

## The Need for Accessibility of Public Infrastructure for People with Physical Disabilities in Pelambuan, Banjarmasin City

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**Abstract:** This research's background is from the needs of people with disabilities in Pelambuan regarding the accessibility of public infrastructure. The large number of physical disability people in Pelambuan who experience mobility difficulties demands an inclusive area. The need for accessibility of public infrastructure includes: pedestrian paths, parking areas, stairs and ramp for physical disabilities must be well provided. The purpose of this research in Pelambuan is to determine accessibility of public infrastructure for physical disability, such as pedestrian paths, parking areas, stairs and ramps. This research type is quantitative descriptive. The data sources are 50 people with physical disability and 10 non-disabled people. Data collection techniques in this research are questionnaire, observation & documentation. The validity of the data using source triangulation techniques & method triangulation. Data analysis techniques consist of data collection, data reduction, data presentation & conclusions. The results of this research showed that public infrastructure in Pelambuan is less accessible for physical disabilities, because it comes out with 55,4%. The condition of pedestrian paths in Pelambuan still bumpy, there are no handrails, broken stairs, broken resting seat, broken guiding block and there is no ramp. Pelambuan doesn't have parking area for disabilities people. The stairs are not fully accessible yet because some of stairs are already fragile, slippery material, the height of the stairs is not up to ideal standards for accessibility. Then, majority of ramps are steep and have no handrails.

**Keywords:** Accesibility; public infrastructure; physical disabilities.

### INTRODUCTION

The concept of inclusivity is becoming an international concern, including Indonesia. Miller & Katz (2009) define inclusiveness as a condition that ensures the meaningful involvement of all people (without discrimination) both as objects and subjects, and this involvement is not just to avoid conflict so as to make individuals or groups have a sense of belonging and motivation to contribute. The concept of an inclusive city has sprung up in various regions of Indonesia and has become a hot conversation, but the concept and academic studies on inclusive cities have not been touched deeply. There is still a lot going on in the ground, cities that are referred to as inclusive cities do not yet have an established concept of inclusivity. Standard Rules on Equal Opportunities for Persons with Disabilities (A/RES/48/96) identify accessibility of the physical environment and information and communication as two target areas to ensure equal distribution of rights or opportunities. Inclusive city development can be understood through the meaning of the words "development" and "inclusive" itself. Development is a process to encourage the improvement of community welfare in a broad sense, not only from the economic side, but also from the social, political, and health side (Kanbur & Rauniyar, 2009).

The government should implement this inclusive concept by creating accessible infrastructure to ensure access for people with disabilities, the same as others, for the physical environment, transportation, for information and communication, information and communication system technology, facilities and other services that are open or available to the public, both in urban and rural areas (KotaKita, 2019). One of the cities that is claimed to be an inclusive city is Banjarmasin. Banjarmasin is included in South Kalimantan Province, Indonesia. Banjarmasin covers an area of 98.46 with 662,230

registered residents as of 2021. With a population density of 6,727 people, Banjarmasin is the most populous city on Kalimantan Island (KotaKita, 2019). There are five sub-districts in Banjarmasin, namely South Banjarmasin, East Banjarmasin, West Banjarmasin, North Banjarmasin and Central Banjarmasin. Pelambuan is one of the village that is part of West Banjarmasin. Pelambuan has an area of 212 Ha with 4 hamlet and 72 neighbourhood. In Pelambuan there are 131 people with physical disability, meaning that Pelambuan should have become a disability-friendly place and have accessible public infrastructure for them because of the large population of people with disabilities there.

This research discusses the need for accessible of public infrastructure for people with disabilities in Pelambuan Village, Banjarmasin City by focusing on the types of physical disabilities with the classification of ambulant disabled. Karyana & Widati (2013: 32) stated that the condition of disability is someone who has difficulty optimizing bodies part function as a result of injury, disease, misformed growth and as a result the ability to perform certain body movements decreases. This condition ultimately results in people with disabilities needing accessibility to help and facilitate them in their daily lives when using public infrastructure. Utomo (2019) Accessibility entails making it possible for persons with disabilities to live independently and participate fully in all aspects of life. Meanwhile persons with disabilities who have physical-motor disabilities in Pelambuan revealed that their experience in accessing public infrastructure still feels that the need for public infrastructure has not been met so that it is inaccessible. It is this opinion that ultimately becomes the problem in this research, what is the need for public infrastructure which includes; pedestrian paths, parking areas, stairs, ramps and guiding blocks. So that this research is useful in providing input to policy makers in providing public infrastructure for persons with physical and motor disabilities.

