

Evaluation Study of the Implementation of Accessibility Design for Persons with Disabilities in Shopping Centers in Denpasar, Bali (Case Study of Icon Bali Mall and Matahari Duta Plaza Mall)

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ABSTRACT

The inclusivity of public spaces is an important principle in sustainable development. Shopping centers serve not only as places for economic transactions but also as spaces for social interaction across diverse community groups. Results show that ICON Bali Mall has relatively implemented accessibility facilities though not fully compliant, while Matahari Duta Plaza Mall lacks fundamental facilities such as ramps, accessible toilets, guiding blocks, and designated parking spaces.

Main barriers identified include technical constraints of older buildings, limited budgets, low managerial awareness, minimal community involvement, and weak regulatory enforcement. Findings are expected to provide references for developers, mall managers, and local governments in building more inclusive, equitable, and sustainable urban environments.

INTRODUCTION

Hospitals today are no longer seen solely as health institutions that carry out curative functions, but also as psychological and social spaces that have a significant impact on patient experience and the performance of medical personnel. Hospital interior design plays a dual role: as a means of healing that supports the physical and mental health of patients, as well as a workspace that promotes the efficiency, effectiveness, and safety of medical personnel (Kotler & Armstrong, 2018).

In the context of the construction of modern health facilities, the design orientation is not limited to functional technical aspects such as circulation, zoning, and the fulfillment of safety standards, but also includes the creation of an atmosphere that is able to provide comfort, reduce stress, and strengthen social relationships between patients, families, and healthcare providers. This is in line with the concept of *healing environment* which emphasizes the relationship between the physical and psychological environment in accelerating the healing process (Ulrich et al., 2008).

In addition, recent research shows that hospital environments designed with environmental psychological aspects in mind—such as natural lighting, color, sound, air quality, and spatial layout—can reduce patient anxiety levels, speed up postoperative recovery, and increase patient and family satisfaction (Becker, 2013; Harris et al., 2016). *Patient-centered interior design* not only improves the quality of service, but also has direct implications for the hospital's reputation and the sustainability of its institution.

On the other hand, interior design also has an important dimension for the well-being of medical personnel. A study by Maben et al. (2016) shows that the quality of an ergonomic, comfortable, and safe medical workspace can reduce burnout, increase productivity, and strengthen job satisfaction. Thus, hospitals as healthcare organizations require integration between the aspects of patient healing and the performance of medical personnel through a comprehensive interior design approach.

Furthermore, in the framework of sustainable development, hospitals are also required to adopt environmentally friendly principles (*green hospitals*). This not only includes energy efficiency and sustainable material use, but also relates to the creation of healthy and inclusive space quality for all users (World Health Organization, 2020). Therefore, a modern hospital must be able to combine three main aspects: medical function, psychological well-being, and environmental sustainability.

Based on this description, research related to hospital interior design is very important to be carried out. The main focus of this study is to assess how hospital interior design can have a significant impact on patient comfort, social interaction, and the effectiveness of medical personnel. With this approach, the research is expected to make a theoretical contribution to the development of *evidence-based design* and practical contributions to the design of hospitals in Indonesia that are more humane, efficient, and sustainable.

LITERATURE REVIEW

1. Previous Research on Accessibility for Persons with Disabilities

A number of previous studies have shown that accessibility for people with disabilities in shopping mall buildings is still low in Indonesia.

Zein (2017) found that vertical facilities such as escalators, elevators, and ramps at Bandung Indah Plaza Mall are inadequate. The number is limited, the use is not on target, and not in accordance with applicable standards. The same thing was expressed by Wardany et al. (2017) who researched five shopping centers in Surakarta. As a result, none of the malls have accessible parking areas, while elevators only meet about 54.2% of accessibility indicators, ranging from space dimensions to sound and visual systems.

Studies in other public facilities also show consistent findings. Syuaib and Rohana (2019) examined the prayer room inside the Panakkukang Mall Makassar, and found that most of the facilities, including ramps, handrails, and doors, were not up to technical standards. As a result, the blind have significant difficulty accessing the worship space. Susanto and Sudiro (2018) studied public facilities in Surakarta (government offices, terminals, stations, markets, airports) and found that steep ramps, guiding blocks are not available, and disabled toilets are rarely filled, so people with disabilities cannot access services independently. These findings show that there are regulatory and implementation gaps in the field. Although technical standards have been regulated in the Minister of Public Works and Housing Regulation No. 14/2017, many public facilities, including shopping centers, are still not disability-friendly.

