibility needs of people with visual, mobility, neuromotor, hearing, cognitive, and other disabilities, making them the most inclusive accessibility standards available.

In Brazil, the Electronic Government Accessibility Model (*Modelo de Acessibilidade em Governo Eletrônico* - eMAG) [Governo Brasileiro, 2014] was introduced by the Brazilian government as a recommendation for digital accessibility and is committed to guiding the development and adaptation of digital content by the federal government, ensuring access to all. eMAG is based on the WCAG 2.0 [Kirkpatrick *et al.*, 2018] international standard, without excluding WCAG accessibility best practices and including specific features tailored to Brazilian users.

The Brazilian decree/law 5,296 of 2004 [Governo Brasileiro, 2004] made accessibility mandatory to public administration websites for people with visual disabilities only. Later, the Brazilian law 13,146 of 2015 [Governo Brasileiro, 2015] broadened this requirement for all public and private organizations in the country. However, no further regulation has defined precise criteria for the new groups to date. Apart from having no current specific regulation, Law 13,146/2015 also fell short of specifying requirements for the accessibility of mobile applications and other types of technologies.

Various accessibility evaluation tools are available worldwide, and in Brazil, the primary tool employed is ASES² - Accessibility Evaluator and Simulator for Websites. Developed by the Ministry of Planning, Budget, and Management, this tool is designed to assess website accessibility according to the eMAG (Accessibility Model in Electronic Government) guidelines. The tool has a set of rules to calculate a score from 0 to 100 based on the adherence to a set of criteria that can be automatically verified. However, this score does not reflect important aspects, such as the lack of covering

important criteria from eMAG that cannot be automatically verified.

The UK established an accessibility monitoring policy for public sector websites and mobile apps [Gov.UK, 2021]. The Digital Central and Data Office (CDDO), connected to the government cabinet, monitors the accessibility according to the European standard ETSI EN 301 549 [European Telecommunications Standards Institute, 2021], which refers to WCAG 2.1 at levels A and AA. They performed simplified inspections covering a sample of pages, detailed inspections and mobile applications inspections. Automated tests are constantly performed on a set of pages. When problems are encountered, detailed tests by specialists and by users with disabilities are performed.

The enactment of accessibility policy and legislation relies on surveillance bodies in different countries to perform law enforcement. This section presents aspects concerning how the Federal Public Ministry in Brazil and the US Department of Justice enact law enforcement actions related to digital accessibility at the federal level.

In Brazil, the competent authority for the defence of unavailable social and individual rights, the defence of the legal order and the defence of the democratic regime is the Public Ministry. According to the Constitution of the Federative Republic of Brazil of 1988 [Brasil, 1988], the Public Ministry is a body that performs an essential function to the effectiveness of Justice (Art. 127) [Brasil, 1988], but does not make up the Brazilian Judiciary (Art. 92) [Brasil, 1988] – due to its functional independence and autonomy. Thus, as Brazil is a federated state, the decentralization of power and the division of competencies between the federative entities and the powers that make up the Brazilian State is demarcated by the Brazilian Constitution of 1988.

Therefore, it is the responsibility of the MPF to act as a supervisor of the law, and in defence of citizenship, that is, in situations that involve the public interest, collective interest and unavailable individual interest in civil, criminal and electoral areas. The MPF also acts in the Federal Court in cases in which the Constitution considers a national interest (Art. 129 CF/88). Furthermore, the MPF acts preventively and extrajudicially when it acts through recommendations and public hearings and promotes agreements through the Terms of Adjustment of Conduct (TAC) [Brasil, 2022].

In cases of breaches of legislation, such as digital accessibility issues, the Public Ministry can employ preventive and extrajudicial mechanisms and instruments: recommendations, public hearings and agreements through Conduct Adjustment Terms (TACs) and litigation and judicial and public civil action (ACP). In short, this means that before the judicial measure is instituted, the MPF can warn the person or organization responsible for the damage or injury to the law so that he can adapt his actions to the requirements and imperatives of the law (preventive and extrajudicial acts - those that do not involve litigation). The MPF often adopts such measures to speed up the repair of the damage and avoid a lengthy judicial dispute in a country marked by the judicialization of social issues. Also, among the preventive and extrajudicial acts are the recommendations, the public hearings and the TACs.

Recommendations are documents issued by MPF mem-

²<https://asesweb.governoeletronico.gov.br/>

bers to public bodies so that they comply with specific constitutional or legal provisions and avoid being sued. The public hearing is an extrajudicial instrument of the Federal Public Ministry. It is used to gather subsidies for the instruction of procedures or public civil inquiries involving all interested parts, which may lead to an agreement. The term of adjustment of conduct (TAC) is an agreement that the Public Ministry enters into with the violator of a particular collective right. This instrument is intended to prevent the continuation of the illegality situation, repair the damage to collective rights and avoid legal action [Brasil, 2022]. The TAC allows for an agreement between the interested parties and those involved in the situation that violates rights. It has a preventive and extrajudicial character, with a provision for punitive sanctions in the case of non-compliance.

The TAC used in Brazil is a legal instrument similar to the settlement agreement [Feingold, 2021] used in the United States. A settlement agreement is a binding agreement between the parties involved in a conflict who negotiate its terms by mutual agreement and before judgment.

The settlement agreement generally avoids the judicialization of conflicting issues and the high costs involved in proceedings in the United States. After observing the legal requirements and finalizing the agreement between the parties, it is presented to the Judge for approval, gaining enforceability. If one of the parties does not comply with the settlement agreement's provisions, the agreement will be breached.

Another important aspect to note is the enforceability of the settlement agreement in the United States, which we can infer from certain factors, such as the North American legal tradition - which ensures the freedom and privacy of agreements and contracts, the recognition of citizens of the supremacy of the law and the judiciary, which reverts to the fear of high pecuniary sanctions (with monetary fines), if the agreed rules are not respected. These characteristics translate into the legal and enforceable force of the settlement agreement; that is, it translates into the legal and social effectiveness of this instrument within the scope of US law.

The legal cases that resulted in settlement agreements reported in this paper were enacted by the US Department of Justice, which is headed by the Attorney General. The US Department of Justice has the duty "to prosecute and conduct all suits in the Supreme Court in which the United States shall be concerned, and to give his advice and opinion upon questions of law when required by the President of the United States, or when requested by the heads of any of the departments, touching any matters that may concern their departments" [US Government, 2022].

