

LEVEL OF SERVICE ANALYSIS OF PEDESTRIAN FACILITY IN SPORTS COMMUNITY AREA MAJALENGKA-WEST JAVA

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ABSTRACT

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The location has many pedestrians, such as recreational areas, and encompasses various activities ranging from commerce to sports. This research aims to understand the perceptions or voices of pedestrians, particularly visitors to Gelanggang Generasi Muda Majalengka. The research methodology is quantitative, utilizing a questionnaire that gathered responses from 50 residents of Kabupaten Majalengka who have frequently engaged in activities and visited Gelanggang Generasi Muda (GGM) Majalengka. The questionnaire data was filled out by 50 respondents exhibiting diverse characteristics, with the majority being students residing in Majalengka. The comparison of the importance and performance levels reveals a minimal GAP, which can be considered insignificant, demonstrating respondents' satisfaction with pedestrian support facilities. Based on the results from the Importance Performance Analysis (IPA) method graph, it can be concluded that two facilities, Stop Facilities (A8), Cleanliness and Trash Facilities (A6), and Disability Facilities (A9), require priority attention for improvement.

1. Introduction

According to the findings of a study published in the journal Nature by researchers from Stanford University in the United States, Indonesia is one of the Asian countries that is too lazy to walk (Pelangie, Rifai, & Yudhistira, 2022). The results of this research are not something to be proud of for our country. Indeed, this starkly contrasts several developed countries that have implemented and tightened regulations by restricting private vehicle usage, resulting in many pedestrians. Consequently, many positive impacts are felt in those advanced countries that dare to enforce these rules. One of them is the minimal pollution produced by vehicles. The urgency of everyone also influences this, but walking is repositioned as the potential to 'ease the position,' which reflects social, physical, and individual factors of inequality in walking (Massingue, 2021)

Walking is an essential mode of transportation, and the movement of pedestrians remains a significant component of today's urban transportation networks (Feng, Duives, Daamen, & Hoogendoorn, 2021). In our country, people are very reluctant to avoid using vehicles for long-distance or short-distance travel. Based on the research results by a researcher from Stanford University, United States of America, published in the Journal of Nature, Indonesia is one of the Asian countries that are lazy to walk. The study stated that Indonesian citizens only walk 3,513 steps daily, while the global average is 5,000 (Budiyanto, Priyomarsono, Trisno, & Lianto, 2020). The impact of the high vehicle pollution caused by the overwhelming number of vehicles indirectly leads to traffic congestion. However, pedestrians are usually found only in specific areas such as tourist spots, shopping districts, recreational areas, and so on. Undoubtedly, this represents progress for our country, and the government must maintain this momentum by implementing a system that yields satisfactory results.

The impact of people walking includes health benefits and the potential to create positive effects on the traffic conditions in the area. The presence of pedestrians does not necessarily mean that the area prohibits or lacks private vehicles passing through. However, for short to medium-distance travel, walking or using public transportation can be encouraged to minimize the concerns mentioned earlier. The location of structural elements in urban areas is also influenced by the distance of pedestrian access (Küçükyağcı & Özgün, 2018). Before making statements encouraging walking for low to medium-distance travel, the government must ensure the availability of adequate facilities to achieve the effectiveness and efficiency of such regulations.

Locations with many pedestrians, one of which is recreational areas, consist of a wide range of activities, including trade and sports. Walking can support the mode shift from private to public transport (Wibowo & Nurhalima, 2018). One of the places in Majalengka that falls within the recreational area is the "Gelanggan Generasi Muda Majalengka," located in the urban area of Majalengka. This place attracts many visitors in the morning and afternoon until the evening. Various activities occur here, such as playing, exercising, trading, etc. Especially on weekends, the place gets extremely crowded, to the extent that it can disrupt the traffic conditions in the surrounding area. The pedestrian facilities in this area are also quite suitable for use.

External factors, namely from tangible manifestations, can be felt by users of the pedestrian facilities themselves, for example, the conditions of the construction of pedestrian facilities, the influence of the speed of the surrounding vehicles, and the availability of separate vehicle lanes (Raji, 2021). The pretty suitable or adequate facilities serve as parameters for the comfort and safety of pedestrians in this area. This research aims to understand the perceptions or voices of pedestrians, specifically Gelanggan Generasi Muda Majalengka visitors. The author hopes that the results of this feedback can be shared with the local government for evaluation, particularly in identifying any lacking facilities in this area.

