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BEYOND BARRIERS: MUSEUM ACCESSIBILITY IN INDONESIA THROUGH THE EYES OF PERSONS WITH DISABILITIES

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Abstract

Museums are increasingly recognised as inclusive cultural institutions, yet accessibility remains severely limited for Persons with Disabilities (PwD) in developing countries, including Indonesia. This study systematically identifies urgent issues and persistent challenges in museum accessibility through two case studies: the Jakarta History Museum (JHM) and the Fort Vredeburg Museum (FVM) in Yogyakarta. A multi-method qualitative approach was employed, combining semi-structured interviews with 25 participants, including PwD and key museum stakeholders, and Community-Based Observation (CBO) using the Inclusive Museum Appraisal Tool (IMAT) with 12 PwD representing diverse disability groups. Findings reveal pervasive, systemic inaccessibility across three accessibility attributes: communication, external elements, and internal elements. Critical barriers, such as the complete absence of sign language services (100%), inaccessible interior design (80%), inadequate facilities (76%), and the lack of accessible elevators, demand immediate improvement. External barriers significantly hinder initial entry, rendering access a fundamental challenge from the outset. The findings reveal a critical gap between global inclusive design standards and prevailing practices in Indonesian museums, emphasising the urgency of comprehensive and strategic interventions to achieve equitable and meaningful cultural participation for visitors with disabilities.

Keywords: Museum Accessibility, Universal Design Principles, Inclusive Museum Appraisal Tool and Community Based Observation

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INTRODUCTION

Museum accessibility encompasses more than merely allowing entry into the building; it also involves ensuring that visitors can navigate the space comfortably and comprehend the information presented. Within this broader conception, two components are especially central: physical accessibility and communication accessibility (Solima, 2017).

Physical accessibility refers to the design of spaces and facilities that accommodate a range of mobility needs. Essential features include ramps, elevators, wide circulation paths, and barrier-free entrances, all of which facilitate safe, independent navigation for visitors with physical disabilities (Rocha et al., 2022). Communication accessibility, by contrast, aims to eliminate information barriers through clear signage, tactile guides, *Braille* labels, audio descriptions, captioned videos, and digital resources in accessible formats, elements that support visitors with sensory or learning disabilities. By addressing both dimensions together, museums can move towards becoming inclusive environments where all visitors, regardless of ability, can participate equally in cultural and educational experiences.

Building on this understanding, the present study has two interrelated aims: (1) to systematically assess museum accessibility conditions for PwD across communication, external, and internal elements using empirical, multi-method evidence; and (2) to examine the lived experiences of PwD as visitors, grounding the findings in user-centred perspectives. By bridging the gap between experiential evidence and policy discourse, this study provides a validated framework designed to guide both future design interventions and broader accessibility policy in Indonesia.

LITERATURE REVIEW

Communication Accessibility in Museum Environment for Persons with Disabilities (PwD)

Communication accessibility serves as a fundamental prerequisite for inclusive cultural engagement, yet its current application in the Indonesian museum sector reveals a persistent dissonance between institutional aspirations and the lived reality of PwD. Barriers exist in both digital and physical formats. Digitally, museum websites and online platforms frequently fail to meet accessibility standards such as the WCAG; accessible practices, including alternative text for images, captions for videos, adjustable layouts, and narrated tours, remain uncommon (Bogdanova et al., 2021; Vila et al., 2024). Emerging technologies such as virtual reality (VR) and 3D simulations, along with social media, are likewise underutilised for fostering inclusive participation (Brischetto et al., 2023; İşlek, 2023).

Physically, communication access can be enhanced through multimodal interpretation, such as *audio descriptions, tactile exhibits, sign language interpretation, and clear visual signage*, though inconsistent implementation often undermines their effectiveness. However, inconsistent implementation currently undermines the efficacy of these tools. It is imperative to recognize that technology alone cannot bridge the accessibility gap; well-trained staff capable of deploying auxiliary aids and providing inclusive guidance are indispensable partners in this ecosystem (Chidiac et al., 2024). Ultimately, for Indonesian museums to transition into truly inclusive institutions, they must embed Universal Design (UD) principles as an operational logic that permeates both their digital infrastructure and the physical interpretation of their cultural narratives, rather than treating accessibility as a secondary, elective feature.

