Perception of Pedestrian to Pedestrian Lane Conditions in Yogyakarta (Case Study: Gejayan Street, Sleman)

M B Lutfi¹ and R Hidayah²

¹ Graduate Program, Yogyakarta State University - Indonesia
² Department of Civil Engineering and Planning Education, Yogyakarta State University - Indonesia
Corresponding author: mbluthfitanjung@gmail.com

Abstract. Streets and sidewalks are inseparable for users. Users especially pedestrians use the sidewalk as access to move from one to another place. The existence of the sidewalk increases the ease in each person to continue to move in a place that is not too far apart so that it is more efficient and effective. Sidewalks with accessibility and environmental quality that support will make the community in an area. This research is a survey research using a questionnaire. Respondents were randomly selected as many as 100 people around Gejayan street sidewalk. The pedestrian classification is divided based on stationary pedestrians and mobile pedestrians. Stationary pedestrians are pedestrians who carry out their daily activities around the sidewalk path. Whereas a mobile pedestrian is a pedestrian who uses the sidewalk pathway only as a path to move between places at certain times. The results showed the level of comfort of stationary pedestrians on Gejayan street was 55.74% and the level of comfort of mobile pedestrians on Gejayan street was 55.77%. So that it is obtained if the comfort level of both types of pedestrians are categorized as quite comfortable

1. Introduction
Street is connecting access for people to interact socially and economically. Street users consist of various age levels and types of work. One of the facilities that are often used is a sidewalk. Sidewalks are a necessity that cannot be ignored, especially in urban areas [1]. The existence of sidewalks increases in everyone to continue their activities in a place that is not too far away so that it is more effective and effective. Sidewalks with accessibility and supportive environmental quality will make people in the area have a better level of comfort [2]. The higher the level of comfort, the lower the accident rate in traffic areas [3].

Walking is a major requirement for daily life pedestrians. Every journey must begin and end with walking [4]. Pedestrians can be grouped into at least two groups, namely stationary pedestrians and mobile pedestrians [5]. Stationary pedestrians, namely pedestrians who have their daily activities around the sidewalk, such as shop owners, parking attendants, and residents. It could be said that stationary pedestrians are “residents” who are around the sidewalk. Whereas mobile pedestrians are pedestrians who use the sidewalk only as a route to move from one place to another. Mobile pedestrians can be from students as access to campus, buyers at a shop to people who use temporary sidewalks.

The Special Region of Yogyakarta is known as a province with a large number of tourists and students [6]. There are many educational institutions, especially in Sleman Regency, so the area is
filled with large numbers of immigrants from various regions. As migrants, most of them aim to gain knowledge in various educational institutions such as high schools or nearby universities. However, some try to confuse their fate in the area.

Gejayan street is one of the main streets which represents the many activities carried out by migrants. It can be seen from the use of the sidewalk not only for decoration but also in use. Its use also varies, both by pedestrians as access to travel and even becoming stalls for some street vendors [7]. This is supported by a variety of activities that make the sidewalks on Gejayan street public space. Sidewalks should be a comfortable area for pedestrians in the surrounding area [8]. The function of the sidewalk should not be underestimated as one of the supporting facilities in the surrounding traffic area. In this case, the sidewalk area on Gejayan street plays an important role in traffic continuity so that good planning and implementation of its use deserve to be analyzed. Further research to see the extent of pedestrians perceptions of the condition of the sidewalks along Gejayan street.

2. Research Method
This study is classified as survey research. Survey research is used on a large population and can be used to categorize the problems to be solved [9]. The method used in this research is to use a quantitative approach. This research was conducted in three stages namely, the first stage is the initial stage (determining the time and location of the study), the second stage is collecting data and the third stage is the data analysis. The instrument used in the study was a questionnaire using a semantic differential scale with 5 levels of criteria [10]. The population in this study were all people of productive age who have activities around Gejayan street. Respondents were selected by random sampling as many as 100 people around the sidewalk of Gejayan street. These pedestrians are both stationary pedestrians (doing activities around the sidewalk) and mobiler pedestrians (who use the sidewalk only to be passed).