There is one relevant research related to this problem, research from Pujianti (2018) entitled "Accessibility of Public Space for the Disabled in Pangkalpinang City". The study produced two points, including: First, some public spaces in Pangkalpinang City do not yet have accessibility for people with disabilities. Second, the condition of some public spaces has accessibility infrastructure for the disabled, but it is not good enough. Based on one of the relevant studies, it can be seen that people with disabilities need accessibility needs that must be fulfill in public facilities and infrastructure in a place. Especially for people with disabilities, this is because they experience obstacles in physical-motor aspects that have a significant impact on their movement or mobility to use public infrastructure. As mentioned in Regulation of the Minister of Public Works and Housing of the Republic of Indonesia No. 14 Year 2017 on Building Facility Requirements, accessibility is a convenience provided for all people to realize equal opportunities in all aspects of their lives and livelihoods. Another article in regulation before states that barrier free is the condition of buildings and environments without physical, information, and communication barriers so that everyone can reach and utilize the building and its environment safely, comfortably, easily and independently. The Division for Social Policy and Development also revealed that accessibility is a prerequisite for the full realization of the rights and involvement of people with disabilities in society and development (Darmadi, 2021). Then, KotaKita (2021) defines public infrastructure as accessible public facilities including access to information and communication, access to buildings and other public facilities. Thus, accessibility is the ease and comfort for all levels of society in using a facility and infrastructure, including for people with disabilities. This means that the government has actually established official regulations that discuss the accessibility of public infrastructure for non-disabled people and people with disabilities such as physical disabled, it is appropriate for the principles of accessibility in public infrastructure to be

applied. Nurhakim (2022) services in places of worship to facilitate the worship procession for disabled groups included access roads to places of worship, toilets, location directional signs, wheelchairs, and braille. This service is a standard requirement for a disability-friendly public building. It remains only to see how the implementation of these regulations is enforced in each region. It remains only to see how the implementation of these regulations is enforced in each region.

Based on this phenomenon, researchers are interested in digging deeper information as outlined in research entitled "The need for accessibility of public infrastructure for physical disabilities in Pelambuan, Banjarmasin City".

## METHOD

Researchers used a quantitative approach in carrying out this research. Creswell (2009) states that quantitative research is a method to test certain theories by examining relationships between variables. Where variables are usually measured with research instruments so that data consisting of numbers can be analyzed based on statistical procedures. Thus, the quantitative approach uses numbers to describe the condition of the research problem based on the data collected by the researcher.

The type of research used is descriptive, quantitative descriptive research is research that aims to descriptive systematically, factually and accurately about the facts and nature of certain populations or try to describe phenomena in detail (Lehmann, in Yusuf 2014: 62). Thus, researchers chose descriptive quantitative to be used with the intention of obtaining information and describing systematically about a fact how accessible public infrastructure needs for the disabled in the Pelambuan of Banjarmasin City, South Kalimantan Province. The research was conducted in Pelambuan, Banjarmasin City because the number of persons with physical motor disabilities was very large, amounting to 131 people. The subjects used in this research were the community in Pelambuan and related stakeholders, which 10 non-disabled residents and 50 disabled resident (physical disability). The selection of the subject of this study is certainly to examine more deeply and find out a valid data sources regarding the need for accessible of public infrastructure for the disabled in Pelambuan Village, Banjarmasin City. Then, the place of research used is in Pelambuan, Banjarmasin City, South Kalimantan Province, Indonesia. Data collection techniques used by researchers are questionnaires, observation and documentation. Data validity techniques used by researchers are triangulation of sources and methods.

## RESULTS AND DISCUSSION

### Result

This study aims to determine the accessibility needs of public infrastructure for people with physical disability in Pelambuan, Banjarmasin. The results showed that public infrastructure in Pelambuan was still less accessible for the disabled by 55.4%. This category can be seen from the results of questionnaires filled out by 60 people consisting of 50 physical disability and 10 non-disabled people as in Table 1.