2. Literature Review

2.1 Pedestrian

Pedestrians are individuals who travel on foot and do not use any form of motorized transportation. The level of service is also influenced by traffic factors, the condition of road facilities, and environmental factors (Shu, Bian, Zhao, Rong, & Liu, 2021). In several developed countries, pedestrians are not confined to specific areas; rather, people often choose to walk instead of using private vehicles for short to medium-distance travel. This choice has significantly positive impacts, both physically and mentally.

Certainly, this is rarely found in Indonesia. Indonesian society tends to prefer using private vehicles even for medium-distance travel, and for short distances, many still rely on private transportation. As a result, there are many negative impacts currently felt by the Indonesian population. In fact, Indonesia is among the countries with the highest levels of pollution in the world. To operate successfully in the presence of pedestrians, autonomous vehicles require input from a huge variety of models that have to work seamlessly together (Camara, et al., 2020)

The government should promptly conduct an evaluation regarding this matter to minimize the negative impacts that are detrimental to the community. The importance of such regulations can also prevent and minimize traffic problems that frequently occur in large cities. The government must make informed decisions to ensure that the public experiences the positive impacts. Some studies on public transportation show that walking is the primary mode and the most accessible mode for a person to be able to access other modes of transportation (Ignaccolo, Giuffrida, & Torrisi, 2019).

Thus, if these regulations are enforced, the community can experience the benefits. However, it is crucial for the government to also pay attention to pedestrian facilities to ensure a sense of safety and comfort

for those on foot. Security, comfort, and convenience are systems needed so that pedestrians can walk comfortably (Rifai, Akhir, Isradi, & Mufhidin, 2021).

2.2 Sidewalk

The road sidewalk, or sidewalk, is a facility and infrastructure used by pedestrians located at the edge of the road. The sidewalk is part of the highway but has a height difference to distinguish the sidewalk from the highway being one of the guarantees of security and safety for pedestrians from the danger of friction with motorized vehicles (Johanes, Dermawan, Isradi, & Rifai, 2022). Sidewalks must be designed in accordance with the number of pedestrians to anticipate the density of foot traffic on the sidewalk. This way, it will provide safety and comfort for pedestrians using the sidewalk.

Infrastructure like sidewalks often goes unnoticed by the Indonesian government. Many sidewalks have relatively narrow dimensions, causing discomfort for pedestrians using them. Additionally, adequate sidewalks are often limited to specific locations, such as recreational areas or shopping districts. It's not uncommon to find sidewalks in these places that are insufficient in terms of size. To promote pedestrian safety, municipal agencies need to focus on public convenience through the provision of need-based infrastructure, especially suitable for the elderly (Haghighi, Nadrian, Sadeghi-Bazargani, Hdr, & Bakhtari Aghdam, 2020).

It is also an unpleasant sight when sidewalks, primarily intended for pedestrian infrastructure, are frequently used as spaces for street vendors. This occurrence is not only prevalent in large cities but is also commonly found in smaller towns. The government is certainly aware of such incidents. The enforcement carried out by the Public Order Agency (Satpol PP) is a manifestation of the government's responsibility for the comfort of pedestrians. Therefore, transportation infrastructure must be utilized at any time so as not to lose its function (Rifai, Ramadhan, Isradi, & Dermawan, 2021).

2.3 Community Activity

Pedestrian mobilization for pedestrians in the city environment is the key to the sustainability of social and economic relations, which are essential for improving and maintaining the quality (Marisamynathan, 2018). From a social perspective, many people believe that it is essential to engage in the distribution and consolidation of empty or underutilized areas. Activities such as eating, working, resting, shopping, and even selling occur in several places that are considered related to their social function (Lamprecht, 2020). Therefore, the social function of having pedestrians will generate economic and social activities for the surrounding community (Christine, Rifai, & Handayani, 2022).

