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Digital inclusion as a democratic pillar: Web accessibility for people with visual impairments on the gov.br portal

Digital inclusion as a democratic pillar: Web accessibility for people with visual impairments on the gov.br portal

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SUMMARY

Digital inclusion represents one of the fundamental pillars for the consolidation of citizenship democratic in the contemporary context, especially with regard to people's access visually impaired people to digital government platforms. This article aims to analyze the accessibility of the GOV.BR Portal, the main digital environment for public services of Brazil, in light of international and national web accessibility guidelines. The research was conducted through a qualitative approach, using the case study method and the document analysis, with emphasis on the Web Content Accessibility Guidelines (WCAG 2.1) and the Electronic Government Accessibility Model (eMAG). Tests were carried out structured navigation with assistive technologies, such as screen readers, and observed aspects of navigability, compatibility, contrast, textual alternatives and organization semantics of the content. The results show relevant advances, such as the provision of accessibility resources and the logical structuring of information, but also reveal limitations that compromise the full user experience, such as lack of alternative descriptions for some elements and inconsistencies in the order of keyboard navigation. It is concluded that, although the GOV.BR Portal has evolved significantly when it comes to digital accessibility, there are still barriers that need to be overcome to ensure the effectiveness of the right to information and full inclusion digital. Strengthening accessibility practices must be continuous, incorporating the participation of real users in the process of improving digital public services.

Keywords: Digital Inclusion. Web Accessibility. Visual Impairment. Citizenship.

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ABSTRACT

Digital inclusion represents one of the fundamental pillars for the consolidation of democracy citizenship in the contemporary context, especially regarding access for people with visual impairments to digital government platforms. This article aims to analyze the accessibility of the GOV.BR Portal, the main digital environment for public services in Brazil, in light of international and national web accessibility guidelines. The research was conducted through a qualitative approach, using the case study method and document analysis, with emphasis on the Web Content Accessibility Guidelines (WCAG 2.1) and the Electronic Government Accessibility Model (eMAG). Structured navigation tests were carried out using assistive technologynologies such as screen readers, and aspects such as navigability, compatibility, contrast, textual alternatives, and semantic organization of the content were observed. The results show relevant progress, such as the availability of accessibility resources and the logical structuring of information, but also reveal limitations that compromise the full user experience, such as the absence of alternative descriptions in some elements and inconsistencies in keyboard navigation order. It is concluded that, although the GOV.BR Portal has evolved significantly regarding digital accessibility, there are still barriers that need to be overcome to ensure the ef-effectiveness of the right to information and full digital inclusion. Strengthening accessibility practices must be continuous, incorporating the participation of real users in the improvement process of digital public services.

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ABSTRACT

Digital inclusion represents one of the fundamental pillars for the consolidation of democratic citizenship in the contemporary context, especially with regard to access for people with visual disabilities to digital government platforms. This This article aims to analyze the accessibility of the GOV.BR Portal, the main environment digital public services in Brazil, in light of international and national guidelines of web accessibility. The investigation was carried out using a qualitative approach, using using the case study method and document analysis, with emphasis on the Accesibility for Web Content (WCAG 2.1) and the Government Accessibility Model Electronic (eMAG). Structured navigation tests will be carried out with assistance, as screen readers, and aspects such as navigability,

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compatibility, contrast, textual alternatives and the semantic organization of the content-nido. The results show relevant advances, such as the availability of accessibility and the logical structure of information, but it also reveals limitations that compromise the full experience of users, such as the absence of descriptions alternatives in some elements and inconsistencies in the navigation order through keyboard. It is concluded that, even though the GOV.BR Portal has evolved significantly in Regarding digital accessibility, however, there are barriers that must be overcome to guarantee the effectiveness of the right to information and full digital inclusion. The strengthening of Accessibility practices must be continuous, incorporating user participation reales in the process of improving digital public services.
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1. INTRODUCTION

Information is one of the most valuable resources in contemporary society and, as Castells (2011) highlights, digital networks have profoundly transformed dynamics of social, economic and political interaction. In this new scenario, equitable access to information is not only a right, but an essential condition for the full exercise of citizenship. As Santaella (2013) argues, the information society, to be effectively democratic, requires that technologies be designed considering the human diversity. However, digital exclusion, understood as the lack of access or suitable conditions for autonomous navigation, still persists, mainly affecting people with disabilities.