External Element in the Museum

Accessibility extends beyond the museum threshold, it is intrinsically tied to the physical environment visitors navigate before entering the building. These external elements, such as *approaches, surrounding environments, and entrance areas*, act as the initial point of contact for PwD, effectively shaping their perception of the institution's inclusivity. Approaches should ensure seamless connectivity with public transportation and parking facilities; pedestrian pathways leading from drop-off zones, bus stops, and parking areas must feature appropriate gradients and level transitions (Adi et al., 2024), since barriers commonly arise from uneven pavements, clutter, and sudden elevation changes (İşlek, 2023). Tactile paving and orientation cues are similarly essential for assisting visually impaired visitors (Ma et al., 2021).

Entrances and reception areas, in turn, serve as the vital transition points between external and internal access. Main entrances should be equipped with clear signage and designed to be operable and direct, supplemented by sensory cues such as lighting, colour coding, or acoustic signals (Zallio & Clarkson, 2021; Zulpiani & Rusyani, 2023), while reception areas should minimise barriers and facilitate effective communication (Lamirande, 2022). UD principles further advocate for sheltered waiting areas, weather-protected routes, and accessible online updates (Berget & Kvikne, 2024; Bringolf, 2022). Collectively, these measures promote inclusivity and predictability, ensuring that all visitors experience a welcoming and accessible environment from the moment they arrive.

Internal Element in the Museum

Once inside, internal elements become equally crucial for ensuring equitable, safe, and dignified access. *These include circulation systems, sanitary facilities, wayfinding strategies, emergency preparedness, and interior design*, each

shaping the inclusivity of the cultural experience in distinct ways.

Circulation forms the foundation of internal accessibility. Horizontally, corridors, galleries, and open spaces should be wide, unobstructed, and fitted with easy-to-operate doors to facilitate seamless movement (Yilmaz, 2018); vertically, stairs, ramps, and lifts must provide barrier-free connections between floors to accommodate diverse mobility needs (Zulpiani & Rusyani, 2023). Sanitary facilities are equally vital for maintaining dignity and independence: inclusive restrooms should be strategically located, spacious, and equipped with grab rails, emergency alarms, and high-contrast fittings to aid recognition (Singh & Saxena, 2023). Wayfinding systems, meanwhile, promote autonomy through clear signage, maps, tactile guides, and raised tactile maps with high-contrast text (Brischetto et al., 2023), while consistent lighting reduces glare (Wall Emerson, 2017; Wendorff, 2023) and thoughtfully managed soundscapes accommodate visitors with hearing impairments (Kruczek et al., 2024). Emergency preparedness, in turn, requires multi-sensory alerts, accessible evacuation routes, and regular staff training to ensure equitable safety (Centre for Accessible, 2023). Interior design ultimately ties these elements together, shaping orientation, exhibition layouts, and sensory interactions; intuitive pathways, contrasting colours, and multisensory features such as tactile models, acoustic elements, and interactive displays allow visitors of all abilities to engage meaningfully (Bošková Filová, 2025; Kasemsarn et al., 2024).

Taken together, the existing literature has addressed museum accessibility globally and examined specific aspects of the Indonesian context, such as exhibition displays, but it remains fragmented, lacking a holistic, user-centred approach that considers communication and external and internal barriers together, particularly regarding the lived experiences of diverse PwD across different urban settings. This study addresses that gap by developing an empirically grounded conceptual framework that integrates these three accessibility dimensions, moving beyond isolated assessments and technical compliance to center user perspectives. In doing so, it advances a more complete understanding of inclusive museum environments and contributes to policy and design discourse on genuinely inclusive cultural participation in Indonesia.

This relevance extends beyond Indonesia, as comparable challenges recur throughout Southeast Asian built-environment research. Zahari et al. (2023) found that regional heritage sites similarly exclude PwD through physical, informational, and attitudinal barriers, pointing to a systemic pattern of inaccessibility that demands inclusive design beyond mere physical modification. Omi et al. (2024) showed that even internationally recognised heritage sites with genuine improvement intentions still fail to resolve core outdoor and communication barriers, and that staff training and capacity-building remain essential to any real progress. Together, these regional findings situate the present

study within a broader pattern of institutionalised exclusion, underscoring the urgency of the holistic, user-centred approach adopted here.