Despite having different particularities in their constitution, the Brazilian MPF and the US Department of Justice have similar attributions concerning law enforcement concerning digital accessibility at the federal level in both countries. This allowed for a comparison between how the two countries perform law enforcement at the federal level.

3 Methods

This study analyzed complaints about the accessibility of digital services in Brazil and the United States handled by

federal-level institutions. Data from Brazil were collected on the Federal Public Ministry website. Data from the United States were collected on the Department of Justice website and the ADA (Americans with Disabilities Act) website.

3.1 Study Design

This study aims to compare the models of complaints about digital accessibility and legal treatment between Brazil and the United States. The study analyzed procedures at the federal level conducted by government oversight bodies in public and private organizations.

The analysis of open public documents is exempt from ethical analysis according to Brazilian Resolution CNS 510/2016 Conselho Nacional de Saúde [2016]. This paper does not reveal names or identification of any person that could be contained in the complaints analyzed.

3.2 Data Collection Procedures

The procedure for collecting cases of complaints about the lack of digital accessibility and legal treatment in Brazil and the United States was conducted by the two principal researchers of this study.

The cases of complaints registered in Brazil can be accessed through MPF's Transparency Portal. These reports are publicly available. In addition, the page provides a search field, which facilitates the search using a search string, as shown in Figure 1.

The authors organized data collection on the MPF website³ as follows: The first step was to define the keywords that would identify aspects of the lack of digital accessibility on websites, mobile applications or systems. Thus, the keywords in Portuguese used were: "Acessibilidade" combined with "Web" "Sites", "Aplicações" and "App". As a result of this process, 143 complaints of accessibility violations were found in public and private bodies. Data collection was carried out from March 30 to August 23, 2023.

In the United States, cases involving people with disabilities are governed by the Americans with Disabilities Act (ADA), a federal civil rights law prohibiting discrimination against people with disabilities in everyday activities. The US Department of Justice recently restructured the ADA's website⁴ and clarified that content on the original website is still being added or updated occasionally. However, it is possible to access their old version.

Records of cases involving people with disabilities on the ADA website can be accessed through the "Enforcement" menu. However, the cases are available and organized in two different places. Cases filed from 2021 to the date when the research was conducted are on the Disability Rights Cases section of the US Department of Justice website⁵. And cases before 2020 are available on the old ADA website⁶.

On the website of the Civil Rights Divisions of the US Department of Justice, as shown in Figure 2, access to complaints is in the context of the left side menu, clicking

³<https://apps.mpf.mp.br/aptusmpf/portal?servidor=portal>

⁴<https://www.ada.gov/>

⁵<https://www.justice.gov/crt/disability-rights-cases>

⁶https://archive.ada.gov/enforce_current.htm

The screenshot displays the 'Portal da Transparência' interface. At the top, there is a search bar with the text 'acessibilidade' and 'sites' entered. Below the search bar, a list of filters is visible, including 'Gênero', 'Atos Extrajudiciais - Res. CNMP', 'Data', 'Data Sessão', 'Área de Atuação', 'Membro Responsável', 'Instância', 'Unidade Federativa Originária', 'Unidade do MPF Originária', 'Unidade Federativa', 'Unidade do MPF', and 'Arquivado'. The search results are displayed in a table format, showing two entries. The first entry is dated '02.08.2022' and is a 'VOTO' by 'CAROLINE MACIEL DA COSTA'. The second entry is dated '17.06.2022' and is a 'DECISÃO MONOCRÁTICA' by 'PGR-2A.CAM'. The summary of the second entry mentions 'Declínio de atribuição' and 'Declínio de representação encaminhada pelo sistema integrado nacional de direitos humanos (sindh)'. At the bottom of the page, there is contact information for the MPF (Ministério Público Federal) and a logo.

Figure 1. Brazil's Federal Public Ministry Transparency Portal in <https://apps.mpf.mp.br/aptusmpf/portal>

on “About the Division”, then on “Disability Rights” and then on “Cases”. This page has a field to search for keywords. Therefore, the first author collected the data and defined the keywords for this search: “accessible technology”, “WCAG”, “site” and “accessibility”. As a result, it returned seven cases that contained aspects related to digital accessibility for people with disabilities. In addition, the data analyzed on this page was collected from 2021 to March 2023.

The keywords and search strategies were different because of the particularities of the different portals. Despite the differences, we aimed at making the search as uniform as possible. However, we acknowledge that there could be occasional cases that would not be addressed by either strategy, although they would be minimal.

Older years' data was collected on the former ADA website (Figure 3), and cases are available in the “Enforcement” menu. The ADA Enforcement page has a menu on its left side that gives access to the Titles that determine each type of organization. For example, Title II covers state and local government, Title III covers publicly traded companies, and Title IV covers telecommunications. Although the ADA applies to many areas of everyday life, it does not cover everything. In some situations, disability discrimination is prohibited by laws other than the ADA. For example, disability discrimination during air travel is managed by the Carrier Access Act.

To collect complaints in this scenario, the first author used the browser's search command, as the ADA page did not have a search field. The search strings used in this process were the same as those used on the US Department of Jus-

tice website. However, the process required more care and time to analyze. As a result, 22 pieces of evidence of digital accessibility were found.

In addition to complaints, the ADA enacted Project Civic Access (PCA), a comprehensive effort to ensure that counties, cities, towns and villages comply with the ADA by eliminating communication barriers that prevent people with disabilities from fully participating in community life. The agreements can be accessed through the side menu on the ADA Enforcement page by clicking on “Project Civic Access”⁷.