The level of pedestrian comfort is classified into five variables. These variables are accessibility, the physical condition of the sidewalks, cleanliness, beauty, and barriers to pedestrians. Each variable also determines the indicators used in making the questionnaire. First, namely accessibility with indicators, namely target objectives on sidewalks, time effectiveness in using sidewalks, ease of moving from crossings to sidewalks, freedom for pedestrians to move, and interconnection between sidewalks on both sides of the street. Second, the physical condition of the sidewalk with indicators, namely the condition of the sidewalk, the surface of the sidewalk does not make it slip, the slope of the sidewalk is quite gentle, the conformity of the sidewalk surface with the street to traffic, and the condition of the sidewalk is flat (not bumpy). The third variable is cleanliness with an indicator of whether the sidewalk tends to be clean, drainage on the side of the sidewalk is well maintained, pavement surface without growing bushes, sidewalk paths without stagnant water, and around the sidewalk does not smell. The fourth is beauty, with indicators namely whether the sidewalk has an attractive design, plants as pedestrian shade have an interesting concept, the determination of the color sidewalk material, the sidewalk has artistic patterns and motifs, and the lighting on the sidewalk adds to the beauty. Finally, the barriers for pedestrians with indicators, namely whether the property of the business owner blocks pedestrians, motorbikes or similar vehicles blocking their passage, the concept of vehicle parking blocks sidewalks, landfills or decorations in public spaces blocking sidewalks and billboards advertising pamphlets block the sidewalks. Then to find out the interval score against the comfort level criteria, it can be seen below.

| Score Interval | Percentage Interval | Sidewalk Comfort Level |
|----------------|---------------------|------------------------|
| 5n ≤ X < 9n    | 20% ≤ X < 36%       | Uncomfortable          |
| 9n ≤ X < 13n   | 36% ≤ X < 52%       | Less comfortable        |
| 13n ≤ X < 17n  | 52% ≤ X < 68%       | Quite comfortable       |
| 17n ≤ X < 21n  | 68% ≤ X < 84%       | Comfortable             |
| 21n ≤ X ≤ 25n  | 84% ≤ X ≤ 100%      | Very comfortable        |
The research time was carried out on weekdays. The research was conducted during times of intense activity, namely morning and evening. The research location was carried out along the sidewalk of Gejayan street. The research location can be seen clearly in Figure 1 and Figure 2.

3. Result and Discussion

3.1. Obtained data

Various data that have been obtained are then processed so that the percentage level of comfort is obtained. Respondents consisted of 100 people who were taken randomly, then at the initial stage they would be classified into several types. Respondent data profile can be seen in Table 2.

| Respondent Data Classification                   | Total |
|------------------------------------------------|-------|
| Sidewalk Users by Gender                        |       |
| Male                                            | 43    |
| Women                                           | 57    |
| Sidewalk Users by Age                          |       |
| 12 - 16 years                                   | 2     |
| 17-25 years                                     | 60    |
| 26 - 35 years                                   | 35    |
| 36 - 45 years                                   | 2     |
| 46 - 55 years                                   | 1     |
| Sidewalk users based on their location of residence |     |
| Around Gejayan street                           | 23    |
| Not Around Gejayan                              | 77    |
| Sidewalk users based on the intensity of their activities |     |
| Rarely                                          | 31    |
| Sometimes                                       | 35    |
| Often                                           | 27    |
| Always                                          | 7     |
3.1.1. Based on Gender
The gender category cannot be used as a benchmark in analyzing the proportion of pedestrians on Gejayan street. Even though the data shows that pedestrians are dominated by women, it cannot be concluded that women are more active on Gejayan street than men.

3.1.2. Based on Age
It can be seen in the diagram if based on age, all respondents are still classified as productive age. Because along Gejayan street there are several universities, schools to retail shops. It can be assumed that the respondent's age range of 16-25 is still pursuing education in various fields. The age range 26-55 can be categorized as people who go back and forth with activities such as buying and selling, banking, and others on Gejayan street.