**Table 1.** Accessibility of Public Infrastructure for Physical Disability (Pedestrian Paths, Parking Areas, Stairs and Ramps)

<i>No.</i>	<i>Questions</i>	<i>VG</i>	<i>G</i>	<i>A</i>	<i>D</i>	<i>VD</i>
1	Does the surface of the pedestrian path flat and non-slippery?	-	-	58%	42%	-
2	Does the surface of the pedestrian path made of strong material?	-	27%	73%	-	-
3	Is there a resting area on the pedestrian path?	-	-	27%	73%	-

<i>No.</i>	<i>Questions</i>	<i>VG</i>	<i>G</i>	<i>A</i>	<i>D</i>	<i>VD</i>
4	Is there a guiding block on the pedestrian path?	-	-	8%	92%	-
5	Is there a ramp on the pedestrian path?	-	-	48%	52%	-
6	Does the pedestrian path fulfill the principle of convenience?	-	8%	92%	-	-
7	Does the pedestrian path fulfill the principle of safety?	-	-	25%	75%	-
8	Can pedestrian paths be used independently by physical disabled people?	-	-	17%	83%	-
9	Is there a parking area for disability people?	-	-	42%	50%	8%
10	Is there a ramp in parking area?	-	-	17%	83%	-
11	Does the parking area fulfill the principle of convenience?	-	-	-	83%	17%
12	Does the parking area fulfill the principle of safety?	-	-	-	83%	17%
13	Can the parking area be used independently by physical disabled people?	-	-	-	83%	17%
14	Is the staircase surface flat and non-slippery?	-	-	75%	25%	-
15	Is there a handrail on the stairs?	-	-	75%	25%	-
16	Are the steps made of strong material?	-	33%	32%	35%	-
17	Does the stairs fulfill the principle of convenience?	-	32%	25%	43%	-
18	Does the stairs fulfill the principle of safety?	-	-	25%	75%	-
19	Can the stairs be used independently by physical disabled people?	-	-	25%	75%	-
20	Is there a handrail on the ramp?	-	8%	83%	8%	-
21	Is there a borders on the ramp?	-	33%	25%	42%	-
22	Is the ramp not steep?	-	-	42%	58%	-
23	Does the ramp fulfill the principle of convenience?	-	-	58%	42%	-
24	Does the ramp fulfill the principle of safety?	-	-	17%	83%	-
25	Can ramp be used independently by physical disabled people?	-	-	17%	83%	-

Description:

VG : Very Good

G : Good

A : Average

D : Deficient

VD : Very Deficient

The results of research on pedestrian paths in Pelambuan are known to be inaccessible for the physical disability because there is only one pedestrian path with bumpy road conditions, no handrails, broken stairs, seats to rest that already broken, no drainage and no ramp.

## Discussion

The results of research on public infrastructure on pedestrian paths in Pelambuan show that there are still general conditions that are not specifically made for people with physical and motor disabilities. In Regulation of the Minister of Public Works and Housing of the Republic of Indonesia No. 14 Year 2017 which mentions accessible pedestrian paths, namely the surface of the pedestrian path must be stable, strong, weatherproof, and not slippery, the use of joints or bumps on the surface needs to be avoided (if forced to have a height of no more than 1.25 cm), slopes of the width of the pedestrian path maximum 2° and the slope of the long side of the pedestrian path maximum 5°, Every 900 cm distance of pedestrian path can be equipped with seating to rest, provided drainage is made perpendicular to the path with a depth of at most 1.5 cm. Pedestrian path

accessibility means ensuring that pedestrian paths can accommodate users of different ages and from different physical abilities, including people with disabilities. In the book of *Guidelines for Technical Planning of Pedestrian Facilities (2018)* states that accessible pedestrian paths for the blind require special information on the surface of pedestrian paths called guiding blocks. Then, for pedestrians who experience mobility barriers with wheelchair aids and for other wheeled users such as strollers, ramps are needed (Western Australia Department of Transport, 2011).

Parking Area, there is no disability parking area in Pelambuan which of course also has no disability parking sign and does not have a ramp. In contrast to the quote of the theory that mentions accessible parking areas for the disabled, namely the location of the parking area should be easy to reach and supervise, equipped with clear directions and markings and not hidden, the parking area for people with disabilities must be placed on the closest lane to the intended building/facility with a distance of no more than 60 m from the entrance, must have sufficient free space for wheelchair users to enter / exit their vehicles, given a symbol of a parking sign for people with disabilities with contrasting colors and signs to distinguish it from public parking area, has a width of 370 cm for single parking and 620 cm for double parking and is connected to a ramp or road to a building or other facility, placed on a flat surface with a maximum slope of 20 degrees. There should be at least 1 parking area that is specifically for people with disabilities (Wardany, et al., 2017). Another policy that contains parking area accessibility standards is contained in Minister of Public Works Regulation No 30 Year 2006, where the distance of the parking area to the building is a maximum of 60 m, marked with a symbol of disability, maximum slope 2°, single parking has a width of 320-360 cm, double parking has a width of 620 cm and has a circulation of 120 cm in the middle (Wicaksono, et al., 2020).