Although the project addresses accessibility needs in public spaces, it also addresses issues of accessibility of web-based services and programs for people with disabilities. The implementation process usually involves a detailed assessment of what needs to be addressed and is entered into settlement agreements between the city and the US government. Contracts may include various provisions to ensure accessibility of web-based services and programs, such as:

- Compliance with Accessibility Standards: Settlement agreements require cities to comply with accessibility standards established by the Disabled Accessibility Act (ADA) and other applicable laws and regulations.
- Accessibility Assessment: Cities may be required to conduct accessibility assessments of their web-based services and programs to identify potential accessibility issues and develop an action plan to address them.
- Staff Training: Cities may be required to train staff

⁷<https://archive.ada.gov/civicac.htm>

The screenshot shows the official website of the United States Department of Justice. The header includes the department's logo and name, along with a search bar. The navigation menu includes links for ABOUT, OUR AGENCY, TOPICS, NEWS, RESOURCES, CAREERS, and CONTACT. The main content area is titled "DISABILITY RIGHTS CASES" and displays a list of cases. A search bar is present with the keyword "Technology Accessible" and a "Show per page" dropdown set to 10. Two cases are visible in the list:

Case Name	Overview	Federal Court	Case Documents
CVS Pharmacy, Inc.	On April 11, 2022, the United States executed a settlement agreement with CVS Pharmacy, Inc., the nation's largest retail pharmacy, under Title III of the ADA regarding the accessibility of its vaccine registration portal. The agreement will ensure that people with disabilities (including those with vision disabilities who use screen readers and those who have difficulty using a mouse) can privately and independently get information about COVID-19 vaccinations and book their vaccination appointments online. Under the agreement, CVS will make content about the COVID-19 vaccine, including the forms for scheduling an appointment to get the vaccine, conform to the Web Content Accessibility Guidelines (WCAG), Version 2.1, Level AA. Press Release		Settlement/Consent Decree
Hy-Vee, Inc.	On December 1, 2021, the United States executed a settlement agreement with Hy-Vee, Inc., a grocery store chain, under Title III of the ADA regarding the accessibility of its vaccine website. The agreement will ensure that people with disabilities (including those with vision disabilities who use screen readers and those who have difficulty using a mouse) can privately and independently get information about COVID-19 vaccinations and book their vaccination appointments online. Under the agreement, Hy-Vee will make		Settlement/Consent Decree

Figure 2. The United States Department of Justice website in <https://www.justice.gov/crt/disability-rights-cases>

working on web-based services and programs to ensure they know accessibility standards and can develop and maintain accessible services and programs.

- **Monitoring and Reporting:** Settlement agreements may require cities to monitor the accessibility of their web-based services and programs regularly and regularly report to the US government on progress against provisions of the settlement agreement.
- **Ongoing Accessibility:** Cities may be required to ensure that web-based services and programs remain accessible to people with disabilities over time, including regularly updating content and resources to maintain compliance with accessibility regulations.

With that, the second author collected data related to the civic project agreements that covered the lack of digital accessibility. The procedure was to access each agreement individually and read it to identify if there was anything related to this aspect. Thus, 95 agreements were found that included data on digital accessibility.

In the final stages of the US data collection, including the complaints and the civic project yielded 124 cases that were available as of March 17, 2023.

3.3 Data Extraction and Analysis

The set of data collected by the first and second authors and was discussed in all aspects until a consensus on exclusion or inclusion. In this process, the following criteria were defined for the inclusion of complaints:

- Public website, system and application for the population;
- Contain digital service information;
- Related to accessibility for people with disabilities.

In addition, the following exclusion criteria were defined:

- Digital books;
- Books in braille;
- Architectural space such as buildings and temples;
- Lack of information if accessibility is in digital or architectural space.

For complaints in Brazil, the extraction process took place in two stages. The first step was to read the summaries of complaints from the MPF Transparency Portal search. The search with the strings found 143 complaints. Of these, 69 complaints were excluded according to the inclusion-exclusion criteria where 30 complaints that were about architectural accessibility, book in Braille and buildings and 39 complaints were excluded for being TV accessibility media, service to people with disabilities in ENEM (National High School Exam) exam and others. In the second stage, the remaining 74 complaints were read in full. At this stage, five complaints were excluded because they were presential Libras Interpreters for exams at the university and care units. In addition, some complaints had the same reference number in the document's content and were included only once. In the end, it resulted in 34 complaints that are available in a table on this external link <https://bit.ly/JBCS23-ExtractedDataMPF>.



Figure 3. ADA website in https://www.ada.gov/enforce_current.htm

For the 34 complaints analyzed in Brazil, the following were extracted: title, year of opening and closing, applicant’s profile, organization, type of system, sector, sphere, problem, solution, defendant’s evaluation, evaluation method, tool, MPF evaluation, accessibility score, and status. With this extraction, it was possible to analyze the procedure for evaluating accessibility complaints, how the process was carried out, what type of evaluation and the status of the complaint closure.

The complaint extraction process in the US followed the same structure as in Brazil, but some steps were slightly different, as the search took place in three different locations, as described in the previous subsection. The inclusion-exclusion procedures were applied similarly, but the discarding rate of the selected complaints was slightly lower. We found 228 complaints, of which 98 were discarded, and another 6 were duplicates, resulting in 124 complaints chosen for analysis.

Of the 124 complaints analyzed in the US, the following data were extracted: title, year of the agreement, organization, type of system, sector, sphere, on justification and violation of the ADA, deadline for adaptation, duration of the agreement, accessibility policy, profile of the user, evaluation method, and evaluation of the secretary of justice. It is possible to notice some similarities, but there are also some distinctions in the data between the two countries. For example, in the United States, deadlines seem to be better established, public policies are used, and training is applied, while in Brazil, there are other factors. A table is available for a better view of the data extracted from

the US complaints and can be accessed at this external link <https://bit.ly/us_complaints_query>

4 Results

This section presents a comparison of digital accessibility cases conducted by the Federal Public Ministry in Brazil and the US Department of Justice.

This section presents a characterization of the legal cases in both countries, with the types of systems and organizations involved, the types of outcomes from the cases, accessibility evaluation methods and arguments and decisions made in the cases.

4.1 Characterization of Legal Cases: Types of Systems and Organizations

The characterization of the legal cases analyzed in Brazil and the US included a classification of the types of systems involved in the complaints. The analysis covered 34 cases analyzed by the Brazilian Federal Public Ministry and 124 cases analyzed by the US Department of Justice.

Table 1 presents the types of systems that were analyzed in Brazil and the US. In both countries, most of the cases were related to the accessibility of websites. Brazil had two cases related to mobile apps, while the US had five cases, and both countries only had one case each related to desktop software. The cases in the US that involved mobile apps also involved websites.

In cases related to cities, towns, and counties, the reports were linked to the public administration sector. However, they mentioned that these entities should have websites with accessible pages. As a result, we found a total of 95 cases. When adding the reports that were effectively opened to address accessibility issues, we reached a total of 124 cases.