3.1.3. Based on the location of residence
Respondents who were obtained during the study showed that pedestrians were very much dominated by people who did not live around Gejayan street. The respondents mostly do activities around Gejayan street only for the various activities they carry out. Even in the diagram, it can be seen that the number of respondents who live around Gejayan street is not more than a quarter of the total respondents.

3.1.4. Based on the intensity of activity
Pedestrians tend to use these facilities occasionally and rarely. Respondents as a whole said that passing Gejayan Street using a motorized vehicle could be said to be very frequent. However, in using the sidewalks it tends in the opposite direction.

3.2. Overall Pedestrian Comfort Level Analysis
After researching by distributing questionnaires to 100 respondents, the next step is to find the percentage level of pedestrian comfort on Gejayan street with the following formula:

\[
\text{Percentage of comfort level for sidewalks} = \frac{\text{score of the respondents}}{\text{maximum score of all variables}} \times 100\%
\]

The total score has been obtained from the calculation process, namely 6970, while the maximum score for all variables is obtained by:

\[
\text{Maximum score} = \text{highest score} \times \text{number of questions} \times \text{number of respondents}
\]

\[
= 5 \times 25 \times 100 = 12500
\]

So that the percentage of the comfort level of the sidewalk is obtained:

\[
\text{Percentage of comfort level for sidewalks} = \frac{6970}{12500} \times 100\% = 55.76\%
\]

With the above results, it can be concluded that the perception of pedestrian comfort is at a fairly comfortable level. Then the score intervals are shown in table 3.

| Table 3. Interval scores on overall sidewalk comfort level criteria. |
|---------------------------------|-----------------|-----------------|-----------------|
| Score Interval                  | Percentage Interval | Sidewalk Comfort Level   |
| 2500 ≤ X < 4500                | 20% ≤ X < 36%      | Uncomfortable            |
| 4500 ≤ X < 6500                | 36% ≤ X < 52%      | Less comfortable         |
| 6500 ≤ X < 8500                | 52% ≤ X < 68%      | Quite comfortable        |
| 8500 ≤ X < 10500               | 68% ≤ X < 84%      | Comfortable              |
| 10500 ≤ X ≤ 12500              | 84% ≤ X < 100%     | Very comfortable         |
The percentage of comfort level is also displayed for each variable on the questionnaire, namely:

3.2.1. Accessibility
The percentage of the comfort level of the sidewalk path, with a total variable score of 1485 and a maximum score of all variables, namely 2500, is obtained:

\[
\frac{1485}{2500} \times 100\% = 59.4\% 
\]

The accessibility variable for pedestrians is quite comfortable.

3.2.2. Physical Condition of Sidewalks
The percentage of the comfort level of the sidewalk path, with a total variable score of 1330 and a maximum score of all variables, namely 2500, is obtained:

\[
\frac{1330}{2500} \times 100\% = 53.2\% 
\]

The physical condition of the sidewalks for pedestrians is quite comfortable.

3.2.3. Cleanliness
The percentage of the comfort level of the sidewalk path, with a total variable score of 1532 and a maximum score of all variables, namely 2500, is obtained:

\[
\frac{1532}{2500} \times 100\% = 61.28\% 
\]

The hygiene variable for pedestrians is quite comfortable.

3.2.4. Beauty
The percentage of the comfort level of the sidewalk path, with a total variable score of 1366 and a maximum score of all variables, namely 2500, is obtained:

\[
\frac{1366}{2500} \times 100\% = 54.64\% 
\]

The sidewalk beauty variable for pedestrians is quite comfortable.

3.2.5. Pedestrian Obstacles / Obstacles
The percentage of the comfort level of the sidewalk path, with a total variable score of 1257 and a maximum score of all variables, namely 2500, is obtained:

\[
\frac{1257}{2500} \times 100\% = 50.28\% 
\]

The sidewalk obstruction variable for pedestrians is classified as less comfortable.

| Table 4. Interval scores against the comfort level criteria for the sidewalks for each variable. |
|-------------------------------|---------------------------------|------------------|
| Score Interval | Percentage Interval | Sidewalk Comfort Level |
| 500 ≤ X < 900 | 20% ≤ X < 36% | Uncomfortable |
| 900 ≤ X < 1300 | 36% ≤ X < 52% | Less comfortable |
| 1300 ≤ X < 1700 | 52% ≤ X < 68% | Quite comfortable |
| 1700 ≤ X < 2100 | 68% ≤ X < 84% | Comfortable |
| 2100 ≤ X ≤ 2500 | 84% ≤ X < 100% | Very comfortable |
It can be seen from the five variables on the level of comfort, four variables show quite comfortable results. However, in terms of pedestrian obstacles, it can be seen that the results obtained are less comfortable. This is more clearly seen in Figure 3.