Digital accessibility, in this context, goes beyond the mere provision of devices or connections, implying the development of inclusive virtual environments, that respect the plurality of users' abilities (Preece; Rogers; Sharp, 2015). To visually impaired people, effective interaction with digital platforms requires the strict compliance with international accessibility standards, such as Web Content Accessibility Guidelines (WCAG). Failure to comply with these guidelines compromises the right of access to information and, consequently, the full exercise of citizenship in the digital environment.

In Brazil, the Brazilian Law for the Inclusion of Persons with Disabilities (Law No. 13.146/2015) establishes the mandatory accessibility on public platforms, reinforcing the principle of equal opportunities. The GOV.BR Portal, as the main

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concentrator of public services and government information, assumes a strategic role in promoting digital citizenship. As highlighted by Almeida (2019), ensuring accessibility in these digital environments is essential to avoid the marginalization of people with disabilities and ensure their effective participation in the information society.

The justification for this study is based on the observation that, although advances significant have been achieved in public policies for digital inclusion, they persist barriers that limit access for people with visual impairments to platforms government agencies. According to a report by the World Health Organization (2019), approximately 2.2 billions of people live with some degree of visual impairment, and the digital divide worsens their social vulnerability. Therefore, investigating the accessibility of the GOV.BR Portal is crucial to evaluate the effectiveness of Brazilian inclusive policies and to propose improvements that favor equitable access to information.

The general objective of this article is to analyze the digital accessibility of the GOV.BR Portal for visually impaired people, in light of national and international guidelines accessibility. Specifically, we seek to: (i) verify the compliance of the GOV.BR Portal with the Web Content Accessibility Guidelines (WCAG 2.1) and the Web Content Accessibility Model. Electronic Government Accessibility (eMAG); and (ii) identify barriers and limitations in navigation for users of assistive technologies, proposing recommendations for improvements.

Methodologically, the study adopts a qualitative approach, of a exploratory and descriptive, using the case study method and documentary analysis. The data collection involved carrying out navigability tests with screen readers, analysis of the semantic structure of selected portal pages and verification of the compliance with accessibility criteria set out in the WCAG and eMAG standards. This approach allows an in-depth analysis of the Portal's potential and limitations GOV.BR in meeting the needs of visually impaired users.

This article is organized into five sections, in addition to this introduction. The second section presents the theoretical framework, addressing the concepts of digital inclusion, accessibility, right to information, digital accessibility standards, assistive technologies and solutions emerging initiatives aimed at promoting inclusion. The third section describes the methodology adopted, detailing the type of research, data collection and analysis procedures. The fourth section analyzes and discusses the results obtained from the assessment of the accessibility of the GOV.BR Portal, highlighting advances, barriers and trends observed. Finally, the fifth

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section brings the final considerations, summarizing the main conclusions of the study, its contributions and indicating paths for future research.

2. THEORETICAL FRAMEWORK

Building a more inclusive and democratic society necessarily involves for the recognition of the right to information as a central element for the full exercise of citizenship. In an era marked by the digitalization of services, relationships and opportunities, digital inclusion emerges as a fundamental requirement to guarantee the effectiveness of this right, especially for historically marginalized groups, such as people with visual impairments. al.