2. Accessibility Regulation

The main legal basis that regulates the rights of persons with disabilities is Law No. 8 of 2016 concerning Persons with Disabilities, which affirms that every person with a disability has the same right to access public facilities without discrimination.

Technically, the Regulation of the Minister of Public Works and Public Housing (PERMEN PUPR) No. 14 of 2017 is the main reference. This regulation sets minimum standards for accessibility facilities, including:

1. Ramp with a maximum slope of 1:12 and handrails on both sides.
2. The door is at least 90 cm wide so that wheelchairs can pass.
3. The disabled toilet is spacious and equipped with hand handles.
4. Elevator with braille button letters, voice indicators, and disability-friendly room dimensions.
5. Disabled parking close to the main entrance.
6. Guiding blocks for the blind with consistent installation standards.

With this regulation, accessibility is no longer an additional option, but a legal and technical obligation that must be fulfilled by every developer of public buildings.

3. Universal Design Theory

The concept of Universal Design was first developed by Ronald L. Mace in the early 1990s as an approach that allows everyone, without exception, to use a space or product without the need for special modifications (Mace, 1991). The seven universal design principles described by Story (2011) include:

1. Equitable Use – Equal use for everyone.
2. Flexibility in Use – Flexibility to suit the needs of diverse users.
3. Simple and Intuitive Use – Ease of use without the need for special skills.
4. Perceptible Information – Clear information, accessible through different senses.
5. Tolerance for Error – Minimizes the risk of harm or error.
6. Low Physical Effort – Reduces the user's physical effort.
7. Size and Space for Approach and Use – Enough space for various body sizes and assistive devices.

The application of this principle in shopping centers allows the creation of an inclusive environment that is friendly to the disabled, the elderly, children, and general visitors.

4. Ergonomics Theory

Ergonomics is a science that studies the interaction between humans, equipment, and the work environment, with the aim of creating a safe, comfortable, healthy, and productive space (Tarwaka et al., 2004). In the context of accessibility, ergonomics emphasizes the importance of:

- a. Suitable movement space dimensions for wheelchairs, canes, or crutches.
- b. The height of the elevator buttons and equipment that everyone can reach.
- c. The quality of lighting, color, sound, and room temperature that supports the psychological comfort of the user (Tanudireja & Solahudin, 2013).

With an ergonomic approach, the design of the shopping mall not only meets technical standards, but also pays attention to the health, comfort and safety of users as a whole.

5. Sintesis

Based on the review of previous research and the theoretical framework above, it can be concluded that the accessibility of shopping centers in Indonesia is still not optimal. National regulations are actually clear, but implementation in the field is often hampered by technical factors, costs, and low awareness of managers. Universal Design Theory and Ergonomics are important conceptual foundations for designing inclusive and humane public facilities, so that all individuals, including people with disabilities, can enjoy equal access.

METHODOLOGY

1. Research Design

This study uses a descriptive qualitative approach with an evaluative method. The descriptive qualitative approach was chosen because it was able to describe the accessibility phenomenon in depth through narrative data, while the evaluative method was used to assess the extent of the implementation of accessibility facilities in accordance with applicable regulations. Thus, this study not only focuses on description, but also on measuring the suitability between existing conditions and the technical standards of PERMEN PUPR No. 14 of 2017 concerning Building Facility Requirements.

2. Research Location

The research was carried out in two large shopping centers in Denpasar City, namely:

1. ICON Bali Mall, which is located in the Sanur area, South Denpasar. This mall will be inaugurated in 2024, so it represents a new building that should have accommodated accessibility standards according to the latest regulations.
2. Matahari Duta Plaza Mall, located on Jalan Dewi Sartika, West Denpasar. The mall has been operating since 1989, long before accessibility technical regulations were enacted, so it is interesting to examine the extent to which the old buildings are able to adapt to modern standards.

The selection of these two locations was carried out purposively because both can represent a comparison of the implementation of accessibility between new and old shopping centers.