Table 1. Types of applications analyzed in accessibility legal cases in Brazil and the US.

Systems	Brazil - N (%)	US - N (%)
Website	29 (85.29%)	124 (100%)
Mobile App	6 (17.65%)	5 (6.2%)
Desktop Software	1 (2.94%)	-

Regarding the United States of America, the Settlement Agreement Between The United States Of America And Florida State University, during the investigation process, the Department of Justice identified that the mobile applications and websites used to recruit workers are not WCAG compliant. Below is an excerpt from the “FSU shall ensure that its FSU Police Department website, including its employment opportunities website and its mobile applications, conform to, at a minimum, the Web Content Accessibility Guidelines 2.0 Level AA Success Criteria and other Conformance Requirements (“WCAG 2.0 AA”).”

Still, in the United States, the United States District Court agreement for The Southern District Of Ohio, the University of Miami’s services, programs and activities were told to have discriminated against based on disability. They have not taken appropriate steps to ensure equally effective communication, the software educational portal is not WCAG compliant, and the agreement states that all websites and software created by them or created by third parties must be accessible to all users. Following is an excerpt from a deal:

“With respect to third-party content, websites, or applications that Miami uses for completion of critical or important transactions (e.g., websites used for campus housing, campus dining, registering for classes, paying bills, obtaining transcripts) or to complete required training (e.g., AlcoholEDU), either: Cause such third-party content, websites, or applications to conform with WCAG 2.0 AA and this Decree”.

In Brazil, the complaint IC 1.22.000.003343/2016-89 and PP 1.25.005.000524/2018-63 deals with mobile applications Globo, GloboPlay, and Caixa Economica Federal, the applications are for newspaper, movie streaming, and Banco Public do Brasil, respectively. Both provide reports from users regarding the lack of accessibility of applications, such as Re-Captcha, problems with content and one report to the reporting service. Following is a report excerpt from the report:

“The application developed to carry out the pandemic, to the point of operation of the institution, not having the ability to contact the institution’s cashier, as the application implemented to carry out the operation of the institution, as the application implemented to carry out the operation of

the institution, as the application makes it impossible to use the institution Banco Bradesco, which allows the use of blind people”.

The complaint IC 1.34.030.000122/2017-61 deals with the lack of accessibility in the Caixa Econômica Federal (CEF) software. The user reports the lack of accessibility of the internet banking. following is a sentence of the complaint: “In addition, it was proved the fulfilment of functions and the implementation of accessibility services for internet banking, call centres, ATMs and customer service.” CEF informed the user that it has accessibility in the branches and its digital services.

Table 2 presents the types of organizations involved in the complaints analyzed in both countries. The analysis classified public organizations according to their level: federal, state or local (municipality or county). In the Brazilian context, there were reports that encompassed both public and private companies within the same complaint, and there were also reports that involved both federal and state-owned public companies in the same complaint.

Table 2. Type of Organizations Involved in the Accessibility Complaints.

Organization types	Brazil - N(%)	US - N(%)
Private	14 (41.18%)	15 (12.1%)
Public (Federal)	16 (47.05%)	1 (0.80%)
Public (State)	7 (20.59%)	4 (3.22%)
Public (Local)	0 (0%)	104 (83.88%)

In Brazil, 14 cases involved private organizations, including companies in streaming services, aviation, financial investments, food delivery, private transport, workers’ unions and e-commerce. Companies involved include Uber (private transport service), IFood (food delivery), Uber Eats (online food and meal delivery platform), Nice Photos (photo development website), App Moovit (urban mobility public transport and navigation), Glambox (grocery store sales app), Recarga Pay (digital bank), Peixe Urbano (group purchasing website), Phototo (photo development website), 99App (individual transport app), Rappi (food delivery), Giulianna Flores (flower shopping website), China in Box (Chinese fast food), Pizza Hut (food pizzas and pasta) and Dominos (food pizzas), Itaú Unibanco and Bradesco and Itaúsa (Bank), Braskem (petrochemicals), Oi and Vivo (telephony), Cielo and B3 (financial services), CPFL Energia (Bank), JBS (food industry), Vale and CSN (mining sector), Anhembi University (school), SERTESP – (Union of Workers in Radio and Television Companies in the State of São Paulo), SATOSP (Union of Acupuncturists and Oriental Therapists of the State of São Paulo), SINDIMUSSP (Union of Professional Musicians in the State of São Paulo), SINDPD (Union of Workers in Data Processing and Information Technology of the State of São Paulo), SINDSEP (Union of Municipal Servants of São Paulo), SINPRO/SP (Union of Teachers of São Paulo), SISPESP (Union of Public Servants of the State of São Paulo), SJSP (Union of Professional Journalists in the State of São Paulo), Bank Workers Union and SMPED (workers union) and Ultrapar Participações. Globo (TV channel and news website) appears in one case and offers Globoplay (TV

channel and streaming) as a service. A case covered by all airlines operating in Brazil.

In the United States, the cases involved private organizations, including pharmaceutical companies, hospitals, educational services, financial services, retail stores, museums, and TV channels. The companies involved are CVS Pharmacy, INC. (network of drugstores and health solutions), Hy-Vee, INC (network of drugstores and health solutions), Meijer, INC. (network of drugstores and healthcare solutions), The Kroger CO. (network of drugstores and healthcare solutions), Rite Aid Corporation (network of drugstores and healthcare solutions), HRB Digital LLC and HRB Tax Group, INC (financial services), Fremantle Productions, INC (TV production company), CBS Broadcasting INC (TV production company), Law School Admission Council (Universities of higher education), Newseum, Inc (interactive journalism museum), Providence Holy Cross Medical Center (hospital), QuikTrip Corporation (store conglomerate), Swedish Medical Center First Hill (hospital chain), edX INC (online course provider), Ahold U.S.A., Inc (store conglomerate), Peapod (online grocery delivery service), Teachers Test Prep, Inc (teacher exam preparation service)

Regarding public organizations, Brazil had 16 cases involving organizations at the federal level, seven cases at the state level and no cases at the local level (municipalities). The organizations involved included the Federal Public Ministry (federal supervisory agency), National Social Security Institute (social security), Regional Labor Court (state-level labor inspection agency), Superior Labor Court (federal-level labor inspection agency), Caixa Econômica Federal (banking services), Federal University of Rio Grande do Sul (university of higher education), Federal Court of Rio Grande Do Sul (state judicial body), Federal Revenue of Brazil (tax inspection body), Regional Electoral Court of Rio Grande Do Sul (state-level judicial body), National Telecommunications Agency (telecommunications regulatory body), Ministry of Education (regulated education body), Ministry Public Ceará (state-level supervisory body), Public Administration in the State of Ceará (organ state administrative level), Petrobras The Order of Lawyers of Brazil, São Paulo State (OAB/SP), Correios, Banco do Brasil, Eletrobrás, CPFL Energia.