The results of research about stairs obtained by researchers showed different answers. Some consider the stairs in some public infrastructure to be accessible, but there are also those who consider it not yet accessible. Actually, some existing stairs are not fully accessible because there are still requirements that have not been fulfilled such as some of them do not have a minimum handrail on one side, the condition of the stairs is fragile, the height of the stairs is not up to ideal standards. Viewed from the accessibility stated in Regulation of the Minister of Public Works and Housing of the Republic of Indonesia No. 14 Year 2017, namely the height of the steps (optride / riser) is no more than 18 cm and not less than 15 cm, the width of the stairs is at least 30 cm, stairs with open steps are not recommended for use, the steps use non-slippery material and the edges are given anti-slip material (step nosing), the slope of the general staircase should not exceed an angle of 35°, equipped with continuous handrails and stair railings for safety and in each section, the handrail must meet ergonomic standards that are safe, comfortable to grip and free from sharp and rough surfaces, the shape of the handrail profile must be easy to grip with a cross-sectional diameter of at least 5 cm. Then, Kurniawan (2014) also mentioned that stairs must be designed to provide comfort and safety for users, in accordance with regulations, the height of comfortable stairs is a maximum of 17.5 cm while the width of the steps is 30 cm. This allows parents, children, and crutch users to get up and down with the power they have. In addition, the maximum number of steps before the border/floor is kept to no more than 11 steps (the number considered as the end point of comfort climbing stairs).

The results of this research about ramps in Pelambuan show that most of the ramps in Pelambuan are not yet accessible for physical disability people. This is because the majority of ramp conditions are not gentle or still steep and there is no handrail. Meanwhile, it is clearly stated in Regulation of the Minister of Public Works and Housing

of the Republic of Indonesia No. 14 Year 2017 that the accessible ramp has an effective width that must not be less than 95 cm without a safety edge / canteen (low curb) and 120 cm with a low curb edge, the lowest safety edge has a height of 10 cm which functions as a retainer for wheelchair wheels so as not to fall out of the ramp, flat surface ramp prefix and suffix must be textured, not slippery, equipped with warning tiles and have at least the same surface length as the width of ramp which is 120 cm, each ramp with a length of 900 cm or more must be equipped with a flat surface (bordes) as a resting place, ramp must be equipped with 2 layers of continuous handrails on both sides with a height of 65 cm for children and 80 cm for adults, The handrail must fulfill ergonomic standards that are safe and comfortable to hold and free from sharp and rough surfaces, ramp on the pedestrian path has a width of at least 120 cm with a maximum slope of 6°. The same thing is mentioned that an accessible ramp must have a maximum slope of 6° (if outside the building) and a maximum of 7° (if inside the building), the flat surface of the ramp prefix or suffix must be textured so that it is not slippery, and must be illuminated with sufficient lighting so as to help ramp users at night (Hasanah, 2017). The results of the study with the theory are inversely proportional, most of the ramps in Pelambuan are still not accessible because they are still too steep so they do not match the accessibility criteria for physical disability.

Accessibility of public infrastructure in other words is the ease and comfort for all levels of society in using a public infrastructure. Accessibility is indispensable for physical disability. The condition of people with physical disability who experience obstacles in mobility usually encounters public infrastructure that is only set for ordinary people who do not experience obstacles. People with disabilities who only have one leg, for example, in order to be equivalent to using sidewalk facilities, the sidewalk needs to be modified so that it can be passed by people with disabilities and also requires the help of tools as a substitute for their legs that do not exist (Jefri, 2016). The provision of public facilities that accessible for people with disabilities is a form of implementation of services to all levels of society that are fair, quality and without discrimination (Murdiyanti, 2012). So, all should be able to use infrastructure safely, comfortably and easily, even for young children, parents or the elderly, men, women and especially for people with disabilities who do need their own special needs. Likewise for people with physical disability who have obstacles in their physical-motor aspects. People with disabilities need the accessibility of public infrastructure that must be fulfilled so that they can move and use public infrastructure with feeling safe, comfort and independence.

## **CONCLUSION**

Based on the results of this research, it can be concluded that the Public Infrastructure of Pelambuan was less accessible to people with physical disabilities, which is 55.4%. The condition of the pedestrian path in Pelambuan is still bumpy, there are no handrails, broken stairs, broken resting seats, broken guiding blocks and there is no ramp. The pelambuan does not have a parking area for people with disabilities. The stairs are not yet fully accessible because some stairs are already fragile, slippery materials, the height of the stairs does not meet ideal accessibility standards.

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