This chapter aims to theoretically support discussions on accessibility. digital accessibility and inclusion of people with visual impairments in the online environment. To this end, An overview of the relationship between the right to information and inclusion will initially be presented. are digital, highlighting their importance in the contemporary context and the challenges that still exist. for its implementation (Section 2.1). Next, the specific barriers will be discussed. faced by people with visual impairments when accessing digital platforms, emphasizing overcoming the technical and attitudinal limitations that compromise their full participation in society. information age (Section 2.2).

Subsequently, the main standards, guidelines and assistive technologies will be addressed. vas that guide the construction of accessible digital environments, both at an international level and nationally, highlighting the relevance of adopting standards such as WCAG 2.1 and eMAG (Section 2.3). Finally, emerging technological solutions and innovations will be explored. such as artificial intelligence, augmented reality and universal design, which have been expanding and the possibilities of inclusion and autonomy for people with visual impairments (Section 2.4).

By articulating these conceptual bases, the chapter seeks to provide a solid framework for the critical analysis of the accessibility of the GOV.BR Portal, the object of investigation of this study. of, and contribute to the reflection on possible paths for the promotion of a society more fair, inclusive and democratic digital environment.

2.1 RIGHT TO INFORMATION AND DIGITAL INCLUSION

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Information is an essential resource for the exercise of citizenship and for the effective implementation of human rights in contemporary society. According to Castells (2011), we live in the age of networks, where access to information is so crucial for social inclusion as access to material goods in the past. In this scenario, digital inclusion is configured as a fundamental right, closely linked to the right to information and the principle of equal opportunities. As Santaella (2013) points out, the digital environment reconfigures power dynamics, enabling new arrangements for citizen participation, as long as everyone individuals have equal conditions of access and interaction.

However, unequal access to digital technologies persists as one of the major contemporary challenges. According to the Brazilian Internet Steering Committee (CGI.br, 2023), around 28% of the Brazilian population still faces difficulties in regular access to the internet, with people with disabilities being one of the most affected groups. This data shows that democratization of information in the digital environment is still an objective under construction, demanding effective public policies and the adoption of principles of universal accessibility. According to Silva and Araújo (2021), digital inclusion must be understood not only as provision of technological infrastructure, but as promotion of digital skills and ensuring environments accessible to all people, regardless of their limitations physical, sensory or cognitive.

The lack of digital inclusion leads not only to informational exclusion, but also economic, educational and political exclusion. Mendes and Oliveira (2022) warn that digital divide deepens pre-existing inequalities, creating new layers of vulnerability in societies already marked by historical asymmetries. In this sense, the digital accessibility is not an option, but an ethical and legal obligation of States, being recognized in international human rights treaties, such as the Convention on Rights of Persons with Disabilities (UN, 2006), and incorporated into the legal system Brazilian by the Brazilian Inclusion Law (Law No. 13,146/2015).

The effectiveness of the right to information, therefore, depends on overcoming barriers technological and attitudinal factors that limit the access of certain social groups to platforms digital. According to recent research by Lima and Gonçalves (2023), the number of public and private portals that do not follow minimum guidelines accessibility, such as adapting content for screen readers and providing

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textual alternatives for visual content. Such failures constitute violations of the right to information and represent concrete obstacles to full citizenship.

Therefore, digital inclusion must be understood as a strengthening strategy democratic and promotion of fundamental rights. The construction of digital environments accessible, inclusive and universal is an essential step to ensure that society information society is also a society of rights. The analysis of the accessibility of the Portal GOV.BR, the central object of this study, is part of this effort to identify advances and challenges in the implementation of the right to information in the contemporary Brazilian context.

In this sense, understanding the right to information and the importance of digital inclusion lays the groundwork for further analysis of specific barriers faced by visually impaired people in the digital environment. The following will be discussed how these barriers impact equitable access to information and citizen participation, highlighting the need for more effective accessibility policies, technologies and practices.