3. Research Subjects and Informants

The subject of the study is the physical facilities of shopping centers related to accessibility, such as ramps, disabled toilets, guiding blocks, special parking, elevators, and signage. The research informants consisted of:

- a. Mall managers, as the party responsible for the provision and maintenance of facilities.
- b. Visitors with disabilities, which include wheelchair users, the visually impaired, and individuals with reduced mobility.

The disabled community in Denpasar City, as a group that has collective experience related to accessibility issues in public spaces.

4. Data Collection Techniques

Research data was obtained through several data collection techniques, namely:

- 1) Field observations, to document the actual condition of accessibility facilities in both malls, including ramps, toilets, elevators, guiding blocks, and special parking.
- 2) Visual documentation, in the form of photos and videos that reinforce the results of field observations and serve as empirical evidence.
- 3) In-Depth Interviews, conducted with mall managers, visitors with disabilities, and representatives of the disabled community to explore first-hand experiences related to the use and management of accessibility facilities.
- 4) Literature and Regulation Study, by examining legal documents such as Law No. 8 of 2016 and PERMEN PUPR No. 14 of 2017, as well as previous research on accessibility for people with disabilities in public facilities.

5. Data Analysis

Data analysis was carried out comparatively by comparing the actual condition of facilities in the two malls with the technical standards of PERMEN PUPR No. 14 of 2017. The analysis process includes several stages, namely:

- 1) Data Reduction, which is to select relevant data from the results of observations, interviews, and documentation.
- 2) Data Categorization, which is grouping findings based on accessibility indicators, such as ramps, disabled toilets, guiding blocks, parking, and elevators.
- 3) Data Comparison, which assesses the suitability of field conditions with regulatory technical standards.
- 4) Data Interpretation, which is drawing meaning from the results of the analysis, identifying gaps, and comparing them with universal design theory and ergonomics.

6. Data Validity

The validity of the data is maintained through triangulation techniques. First, triangulation of sources is carried out by comparing information from managers, visitors with disabilities, and the community. Second, the triangulation method was carried out by comparing the results of observations, interviews, and visual documentation. Third, theoretical triangulation is used by associating research findings with universal design theory, ergonomics, and applicable accessibility regulations. With this approach, the results of the research can be accounted for their validity and reliability.

RESULTS AND DISCUSSION

1. Implementation of Accessibility at ICON Bali Mall

ICON Bali Mall as a shopping center that will be inaugurated in 2024 has relatively integrated accessibility facilities in accordance with the Minister of Public Works and Housing Regulation No. 14/2017 (Figure 1).

First, ramp facilities are available at the main entrance. This ramp makes it easier for wheelchair users and the elderly to access the building. However, the measurement results show that the slope of the ramp is not fully up to standard (maximum 1:12), so it still poses obstacles for some users.

Second, disabled toilets are available on several floors with adequate space sizes, equipped with handrails and wheelchair maneuvering space that meet standards. This provides more inclusive access for users with disabilities.

Third, the elevator facilities have been equipped with braille buttons, sound indicators, and a good lighting system, so that they can be used by the visually impaired. However, some users report that the height of the elevator button is still relatively less ergonomic for wheelchair users.

Fourth, guiding blocks are available, but only in the main entrance area and part of the corridor. The installation has not been consistent and does not always lead to important facilities such as toilets or elevators.

Fifth, special parking for people with disabilities has been provided near the main entrance, with a size that is in accordance with the standards. However, supervision of parking use is still weak because it is often abused by non-disabled drivers.

