

Autoethnographic Evaluation of Insurance Web Accessibility in Indonesia Using WCAG 2.2 and SETARA

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ABSTRACT

Digital accessibility remains a critical challenge in Indonesia's insurance sector, particularly for blind users who rely on screen readers and structured navigation. This study aimed to evaluate the accessibility of nineteen insurance websites across life and general insurance. This qualitative autoethnographic study combined WCAG 2.2 technical assessment with blind participants' experiential evaluations using the SETARA 2024 framework. Three informants conducted structured evaluations across four weighted dimensions: navigation and page structure, screen reader compatibility, language clarity, and registration inclusivity. Their experiential judgments were transformed into weighted scores and categorized into High (AAA), Moderate (AA), and Limited (A) accessibility levels. The results revealed substantial variation: only a few websites achieved High Accessibility, while most fell into Moderate or Limited categories. Common barriers included inconsistent heading hierarchies, incomplete labeling of form fields, inaccessible interactive components, and registration processes blocked by CAPTCHA without alternatives. These findings demonstrate that technical compliance alone does not guarantee experiential usability. The study concludes that improving accessibility requires both adherence to WCAG standards and attention to lived user experiences, offering practical implications for insurers and regulators seeking to advance inclusive digital services.

Keywords: Accessibility; Autoethnography; Blind Users; Digital Inclusion; Insurance Websites

INTRODUCTION

The rapid growth of insurance technology (insurtech) in Indonesia since 2015 has transformed the insurance industry, enabling digital platforms to deliver services more efficiently (Nasution et al., 2025; Widayani, 2023). However, accessibility for people with disabilities remains a pressing issue. The Indonesian government has mandated inclusive financial services through the Law of the Republic of Indonesia No. 8/2016 Concerning People with Disabilities and Financial Services Authority Regulation (POJK) No. 22/2023 Concerning Consumer Protection, further operationalized by the Pedoman SETARA OJK 2024 (Otoritas Jasa Keuangan [OJK], 2025). These frameworks emphasize equal access, but empirical realities show persistent barriers for visually impaired users, particularly blind users.

Globally, the Web Content Accessibility Guidelines (WCAG) provide the principal benchmark for designing accessible digital environments (Ara et al., 2025; Shah, 2024). WCAG has been widely adopted to evaluate website accessibility by emphasizing the principles of perceivability, operability, understandability, and robustness. Nevertheless, previous studies have shown that technical compliance with WCAG does not always guarantee satisfactory user experiences because accessibility barriers frequently remain when websites are used by people with disabilities in real situations (Jayasiri & Jayalal, 2025; Mourad et al., 2019). Consequently, accessibility evaluation requires not only technical compliance testing but also direct assessment from the perspective of end users (Alshira, 2020).

In Indonesia, accessibility research has predominantly focused on educational institutions and government websites (Suhendri, 2020), while accessibility in insurance services has received limited scholarly attention despite the sector's increasing digitalization. This gap is particularly important because insurance websites provide essential services that extend beyond information delivery, including product selection, policy registration, premium payment, and claims submission. Accessibility barriers in these processes may directly affect the ability of blind users to obtain financial protection independently and equitably. Therefore, evaluating accessibility in the insurance sector requires greater attention than evaluating informational websites alone (Doan & Darcy, 2025; Emara, 2023; Trifan et al., 2024).

This study addresses these gaps by evaluating the accessibility of Indonesian insurance websites through an autoethnographic approach that combines technical accessibility assessment based on WCAG 2.2 with user experience evaluation using the SETARA 2024 accessibility framework. Unlike previous studies that primarily emphasize technical compliance, this research integrates international accessibility standards with the lived experiences of blind users to examine whether technically compliant websites are also practically accessible. The findings are expected to enrich accessibility research in the insurance sector, provide empirical evidence for improving inclusive digital insurance services, and contribute practical recommendations for insurance companies and policymakers in strengthening accessible financial services in Indonesia.

LITERATURE REVIEW

Web Accessibility and WCAG Compliance

Website accessibility refers to the extent to which digital content and online services can be accessed, understood, navigated, and used by all individuals, including persons with disabilities. As digital platforms increasingly become the primary medium for information exchange and service delivery, accessibility has evolved from a technical consideration into an essential component of inclusive digital governance (Campbell et al., 2024).

Previous studies have demonstrated that WCAG has become the dominant benchmark for evaluating accessibility across various digital environments. Automated evaluation tools are widely employed to identify technical barriers such as missing alternative text, improper heading structures, inaccessible forms, insufficient keyboard navigation, and compatibility problems with assistive technologies (Acosta-Vargas et al., 2019). These technical indicators provide an objective basis for measuring compliance with international accessibility standards and allow comparison across websites using standardized criteria.

Despite its widespread adoption, several studies cited in this research indicate that technical compliance alone does not necessarily ensure meaningful accessibility for persons with disabilities (Kumar et al., 2021). Websites that satisfy automated WCAG evaluation may still present practical obstacles when accessed through screen readers or other assistive technologies. Consequently, accessibility should not be interpreted solely as technical conformity but also as the ability of users with disabilities to complete intended tasks effectively, efficiently, and independently. This distinction between technical compliance and practical accessibility forms an important theoretical foundation for the present study (Bostic et al., 2021).

Autoethnography and Digital Inclusion

Autoethnography has increasingly been employed in accessibility research because it enables researchers to integrate personal experience with broader social and technological contexts (Ellis & Adams, 2020). Rather than treating users with disabilities merely as research participants, this approach recognizes their lived experiences as valuable sources of empirical knowledge for understanding accessibility barriers that may remain undetected through automated testing alone (Mack et al., 2021). By combining systematic observation with personal reflection, autoethnography provides deeper insight into how digital systems are actually experienced during everyday interaction.