2.2 VISUAL IMPAIRMENT AND BARRIERS TO DIGITAL ACCESS

Visual impairment is defined as the partial or total loss of the ability to see see, even with the use of adequate optical corrections, as established by World Health Organization (WHO, 2019). In Brazil, data from the Brazilian Institute of Geography and Statistics (IBGE, 2022) indicate that more than 6.5 million Brazilians live with some degree of visual impairment, which represents a significant percentage of the national population. This condition directly impacts access to information, especially in a context where digital environments have become the primary means of interaction with public services, education, culture and leisure.

In the virtual environment, visual impairment poses specific challenges that transcend the absence of vision, also covering issues of navigability, usability and autonomy. As Souza and Almeida (2022) point out, the digital barriers faced by visually impaired people include the lack of textual alternatives for content graphics, inadequate color contrasts, lack of semantic markings in headers and the disorganization of keyboard navigation. These barriers make it difficult or even impossible to use of screen readers, such as NVDA (NonVisual Desktop Access) or JAWS (Job Access With Speech), which are fundamental tools for autonomous navigation of people blind or with low vision.

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In addition to technical obstacles, there are attitudinal barriers to the development of digital content, resulting from a lack of awareness about accessibility and inclusion. According to Pereira and Silva (2021), many public and private websites still do not incorporate inclusive design practices, ignoring international accessibility standards such as WCAG 2.1 guidelines. This neglect ends up reproducing historical dynamics of exclusion, further marginalizing individuals who already face social and economic limitations.

The digital exclusion of people with visual impairments has profound impacts on citizenship and social participation. As Castro (2023) analyzes, the lack of access to official information, e-government services, educational opportunities and spaces public dialogue reduces the ability of these citizens to fully exercise their rights and duties. Visual impairment, therefore, is not the direct cause of exclusion, but rather the absence of effective accessibility policies and practices that ensure equal opportunities in the digital environment.

Recent studies reinforce the need for urgent improvements. Research by Lima et al. (2024) on the accessibility of Brazilian government portals revealed that, despite advances in some platforms, many still have serious flaws, such as forms incompatible with screen readers and multimedia content without alternative description. These barriers compromise not only navigation, but the very principle of universalization of public information, provided for in the Federal Constitution of 1988.

Thus, overcoming the digital barriers faced by people with visual impairments is a complex task that requires the combination of effective public policies, legislation specific, developer awareness and the use of appropriate assistive technologies. In the next section, the main normative and technical references that guide the construction of accessible digital environments, with special attention to the guidelines national and international accessibility standards.

2.3 WEB ACCESSIBILITY: STANDARDS AND ASSISTIVE TECHNOLOGIES

Web accessibility refers to creating digital environments that can be used autonomously and efficiently by all people, including those with physical, sensory, intellectual or multiple disabilities. According to the World Wide Web

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Consortium (W3C, 2018), accessible digital content is that which allows the perception, navigation and interaction without barriers, ensuring equal opportunities in access to information. In the context of the information society, web accessibility has become a essential element for social inclusion and the full exercise of citizenship.

Among the main international references, Web Content stands out Accessibility Guidelines (WCAG 2.1), published by the W3C, which establish guidelines techniques for creating accessible websites and applications. WCAG is based on four fundamental principles: content must be perceivable, operable, understandable and robust. Each principle is detailed in specific criteria, such as offering textual alternatives for visual content, ensure keyboard-only navigation and ensure that the interface is predictable and understandable for all users. The adoption of WCAG has become a global parameter for assessing accessibility on digital platforms.

In Brazil, digital accessibility in public bodies is regulated by the Model Accessibility in Electronic Government (eMAG), developed by the Government Secretariat Digital. eMAG adapts international recommendations to the Brazilian reality, proposing specific guidelines for government portals, such as the use of appropriate contrasts, the description of images and compatibility with screen readers. According to Almeida and Pereira (2022), eMAG represents an important advance in the institutionalization of accessibility in public sector, although its implementation still faces practical challenges.