Pedestrian and cyclists are the most vulnerable road user as they account for 26% of the total road accident related fatalities in World (Kathuria & Vedagiri, 2020). A place with numerous group activities certainly has its own allure. This attraction can take various forms, including historical significance, topography, beauty, and more. A city full of history plays a vital role in maintaining history, historical dimensions, clarity of mind, and the form of urban structures, which have implications for social, cultural, and economic aspects of community activities (Mehanna, 2019). A city with its own history plays a crucial role in the progress and beauty of a region.

This also falls into the category of beauty that enhances the appeal of a city. Moreover, with additional attractions in other aspects, it can draw the interest of individuals or groups to engage in activities in that area or city. Furthermore, having dedicated spaces for sports in the city center is particularly appealing to sports enthusiasts, as health is a significant concern for various community activists. Healthy community is an important foundation for building a healthy city and residents' health. World Health Organization research shows that the influence of personal behavior and lifestyle accounts for about 60% (the highest) of their health (Yang, Sun, Huang, & Fang, 2022)

3. Method

The research method employed in this study is quantitative research. Quantitative research is a methodology that relies on numerical data in its process. In any research, data is essential to support the research activities. The types of research data are divided into two categories: primary and secondary. In this study, primary data is required as the core data, while secondary data serves as supporting information for the research.

In the urban area of Majalengka, there are several centers of community activities, one of which serves as a recreation hub for the residents. There are several recreational places in this urban area, such as the Gelanggang Generasi Muda (GGM) Majalengka. This area is strategically located, surrounded by shopping districts and educational institutions in the urban zone. Besides being a recreation spot, it often becomes a center for snacks and sports activities like jogging.



Figure 1. Research Location

Primary data used in this research takes the form of questionnaire data. The questionnaire data requires 50 respondents who are residents of Kabupaten Majalengka and have engaged in activities and visited Gelanggang Generasi Muda (GGM) Majalengka. In addition to primary data, secondary data is also needed, such as the population data of Kabupaten Majalengka, which aims to validate the questionnaire data.

The author will use the Importance-Performance Analysis (IPA) method to process the questionnaire data. This method is employed to compare performance and importance levels based on the distributed questionnaires. Additionally, there will be recommendations to improve the effectiveness and efficiency of facilities considered essential for supporting pedestrians. The variables used will be based on the Technical Planning Guidelines Pd-03-2017, which will be listed in the table below.

Table 1. Parameters the research

No.	Variable	Source
1	Pedestrian Width	Pd-03-2017 Technical Planning Guidelines
2	Pavement Surface	
3	Lighting	
4	Shielding/Shading Facilities	

5	Seating Facilities
6	Cleanliness and trash facilities
7	Crossing Zone Facilities
8	Stop Facilities
9	Disability Facilities
10	Curb Condition

4. Result and Discussion

4.1 Characteristics of Respondent Data

Data from the questionnaire was obtained with a total of 50 respondents. Most respondents were less than 20, constituting 44% of the sample. Most of them identified as students with frequent walking more than ten times in the last year. A significant portion, 38%, visited the location primarily for recreational purposes. The complete data is provided in the table below.

Table 2. Respondent Characteristics

No.	Characteristics	Value (%)	
1	Gender	Man	72
		Woman	28
2	Age	<20	44
		21-30	32
		31-40	10
		41-50	8
		51-60	6
		>60	0
3	Last Educational	Elementary School	0
		High School	4
		Senior High School	54
		Diploma Degree	12
		Bachelor Degree	20
		S2	8
		S3	2
4	Occupation	PNS/Akpol/TNI	8
		Private Employees	4
		BUMN Employees	24
		Self Employed	10
		Housewife	6
		Student	32
5	Domicile	Majalengka	76
		Cirebon	4

		Sumedang	2
		Bandung	16
		Indramayu	0
		Other	2
6	Frequency	< 3 Times	16
		3-10 Times	10
		> 10 Times	74
7	Main Purposes	Eating	26
		Recreation	38
		Sport	20
		Work	10
		Other	6

The table above provides the personal data of the questionnaire respondents regarding pedestrians in the GGM Majalengka area. Notably, 76% of the respondents are residents who have likely visited GGM frequently. Additionally, residents flock to the area for different purposes, with one of the main objectives being recreation.