![Graph of pedestrian comfort level overall for each variable.](image)

**Figure 3.** Graph of pedestrian comfort level overall for each variable.

### 3.3 Analysis of Stationary Pedestrian Comfort Level

From the questionnaires distributed to 100 respondents, stationary pedestrians are defined as walkers using sidewalks with an intensity of "always" and often " often. From the definition above, the number of respondents who are classified as stationary pedestrians in 34 respondents. The comfort level for stationary pedestrians is to find the percentage level of comfort using the following formula:

\[
\text{Percentage level of comfort stationary pedestrian} = \frac{\text{total score of the respondents}}{\text{the maximum score of all variables}} \times 100\%
\]

The total score has been obtained from the calculation process, namely 2369, while the maximum score for all variables is obtained by:

\[
\text{Maximum score} = \text{highest score} \times \text{number of questions} \times \text{number of respondents}
\]

\[
= 5 \times 25 \times 34
\]

\[
= 4250
\]

So that the percentage of the comfort level of the sidewalk is obtained:

\[
\text{Percentage of comfort level for sidewalks} = \frac{2369}{4250} \times 100\% = 55.74\% 
\]

With the above results, it can be concluded that the perception of pedestrian comfort is at a fairly comfortable level. The score interval can be seen in table 5.

| Score Interval | Percentage Interval | Sidewalk Comfort Level |
|---------------|---------------------|------------------------|
| 850 ≤ X < 1530| 20% ≤ X < 36%       | Uncomfortable          |
| 1530 ≤ X < 2210| 36% ≤ X < 52%       | Less comfortable       |
| 2210 ≤ X < 2890| 52% ≤ X < 68%       | Quite comfortable      |
| 2890 ≤ X < 3570| 68% ≤ X < 84%       | Comfortable            |
| 3570 ≤ X ≤ 4250| 84% ≤ X ≤ 100%      | Very comfortable       |

The percentage level of comfort for stationary pedestrians is also displayed for each variable on the questionnaire, namely:
3.3.1 Accessibility
The percentage of the comfort level of the sidewalk path, with a total variable score of 508 and a maximum score of all variables, namely 850, is obtained:

\[ \frac{508}{850} \times 100\% = 59.79\% \]

The accessibility variable for pedestrians is quite comfortable.

3.3.2 Physical Condition of Sidewalks
The percentage of the comfort level of the sidewalk lane, with a total variable score of 457 and a maximum score of all variables, namely 850, is obtained:

\[ \frac{457}{850} \times 100\% = 53.76\% \]

The physical condition of the sidewalks for pedestrians is quite comfortable.

3.3.3 Cleanliness
The percentage of the comfort level of the sidewalk path, with a total variable score of 518 and a maximum score of all variables, namely 850, is obtained:

\[ \frac{518}{850} \times 100\% = 60.94\% \]

The hygiene variable for pedestrians is quite comfortable.

3.3.4 Beauty
The percentage of the comfort level of the sidewalk path, with a total variable score of 459 and a maximum score of all variables, namely 850, is obtained:

\[ \frac{459}{850} \times 100\% = 54\% \]

The sidewalk beauty variable for pedestrians is quite comfortable.