RESEARCH METHODOLOGY

A multi-method qualitative approach was employed to examine physical accessibility in Indonesian museums, integrating institutional perspectives with the lived experiences of PwD. Drawing on multiple sources of evidence, the study enabled comprehensive qualitative data collection through an iterative, reflective process that achieved thematic saturation. Ethical approval was obtained through the UMREC Research Ethics Protocol (2024), ensuring strict adherence to research integrity standards throughout (see Figure 1).

The empirical inquiry centers on two case studies: the Jakarta History Museum (JHM) and the Fort Vredenburg Museum (FVM) in Yogyakarta. These museums, despite being in different cities, share key characteristics, such as preservation and exhibition of historical artifacts and heritage buildings with Dutch architectural styles, as well as centers for education and research that serve students, researchers, and the public. Both museums maintain and preserve extensive collections of archaeological artefacts, artworks, and historical documents. They are significant tourist attractions that draw visitors interested in local culture and history. These criteria, together with FVM's 2024 recognition by Indonesia's Ministry of Culture as the country's most inclusive museum, which positions it as an evidence-rich comparator against JHM's more typical, less-adapted metropolitan condition, were therefore judged sufficient to represent the range of accessibility challenges characterising Indonesian museums broadly. These criteria align with Yin et al. (2018) multiple case study protocol, where contrasting but comparable sites serve as strategic exemplars for analytical generalisation rather than statistical representation.

Data collection was structured around two primary instruments: semi-structured interviews and Community-Based Observation (CBO). Twenty-five stakeholders were recruited via purposive and snowball sampling, with participants divided between Jakarta (n=13) and Yogyakarta (n=12). The sample comprised a diverse array of PwD (including those with visual, mobility, and hearing/speech impairments), alongside architects, museologists, and local authority regulators. Interviews, spanning 60 to 90 minutes, employed the Appreciative Inquiry (AI) method, which encourages an action-oriented dialogue to build shared community visions (Ab Ghafar et al., 2022). To ensure the process was fully inclusive, adaptive communication techniques were applied, including a sign language interpreter, with strict adherence to informed consent and participant anonymity protocols. The participants were required to be 18 years or older with prior museum-visit experience and gender was not recorded as a selection variable in this study. Participants represented a diverse cross-section

of stakeholders, including the PwD in several categories as follows:

- (i) Visual impairment (*P1_JT, P2_JT, P1_YK, P4_YK*),
- (ii) Wheelchair user (*P3_JY, P4_JT, P5_JT, P2_YK, P6_YK*),
- (iii) Deaf and muted (*P6_JT, P7_JT, P3_YK, P7_YK*),
- (iv) Physically disabled (*P5_YK*), (v) Architect (*P8_JT & P8_YK*),
- (v) Museum representative (*P10_JT, P13_JT, P9_YK, P12_YK*),
- (vi) Museologist (*P11_JT & P11_YK*), and
- (vii) Local authority in museum and building regulation (*P9_JT, P12_JT, P10_YK*).

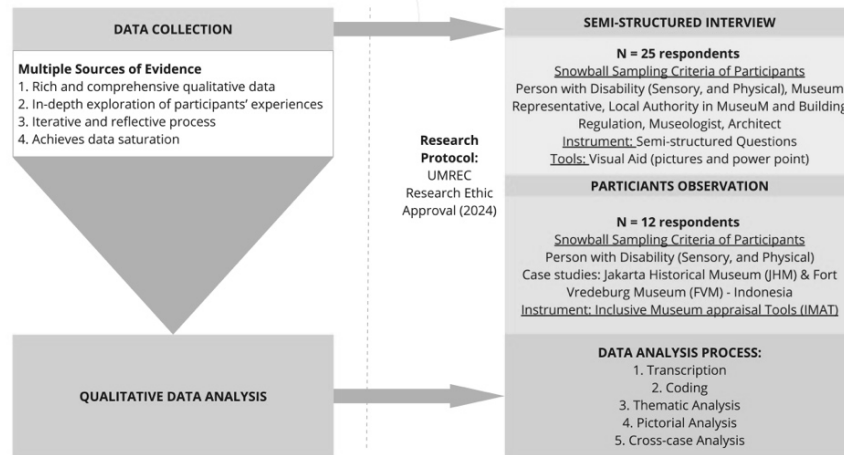


Figure 1: Data Collection Method and Stages Source: Author (2025)