In the United States, most cases related to public organizations were at the local level (towns and counties), four were at the state level, and one was a federal-level organization. The organizations involved included Louisiana Tech University (state university), Miami University, Et Al, (state university), National Museum Of Crime And Punishment (national museum), Florida State University (state university), and towns and counties across different states.

4.2 Outcomes from the Complaints

Table 3 presents the types of outcomes resulting from the complaints about digital accessibility in Brazil and in the United States.

All 124 cases in the United States resulted in settlement agreements with long-term conditions for adjusting processes and making digital systems more accessible. Brazilian complaints, in contrast, did not have any case resulting in

agreements. The Federal Public Ministry in Brazil has a legal device called “Conduct Adjustment Agreement” (in Portuguese *Termo de Ajustamento de Conduta - TAC*). However, no records of such agreements were found in the analysis of complaints in Brazil⁸.

The outcomes of cases in Brazil resulted in 15 cases in which the complaints were archived with no further procedures after the accused part provided evidence of what they considered accessibility improvements or a rebuttal. In such cases, no evidence was found showing accessibility analysis performed during the investigation. Another 11 cases showed evidence of accessibility evaluations performed as part of the investigation, with immediate archiving after achieving some improvement. However, these cases did not lead to any long-term agreement to enact permanent accessibility policies.

Table 3. Type of Outcomes from the Investigations.

Outcome	Brazil - N(%)	US - N(%)
Immediate archiving after some evaluation	16 (47.1%)	0 (0%)
Immediate archiving without testing	18 (52.9%)	0 (0%)
Long-term Settlement Agreement	0 (0%)	124 (100%)

In Brazil, complaints made by people with disabilities to the MPF are related to accessibility problems in services and content on websites and applications of private and public companies. Users with disabilities represent this to the Public Ministry for knowledge of the illicit fact or irregularity that allows the adoption of measures. Unfortunately, no document determines deadlines and what corrective actions must be carried out. However, law 13,146 of 2015 [Governo Brasileiro, 2015] describes the inclusion of accessibility in websites, applications and software of national companies or with commercial representation in Brazil as mandatory. However, it is not established how the verification of accessibility on websites and applications should be done. Some organizations use the ASES score (usually above 90%) as a justification for proving the accessibility of websites and services.

One of the cases analyzed was the inquiry of the 15 most accessed e-commerce companies in Brazil, highlighting that they did not reach the desired percentage in the evaluation by the ASES tool. However, some of these companies manifested and adapted to reach the percentage defined in the process. Therefore, this case has been filed partially. See an excerpt taken from Civil Inquiry 1.34.001.006289/2020-89 (A3)

”...Considering that the companies Uber, Ifood, Uber Eats, Moovit App, RecargaPay, 99 App, Rappi, Giuliana Flores and Pizza Hut adapted their electronic platforms, exceeding the minimum parameter of 95% accessibility, according to the criteria of eMAG and evaluation by A WEB , archiv-

⁸Search for TACs available online at <http://www.transparencia.mpf.mp.br/conteudo/atividade-fim/termos-de-ajustamento-de-conduta>

ing in relation to them is the measure that imposes itself. ”

In other cases of private organizations, the complaint described irregularities in pages and web services. In these cases, for example, some companies claimed that the eMAG standard was not mandatory or contested the complaint, claiming that their pages and web services were accessible. However, in some cases, MPF decided to drop the case because the representative did not respond or was absent from the process. Following is an excerpt taken from civil inquiry 1.34.001.003043/2013-26

“...In response, Yahoo! Brasil pointed out that the accessibility assessment mentioned in the aforementioned meeting was carried out in the face of the electronic site “www.yahoo.com.br”, which is not the object of investigation of this fact, with only the “Yahoo-mail” platform being the object of comment. . Furthermore, it clarified that the W3C international parameters, used for evaluation at the meeting, are not provided for in the current accessibility law.”

The agreements between the US and the cities had a similar scope of the investigation: a compliance review under Title II of the American Disability Rights Act (ADA). Each city presents the actions that have already been taken and what the corrective actions will be. In this process of corrective actions, several aspects are fulfilled within the deadlines pre-established by the city itself. Among these aspects, it has on the services and programs based on the web. Sometimes, an employee is appointed as the web accessibility coordinator and maintains an independent consultant, approved by the United States, to assess the website’s accessibility annually. The following features were common to all towns and counties:

- Establish, implement and post a policy that the websites’ web pages will be accessible, and create an implementation process for that;
- Ensure that all new or modified web pages and content are accessible;
- Develop and implement a plan to make existing web content accessible;
- Provide on your homepage a way for users to request accessible information or services through a phone number or email; and
- At least once a year, to recruit people with disabilities to test your web pages.

The agreements between the US and the private and public organizations, during the investigation process, the United States concluded that the websites, software and mobile applications are not accessible for people with disabilities who need screen readers and also for those who have difficulties in using the mouse, being a violation of the ADA, the problems encountered are: (i) radio buttons, checkboxes and form fields that are not labelled correctly; (ii) an interface for inputting information that does not provide complete information for screen reader users or allow them to browse

the options introduced; (iii) images that provide information to sighted users but are not described for screen reader users; and (iv) colour pattern that makes it difficult for low vision and colour blind users to see. Many of these investigations started from a user complaint. The following excerpt from the National Federation Of The Blind was taken from the was taken from the Settlement Agreement National Federation Of The Blind, Et. Al. V. Law School Admission Council, and states that:

“...alleging that the lsac.org website and application service, the primary means by which students apply to the named law schools, is not accessible. to individuals who are blind or have low vision in violation of Title III of the American’s with Disabilities”

4.3 Accessibility Evaluation Methods and Policies

Table 4 presents a summary of the types of accessibility evaluation methods contained in the complaints investigated by Brazil’s MPF and by the US Department of Justice.