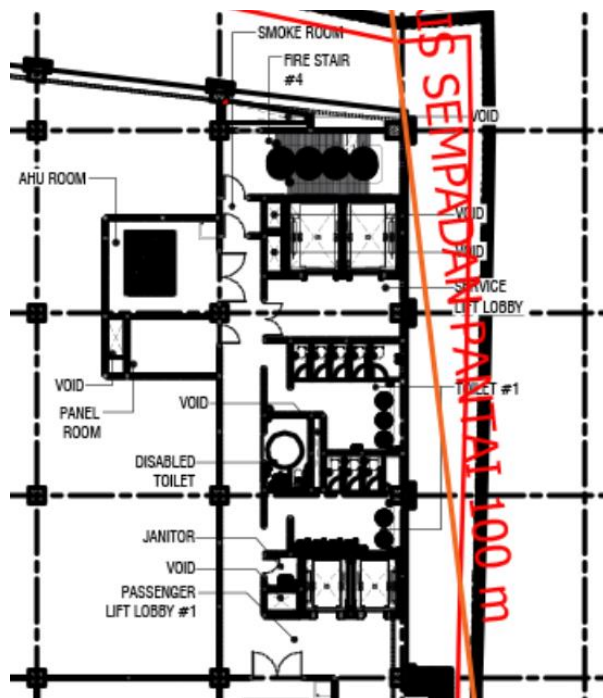
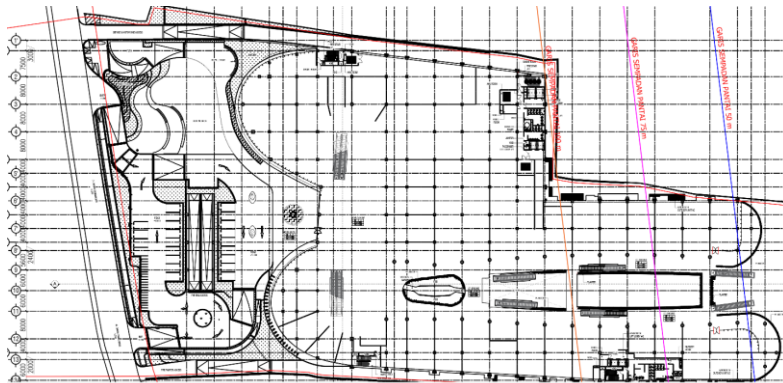


Figure 1. Ramp and Toilet for the Disabled at ICON Bali Mall (Source: Researcher's Documentation, 2025)

2. Implementation of Accessibility at Matahari Duta Plaza Mall

Unlike ICON Bali Mall, Matahari Duta Plaza Mall, which has been operating since 1989, shows conditions that are far from accessibility standards.

1. First, ramp facilities are not available, so wheelchair users have difficulty accessing the main entrance and parking area.
2. Second, special toilets for the disabled were not found, and all public toilets had doors and spaces that were too narrow for wheelchairs.
3. Third, elevator facilities are available, but they are not equipped with braille buttons, sound indicators, or adequate space size. This elevator is designed for general users without regard to the needs of people with disabilities.
4. Fourth, the guiding block is not available at all, so the blind face significant barriers in mobility.
5. Fifth, special parking for people with disabilities is also not provided, making visitors with disabilities have to share with public transportation, which adds to the risk of safety and comfort.

The main problem of this mall is the age factor of the building, where accessibility regulations did not exist when the mall was built. In addition, the limited cost of adaptation and low management awareness are the main inhibiting factors in revitalization efforts.



Figure 2. Parking Area and Entrance of Matahari Duta Plaza Mall without Ramp
 Source: Researcher Documentation, 2025

3. Comparison of Implementation in Both Malls

Based on the results of observations, the following comparisons can be made (Table 1)

Table 1. Comparison of Accessibility Design Implementation for Persons with Disabilities

Facility Aspects	ICON Bali Mall	Matahari Duta Plaza Mall
Ramp	There is (not yet according to the ideal slope)	None
Toilet difabel	Available (as per standard)	None
Elevator	Available (with braille buttons)	There is, not accessible
Guiding block	There are some	None
Dedicated parking	Exist	None

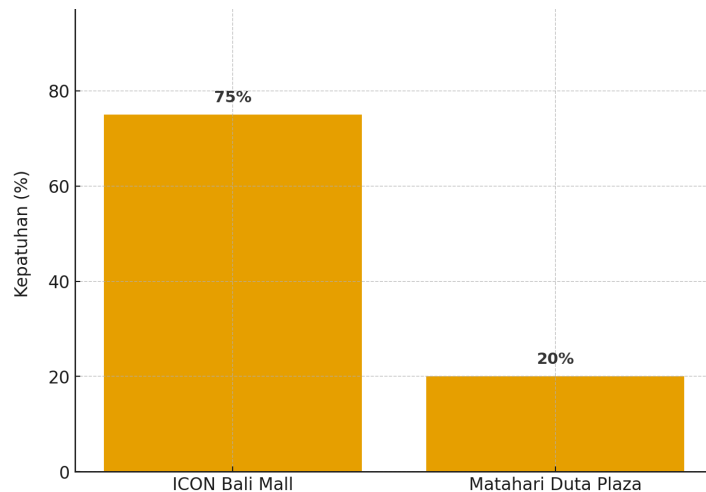


Figure 3. Compliance Rate with Accessibility Standards (%) at ICON Bali Mall and Matahari Duta Plaza Mall

From the graph, it can be seen that ICON Bali Mall has met around 75% of accessibility standards, while Matahari Duta Plaza Mall is only about 20%, indicating a large gap between new and old buildings.