3.3.5 Pedestrian Obstacles / Obstacles
The percentage of the comfort level of the sidewalk, with a total variable score of 427 and a maximum score of all variables, namely 850, is obtained:

\[ \frac{427}{850} \times 100\% = 50.23\% \]

The sidewalk obstruction variable for pedestrians is classified as less comfortable. The determination of the score interval can be seen in Table 6.

| Score Interval | Percentage Interval | Sidewalk Comfort Level |
|----------------|---------------------|------------------------|
| 170 ≤ X < 306  | 20% ≤ X < 36%       | Uncomfortable          |
| 306 ≤ X < 442  | 36% ≤ X < 52%       | Less comfortable       |
| 442 ≤ X < 578  | 52% ≤ X < 68%       | Quite comfortable      |
| 578 ≤ X < 714  | 68% ≤ X < 84%       | Comfortable            |
| 714 ≤ X ≤ 850  | 84% ≤ X ≤ 100%      | Very comfortable       |
3.4 Analysis of the Comfort Level of Mobiler Pedestrians

Meanwhile, from the questionnaires distributed to 100 respondents, mobile pedestrians are defined as walkers using sidewalks with intensity "sometimes" and "rarely". From the definition, the number of respondents who are classified as stationary pedestrians in 66 respondents. The comfort level of a mobile pedestrian is to find the percentage level of comfort using the following formula:

\[
\text{Percentage level of comfort mobiler pedestrian} = \frac{\text{total score of the respondents}}{\text{maximum score of all variables}} \times 100\%
\]

The total score has been obtained from the calculation process, namely 4601, while the maximum score for all variables is obtained by:

\[
\text{Maximum score} = \text{highest score} \times \text{number of questions} \times \text{number of respondents} = 5 \times 25 \times 66 = 8250
\]

So that the percentage of the comfort level of the sidewalk is obtained:

\[
\text{Percentage of comfort level for sidewalks} = \frac{4601}{8250} \times 100\% = 55,77\%
\]

It can be concluded that the perception of pedestrian comfort is at a fairly comfortable level. The score interval can be seen in table 7.

| Score Interval | Percentage Interval | Sidewalk Comfort Level    |
|----------------|---------------------|---------------------------|
| 1650 ≤ X < 2970 | 20% ≤ X < 36%        | Uncomfortable             |
| 2970 ≤ X < 4290 | 36% ≤ X < 52%        | Less comfortable          |
| 4290 ≤ X < 5610 | 52% ≤ X < 68%        | Quite comfortable         |
| 5610 ≤ X < 6930 | 68% ≤ X < 84%        | Comfortable               |
| 6930 ≤ X ≤ 8250 | 84% ≤ X < 100%       | Very comfortable          |

The percentage level of comfort for mobile pedestrians is also displayed for each variable in the questionnaire, namely:

3.4.1 Accessibility

The percentage of the comfort level of the sidewalk path, with a total variable score of 977 and a maximum score of all variables, namely 1650, is obtained:

\[
\frac{977}{1650} \times 100\% = 59,21\%
\]

The accessibility variable for pedestrians is quite comfortable.

3.4.2 Physical Condition of Sidewalks

The percentage of the comfort level of the sidewalk path, with a total variable score of 873 and a maximum score of all variables, namely 1650, is obtained:

\[
\frac{873}{1650} \times 100\% = 52,9\%
\]

The physical condition of the sidewalks for pedestrians is quite comfortable.
3.4.3 Cleanliness
The percentage of the comfort level of the sidewalk path, with a total variable score of 1014 and a maximum score of all variables, namely 1650, is obtained:

\[
\frac{1014}{1650} \times 100\% = 61.45\%
\]

The hygiene variable for pedestrians is quite comfortable.

3.4.4 Beauty
The percentage of the comfort level of the sidewalk path, with a total variable score of 907 and a maximum score of all variables, namely 1650, is obtained:

\[
\frac{907}{1650} \times 100\% = 54.97\%
\]

The sidewalk beauty variable for pedestrians is quite comfortable.