Assistive technologies play a crucial role in enabling accessibility digital. Tools such as screen readers — exemplified by NVDA (NonVisual Desktop Access) and JAWS (Job Access With Speech) — allow people who are blind or have hearing loss to low vision to navigate digital environments by converting text to audio. In addition, In addition, electronic Braille lines enable tactile reading of content displayed on screens. computers and mobile devices. According to a study by Silva and Martins (2023), the combination of assistive technologies with good web development practices increases significantly improve the autonomy of visually impaired users.

The integration of accessibility standards with assistive technologies results in building more inclusive and democratic environments. However, the effectiveness of these initiatives depend on the commitment of developers, public managers and legislators with the promotion of digital inclusion. Research by Souza et al. (2024) reveals that, although the number of websites that partially adopt accessibility guidelines has grown, the implementation is still fragmented and often limited to superficial aspects, without ensure the complete browsing experience for people with disabilities.

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Therefore, understanding standards and assistive technologies is essential for building of truly inclusive digital platforms. In the next section, we will present emerging technological solutions and innovations that aim to further enhance the accessibility, focusing on recent trends such as artificial intelligence, reality augmented and universal design.

2.4 EMERGING ACCESSIBILITY SOLUTIONS AND TECHNOLOGIES DIGITAL

Technological evolution in recent decades has significantly boosted the development of assistive solutions aimed at promoting digital accessibility. Technologies that were previously restricted to a few users, such as screen readers and braille displays digital, have become more accessible and sophisticated, expanding the possibilities for inclusion for people with visual impairments. According to a report by Mendes and Carvalho (2023), technological innovation has been responsible for reducing historical barriers, allowing a more autonomous and effective interaction with digital environments.

Among the solutions already consolidated, the advancement of screen readers stands out, such as NVDA and JAWS, which transform the textual content of web pages into auditory information or tactile. These tools have evolved to support different formats of content, such as tables, graphs and interactive forms. Another relevant example is the improvement of electronic Braille lines, which, with dynamic update technologies, provide tactile reading of complex information, including mathematical formulas and diagrams. In addition, new speech synthesizers have ensured better naturalness in communication, bringing the digital browsing experience closer to human interaction conventional.

Recently, Artificial Intelligence (AI) has emerged as a powerful ally of accessibility. AI-based tools such as Microsoft Seeing AI and Google Lookout, are able to interpret images and verbally describe scenarios, objects and people, expanding access to visual content for people with visual impairments. As Souza et al. (2022) point out, these applications represent a change in paradigm by integrating computer vision and machine learning to create experiences richer and more inclusive digital environments.

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Augmented reality (AR) and virtual reality (VR) are also beginning to be explored as innovative alternatives for accessibility. AR applications have enabling spatial orientation in complex physical environments, aiding locomotion of blind people in urban spaces and public institutions. According to a study by Lima and Fernandes (2024), solutions that combine augmented reality with mobile devices offer great potential to make cities and public services more accessible and responsive.

Another recent trend is the integration of Universal Design standards into projects digital, prioritizing the creation of interfaces that are naturally accessible, without need for subsequent adaptations. As discussed by Almeida e Silva (2021), Design Universal benefits not only people with disabilities, but all users, by promoting usability, simplicity and autonomy in the use of technologies.

Automated accessibility assessment tools such as WAVE, Axe and Accessibility Insights, have also played a relevant role in supporting the development of accessible digital content. These tools identify errors in accessibility on websites and applications, allowing quick adjustments and compliance with WCAG guidelines.

Despite advances, challenges persist, especially with regard to integration of these technologies broadly and consistently across different platforms. As Ramos and Oliveira (2023) highlight the transformative potential of emerging technologies depends directly on the awareness of developers, public managers and policymakers on the centrality of accessibility in the digital society contemporary.

3. METHODOLOGY

This study adopts a qualitative approach, of an exploratory and descriptive nature, whose objective is to understand the aspects related to digital accessibility on the Portal GOV.BR for people with visual impairments. Qualitative research is suitable for analyzing complex phenomena involving subjective aspects, such as the navigation experience in digital environments, allowing for more sensitive and detailed investigation (Creswell, 2014).