Within the context of digital inclusion, accessibility extends beyond compliance with technical standards to encompass equitable participation in digital environments. Inclusive digital services should enable users with disabilities to obtain information, interact with digital interfaces, and complete essential online transactions independently (Campbell et al., 2024). For blind users, this includes the ability to navigate website structures, interpret content accurately through screen readers, understand instructions clearly, and complete interactive processes without unnecessary barriers (Kumar et al., 2021). Consequently, integrating autoethnographic perspectives with technical accessibility evaluation provides a more comprehensive understanding of digital accessibility than relying on compliance testing alone (Ellis & Adams, 2020).

This perspective is particularly relevant to insurance websites because successful interaction involves multiple sequential activities, including searching for product information, comparing insurance options, completing registration forms, submitting applications, and accessing post-purchase services (Campbell et al., 2024; Mack et al., 2021). The quality of accessibility therefore depends not only on technical conformity but also on users' actual experiences while completing these tasks (Kumar et al., 2021).

Indonesian Regulatory Context

Indonesia has demonstrated increasing commitment to promoting accessible digital services through national policies and regulatory initiatives. Within the financial sector, the Financial Services Authority (OJK) introduced the SETARA 2024 Guidelines to encourage financial institutions to develop more inclusive digital services for consumers

with disabilities. While WCAG provides internationally recognized technical standards, SETARA contextualizes accessibility within Indonesian financial services by emphasizing consumer protection, service inclusiveness, and equal access to financial information.

Accessibility research has long emphasized the tension between compliance and usability. Chiriboga-Casanova et al. (2025) demonstrated that healthcare websites, although WCAG-compliant, remained inaccessible to patients with disabilities. Similarly, Djatmiko et al. (2025) and Nasution et al. (2025) found that accessibility gaps persisted in government portals despite regulatory frameworks. In the Indonesian context, Raharjo et al. (2023) highlighted barriers in educational websites, particularly in navigation and readability, which parallel the challenges blind users face on insurance websites. More recent studies confirm that these gaps remain significant in digital services (Tang et al., 2025).

Global studies reinforce this paradox. Ormeño et al. (2023) argued that compliance alone is insufficient, as usability must be measured through lived experiences. Vollenwyder et al. (2023) further emphasized that accessibility evaluation must integrate compliance testing with experiential perspectives. Reuschel et al. (2023) and Shi (2025) showed that technically compliant sites may remain inaccessible to screen reader users, a finding echoed in newer research on usability gaps in financial and educational platforms.

The theoretical foundation of this study is grounded in autoethnography, which situates personal experience within broader social contexts (Keleş, 2022; Martin, 2025). Autoethnography has been applied in accessibility research to reveal barriers invisible to automated tools, thereby strengthening methodological robustness. Recent Koopman et al. (2020) methodological contributions highlight the importance of reflexivity in capturing user realities. In addition, universal design frameworks (Hedvall et al., 2025) and digital inclusion debates (Henni et al., 2022; Othman et al., 2024) provide conceptual grounding for understanding accessibility as both compliance and usability.

The coexistence of WCAG and SETARA illustrates the complementary relationship between international technical standards and national regulatory expectations (Nasution, 2023; Pratama et al., 2025). WCAG primarily evaluates technical accessibility based on the POUR principles, whereas SETARA emphasizes the practical implementation of accessibility within financial services. Together, these frameworks provide a comprehensive basis for assessing the accessibility of insurance websites from both technical and contextual perspectives.

Accordingly, this study adopts both frameworks to evaluate insurance website accessibility. WCAG 2.2 serves as the benchmark for technical compliance, while SETARA provides contextual guidance for interpreting accessibility within Indonesia's financial services environment. Combining these two frameworks with autoethnographic evaluation enables this research to examine not only whether insurance websites comply with accessibility standards but also whether they effectively support independent access for blind users.

Conceptual Framework

Figure 1. Conceptual Framework for Evaluating Insurance Web Accessibility Evaluation