3.4.5 Pedestrian Obstacles / Obstacles
The percentage of the comfort level of the sidewalk path, with a total variable score of 830 and a maximum score of all variables, namely 1650, is obtained:

\[
\frac{830}{1650} \times 100\% = 50.3\%
\]

The sidewalk obstruction variable for pedestrians is classified as less comfortable. The determination of the score interval can be seen in table 8.

| Score Interval | Percentage Interval | Sidewalk Comfort Level |
|----------------|---------------------|------------------------|
| 330 ≤ X < 594  | 20% ≤ X < 36%       | Uncomfortable          |
| 594 ≤ X < 858  | 36% ≤ X < 52%       | Less comfortable        |
| 858 ≤ X < 1122 | 52% ≤ X < 68%       | Quite comfortable       |
| 1122 ≤ X < 1386| 68% ≤ X < 84%       | Comfortable             |
| 1386 ≤ X ≤ 1650| 84% ≤ X ≤ 100%      | Very comfortable        |

3.5 Comparison between stationary pedestrians and mobile pedestrians
After obtaining the criteria for stationary pedestrians and mobile pedestrians, then we can see the comparison between the two types of pedestrians. This comparison is carried out to see if there are significant differences between the two types of pedestrians. Stationary pedestrians can be said to be pedestrians who routinely cross the sidewalk because they are close to a place to live or do activities, then compared to mobile pedestrians who tend to use the sidewalk only for certain purposes. The comparison of the two can be seen in the figure 4.
From the results of the data analysis carried out, it can be seen that the comfort level of both stationary pedestrians and mobile pedestrians shows the results that are relatively close to each other. It can be seen that each of the variables compared shows a different percentage but the values are very close together. In the accessibility variable, the percentage difference is only 0.53. Then in the physical condition variable for the sidewalk, the difference obtained is only 0.14. Then the hygiene variable also tends to be close to a difference of 0.51. The beauty variable also shows a slight difference, namely 0.97. The last variable is pedestrian barriers with the closest difference, namely 0.07. It can be seen from the five aspects above that between stationary pedestrians and mobile pedestrians the difference between variables is not more than 1%. This shows that the perceptions between the two types of pedestrians on the comfort of the sidewalk on Gejayan street tend not to be much different.

Data analysis can also show that participating respondents tend to be objective about the conditions and reality they feel. This is inseparable from the respondents who after being analyzed almost 75% are students. Students tend to be critical of various issues, including when giving their perception of public facilities, including sidewalks. The number of respondents from among students is also inseparable from the location of Gejayan street itself. It many educational institutions are ranging from campuses such as Yogyakarta State University, Sanata Dharma University, Atma Jaya University, and others. A large number of educational institutions means that there are many temporary residences for students and university students around Gejayan street. It also makes economic activity on Gejayan street very massive and becomes one of the centers of the crowd in Sleman Regency.

Data analysis was also performed using the T-test. A T-test was performed to determine whether there was a significant difference between the two sample groups of data. In this study, what will be tested is the result of the perceived comfort between stationary pedestrians and mobile pedestrians. The analysis was performed using statistical applications with a comparative analysis of two independent samples. The results can be seen in table 9 and table 10 below.

**Table 9.** Group statistics.

| Class                      | N  | Mean   | Std. Deviation | Std. Error Mean |
|----------------------------|----|--------|----------------|-----------------|
| Perception of Comfort Level|    |        |                |                 |
| Stationary Pedestrian      | 5  | 2.78680| 0.224470       | 0.100386        |
| Mobiler Pedestrian         | 5  | 2.78800| 0.227386       | 0.101690        |
Table 10. Independent samples test.

| Perception of Comfort Level | Levene's Test for Equality of Variances | t-test for Equality of Means | 95% Confidence Interval of the Difference |
|-----------------------------|----------------------------------------|-----------------------------|------------------------------------------|
|                            | F           | Sig.      | t     | df | Mean Diff | Std. Error | Lower | Upper |
| Equally assumed variances  | 0.001       | 0.972     | -0.008| 8  | -0.0012   | 0.143      | -0.330| 0.3283|
| Equal variances not assumed| -0.008      | 7.999     | 0.994 | 0.0012 | 0.143      | -0.330     | 0.3283|

Based on statistical analysis using software, it is obtained if the t value obtained is -0.008. Then, if it is made into the rules for comparing the value of the t table and t count, it is -2,306 < -0.008 < 2,306. The results prove that there is no significant difference in the perceived comfort between stationary pedestrians and mobile pedestrians.