The CBO was performed by 12 PwD (six per site) using the *Inclusive Museum Appraisal Tool* (IMAT), developed directly from semi-structured interview findings and grounded in established international and national policies. Unlike traditional institutional audits, IMAT evaluates accessibility from the firsthand, embodied perspective of the user: including PwD as inspectors allowed the study to capture direct feedback on how physical environments genuinely shape user experience, enhancing the authenticity of the evaluation beyond what compliance-based checklists alone can offer. The instrument was developed iteratively, synthesising *UD principles* (Centre for UD, 1997), *the MS 1184:2014 Malaysian Standard*, and *the Smithsonian Accessible Design Guidelines* (2021). It maps 17 observable indicators across three dimensions, *communication, external elements, and internal elements*, with each feature assessed as *absent/non-compliant, partially present, or fully present and functional*. Reliability and content validity were verified by a PwD

experienced in access auditing of public buildings in Indonesia, reinforcing the tool's credibility for the local context. To ensure systematic coverage, the checklist followed a journey-based sequence, such as *arrival, entrance, circulation, facilities, and exit*, enabling structured assessment of access, amenities, and signage at each stage, with observations documented through annotated photographs and floor plans. This design allows IMAT to generate both qualitative and quantitative evaluations of museum spaces, producing actionable insight for improving inclusivity and advancing UD in practice. All qualitative data subsequently underwent a five-stage analysis, comprising transcription, coding, thematic analysis using NVivo 14, following Braun and Clarke's (2019) framework, pictorial analysis, and cross-case analysis. By triangulating interview transcripts, IMAT-based observational data, and policy documentation review, this study offers a robust, holistic account of the current accessibility landscape in Indonesian museums. This layered methodological approach strengthens the credibility and transferability of the findings, situating the study's recommendations within broader academic discourse on social equity and cultural participation.

ANALYSIS AND DISCUSSION

Findings on Semi-Structured Interviews

Based on thematic analysis of the interviews, three accessibility attributes emerged as follows:

- i. Communication Accessibility
- ii. External Elements
- iii. Internal Elements

These attributes reflect how physical and communicative access significantly shape the experiences of diverse visitors with disabilities. Each attribute provides criteria that highlight the importance of the elements and design considerations necessary for inclusive museum environments.

Communication Accessibility

According to the participants' feedback, five interconnected criteria of communication accessibility in Indonesian museums emerged (see Table 2). These criteria highlight how communication barriers and opportunities shape the inclusivity of cultural participation for PwD.

Semi-structured interview analysis reveals persistent, systemic gaps in inclusive communication and interpretation across both museum sites. Sign language provision was identified as the most significant barrier, cited by all

participants (100%). The absence of institutionalized sign language services indicates a fundamental structural failure, as one participant stated: *“Ideally, all museum guides should be able to serve visitors using sign language”* (P10_JT). Although some initiatives have been reported, these remain sporadic and are not integrated into routine practice. This suggests that accessibility is still primarily viewed as a compliance requirement rather than an essential aspect of the inclusive visitor experience.

Table 1: Attributes and Criteria for Communication Accessibility from Participant’s Feedback

ATTRIBUTES		CRITERIA	
Communication Accessibility	96%	Sign Language	100%
		Inclusive Exhibition Display	80%
		Information	68%
		Digital Communication	68%
		Auxiliary Aids	56%
		Total criteria, n=5	

Physical communication barriers were also prominent. Deficiencies in wayfinding (68%) and interior design, particularly inadequate lighting and lack of visual contrast (80%), compounded the challenges experienced by visitors with sensory disabilities. As one blind participant stated, *“proper lighting and guiding blocks are very important”* (P1_YK). The lack of tactile guides and sufficient sensory cues makes independent navigation nearly impossible, reinforcing systemic exclusion that prioritizes heritage aesthetics over UD principles. Additionally, gaps in auxiliary aids and digital accessibility (56%) contributed to participants feeling marginalised from museum platforms, as one participant remarked, *“it seems we are not the target audience”* (P3_JT). Collectively, these findings indicate that accessibility remains fragmented and insufficiently integrated into museum practice, demonstrating a limited shift from a medical to a social model of disability.