The method used is the case study, which, according to Yin (2015), is characterized by intensive analysis of a specific object, seeking to extract deep understandings and

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contextualized. The GOV.BR Portal was selected as the unit of analysis due to its centrality in the provision of public services and the dissemination of official information in Brazil, in addition to its representativeness as an electronic government platform.

Data collection was carried out through documentary analysis and the application of practical accessibility tests. The documentary analysis included the examination of regulations national and international issues regarding digital accessibility, especially Web Content Accessibility Guidelines (WCAG 2.1) developed by the W3C (2018), and the Accessibility Model Accessibility in Electronic Government (eMAG), published by the Secretariat of Digital Government of Brazil. These guidelines were used as a reference for the construction of the criteria for assessment.

Practical tests consisted of simulated navigation in different sections of the Portal GOV.BR, using assistive technologies such as NVDA and JAWS screen readers. The navigation was carried out considering variables such as header structure, description alternative images, color contrast, form usability and compatibility of keyboard-only navigation. Observations were recorded systematically, with notes on barriers encountered, good practices identified and suggestions for improvement.

In addition, automatic accessibility assessment tools were used, such as WAVE (Web Accessibility Evaluation Tool) and Ax Accessibility Checker, to identify errors and alerts related to WCAG 2.1 compliance. These tools helped identify technical issues that could impact the user experience visually impaired users, complementing the qualitative analysis of navigation.

Data analysis followed the logic of thematic content analysis, as proposed by Bardin (2016), allowing the categorization of findings into relevant themes for discussion of the results. The main categories considered were: navigability, perceptions of usability, compliance with accessibility standards and barriers technological.

Regarding ethical aspects, although the study does not directly involve the participation of human subjects, the principles of social responsibility were respected and promoting universal accessibility. The research sought to highlight practices that promote inclusion and constructively point out the limitations encountered, contributing for the improvement of public digital services.

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4. RESULTS AND DISCUSSION

The analysis of the digital accessibility of the GOV.BR Portal, carried out based on the combination of practical tests with assistive technologies and the use of tools automatic assessment methods, revealed important advances, but also highlighted limitations that compromise the autonomous navigation experience for people with visual impairments. This section discusses the main findings, connecting them to the theoretical framework presented. previously and highlighting the implications for promoting inclusive digital citizenship.

In practical tests, carried out with the aid of NVDA and JAWS screen readers, It was observed that the GOV.BR Portal has a basic structure compatible with technologies assistive features on their main pages. The headers are largely organized in hierarchical form, which facilitates navigation for users who depend on reading by title levels. However, in several internal sections, inconsistencies were identified in the marking up headers, making it difficult to find content and harming the experience fluid navigation, as recommended in WCAG 2.1 (W3C, 2018).

The lack of alternative descriptions in images was one of the most common problems recurring. Although the home page contains some images with alternative texts suitable, many decorative or informative images on subpages do not have compatible description, violating the principle of perceptibility of information. This finding corroborates recent studies, such as that of Souza et al. (2022), which point to negligence in insertion of alternative texts as one of the most persistent barriers in environments public digital.

Contact forms and access to services, although accessible in terms of keyboard navigation, presented difficulties regarding the labeling of mandatory fields. In several situations, screen readers were unable to correctly report the function of certain fields, requiring trial and error on the part of the user, which compromises the autonomy and efficiency in filling in sensitive data. These problems highlight failures in the application of the operability principle, fundamental for the construction of accessible environments.

Automatic analysis, performed using the WAVE and Axe Accessibility tools Checker, identified several alerts and errors related to color contrast, lack of alternative text on action buttons and inadequate semantic structure in lists and tables. In average, 23 errors were detected per page evaluated, a number higher than that considered acceptable by good digital accessibility practices. These results corroborate the data

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presented by Lima et al. (2024), which indicate that most government portals Brazilians still have significant deficiencies in technical accessibility criteria.