4. Social Implications

The results of this study have important social implications.

At ICON Bali Mall, the availability of relatively good accessibility facilities makes this mall more friendly to people with disabilities, the elderly, and foreign tourists. This enhances Denpasar's image as an inclusive-oriented city and supports sustainable tourism.

On the contrary, the conditions at Matahari Duta Plaza Mall are a reflection of the delay in adapting the old building to accessibility regulations. The absence of basic facilities has the potential to cause access discrimination for people with disabilities, as well as reduce the competitiveness of malls in attracting consumers with special needs.

By broader implications, this study confirms that accessibility is not only a technical issue, but also a social justice and human rights issue. The implementation of good accessibility design can strengthen the participation of people with disabilities in public spaces, while its failure actually deepens social exclusion.

CONCLUSION

Based on the results of research and analysis conducted on two shopping centers in Denpasar City, several important conclusions can be drawn as follows:

1. *Implementation of Accessibility at ICON Bali Mall.* ICON Bali Mall as a new shopping center has relatively implemented a number of accessibility facilities, such as ramps, disabled toilets, elevators with braille buttons, guiding blocks, and special parking. However, some facilities have not fully met the technical standards stipulated in the Ministerial Regulation of PUPR No. 14/2017, such as the less than ideal ramp slope and inconsistent placement of guiding blocks. This shows that there is a gap between implementation in the field and normative standards.

2. *Implementation of Accessibility at Matahari Duta Plaza Mall.* Matahari Duta Plaza Mall, as an old building that has been operating since 1989, has not met most of the accessibility requirements. Ramps, disabled toilets, guiding blocks, and special parking are not available, while the existing elevators are not disability-friendly. This condition shows the weak adaptation of old buildings to the demands of new regulations, as well as limitations in revitalization efforts.
3. *Implementation Obstacle Factors.* Obstacles in the implementation of accessibility design are influenced by several main factors, namely the technical limitations of old buildings, high adaptation costs, low awareness of mall managers, and weak government supervision of regulatory implementation. These factors together create a significant gap between accessibility standards and real practice in the field.
4. *The Meaning of Accessibility in Urban Development.* Accessibility is not only a technical issue, but also concerns aspects of compliance with regulations, urban development politics, and the image of Bali as an international tourist destination. Disability-friendly shopping malls not only fulfill the human rights of people with disabilities, but also strengthen the attractiveness of Denpasar as an inclusive and sustainable city.

RECOMMENDATIONS

Based on these conclusions, this study provides a number of strategic recommendations addressed to various stakeholders:

1. *For the Government.* Local governments need to strengthen the monitoring mechanism for the implementation of accessibility regulations, both in new and old buildings. In addition, it is necessary to develop incentive policies, such as levy deductions or funding support, for managers of old buildings who revitalize facilities to meet accessibility standards.
2. *For Mall Managers.* Shopping center managers are advised to conduct regular facility audits to ensure the sustainability of the implementation of accessibility standards. In addition, it is important to involve the disability community in the planning and evaluation process, so that the resulting design is truly in line with the needs of the user.
3. *For Academics and Researchers.* Academics in the field of architecture, design, and urban planning need to expand their research on accessibility in other public buildings in Bali, such as hospitals, terminals, schools, and government offices. The results of the research can be the basis for *evidence-based policies* for the government and practical references for developers in creating inclusive public spaces.

Thus, this study emphasizes that accessibility is a multidimensional issue involving technical, social, regulatory, and political aspects. Improving accessibility in shopping centers in Denpasar is expected to not only improve the quality of public services, but also strengthen Bali's commitment as an inclusive, disability-friendly, and sustainable development-oriented area.

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