4.2 Comparison of Importance and Performance Index

The comparison between respondents' importance and satisfaction will yield the GAP or the difference value between the two questions. Thus, the emerging gap is expected to represent the discrepancy in the pedestrians' level of satisfaction with the available facilities. In this way, respondents may hope for further action regarding this mismatch. The comparison of importance level, satisfaction level, and their respective GAPs can be found in the table below.

Table 3. Comparison of Importance and Performance Index

No.	Variable	Importance	Performance	Gap
A1	Pedestrian Width	7.56	7.72	0.16
A2	Pavement Surface	7.54	7.58	0.04
A3	Lighting	7.68	7.72	0.04
A4	Shielding/Shading Facilities	7.52	7.7	0.18
A5	Seating Facilities	7.48	7.68	0.20
A6	Cleanliness and trash facilities	7.62	7.6	0.02
A7	Crossing Zone Facilities	7.46	7.56	0.10
A8	Stop Facilities	7.66	7.5	0.16
A9	Disability Facilities	7.7	7.64	0.06
A10	Curb Condition	7.6	7.68	0.08
Average		7.58	7.64	0.1

Based on the table above, the average importance level of the respondents is 7.58. Meanwhile, the average performance or satisfaction level of the respondents is 7.64. Therefore, there is a gap between the importance and performance levels with a value of 0.1. However, the calculated GAP is considered minor despite being present, and the results are insignificant. Hence, respondents are generally satisfied with the existing facilities.

Firstly, the gap between the performance level and the importance level regarding the width of the pedestrian walkway indicates that pedestrians are satisfied with the width of the pedestrian facilities. However, some irresponsible individuals sell activities within these pedestrian facilities. This directly reduces the comfort level for pedestrians.

Furthermore, respondents are satisfied with the surface pavement. This also applies to lighting, shielding/shading, seating, crossing zones, and disability facilities, as the community is satisfied with them. However, for cleanliness and trash facilities and stop facilities, respondents are still dissatisfied because the level of importance exceeds the performance level of these facilities. Therefore, these facilities require attention from the government.

4.3 Importance and Performance Analysis (IPA)

This method serves several purposes, one of which is determining the inputted data's priority level. This method has four quadrants, each with a different meaning. The criteria for each quadrant have been explained earlier. The graph for the IPA method is presented in the table below.

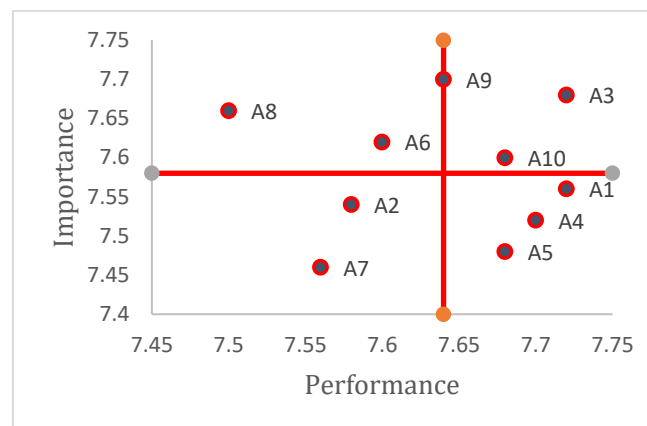


Figure 2. Result of Importance and Performance Analysis.

Based on the above graph, it can be seen that in quadrant 1, which indicates results that should be maintained, there are A3 and A10. Meanwhile, quadrant 2, which has the highest priority level, has three values: A8, A6, and A9. For quadrant 3, which is the second priority, there are two values: A2 and A7. Lastly, quadrant 4, which has a low priority level, has three values: A1, A4, and A5. Thus, the results and discussion of this study have been concluded.

5. Conclusion

Based on the above-searched data, it can be concluded that the questionnaire was filled out by 50 respondents with various characteristics, mostly students residing in Majalengka. The comparison of the importance and performance levels shows a tiny GAP or can be considered not very significant. This indicates the satisfaction of respondents regarding pedestrian support facilities. According to the IPA method graph, it can be concluded that two facilities need improvement priority: Stop Facilities (A8), Cleanliness and Trash Facilities (A6), and Disability Facilities (A9).

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