Internal Elements and Inclusive Experiences

Internal elements were identified as the second-most-critical attributes for enabling PwD to access museums independently (see Table 3). Interior design, cited by 80% of participants, emerged as a primary concern. Participants frequently described dark environments and insufficient spatial navigation. For instance, one participant stated, *“museums tend to be dark and frightening”* (P12_JT), while another suggested using *“stronger color contrast, like bright floor markings”* (P1_JT).

Wayfinding (68%) was similarly problematic, with approximately 80% of participants reporting a lack of tactile guides, clear signage, and sufficient

lighting. One blind participant emphasized that *"proper lighting and guiding blocks are very important"* (P1_YK), underscoring the inadequacy of current navigation systems in supporting independent movement for a diverse range of users. Facilities and amenities (76%) revealed critical gaps in basic accessibility, particularly in restroom provision. More than half of participants reported inaccessible toilets, with one wheelchair user stating, *"If the restroom is not accessible, it becomes a significant issue"* (P4_JT). Furniture and exhibit design (36%) further limited inclusive engagement, as physically disabled visitors were often restricted to passive viewing rather than hands-on interaction (P4_JT).

Table 2: Attribute and Criteria for Internal Elements from Participant's Feedback

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ATTRIBUTES		CRITERIA	
Internal Elements	96%	Interior Design Aspects	80%
		Museum Facilities Amenities	76%
		Wayfinding	68%
		Furniture	36%
		Emergency Escape Area	16%
		Total criteria, n=5	

Although less frequently raised, emergency preparedness (16%) remains a concern, with participants noting the absence of evacuation systems and designated assembly points (P5_JT). Collectively, these findings demonstrate a fundamental failure to apply UD principles throughout the museum's internal environment, indicating that safety, dignity, and inclusion remain secondary considerations rather than integrated design requirements.

External Elements Accessibility

External elements accessibility conditions constitute a significant barrier to inclusive museum access, with critical challenges identified in approach infrastructure and entrance design (see Table 4). Disability parking and pedestrian pathways were highlighted as essential yet currently insufficient, as participants noted: *"parking areas must have these marked"* (P3_JT) and *"there should be easy access from the parking lot to the entrance for wheelchair users"* (P2_YK).

Table 3: Attributes and Criteria for External Elements from Participant's Feedback

ATTRIBUTES		CRITERIA	
External Elements	64%	External Approaches and Environment	72%
		Entrance Area	20%
		Total Criteria, n=2	

Unsafe and disorienting pedestrian environments further exacerbated exclusion, with one participant stating, *"it's as if the museum forgot that not everyone walks"* (P4_JT), and another reporting difficulty navigating the approach (P3_JT). Transportation inequalities, reported by 44% of participants, imposed additional constraints, as limited and expensive options restricted independent arrival. The lack of sheltered drop-off zones further reinforced dependency, as reflected in the statement: *"I need help from others just to get from the car to the entrance; I want to be independent"* (P1_JT).

At the point of entry, both physical and service-related barriers persist in ticketing, reception, and circulation areas. Participants identified narrow corridors, uneven surfaces, and non-inclusive service counters as frequent obstacles, emphasizing that *"ticket counters also need to be taken into account"* (P12_JT). One participant mentioned, *"equitable use means I should be able to access the same entrance as everyone else"* (P3_JT), highlighting the disparity between UD principles and current implementation.

Collectively, these findings demonstrate that external and entrance features remain fragmented and insufficiently designed, indicating the need for a systemic transformation that integrates accessibility into national building regulations, institutional accreditation processes, and collaborative audit mechanisms involving PwD, designers, and museum stakeholders.

Internal elements Accessibility

Auxiliary communication aids frequently exhibited structural deficiencies, such as inadequate speaker audibility, excessive sound reflection resulting from the lack of acoustic treatments, and insufficient provision of essential assistive technologies, including infrared listening systems and consistent sign language interpretation. Digital platforms, which are vital for pre-visit planning among most disability groups, also displayed significant deficiencies in both museums. These deficiencies included inconsistent caption accuracy and the use of complex language, both of which substantially hinder accessibility for Deaf. It was echoed by a Deaf participant, who noted the limits of understanding captions: *"...not all deaf individuals have the same level of language proficiency"* (P6_JT). Another Deaf participant emphasised the value of text-based alternatives over reliance on residual hearing: *"clear subtitles or captions on videos and audio guides are really helpful... written text gives me equal access"* (P3_YK). At the institutional level, JHM lacked an operational framework for accessibility. Conversely, FVM showed slightly greater preparedness by offering a wider range of assistive devices and maintaining a stronger digital presence through its website and social media channels.