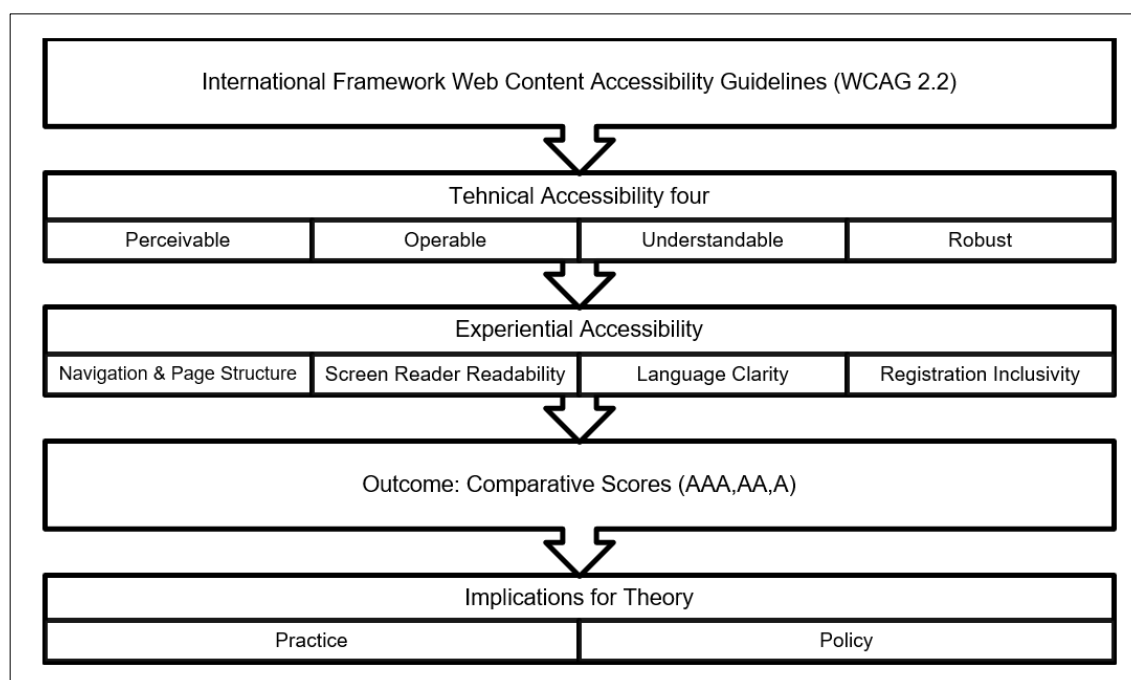


Figure 1 illustrates the conceptual framework adopted in this study. The evaluation begins with two complementary theoretical foundations: WCAG 2.2 as the international standard for technical accessibility assessment and the SETARA 2024 Guidelines as the national framework for inclusive financial services. These two frameworks are integrated through an autoethnographic approach that incorporates the lived experiences of blind users while interacting with insurance websites. The combined assessment is operationalized into four evaluation criteria: navigation and page structure, screen reader compatibility, language clarity, and registration inclusivity, which collectively represent the essential dimensions of accessibility from both technical and experiential perspectives. The integration of these components leads to a comprehensive evaluation of insurance website accessibility, thereby enabling the assessment of technical compliance alongside actual user experience.

RESEARCH METHOD

Research Design

This study employed a qualitative autoethnographic research design to evaluate the accessibility of insurance websites in Indonesia by integrating technical accessibility assessment with the lived experiences of blind users. Autoethnography was selected because the researcher is a visually impaired user who routinely accesses digital services using screen-reader technology. This position enabled the researcher to document first-hand experiences while systematically reflecting on accessibility barriers encountered during website interaction. In line with qualitative inquiry, personal experiences were interpreted within broader technological, regulatory, and social contexts, allowing accessibility to be examined beyond technical compliance alone (Feghali et al., 2024).

To strengthen the credibility of the findings, the researcher collaborated with two additional blind participants who independently evaluated the same websites and discussed their experiences through structured Focus Group Discussions (FGDs). The study therefore combined three complementary sources of evidence: (1) technical accessibility evaluation based on the WCAG 2.2, (2) user experiences obtained through direct website interaction, and (3) collective reflection generated during the FGDs. The

integration of these data sources enabled triangulation between international accessibility standards and the practical experiences of blind users.

Although participants' evaluations were subsequently summarized into weighted numerical scores, the research remained qualitative in design. The numerical values were not intended for statistical inference or hypothesis testing but served as an analytical device to operationalize qualitative judgments and facilitate systematic comparison across the nineteen insurance websites. The scores therefore represented the intensity of participants' experiential assessments rather than objective measurements of accessibility. This approach preserved the interpretive nature of autoethnographic research while improving the transparency and comparability of accessibility evaluation.

Accordingly, the methodological framework integrated qualitative interpretation with structured scoring procedures to provide a comprehensive evaluation of insurance website accessibility. Technical compliance was examined through WCAG 2.2, while experiential accessibility was interpreted through participants' lived experiences using the SETARA 2024 Guidelines. The combination of these complementary perspectives enabled the study to identify both technical accessibility barriers and practical usability issues that may not be detected through automated accessibility testing alone.

Subjects and Objects of Study

Participants

The study involved three participants with visual impairments who routinely use screen-reader technology to access digital information. The participants consisted of two experienced screen-reader instructors and the researcher. The two instructors represented advanced users with extensive experience in evaluating website accessibility, while the researcher represented an intermediate user who regularly relies on screen-reader technology for academic and daily activities. This combination was intentionally adopted to capture accessibility experiences from users with different levels of digital proficiency, thereby reducing the possibility that the evaluation would reflect only a single level of expertise.

All participants independently accessed the selected insurance websites using their own laptops equipped with screen-reader software before discussing their observations through a structured Focus Group Discussion (FGD). During the discussion, participants compared their navigation experiences, identified accessibility barriers, and reached a shared interpretation of the usability issues encountered on each website. The inclusion of multiple participants also strengthened data credibility through investigator triangulation by comparing individual experiences before producing a collective interpretation. [Table 1](#) presents the profile of the study participants.

Table 1. Participant Profile

Participant	Role	Screen Reader Experience	Function in the Study
P1	Screen-reader instructor	Advanced	Independent evaluator and FGD participant
P2	Screen-reader instructor	Advanced	Independent evaluator and FGD participant
P3	Researcher	Intermediate	Researcher-participant, evaluator, and FGD facilitator

The identities of all participants are anonymized to protect confidentiality while ensuring that the reported findings accurately represent the perspectives of blind users with different levels of digital experience.

Website Selection

The object of this study consisted of the official websites of Indonesian insurance companies. Website selection followed a purposive sampling strategy because the objective was not to obtain statistical representation but to evaluate accessibility within the most influential segment of the Indonesian insurance industry. Accordingly, the study selected insurance companies that ranked among the largest by gross premium in 2024, as published by the International Association of Insurance Supervisors (IAIS, 2025). This criterion ensured that the evaluated websites represented companies with substantial market presence, extensive public visibility, and significant interaction with policyholders through digital services.

Based on these criteria, nineteen websites were included in the evaluation, comprising nine life insurance companies and ten general insurance companies. Together, these websites represent the dominant providers of insurance services in Indonesia and therefore constitute an appropriate sample for examining accessibility practices within the national insurance sector. Focusing on leading insurance companies also increases the practical relevance of the findings because these websites are likely to receive the highest levels of public access and digital interaction.

All nineteen websites were evaluated during October 2025 under comparable testing conditions. Each participant independently completed accessibility tasks on every website before the findings were discussed collectively during the Focus Group Discussion. Applying the same evaluation procedure across all websites enhanced the consistency and comparability of the accessibility assessment.

Data Collection

Data collection was conducted during October 2025 using three complementary techniques to capture both technical accessibility and users' lived experiences. The integration of multiple data sources was intended to strengthen methodological rigor through data triangulation while providing a more comprehensive understanding of insurance website accessibility.

First, each of the nineteen insurance websites was evaluated using WCAG 2.2 through W3C-based accessibility evaluation tools. The technical assessment identified potential accessibility barriers associated with the four WCAG principles: Perceivable, Operable, Understandable, and Robust (POUR), including page structure, alternative text, heading hierarchy, form accessibility, keyboard navigation, and compatibility with assistive technologies. These findings provided the technical baseline for evaluating compliance with international accessibility standards.