4. Conclusion

Based on the results and discussion it can be concluded that the overall perception of pedestrians on sidewalk conditions in terms of comfort shows that the category is quite comfortable with a percentage of 55.74%. Then based on the five variables, it can be seen that the variables, namely the four variables, namely the accessibility variable, the physical condition variable, the cleanliness variable, and the beauty variable are classified as quite comfortable. Only the pedestrian obstacle variable is in the uncomfortable category with 50.23%.

A comparison of the perception of stationary pedestrians with mobile pedestrians also shows that the category is quite comfortable. Based on three perceptions studied, only the pedestrian obstacle variable showed the uncomfortable category. This is influenced by the concept of parking that blocks the sidewalk and billboards that tend to obstruct pedestrians. The category is quite comfortable when seen in the interval score table, it is close to the category limit is less comfortable, so that it needs significant improvements so that the sidewalks are more friendly for pedestrians.

In the comparison of the perceptions of stationary pedestrians with mobile pedestrians, it can be seen in the comparative analysis of the two independent categories of T-test with the t-table value that is still between the t-calculated value. This proves that the perceived comfort between stationary pedestrians and mobile pedestrians does not have a significant difference.

5. Recommendation

The results of this study are expected to be used as a reference for the authorized government. The condition of the sidewalk in terms of comfort is still in a quite comfortable category. The government can improve the quality of sidewalks so that people who use sidewalks and street users can do their activities much more comfortably. Improving by fixing several areas such as starting from the side of the sidewalk material, greenery around and adequate lighting

Based on this research, it can also be used as a reference for people around the sidewalks to play a more active role in protecting the surrounding environment, including sidewalks. The busy activity on Gejayan street should be a benchmark for the surrounding community to take care of the sidewalks so that it will be a benefit for the community as well. The government and the community must indeed help each other in maintaining and maintaining the quality of the sidewalks on Gejayan street. So that they can increase the income of the people around the sidewalks on Gejayan street.
6. References

[1] Syoufa A 2017 Tinjauan tingkat kenyamanan dan keamanan pejalan kaki pada desain trotoar jalan margonda raya depok dengan jalan pddajaran bogor Jurnal Desain Konstruksi Volume 16 No.2

[2] Natalia T W and Rohmawati T 2017 The perception of pedestrian toward physical condition of sidewalk on dipatiukur street Prosiding Saintiks FTK UNIKOM

[3] Dinh D D, Vù, N H, McIlroy R C, Plant K A, and Stanton N A 2020 Effect of attitudes towards traffic safety and risk perceptions on pedestrian behaviours in Vietnam IATSS Research xxx 2020 xxx Elsevier

[4] Sangeeth K and Abhijit L 2019 Factors influencing pedestrian speed in level of service (LOS) of pedestrian facilities transportation research interdisciplinary perspectives 3 Elsevier

[5] Krisnawati E 2013 Studi keberadaan city walk terhadap fungsi peruntukan (study kasus city walk jl. slamet riyadi surakarta) Jurnal Teknik Sipil dan Arsitektur Universitas Tunas Pembangunan Surakarta Vol 13 No 17

[6] Kiswantoro A 2017 Pengaruh kenyamanan fasilitas wisata dan kepuasan wisatawan terhadap keputusan untuk berkunjung kembali ke kawasan wisata goa rancang kencana dan air terjun Sri Gethuk Gunungkidul Yogyakarta Jurnal Ilmiah Kepariwisataan Volume 11 No 1

[7] Mahaswara H A 2016 Menggugat Ruang Publik Melalui Gerakan Masyarakat (Studi Kasus Gerakan Warga Berdaya di Yogyakarta) Jurnal Pemikiran Sosiologi Vol. 3 No. 2

[8] Rahmah K N and Sembada G G 2018 Kampanye mengenai fungsi trotoar kepada masyarakat e-Proceeding of Art & Design Volume 5 No 3

[9] Sukardi 2019 Metodologi Penelitian Pendidikan: Kompetensi dan Praktiknya (Jakarta: Bumi Aksara) p 20

[10] Sugiyono 2014 Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitatif dan R&D (Bandung: Alfabeta) p 132