Crucially, the physical exhibition spaces in both case studies were found to lack comprehensive inclusive design, indicating that access for PwD was

not independent. Shared limitations include minimal or absent tactile interaction, inconsistent placement of small and high-mounted objects, and a universal deficiency in providing alternative label formats such as Braille, audio descriptions, or large print. Interpretive media, including audio-visual elements and interactive displays, frequently lacked descriptive content and were physically inaccessible to wheelchair users.

Although FVM generally provided a more accessible exhibition environment, evidenced by better object placement, contrast in backdrops, and bilingual labels, both institutions require substantial, systematic improvements to ensure equitable engagement across all exhibit elements and to adhere to truly inclusive design principles.

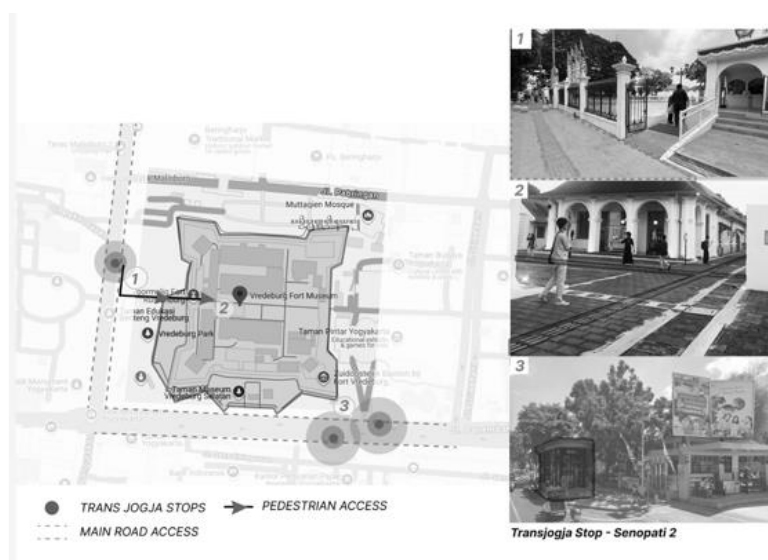


Figure 3: External elements, including provision of pedestrian pathway (1), tactile pathway around the museum (2) and the bus stop close proximity (3) to FVM. Source: Author (2025)

Both museums exhibit significant deficiencies in *external accessibility*, including inadequate infrastructure, insufficient wayfinding, and poorly designed service areas that fail to provide a safe, continuous path of travel. JHM (see Figure 2) is especially limited in accessibility due to non-low-floor buses, long distances to transit points (approximately 300 meters), poorly maintained pathways, damaged tactile paving, and the absence of dedicated visitor parking.

FVM offers marginally better transit proximity and accessible parking within the complex (see Figure 3), supported by a buggy service; however, it still

presents obstacles, including excessively steep ramps, uneven level transitions, and inconsistent drop-off zone markings. Wayfinding at both sites remains insufficient, with an absence of tactile elements, inadequate contrast, and unclear directional signage, resulting in unreliable navigation for sensory-impaired users.

Additionally, entrance and reception areas perpetuate exclusion, as neither location provides lowered ticketing counters, manoeuvring space compliant with accessibility standards, nor companion seating for wheelchair users. Inconsistent and insufficient external lighting further undermines safe navigation and visual communication for Deaf visitors.