Second, all participants independently navigated the selected websites using their own laptops equipped with screen-reader software. Participants were instructed to perform representative user tasks commonly undertaken by prospective or existing insurance customers, including locating product information, exploring website navigation, completing online registration where available, and identifying claim-related information. During these navigation sessions, participants documented accessibility barriers, usability issues, and successful interactions encountered while completing each task.

Third, the individual observations were discussed collectively through an FGD. The discussion enabled participants to compare their experiences, clarify differing

interpretations, and identify recurring accessibility issues across websites. The researcher simultaneously maintained reflective field notes to document contextual observations that emerged during the evaluation process. Combining technical assessment, independent user testing, FGD, and reflective documentation enabled triangulation between technical compliance and the practical experiences of blind users, thereby enhancing the credibility and trustworthiness of the findings.

Accessibility Assessment Framework

Website accessibility was evaluated by integrating two complementary frameworks. The first framework was the WCAG 2.2, which served as the international benchmark for assessing technical accessibility based on the four POUR principles. The second framework was the SETARA 2024 Guidelines issued by the OJK, which contextualize accessibility within Indonesian financial services by emphasizing equitable access for persons with disabilities. While WCAG focuses primarily on technical compliance, SETARA highlights accessibility from the perspective of inclusive financial service delivery. Combining these frameworks enabled the study to evaluate not only whether insurance websites complied with technical standards but also whether they supported effective interaction for blind users.

To operationalize these frameworks within an autoethnographic context, participants evaluated each website using four accessibility dimensions derived from the WCAG principles and aligned with the SETARA Guidelines. Rather than replacing WCAG, these dimensions simplified its technical requirements into practical evaluation categories that could be consistently applied during user testing.

Table 2. Operational Accessibility Assessment Criteria

Accessibility Dimension	WCAG Principle	Weight	Operational Focus
Navigation and Page Structure	Perceivable & Operable	35%	Website organization, heading hierarchy, menu consistency, logical navigation, and page orientation
Screen Reader Compatibility	Operable & Robust	30%	Compatibility with screen readers, alternative text, buttons, forms, tables, and interactive elements
Language Clarity	Understandable	20%	Clarity of instructions, terminology consistency, understandable labels, and readability of website content
Registration Inclusivity	Robust	15%	Accessibility of registration forms, CAPTCHA alternatives, validation messages, and completion of online registration

Source: Developed by the authors through the operationalization of WCAG 2.2 and the SETARA 2024 Guidelines.

As presented in Table 2, the weighting scheme was developed to reflect the relative importance of each dimension from the perspective of blind users. Navigation and page structure received the highest weight because successful navigation constitutes the prerequisite for accessing all subsequent website functions. Screen reader compatibility was assigned the second-highest weight because it directly determines whether digital content can be interpreted through assistive technology. Language clarity supports users' understanding of website information and service procedures, whereas registration inclusivity evaluates whether users can independently complete essential online transactions. Collectively, these four dimensions operationalize the broader

WCAG principles into user-centered evaluation criteria while remaining consistent with the objectives of the SETARA 2024 Guidelines.

Weighted Accessibility Scoring Procedure

To facilitate systematic comparison across the nineteen insurance websites, participants' qualitative evaluations were converted into weighted accessibility scores. This preserved the qualitative nature of the study while providing a comparable numerical index for descriptive interpretation rather than statistical inference or hypothesis testing.

The scoring procedure followed four stages. First, each participant independently evaluated every website using the four dimensions in Table 2. Second, the participants discussed their observations in the FGD to identify common accessibility issues and reconcile differences in interpretation while preserving recurring barriers encountered during website navigation. Third, each dimension was scored on a five-point scale and multiplied by its predetermined weight (35%, 30%, 20%, and 15%) to reflect its relative importance from the perspective of blind users. Finally, the weighted scores were aggregated into an overall accessibility score for each website and categorized as High Accessibility (AAA) for scores above 70%, Moderate Accessibility (AA) for scores between 40% and 69%, or Limited Accessibility (A) for scores below 40%. These scores were then interpreted together with the WCAG 2.2 evaluation to identify where technical compliance aligned with, or diverged from, lived user experience.

Data Analysis

Data analysis followed an iterative qualitative analysis process supported by descriptive score aggregation. Analysis began with data reduction, during which technical evaluation results, participants' observational notes, reflective field notes, and FGD transcripts were organized according to the four accessibility dimensions established in the assessment framework.

Subsequently, data from the three participants were compared to identify recurring accessibility barriers, similarities, and differences in user experiences across the nineteen insurance websites. Technical findings derived from WCAG 2.2 evaluation were then examined alongside participants' experiential assessments to explore the relationship between technical accessibility compliance and practical usability.

The weighted accessibility scores generated through the analytical procedure described in Section 3.6 were incorporated at this stage as descriptive summaries to facilitate comparison across websites. Rather than functioning as statistical evidence, these scores supported qualitative interpretation by highlighting patterns of accessibility performance and enabling clearer identification of websites with relatively stronger or weaker accessibility characteristics.

The final stage involved interpretive analysis through methodological triangulation. Findings from the WCAG 2.2 evaluation, participants' independent observations, Focus Group Discussion outcomes, and the researcher's reflective autoethnographic notes were interpreted collectively to produce an integrated understanding of insurance website accessibility. Data credibility was strengthened through source triangulation, methodological triangulation, and participant confirmation during the FGD, ensuring that the reported findings accurately represented the shared experiences of blind users while remaining consistent with internationally recognized accessibility standards.

RESULTS

Overview of Accessibility Evaluation

Table 3. Summary of Accessibility Evaluation Framework

Evaluation Perspective	Assessment Basis	Primary Output	Purpose
Technical Accessibility	WCAG 2.2 evaluation using W3C-based accessibility tools	Technical compliance findings	To identify conformity with international accessibility standards
Experiential Accessibility	Autoethnographic evaluation and Focus Group Discussion	Experiential Accessibility Score	To evaluate practical accessibility experienced by blind users

Source: Developed by the authors based on the research methodology (2025).