From the triangulation between the collected data, it is found that, despite the advances in the conception of the GOV.BR Portal as a more inclusive platform, there are still gaps significant gaps that need to be overcome. The deficiency in the systematic application of accessibility guidelines, especially with regard to the description of non-accessible elements. textual and structured navigation, negatively impacts people's right to information with visual impairment, perpetuating forms of digital exclusion.

These findings reinforce the need for a more rigorous approach in implementation of accessibility standards, aligned with national guidelines (eMAG) and international standards (WCAG 2.1), and the systematic use of validation and testing tools with real users. In the following section, the final considerations of this study, highlighting the identified contributions, the limitations of the research and the suggestions for future work on digital inclusion and web accessibility.

Table 1 – Accessibility Assessment on the GOV.BR Portal

Accessibility Criteria	**Criteria Description**	**Assessment Result**
Heading Hierarchy	Correct heading structure (H1, H2, H3) for logical navigation	Partially met
Alternative Description of Images	Presence of alternative texts (Alt Text) in images	Not Answered
Keyboard Navigation	Possibility to navigate all functions using only the keyboard	Answered
Field Labeling Forms	Clear identification of input fields for screen readers	Partially met
Color Contrast	Sufficient contrast ratio between text and background	Not Answered
Semantic Organization of Lists and Tables	Correct use of semantic HTML markup for content structuring	Partially met
Screen Reader Compatibility	Proper reading of content by NVDA and JAWS software	Partially met
Alternatives to Content Multimedia	Availability of captions or transcripts for videos and audios	Not Answered
Error Feedback in Forms	Clear error messages in forms for user guidance	Not Answered

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Accessibility Criteria	Criteria Description	Assessment Result
Navigation Consistency	Predictable, standardized menus, links, and structure across all pages	Answered

Source: Prepared by the author (2025).

The systematic analysis presented in Table 1 shows that, although the Portal GOV.BR has incorporated accessibility practices in some fundamental aspects, such as keyboard navigation and consistency of menus and links, deficiencies still persist significant in essential criteria for the full digital inclusion of people with disabilities visual. Elements such as the absence of alternative descriptions for images, contrasts inadequate, flaws in semantic organization and the lack of alternatives for content multimedia directly compromise the effectiveness of access to information, in contrast to the principles established by the WCAG 2.1 guidelines (W3C, 2018) and by eMAG (Secretariat of Digital Government, 2020).

The high number of criteria classified as “Partially Met” or “Not “Metted” reveals a pattern of inconsistent implementation of accessibility practices. As discussed by Souza et al. (2022) and Lima et al. (2024), digital accessibility does not can be approached in a fragmented or superficial manner, otherwise it will reinforce exclusion digital of vulnerable groups. The results corroborate the need to improve not only the adoption of technical guidelines, but also of fostering an organizational culture focused on inclusive design and continuous monitoring of practices accessibility in digital public services.

These findings indicate that strengthening accessibility on the GOV.BR Portal demands an integrated strategy, which involves training developers, implementation of regular testing with real users and the incorporation of technologies emerging technologies aimed at eliminating digital barriers. The interpretation of data therefore reinforces the centrality of digital accessibility as a vector for implementing citizenship and the democratization of access to information in contemporary society.

Therefore, the analysis conducted revealed that the GOV.BR Portal, despite incorporating relevant accessibility practices in aspects such as keyboard navigation and consistency of menus and links, still presents structural deficiencies that limit full digital inclusion of people with visual impairments. The lack of alternative descriptions in images, inadequate contrasts, failures in the semantic marking of content and the insufficiency of

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accessible alternatives for media reinforce a pattern of inconsistent implementation of WCAG 2.1 and eMAG guidelines.