We identified that only one of the 26 complaints in Brazil had an evaluation with a specialist and in the United States, 9 of the 124 agreements mentioned an evaluation with specialists. Concerning tests with users with disabilities, there was a bigger difference between the two countries. In Brazil, there was only one case that mentioned user evaluation during the investigations, while the US cases had 79 mentions of using user evaluations in proposed policies.

The total sum exceeding 100% occurs because some reports involved more than one type of accessibility test. Therefore, each report that included automated tests and tests involving users and experts was counted only once for each type of tests.

Table 4. Evaluation Methods and Policies Employed in Inquiries and Settlement Agreements

Assessment methods and policies	Brazil - N(%)	US - N(%)
Automated evaluation	15 (41,11%)	31 (25%)
Inspection by experts	1 (2.94%)	11 (8.87%)
Tests with users	1 (2.94%)	108 (87.1%)
Accessibility policies	0 (0%)	123 (99.19%)

In Brazil, 16 complaints had some type of evaluation, 13 of which were automated tests only, and based on the tool’s score, MPF decided to file the complaints. The other 15 complaints had no evaluation to help in the ruling. In addition, organizations were not required to provide accessibility test reports and accessibility policies.

In the United States, by agreement between the US Department of Justice and the organizations, they must perform accessibility tests with users and experts. In some situations, automated tests are recommended. However, they are always accompanied by user tests or tests with experts. In addition, there are specific deadlines for carrying out accessibility tests, and their accessibility policies must be published in visible places.

4.4 Features observed in the analyses in Brazil

This section presents arguments and procedures used in the legal analysis, from the perspective of the accused parties, the MPF and users who filed the complaints.

4.4.1 Claims to have technical accessibility without presenting evidence

In many cases, the reports describe that the organization informs that the site has accessibility features but does not show test results. In the analysis, we found four situations like this. An example appears in this excerpt taken from the complaint made by a visually impaired person with difficulties in registering for the ENEM (National High School Exam, used for university admission):

“... the information provided by INEP demonstrates that the registration site offers access to the visually impaired through the NVDA screen application, aiming to digitally include and grant autonomy to these people who have a visual impairment (case D21).”

4.4.2 Use of automated tools by accused parts and by the investigators

The reliance on automated tools to provide evidence of compliance to accessibility standards in Brazil has been observed both by the accused parts and by the Federal Public Ministry.

The following is an example of a statement from a financial investment firm as a response to show they made improvements in their website, pointing to a score provided by an automated tool:

“...presented reports obtained through the website (<http://asesweb.governoeletronico.gov.br/ases/>), address of the Federal Government responsible for evaluating, simulating, and correcting the accessibility of pages, sites, and electronic portals, attesting to an accessibility of over 99% (case A10).”

4.4.3 Loopholes in the law and the lack of regulation

In three situations, companies argued that the legislation did not mandate them to have accessible websites (before 2015). Yahoo! Brasil used such an argument in one case:

“In response, OATH BRASIL, the current name of Yahoo! Brasil, stated that the eMAG standard is not mandatory and not even intended for private entities (case A13).”

In other cases, after the Brazilian Law of Inclusion in 2015, companies still argued that the law did not specifically indicate what accessibility standard must be used to adhere to the legislation.

Other scenarios included situations in which the accused parts argued that the Brazilian legislation does not mandate the use of WCAG, when it was mentioned as an international standard to be followed.

In other situations, the accused parts argued that eMAG, the Brazilian standard was outdated, as we show in the following quote:

“In this sense, it is imperative that the investigated companies at least promote the adequacy of their homepages by eMAG, a criterion that is already outdated as recognized by the IFRS itself, responsible for creating the tool (case A3).”

4.4.4 Difficulty in acknowledging problems reported by users with disabilities

There were situations in which companies in Brazil were reluctant to accept allegations from users with disabilities that they had accessibility problems. In some situations, companies opposed allegations from users with results from automated evaluations. In other cases, people with disabilities had to demonstrate problems in person, as prosecutors found it difficult to understand the nature of the problem they reported.

Yahoo! Brazil was involved in such a case. Following, we present the user's and the company's versions:

“In response, the representative informed that the page still does not meet accessibility standards and requests a hearing to report his difficulties. The representative also reported having contacted Yahoo! Brazil and got the answer that there was nothing more to be done about their demand (case A13).”

“In response, Yahoo! Brasil, through its lawyers, informed that a recent test was carried out in terms of accessibility, which concluded that the tool is fully accessible in all its features (case A13).”

4.4.5 Archiving a case without including evidence of improved accessibility

Our analysis found cases in which the report recommends the archival of complaints with allegations of improvements. However, the reports themselves do not include any evidence. The following is an example of such a case:

“Finally, the official Public Prosecutor concluded that the object of the present file was achieved, having been proven the implementation of reasonable and adequate adaptations to the service of Caixa Econômica Federal (case D4).”

4.5 Features observed in the decisions in the US

Data collected from US cases show some differences in how decisions are made concerning Brazil. The Civil Rights Division of the US Department of Justice has a law that protects people with disabilities in many areas of public life, known as the ADA - Americans with Disabilities Act. The ADA sets out requirements to prevent discrimination against people with disabilities that apply to many situations encountered in

everyday life. Employers, state and local governments, publicly traded companies, commercial facilities, transportation providers, and telecommunications companies must follow ADA requirements.

Following, we present three features observed in the settlement agreements reached by the US Department of Justice that had important differences from how digital accessibility cases were handled in Brazil.

4.5.1 The widespread use of settlement agreements

US Justice typically strives to make agreements with the organizations involved and deals with several accessibility fronts in these agreements, including web-based services and programs. This specific feature describes what needs to be accomplished. For example, the Accessibility Guidelines Compliance (WCAG) level in the agreements was set to be level A or AA. The time for adaptations varied in the agreements, with an average time of six months. There is an obligation to send a report after accessibility evaluations (automatic, with experts, and with users).

There are deadlines for carrying out user tests. In some cases, user testing needs to include blind, low vision, and physical users. The agreement also requires an accessibility deployment plan. Finally, it needs to have an exclusive employee for the accessibility demands of the population.

Following is an excerpt from the Settlement Agreement Between the United States of America and Ahold U.S.A., INC. and PEAPOD, LLC., which illustrates the arguments used in the agreement.