The accessibility evaluation covered nineteen official insurance websites in Indonesia, comprising nine life insurance companies and ten general insurance companies. As shown in Table 3, each website was assessed through two complementary perspectives: technical accessibility, evaluated against WCAG 2.2 using W3C-based accessibility tools, and practical accessibility, assessed through the Experiential Accessibility Score that summarized the lived experiences of three blind participants during independent website interaction and subsequent FGDs. This dual evaluation enabled comparison between technical compliance and actual usability from the perspective of screen-reader users. Across the nineteen websites, substantial variation was observed in both technical compliance and experiential accessibility, and websites with relatively higher technical compliance did not always provide better accessibility experiences for blind users.

To facilitate consistent interpretation, the Experiential Accessibility Score was categorized into three operational levels: AAA, AA, and A. These categories served solely as analytical classifications and should not be interpreted as formal WCAG conformance levels. Overall, the evaluation identified recurring accessibility differences across both life insurance and general insurance websites, which were examined through four operational accessibility dimensions: (1) navigation and page structure, (2) screen reader compatibility, (3) language clarity, and (4) registration inclusivity.

Technical Accessibility Compliance

The technical accessibility evaluation was conducted using W3C-based accessibility assessment tools in accordance with the WCAG 2.2. The assessment examined the extent to which each insurance website complied with internationally recognized accessibility requirements, particularly those related to the four WCAG principles: POUR. The technical findings were subsequently compared with the Experiential Accessibility Scores presented in the following section to examine the relationship between technical compliance and actual user experience.

Technical Accessibility Scores of Life Insurance Websites

Table 4. Technical Accessibility Scores of Life Insurance Websites

Company	Technical Accessibility Score (%)
Astra Life	8.33
AIA	50.99
Simas Jiwa	37
Capital Life	43.98
Allianz Life	75
Indolife	55.28
AXA Insurance	52.98
BRI Life	50
Manulife	18.83

Source: Authors' analysis based on WCAG 2.2 evaluation and Participants Analysis (2025).

Table 4 presents the comparative technical accessibility scores of the nine life insurance websites. The evaluation revealed substantial variation, with Allianz Life achieving the highest compliance (75%) and Astra Life the lowest (8.33%). Most companies fell within the moderate range of 40–55%, reflecting uneven implementation of WCAG 2.2 standards across the sector. Common technical barriers included inconsistent heading structures, incomplete alternative text for images, inaccessible form controls, insufficient semantic labeling, and interactive components that were not fully compatible with screen-reader navigation. These recurring issues limited the ability of blind users to navigate content and complete essential tasks independently. As one participant noted during the evaluation, “Even when the page is announced as structured, the screen reader cannot follow the headings logically, so I lose orientation halfway through.” This excerpt illustrates how technical shortcomings directly translated into practical accessibility barriers during real user interaction.

Technical Accessibility Scores of General Insurance Websites

Table 5. Technical Accessibility Scores of General Insurance Websites

Company	Technical Accessibility Score (%)
PLN Insurance	8.33
Simas Insurtech	50.99
Sinar Mas	37
Astra Buana	43.98
Jasindo	75
Tugu Insurance	55.28
ACA Insurance	52.98
Askrindo	50
BRINS	18.83
Aswata	18.83

Source: Authors' analysis based on WCAG 2.2 evaluation and Participants Analysis (2025).

Table 5 presents the comparative technical accessibility scores of the ten general insurance websites. The evaluation revealed wide disparities, with Jasindo achieving the highest compliance (75%) and PLN Insurance the lowest (8.33%). Several companies, including Tugu Insurance (55.28%), ACA Insurance (52.98%), and Askrindo (50%), demonstrated moderate levels of conformity, while BRINS and Aswata recorded the lowest scores (18.83%). These results highlight that technical accessibility implementation remains uneven across the general insurance sector. Recurring barriers included inconsistent heading hierarchies, missing alternative text for visual elements, inaccessible form controls, and interactive features that were only partially compatible with screen-reader navigation. As one participant reflected during testing, “I can reach the registration page, but the form fields are not labeled properly, so the screen reader just says ‘edit box’ without telling me what to enter.” This excerpt illustrates how technical shortcomings directly hindered independent task completion, reinforcing the empirical evidence of accessibility gaps across general insurance websites.

Experiential Accessibility Scores

The following subsections present the detailed experiential accessibility scores for each insurance segment. This section focuses on life insurance websites, while subsequent sections address general insurance websites. This structure enables a clearer comparison across categories while maintaining consistency in reporting the empirical findings.

Experiential Accessibility Scores of Life Insurance Websites

Table 6. Experiential Accessibility Scores of Life Insurance Websites

Company	Experiential Accessibility Score (%)	Category
Astra Life	78	High Accessibility (AAA)
AIA	65	Moderate Accessibility (AA)
Simas Jiwa	58	Moderate Accessibility (AA)
Capital Life	52	Moderate Accessibility (AA)
Allianz Life	51	Moderate Accessibility (AA)
Indolife	40	Moderate Accessibility (AA)
AXA Insurance	35	Limited Accessibility (A)
BRI Life	30	Limited Accessibility (A)
Manulife	22	Limited Accessibility (A)

Source: Authors' analysis based on WCAG 2.2 evaluation and Participants Analysis (2025).

Table 6 presents the experiential accessibility scores of the nine life insurance websites, categorized into High Accessibility (AAA), Moderate Accessibility (AA), and Limited Accessibility (A). The results show Astra Life as the only company achieving High Accessibility (78%), while six companies—including AIA (65%), Simas Jiwa (58%), Capital Life (52%), Allianz Life (51%), and Indolife (40%)—fell into the Moderate Accessibility range. In contrast, AXA Insurance (35%), BRI Life (30%), and Manulife (22%) were classified as Limited Accessibility, reflecting persistent barriers that hindered independent navigation and task completion.