The findings corroborate recent literature, such as the studies by Souza et al. (2022) and Lima et al. (2024), who point out that digital accessibility on government portals Brazilians remains a critical challenge. It is clear that the simple adoption of good technical practices are not enough: it is necessary to foster an organizational culture oriented to inclusive design and continuous testing with real users, thus ensuring the implementation of the right to information and digital citizenship.

The systematization of the results, presented in Table 1, showed a high number of criteria classified as “Partially Met” or “Not Met”, indicating that actions to promote accessibility are still fragmented. This data reinforce the need to adopt integrated strategies, involving technical training of developers, systematic use of evaluation tools, continuous monitoring and the strict application of national and international accessibility guidelines.

Thus, the present discussion points to the urgency of a repositioning strategic in the management of digital accessibility of the GOV.BR Portal, based on building truly inclusive and sustainable digital environments.

In the following section, the final considerations of this study are presented, summarizing the main contributions of the research, the limitations encountered and suggestions for future investigations, with a view to fostering the evolution of digital inclusion and strengthening the universal access to information.

FINAL CONSIDERATIONS

This study aimed to analyze the digital accessibility of the GOV.BR Portal for people with visual impairments, in light of national and international guidelines accessibility, in particular the Web Content Accessibility Guidelines (WCAG 2.1) and the Model Accessibility in Electronic Government (eMAG). Through a qualitative approach, based on case study, documentary analysis and practical tests with assistive technologies, we sought to understand the potential and limitations of the main service platform digital audiences in Brazil regarding compliance with the right to information.

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The results showed important advances in the structuring of the platform, such as the possibility of keyboard navigation and consistency in the organization of menus and links. However, significant barriers remain, particularly related to the lack of descriptions alternatives in images, inadequacies in the semantic structure of lists and forms, insufficient color contrasts and flaws in input field labeling. These factors compromise the navigability, autonomy and efficiency of the user experience with visual impairment, posing concrete challenges for the implementation of digital citizenship full.

With regard to the fulfillment of the proposed objectives, it can be stated that all were fully met. The general objective of analyzing the digital accessibility of GOV.BR Portal was achieved through practical testing, application of evaluation tools and critical analysis of the collected data. The first objective specific, which consisted of verifying the portal's compliance with the WCAG 2.1 guidelines and eMAG, was achieved through the systematization of the evaluated criteria and the identification of adhesion and failure points. The second specific objective, concerning the identification of accessibility barriers and the proposal of recommendations for improvement, was contemplated through the development of the checklist framework, critical interpretative analysis and suggestions presented to improve accessibility practices.

The main contribution of this study lies in the systematic identification of points strengths and weaknesses of accessibility on the GOV.BR Portal, offering subsidies for critical reflection on the implementation of public policies for digital inclusion. By highlighting the need to improve accessibility practices, this work reinforces the importance of building digital environments that respect the principles of equality, dignity and social participation, as recommended in legal frameworks such as the Law Brazilian Inclusion Law (Law No. 13,146/2015).

Among the limitations of the research, it is worth highlighting the fact that the evaluation was concentrated in tests carried out by observers, without the direct participation of end users with visual impairment, which could have enriched the analysis with more insights diversified. In addition, the research focused on technical accessibility criteria, not covering subjective dimensions of the user experience, such as the feeling of safety, confidence and comfort in navigation.

For future research, it is recommended to conduct studies involving users real in usability testing, as well as the deepening of accessibility analysis in different mobile devices, considering the growing use of smartphones for

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access to public services. It is also suggested that accessibility practices be investigated adopted in other government portals, national and international, in order to identify good practices and reference models that can inspire the continuous evolution of digital accessibility in Brazil.

In short, ensuring full accessibility of the GOV.BR Portal is not just a technical issue, but a fundamental condition for the promotion of inclusive citizenship in information society. Overcoming the barriers identified in this study represents a decisive step towards the consolidation of a truly democratic digital space, accessible and committed to the rights of all citizens.

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