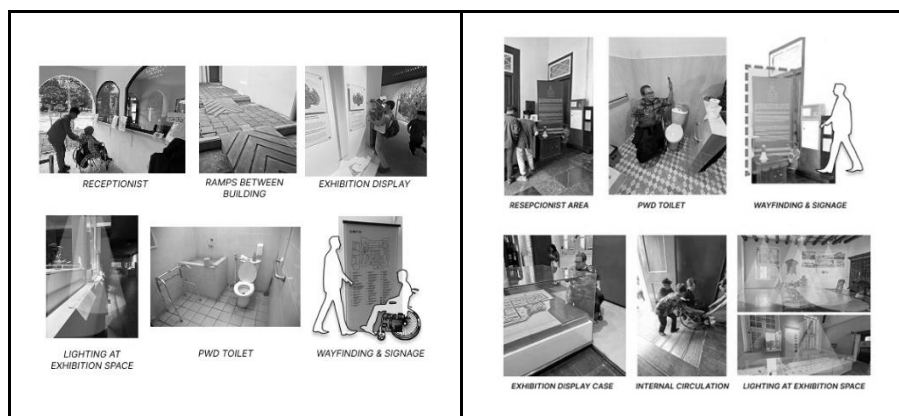


Figure 4: Internal Elements in JHM (left) and in FVM (right). *Source: Author (2025)*

Internal circulation, facilities, and emergency preparedness are substantially non-compliant, restricting independent use, particularly for PwD who require vertical mobility or enhanced safety features. The most significant barrier is the complete absence of accessible elevators at both JHM and FVM, which prevents wheelchair users from independently accessing different museum levels. Ramps at both sites are either retrofitted (JHM) or excessively steep and unmarked (FVM), reducing overall usability. Horizontal circulation is further impeded by cluttered pathways, frequently uneven or slippery flooring, especially at FVM, and a lack of clear wayfinding signage or glass wall markings.

Internal lighting is inconsistent and inadequate and does not support visual communication; the unregulated use of spotlights and strobe lighting may cause sensory distress (see Figure 4, left and right). Museum facilities are severely deficient: PwD restrooms lack compliant turning space and accessible fixtures, such as grab bars, sinks, mirrors, flush mechanisms, and multi-sensory emergency alarms. JHM lacks a lactation room entirely, and both prayer rooms are characterised by inadequate wayfinding and insufficient space. Emergency preparedness is critically inadequate: neither museum provides visible or

accessible evacuation plans, audible or visual (strobe) alarms, reachable fire alarm activation points, or designated accessible emergency exits or refuge areas, which poses significant safety risks for all PwD.

DISCUSSION

The findings demonstrate that museum inaccessibility in Indonesia is systemic, fundamentally contradicting museums' globally recognised role as inclusive institutions serving cultural, social, and educational functions. Solima (2017) identifies physical and communication accessibility as equally essential to an inclusive museum experience, yet evidence from both case studies shows these components remain fragmented and unintegrated in practice. The most significant deficiency lies in communication access: all participants reported a complete absence of institutionalised sign language services, directly contradicting the established importance of human-mediated interaction in museum engagement (Chidiac et al., 2024). Compounding this, limitations in auxiliary aids and digital accessibility further marginalise PwD, illustrated by one participant's observation that museums do not appear to consider them their target audience. Together, these findings point to a systemic failure to implement multimodal interpretation strategies and leverage technology for equitable participation, both central to UD principles (Brischetto et al., 2023; İşlek, 2023).

Analysis of external and internal physical elements reveals a parallel failure to apply UD principles in ensuring safe, independent museum navigation, consistent with Rocha et al. (2022). Externally, unsafe pedestrian pathways and inequitable transportation access violate the principle of seamless connectivity, compelling visitors to depend on external assistance rather than navigate independently. Internally, inaccessible interior design, characterized by dark atmospheres and insufficient visual contrast, fails to meet the sensory needs of diverse visitors, aligning with Wendorff (2023) and Kusuma et al. (2025), while the complete absence of accessible elevators constitutes a fundamental limitation of physical accessibility standards (Zulpiani & Rusyani, 2023). Additional gaps in sanitation facilities and emergency preparedness further suggest that safety, dignity, and inclusion remain secondary rather than primary institutional considerations. Collectively, these findings indicate that Indonesian museums continue to operate within a fragmented, compliance-focused approach that falls significantly short of genuine inclusivity. The *Museum Accessibility Framework* proposed in this study, encompassing physical access across external and internal elements alongside communication access, offers an empirically validated tool to address this gap, underscoring the need to reconcile heritage conservation and inclusive design as complementary institutional imperatives.