Across the Moderate and Limited categories, participants consistently reported difficulties with navigation structures, incomplete labeling of form fields, and unclear instructions during registration. Participant 1 emphasized, “The menus are announced, but the screen reader keeps jumping back, so I cannot follow the flow of information.” Participant 2 added, “Some buttons are detected, but the screen reader only says ‘button’ without describing the function, so I have to guess what action they perform.” Participant 3 reflected, “Even when I manage to reach the registration page, the CAPTCHA blocks me completely because there is no accessible alternative.” These excerpts illustrate how technical shortcomings translated into practical barriers, reinforcing the gap between compliance scores and lived accessibility experiences.

Experiential Accessibility Scores of General Insurance Websites

Table 7. Experiential Accessibility Scores of General Insurance Websites

Company	Experiential Accessibility Score (%)	Category
PLN Insurance	90	High Accessibility (AAA)
Simas Insurtech	85	High Accessibility (AAA)
Sinar Mas	67	Moderate Accessibility (AA)
Astra Buana	62.75	Moderate Accessibility (AA)
Jasindo	48.5	Moderate Accessibility (AA)
Tugu Insurance	45	Moderate Accessibility (AA)
ACA Insurance	45	Moderate Accessibility (AA)
Askrimdo	38.5	Limited Accessibility (A)
BRINS	28.5	Limited Accessibility (A)
Aswata	25	Limited Accessibility (A)

Source: Authors' analysis based on WCAG 2.2 evaluation and Participants Analysis (2025).

Table 7 presents the experiential accessibility scores of the ten general insurance websites, categorized into High Accessibility (AAA), Moderate Accessibility (AA), and Limited Accessibility (A). The results show PLN Insurance (90%) and Simas Insurtech (85%) as the only companies achieving High Accessibility, reflecting relatively smooth

navigation and effective screen-reader compatibility. A cluster of companies, including Sinar Mas (67%), Astra Buana (62.75%), Jasindo (48.5%), Tugu Insurance (45%), and ACA Insurance (45%), fell into the Moderate Accessibility range, where users were able to complete most tasks but still encountered recurring barriers. In contrast, Askrindo (38.5%), BRINS (28.5%), and Aswata (25%) were classified as Limited Accessibility, indicating significant obstacles to independent interaction.

Across the Moderate and Limited categories, participants consistently reported barriers such as unclear labeling of buttons, inconsistent page structures, and inaccessible registration processes. Participant 1 explained, "The screen reader announces the menus, but the hierarchy is inconsistent, so I lose track of where I am in the navigation." Participant 2 emphasized, "I can reach the claim information page, but the instructions are too vague, so I am not sure what to do next." Participant 3 reflected, "The registration forms often stop me because the validation messages are not read out, so I cannot correct the errors." These excerpts illustrate how technical shortcomings directly translated into practical usability barriers, reinforcing the divergence between compliance scores and lived accessibility experiences.

Thematic Accessibility Barriers

Beyond the accessibility scores, the evaluation identified four recurring thematic barriers that consistently influenced the accessibility experiences of blind participants across the nineteen insurance websites. These themes correspond to the four operational accessibility dimensions established in the research framework: navigation and page structure, screen reader compatibility, language clarity, and registration inclusivity. Rather than occurring independently, these barriers frequently interacted and collectively affected participants' ability to obtain insurance information, complete registration procedures, and navigate website services efficiently.

Table 8. Thematic Accessibility Barriers Identified Across Insurance Websites

Accessibility Dimension	Typical Accessibility Barrier	Observed Impact on Blind Users
Navigation and Page Structure	Inconsistent heading hierarchy, unclear navigation sequence, repetitive menus	Users frequently lost orientation and required additional navigation steps to locate information.
Screen Reader Compatibility	Missing alternative text, unlabeled buttons, inaccessible forms, inconsistent semantic markup	Screen readers failed to provide meaningful descriptions, limiting independent interaction with website content.
Language Clarity	Ambiguous labels, inconsistent terminology, unclear instructions	Participants experienced uncertainty when completing service procedures and interpreting website information.
Registration Inclusivity	Inaccessible CAPTCHA, incomplete form labels, unclear validation messages	Participants were unable to complete online registration independently without external assistance.

Source: Authors' analysis based on WCAG 2.2 evaluation, participant observation, and Focus Group Discussion (2025).

Table 8 shows that navigation and page structure, screen reader compatibility, language clarity, and registration inclusivity consistently shaped blind users' accessibility experiences across the nineteen websites. Navigation and page structure emerged as the most frequent barrier, followed by screen reader compatibility, because inconsistent heading structures, poorly organized menus, missing alternative text, unlabeled

interactive buttons, inaccessible form fields, and inconsistent semantic markup reduced navigation efficiency and assistive-technology effectiveness.

Language clarity and registration inclusivity also constrained access. Unclear instructions, inconsistent terminology, and ambiguous hyperlinks complicated users' understanding of insurance products and service procedures, while inaccessible CAPTCHA mechanisms, insufficiently labeled form fields, and unannounced validation messages often prevented independent online registration. Together, these patterns show that accessibility depends not only on available content, but also on whether blind users can complete essential tasks independently from start to finish.

The autoethnographic observations reinforced these thematic findings. One participant noted:

"I could reach the registration page without difficulty, but the CAPTCHA was inaccessible and the error message was never announced by the screen reader. At that point, I could not continue independently." (Participant P2, field note)

Similarly, the researcher documented the following observation during the evaluation process:

"The product information was generally accessible, but several navigation menus repeated unnecessarily, making orientation increasingly difficult after moving through multiple sections." (Researcher's reflective field note)

These empirical observations demonstrate that accessibility barriers extend beyond isolated technical deficiencies. Instead, they reflected recurring usability patterns that directly influenced the effectiveness, efficiency, and independence of blind users when interacting with insurance websites.