“By the applicable Conformance Date and at least once annually for the term of this Agreement after the Conformance Dates, tests shall be conducted by individuals with different disabilities, including at a minimum individuals who are blind or have low vision, individuals who are deaf or hard of hearing, and individuals who have physical disabilities affecting manual dexterity (such as those limiting the ability to use a mouse).”

4.5.2 Mandating the Establishment of Organizational Digital Accessibility Policy

As part of the agreement, organizations must make public policy publicly available on their websites on the home page in a conspicuous place, stating that they are acting following the ADA and its recommendations. In addition, organizations must provide telephone, email and forms in a visible place on the page so that anyone can directly contact the person responsible for the organization’s accessibility. Of the 124 organizations, only one organization did not have this term in their agreement.

Following is an excerpt from the Settlement Agreement Under the Americans with Disabilities Act between the United States of America and Hy-Vee, INC., which illustrates the arguments used in the settlement agreement.

“Within ten (10) business days after the Effective Date of this Agreement, Hy-Vee shall provide a notice, entitled “Accessibility”, prominently and

directly linked from the footer of the www.hy-vee.com homepage and Vaccine Registration Portal, with a statement of Hy-Vee’s policy to ensure that persons with disabilities have full and equal enjoyment of the goods, services, facilities, privileges, advantages, and accommodations of Hy-Vee through the Vaccine Registration Portal. The notice shall include an email address and a toll-free telephone number (which shall accept calls made using video relay services) where customers with disabilities can provide feedback on how website accessibility can be improved on the Vaccine Registration Portal and can request assistance if they experience technical difficulties with the website.

4.5.3 Training Policy Requirement

Regarding the training term, organizations must provide training to their employees periodically. This term was found in 29 agreements and showed that the organization must send training reports to the Department of Justice after training. In cases where the employee is on leave or vacation, the organization must provide the training within 15 days of their return.

Following is an excerpt from the Settlement Agreement Under the Americans with Disabilities Act between the United States of America and Cvs Pharmacy, Inc., which illustrates the arguments used in the settlement agreement.

“Within thirty (30) days after the Effective Date of this Agreement, and at least once annually thereafter for the Term of this Agreement, CVS shall provide training to all persons (CVS’s employees, contractors, and consultants) who design, develop, maintain, manage, or otherwise have responsibility for the Vaccine Content (Website Content Personnel). This training shall include instruction on how to conform Vaccine Content with WCAG 2.1 AA and the terms of this Agreement (Website Accessibility Training). For persons who must receive Website Accessibility Training pursuant to this Agreement, but who did not receive training on a designated annual training date required under this Agreement (for instance, because they were on leave or because they began their affiliation with CVS subsequent to the training date), CVS shall provide the Website Accessibility Training to such persons within fifteen (15) days after the individual’s hire or return from leave.

5 Discussion

This section discusses the main aspects and implications of the observations in the analyses of digital accessibility complaints at federal level in Brazil and the US. We reflect on the impact of the findings on legislation and regulation of digital accessibility in Brazil and the US. We also discuss the differences between the two countries and the limitations in digital accessibility surveillance observed.

5.1 The Use of Long-Term Agreements for Digital Accessibility

One of the most important features observed in the analysis of cases handled by the US Department of Justice was the use of settlement agreements [Feingold, 2021] with mandates for medium and long-term solutions. Most agreements resulted in detailed guides with comprehensive definitions to perform accessibility improvements in websites, mobile apps and other systems and to establish accessibility organizational policies that would include different evaluation methods, such as inspections by specialists and tests by users with disabilities performed periodically.

Providing settlement agreements with long-term solutions is very important to avoid immediate solutions that may not last after websites, mobile apps and other systems receive updates. Demanding for policies that reflect on processes tends to have a lasting impact on the organizations that are involved in the agreement.

In Brazil's MPF, on the other hand, we found no cases in which a more comprehensive agreement was achieved. Despite differences between the legal systems in Brazil and the US, the term of adjustment of conduct (TAC) used by the Federal Public Ministry have many similarities with the settlement agreements used in the US.

TACs have been successfully used in a number of topics investigated by MPF in Brazil. Promoting its use in digital accessibility cases would enable more effective policies to help organizations define and apply processes that would help maintain the accessibility of their digital services.

However, in order to promote the use of TACs, MPF would need detailed models to propose to different organizations to propose effective processes. The models used in settlement agreements performed in the US may provide a good starting point to help define long-term agreements made by MPF in Brazil. Nevertheless, it would be necessary to conduct detailed studies to include specific legislation and contextual issues related to the Brazilian context.

5.2 The Need for Digital Accessibility Capacity Building in Evaluation and Policies

The analysis performed in this paper showed that the US has a longer history of enacting digital accessibility investigations and agreements than Brazil at the federal level. While the US has cases dating from as early as 2004, the earliest found case handled by MPF in Brazil dates from 2011, with a very recent trend of increasing numbers. The earlier definition of accessibility standards and regulations in the US may be a possible explanation for the larger number of cases at the federal level than in Brazil.

The experience of dealing with different complaints regarding digital accessibility provides bases for building capacity and maturity to perform investigations and to propose more effective solutions. As previously discussed, the settlement agreements analyzed from the US Department of Justice contain evidence of more solid programmes involving a range of accessibility evaluation methods and long-term policy proposals for organizations with registered complaints.

A significant number of settlement agreements contain mandates for performing evaluations involving users with different disabilities. They also involve the hiring of accessibility specialists to aid in the design and evaluation of digital systems.

In many cases analyzed by the Brazilian MPF, on the other hand, there is extensive use of automated tools as the only measure to help in decisions concerning accessibility complaints. The research found only one case analyzed by MPF with the use of expert inspections and one with evaluation by users with disabilities.

Other studies in Brazil have raised concerns about the needs for better capacity building on digital accessibility by oversight bodies such as the MPF. One study with interviews with state-level prosecutors found that there is little technical support to aid in the investigation of digital accessibility cases [Siqueira et al., 2022b]. Another study found that a large number of state-level public ministry websites had accessibility issues themselves [Siqueira et al., 2022a].

Incorporating staff within MPF to perform all investigations could be challenging. However, the Brazilian government could promote initiatives such as the São Paulo municipality's CPA (Permanent Accessibility Commission - *Comissão Permanente de Acessibilidade*). CPA provides services with accessibility evaluations using automated and manual guidelines reviews.