These implications extend beyond Indonesia. The IMAT was itself

partly constructed from the Malaysian Standard (MS1184:2014), the barriers identified at JHM and FVM, such as absent sign language provision, non-compliant elevators, and inadequate wayfinding, offer a directly transferable diagnostic lens for Malaysian heritage institutions facing comparable constraints between conservation and accessibility. Many of Malaysia's own heritage museums, housed in colonial-era buildings similar to JHM and FVM, confront the same tension between preservation mandates and UD retrofitting. The proposed framework therefore offers Malaysian planners, heritage agencies, and cultural-tourism authorities an empirical reference for assessing inclusive cultural-space planning across comparable Southeast Asian urban heritage contexts, reinforcing regional efforts toward ASEAN-wide accessible heritage tourism standards.

CONCLUSION

This study demonstrates that Indonesian museums experience systemic, rather than incidental, inaccessibility. To analyse this structural exclusion, the research introduces the *Framework of Museum Accessibility, which comprises three attributes: Communication, External elements, and Internal Elements* (see Figure 5). This framework underscores the importance of balancing efforts to address physical inaccessibility with efforts to enhance communication access.

Physical inaccessibility, often rooted in heritage preservation perspectives, requires a paradigm shift in which accessibility is recognised as enhancing, rather than compromising, cultural value. Achieving this balance requires addressing external barriers, inadequately designed entrances, inaccessible ticketing systems, insufficient pathways, and limited transportation and parking, that hinder access before entry, alongside internal barriers such as unsafe circulation, non-intuitive wayfinding, inadequate lighting, inaccessible restrooms, and insufficient emergency preparedness, all of which compromise safety and the overall visitor experience.

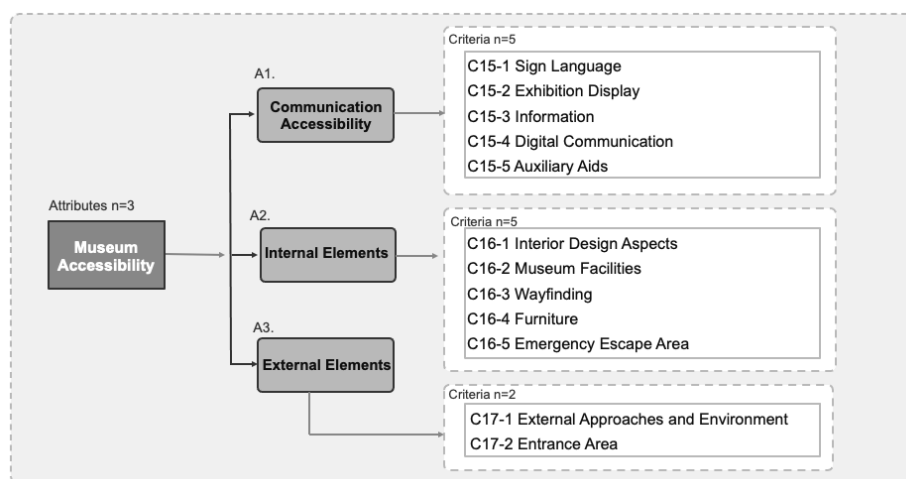


Figure 5: Framework of Museum Accessibility. *Source: Author (2025)*

Simultaneously, genuine inclusivity requires museums to prioritise communication accessibility, ensuring that access extends beyond the physical environment to encompass the interpretation of information. Achieving this demands a comprehensive, collaborative framework that reconciles heritage conservation with inclusion by balancing physical accessibility elements (external and internal) with communication access, guided by user-centred design, inclusive planning, and the active participation of PwD in both design and evaluation processes.

These improvements can be prioritised across three timeframes. Urgently, museums must address the absence of sign language services, the lack of accessible elevators, non-compliant PwD restrooms, and absent emergency evacuation provisions through immediate remedial retrofitting and staff-facing service protocols. In the medium term, attention should turn to wayfinding, tactile guides, lighting and contrast, digital accessibility (WCAG compliance), and auxiliary aids, requiring museum-level design and procurement upgrades over a one- to two-year horizon. Longer term, institutional and policy reform should establish a unified national accessibility standard, mandate museum-specific technical guidelines, and strengthen enforcement and accreditation linkages through coordinated action from the Ministry of Public Works, the Ministry of Education and Culture, and museum accreditation bodies.

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