Summary of Key Findings

The results demonstrate that evaluating insurance website accessibility requires the integration of both technical compliance and user-centered assessment. The WCAG 2.2 evaluation identified varying levels of technical accessibility across the nineteen insurance websites, while the Experiential Accessibility Score captured participants' actual ability to navigate, understand, and complete essential online insurance services independently. Taken together, these findings show that the two evaluation approaches are complementary rather than interchangeable perspectives on digital accessibility.

Across both life insurance and general insurance websites, technical accessibility compliance varied considerably. Although several websites showed relatively stronger conformity with WCAG 2.2 requirements, higher technical compliance did not consistently correspond to higher experiential accessibility. In contrast, some websites with only moderate technical compliance enabled blind participants to complete common tasks more effectively because they offered clearer navigation pathways, better structured content, and more intuitive interaction sequences.

The experiential evaluation identified four recurring accessibility dimensions that shaped participants' website experiences: navigation and page structure, screen reader compatibility, language clarity, and registration inclusivity. These dimensions influenced users' ability to access insurance product information, complete registration procedures, and use online insurance services independently. Among them, navigation consistency and screen-reader compatibility were the most influential factors, while registration

inclusivity remained the most significant barrier to completing online transactions without assistance. The autoethnographic observations and Focus Group Discussions further confirmed that accessibility barriers were not isolated technical deficiencies, but a combination of technical compatibility, logical information architecture, and practical usability. Overall, the findings indicate that technical accessibility standards alone are insufficient to represent users' actual digital experiences, underscoring the importance of user-centered evaluation for inclusive digital insurance services.

DISCUSSION

Explaining the Compliance–Usability Paradox

One of the most important findings of this study is the existence of a compliance–usability paradox in the accessibility evaluation of insurance websites. The results demonstrate that technical compliance with WCAG 2.2 did not consistently correspond to better accessibility experiences for blind users. Although websites with higher technical conformity generally provided a stronger accessibility foundation, several remained difficult to navigate in practice, whereas some websites with only moderate technical compliance enabled participants to complete essential tasks more efficiently because they offered clearer navigation structures, more predictable interaction sequences, and information that was easier to interpret using screen-reader technology. This finding suggests that technical accessibility and practical usability represent complementary dimensions of digital inclusion: compliance establishes the technical conditions necessary for accessibility but does not automatically guarantee an efficient, understandable, or independent user experience.

The findings further indicate that blind users evaluate website accessibility holistically rather than through isolated technical features. During the autoethnographic evaluation, participants consistently prioritized logical page organization, meaningful labels, predictable interaction flow, and efficient navigation over the mere presence of technically accessible interface elements. This explains why the Experiential Accessibility Score complements rather than replaces the WCAG 2.2 assessment. While the technical evaluation objectively measures compliance with recognized accessibility standards, the experiential assessment captures how those technical implementations affect users during actual website interaction, providing a more comprehensive understanding of digital accessibility.

These findings are consistent with previous accessibility research showing that technical conformance alone is insufficient to explain users' actual interaction experiences, particularly when assistive technologies are used for complex navigation and task completion. Rather than contradicting WCAG, the present study reinforces the importance of complementing technical evaluation with user-centered assessment. Methodologically, this study extends previous accessibility evaluation approaches by integrating W3C-based technical assessment with autoethnographic evidence from blind users, conceptualizing accessibility as the interaction between technical compliance and lived user experience. This integrated perspective provides a richer basis for evaluating inclusive digital services within the insurance sector.

Implications for Blind Users

The findings have important implications for blind users who increasingly rely on digital platforms to obtain financial information and access insurance services independently. Although technical accessibility standards establish minimum requirements for inclusive website design, the present study demonstrates that compliance alone does not necessarily translate into an accessible user experience. Successful interaction depends not only on whether assistive technologies can detect website elements, but also on

whether information is organized logically, navigation is predictable, and essential tasks can be completed efficiently without external assistance. When barriers such as unclear navigation, inaccessible forms, or poorly structured content persist, users require greater time and cognitive effort to complete tasks and may become dependent on assistance from others, reducing the digital autonomy that accessible services are intended to provide.

The findings further suggest that accessibility should be understood as an enabler of equal participation rather than merely as a technical feature of website development. Because insurance websites serve as gateways to product information, policy registration, premium payment, and claims services, accessibility limitations may restrict blind users' opportunities to obtain financial protection and make informed decisions comparable to those of sighted users. Participants consistently indicated that logical navigation, meaningful labels, and accessible interactive components improved both task completion and confidence when using digital insurance services, whereas inaccessible forms, ambiguous instructions, and inconsistent website structures generated uncertainty about whether transactions had been completed successfully. This observation aligns with evidence that service quality, perceived value, convenience, ease of use, and trust collectively shape customer satisfaction and digital service experiences (Nursalim et al., 2025; Xia et al., 2025).

Overall, the findings indicate that improving accessibility should emphasize complete user journeys rather than isolated website components. Blind users evaluate accessibility as a continuous experience extending from locating information to registration, communication, and subsequent service use. Accordingly, accessible insurance websites contribute to greater digital independence, broader financial inclusion, and more equitable access to financial services for persons with visual disabilities. Future accessibility initiatives should therefore continue integrating direct user participation with technical evaluation to ensure that digital transformation delivers meaningful improvements in users' everyday experiences rather than technical compliance alone.

Implications for Insurance Companies

The findings of this study have important implications for insurance companies undergoing digital transformation. As insurance services increasingly rely on web-based platforms for product promotion, customer registration, policy management, and claims processing, website accessibility should be viewed as an essential component of service quality rather than merely a technical or regulatory requirement. Accessible digital services enable customers to obtain insurance information and complete transactions independently.

The compliance–usability relationship identified in this study indicates that technical conformity with accessibility standards alone does not guarantee satisfactory user experiences. Insurance companies should therefore complement WCAG-based technical evaluation with user-centered assessments involving persons with disabilities to identify practical accessibility barriers that automated tools may overlook. A design-thinking approach has likewise been shown to improve efficiency, security, and user satisfaction by aligning digital solutions with users' needs (Rahmad & Ghina, 2025).