5.3 The Use of National Standards Versus International Standards

Brazil and the US have national standards for web accessibility (eMAG [Governo Brasileiro, 2014] and Section 508 [US Government, 2018], respectively). Although both standards have strong correspondence with WCAG from the W3C, there has been tension in terms of the legal backing for using WCAG in judicial handling of digital accessibility [Lazar, 2019a] in both countries.

However, despite contention in some cases in the US (as reported by previous studies [Lazar, 2019a, 2018]), our study found that 45 out of 124 settlement agreements negotiated by the US Department of Justice requested adherence to WCAG at some level. This is an interesting fact, considering that Section 508 [US Government, 2018] is the formal legal requirement in the US.

In the particular case of Brazil, accused parts have argued that eMAG and the automated evaluation tool ASES have not been updated since 2014. As ASES is backed by the Brazilian federal government, many public agencies and private institutions use the tool as a reference for accessibility evaluations.

Efforts from the Brazilian government to update the guidelines and associated automated tools would be a necessary action. Appropriate government actions are necessary. Section 508 in the US, for example, has had constant update, while the Brazilian eMAG has not had any updates since 2014. However, it would be necessary to reflect on whether the mismatch between national and international standards keeps the best interests of people with disabilities.

eMAG has other shortcomings, such as not covering the accessibility of mobile apps and other types of technologies.

Other standards such as the open standard ETSI EN 301 549 - Accessibility requirements for ICT products and services from the European Union [European Telecommunications Standards Institute, 2021] and Section 508 [US Government, 2018] have incorporated such requirements. Finally, the widening of coverage of digital accessibility legislation by Brazilian law in 2015 without binding of specific guidelines has posed many challenges to operationalize law enforcement. Despite not covering for specific contextual issues in the country, the use of international standards with constant updates might be a more sustainable option for the country.

5.4 Future directions to improve law enforcement in Brazil

The comparative analysis reported in the paper brought important implications from the analysis of good practices conducted in digital accessibility surveillance in Brazil and in the US, and lessons that can be incorporated in Brazil.

The Federal Public Ministry has played a crucial role in digital accessibility law enforcement. As Law 13,146/2015 advances towards implementing this law to other levels, the experience from the Federal Public Ministry will be paramount to widen such initiatives in the country.

However, there are still shortcomings that need to be addressed with room from substantial contribution from the Brazilian Computer Society, especially from Human-Computer Interaction researchers. Due to a number of limitations, most agreements (TACs) in Brazil are based on achieving results measured by automated tools. Despite being easier to measure and to argue in judicial contexts, the lack of manual inspections and evaluations by users with disabilities creates targets that ultimately may not ensure that the improvements will make websites more accessible, but only adhere to basic criteria.

The study showed that many problems in Brazil still occur due to the lack of regulation of specific legislation, such as Art. 63 of Law 13,146/2015, as there is no specification of what international standards should be adopted. At the time this paper was written, the Brazilian Association for Technical Standards (ABNT) is holding meetings in its group CB40 - Accessibility to establish national Web accessibility standard (with the participation of some of the authors). By having such standard, many of the problems encountered in some of the cases would not have gone without appropriate handling. Brazil's NIC.br (Brazilian Network Information Center) are also working in a partnership with the British Embassy to develop strategies and discuss regulatory standards for web accessibility. Part of this effort already culminated in the release of a guide for web accessibility implementation in government [NIC.Br, 2023]. The partnership will also involve a working group to propose a regulatory decree to specify technical aspects for adhering to Law 13,146/2015's article 63.

The Federal Public Ministry also established a cooperation agreement (PRM-BAU-SP-00003091/2022) in a project led by Prof. Tiago Silva da Silva to help develop better tools for digital accessibility surveillance.

Despite these ongoing efforts to improve legislation and regulation of digital accessibility, substantial research is still needed to effectively promote digital accessibility in Brazil.

The proposed regulatory devices must include appropriate evaluation methods, such as manual inspections by experts and user evaluation, going beyond the current practice of only employing automated evaluations. The judiciary power needs appropriate handling of digital accessibility cases and detailed consultancy and technical assistance to conduct investigations and to understand evidence of problems deriving from different methods. Although easy-to-understand scores from automated tools may be convenient to obtain, they are extremely misleading and ineffective in safeguarding people with disability's rights.

Researchers in different areas of Computer Science need to become involved with those issues to establish appropriate development and evaluation processes, and to establish dialogue with people from a Law background.

6 Conclusions and Future Work

This paper presented a comparison between the handling of digital accessibility complaints by federal-level agencies Federal Public Ministry in Brazil and the US Department of Justice. The study analyzed 26 cases in Brazil and 124 cases in the United States.

The study described the types of organizations and types of systems with complaints in both countries. The results showed that Brazil had a balance between private and public organizations, while the US had a higher percentage of local-level governmental organizations.

The results also showed that investigations in Brazil had limited use of accessibility evaluation methods, with a widespread use of automated evaluations and little use of evaluations with users with disabilities and expert inspections. Settlement agreements from the US Department of Justice, however, had a higher prevalence of definitions for using evaluations involving users with different disabilities, and a growing number of cases with recommendations for involving accessibility experts. All cases in the United States resulted in demanding the deployment of a long-term digital accessibility policy by organizations with registered complaints. This feature was not observed in Brazil.

The discussion in the paper analyzed issues regarding implications of the comparison and directions for implementing long-term agreements in the Brazilian context, by using terms of adjustment of conduct (TACs), available by MPF, with similarities with settlement agreements. The discussion also analyzed the need for capacity building to enact accessibility evaluations in investigations and the issues concerning the adoption of nation or international standards in investigations both in Brazil and in the United States.

This study had limitations in the analyses performed in Brazil and in the United States. In Brazil, the study only covered cases conducted by MPF. It did not include cases handled by state-level public ministry or by internal auditing entities. In the US, the investigation did not analyze state-level general attorneys. In both countries, the research did not analyze law suits ruled in court.

Future work should analyze investigations conducted by state-level agencies in both Brazil and the US. We also intend to perform investigations on law suits and decisions made in court in different levels. We also intend to extend this investigation including other countries in both the Global North and the Global South.

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The authors declare that they have no competing interests.

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