Accessibility should also be integrated throughout website planning, development, implementation, and maintenance rather than treated as a final compliance check. Embedding accessibility into routine digital governance and quality assurance helps organizations prevent barriers before services are deployed while supporting consistent service improvement.

Beyond regulatory compliance, accessible websites contribute to broader organizational goals by improving customer experience, strengthening trust, expanding market reach, and reinforcing inclusive digital services. The integrated evaluation framework proposed in this study, combining WCAG-based technical assessment with experiential evaluation by blind users, offers a practical approach for internal accessibility audits and evidence-based improvements. Overall, effective accessibility management depends on integrating technical standards, user participation, continuous evaluation, and inclusive service design to deliver digital services that are both technically accessible and genuinely usable by persons with visual disabilities.

Interpreting SETARA 2024 in Light of the Findings

The findings of this study provide an important perspective for interpreting the implementation of Indonesia's SETARA 2024 Guidelines within the insurance sector. As a national framework promoting inclusive financial services, SETARA 2024 encourages financial institutions to ensure that digital services can be accessed equitably by persons with disabilities. The present findings suggest that effective implementation of these guidelines requires more than formal compliance with accessibility requirements. Instead, accessibility should be understood as the practical ability of users with disabilities to independently access information, complete transactions, and utilize digital financial services throughout the entire customer journey.

The compliance–usability relationship identified in this study indicates that technical accessibility standards and inclusive financial policies should be interpreted as complementary rather than competing frameworks. WCAG 2.2 provides internationally recognized technical criteria for accessible website development, whereas SETARA 2024 establishes the broader policy direction for inclusive financial service delivery in Indonesia. The empirical findings demonstrate that achieving the objectives of SETARA requires organizations to integrate both perspectives by combining technical accessibility with direct evaluation of users' actual experiences.

Another important implication concerns the operationalization of inclusive digital services. The results suggest that implementation of SETARA should not be evaluated solely through the existence of accessibility features or institutional policy commitments. Instead, successful implementation should also consider whether persons with disabilities can independently obtain insurance information, complete registration procedures, submit claims, and interact with digital services without encountering avoidable accessibility barriers. This interpretation shifts the emphasis from institutional readiness toward practical accessibility outcomes experienced by service users.

The integrated evaluation framework proposed in this study offers a practical mechanism for supporting this interpretation. By combining WCAG 2.2 technical assessment with the Experiential Accessibility Score, insurance companies and regulators can obtain complementary evidence regarding both technical accessibility and actual service usability. Such an approach enables accessibility evaluation to move beyond compliance auditing toward continuous service improvement informed by the experiences of persons with disabilities.

From a policy perspective, the findings also suggest that future implementation of SETARA would benefit from greater emphasis on user participation during the evaluation of digital financial services. Involving persons with disabilities in accessibility testing provides evidence that cannot be obtained through automated technical assessment alone and enables organizations to identify barriers affecting real-world interaction with digital services. Consequently, accessibility evaluation becomes not only a regulatory

requirement but also a participatory process that supports continuous improvement in digital inclusion.

Overall, this study demonstrates that the objectives of SETARA 2024 are more likely to be achieved when technical accessibility standards, organizational commitment, and user-centered evaluation are implemented as an integrated framework. Such an approach strengthens inclusive digital transformation within the insurance industry by ensuring that accessibility is assessed not only by the presence of technical features but also by the extent to which those features enable independent and meaningful participation for persons with visual disabilities.

CONCLUSION

This study evaluated the accessibility of nineteen Indonesian insurance websites by integrating a WCAG 2.2-based technical assessment with an autoethnographic evaluation involving blind users. The findings demonstrate that technical accessibility compliance and experiential accessibility represent two complementary dimensions of digital accessibility. Although several websites exhibited relatively stronger technical compliance, higher conformity with accessibility standards did not consistently result in better user experiences. Conversely, some websites with only moderate technical compliance enabled blind users to complete essential tasks more independently because they provided clearer navigation structures, more intuitive interaction flows, and better support for screen-reader use.

The study further identified four recurring accessibility dimensions that shaped users' digital experiences: navigation and page structure, screen-reader compatibility, language clarity, and registration inclusivity. Among these dimensions, navigation consistency and screen-reader compatibility had the greatest influence on participants' ability to access insurance information and complete digital services independently. These findings indicate that accessibility evaluation should extend beyond technical compliance to include direct user experience, thereby providing a more comprehensive understanding of inclusive digital service quality.

This study also contributes to accessibility evaluation by demonstrating the value of combining technical assessment with user-centered evidence. The integration of WCAG 2.2 evaluation and the Experiential Accessibility Score offers a practical framework for assessing accessibility from both technical and experiential perspectives. Such an approach may support insurance companies, accessibility practitioners, and policymakers in developing digital financial services that are not only technically compliant but also genuinely usable by persons with visual disabilities. Furthermore, the findings provide empirical support for strengthening the implementation of Indonesia's SETARA 2024 Guidelines through accessibility evaluation that incorporates both technical standards and the lived experiences of users with disabilities.

LIMITATION

Several limitations should be acknowledged. First, the study evaluated nineteen insurance websites representing the largest life and general insurance companies in Indonesia; therefore, the findings may not fully represent the accessibility conditions of smaller insurance providers or other financial service sectors. Second, the experiential assessment involved three blind participants with different levels of screen-reader proficiency. Although this design was appropriate for an autoethnographic study and allowed in-depth exploration of user experiences, broader participant representation may reveal additional accessibility challenges encountered by users with different backgrounds and digital competencies.

Third, the study focused exclusively on users with visual disabilities. Future research may extend the proposed evaluation framework by involving participants from other disability groups, such as individuals with hearing, motor, or cognitive impairments, to obtain a more comprehensive understanding of digital accessibility within financial services. Future studies may also examine mobile applications, customer self-service platforms, and emerging digital insurance technologies to further evaluate inclusive financial services across multiple digital environments.

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DECLARATION OF CONFLICTING INTERESTS

The author declares no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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