

Correspondence Analysis between Cycling Time and The Purpose of Cycling Activities in Urban Areas

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Abstract

Bandung has supported the movement to support healthy living by facilitating bike shelters. Unfortunately, there are many shelters that not operating due to a lack of public interest in cycling, less strategic locations, and inadequate facilities. The purpose of this research is to facilitate Bandung bicycle shelter that suits the needs of Bandung people, so that it could attract the attention of Bandung people and tourists. The study used quantitative methods by spreading questionnaires and getting data from 119 respondents. Questionnaires are disseminated and produce open answers that will be grouped into several subpoints. The benefit of this research is to increase knowledge for the author and could be a research guide for future research. The results showed that people in majority riding bicycle only to get around the residential without a purpose, in addition, the community also expects additional facilities such as security and hygiene facilities in each shelter.

Keywords: Bandung, bicycles, shelter

Introduction

Bandung is ranked 2nd most populous city in Indonesia (Mahdan, 2022). The majority of citizen in Bandung use private transportation so that traffic jams in Bandung increase (Widyatami, 2019). The 'Bike to School' campaign started by Bandung City Government created a trend of cycling culture Bandung and could decrease the number of traffic jam (DPRD Bandung, 2022). This could be a potential for using bicycles as a means of transportation (Helena, 2015). According to Darsini (2020), cycling activity has increased especially since the pandemic. People are aware of the importance of exercise to maintain health. Cycling is widely enjoyed by children and the elderly. The increasing use of bicycles is currently a new lifestyle for people, the function of bicycles for some people has now become a daily routine or they only use bicycles as a means of mobility. In Bandung itself, many cyclists cycle on the road so they have to share the lane with other passing vehicles. This is due to the lack of special lanes for bicycle users. Cyclists also cycle most often on weekends (Kautsar, 2020). According to (Artiningsih, 2011), the implementation of bicycle lanes in city areas is limited due to the heavy traffic volume. In Bandung City, bicycle lane locations are located at 7 points,

specifically Asia Afrika, City Hall, Saparua, Dago, Dipatiukur, Surapati, and Buah Batu (Marditama, 2022).

According to researchers' observations in Sukoharjo, many people cycle in the morning or afternoon on the sides of the road (Darsini, 2020). This can be influenced by the weather at that time. On the other hand, the average temperature in Bandung City per year is as in the picture below. This average temperature can also influence people's interest in cycling.

Table 1. Average Temperature in Bandung 2015 – 2021.

	Day Temperature	Night Temperature
January	29°C	18°C
February	29°C	18°C
March	30°C	18°C
April	29°C	19°C
May	29°C	19°C
June	28°C	18°C
July	29°C	17°C
August	28°C	16°C
September	30°C	17°C
October	28°C	17°C
November	29°C	19°C
Desember	28°C	18°C

Source: Hikersbay 2021

Based on the table of average temperatures for Bandung City above, the temperature during the day is too hot, while at night it is too cold. Meanwhile, the temperature range in the morning is 20°C and in the afternoon is 22°C, this shows that the temperature in Bandung City in the morning and afternoon is not too cold and not too hot so it is comfortable for activities outside the home. Therefore, people tend to be more comfortable cycling in the morning or afternoon. The temperature factor in Bandung also influences the shape and material of the bicycle shelter that needs to be designed (Maulana, 2020). Bandung City has facilitated bicycle shelters in several locations, but many of them have been neglected. This is a topic that needs to be investigated because with the increase in people cycling and the cycling community, there should be more bicycle shelters available. However, in reality, many bicycle shelters are not used (Baihaqi, 2019). According to Aquarita (2016), Bandung has large bicycle tourism potential. All tourist attractions owned by the city of Bandung can be used as bicycle tourism objects, where natural tourism, culinary tourism and heritage tourism are the most attractive tourist attractions for bicycle tourism based on the perceptions of tourist respondents.

This research aims to determine the public facilities needed to support community activities when cycling. Thus, this research can be used as input or reference for strategic locations for establishing bicycle shelters.

Research Design

This research uses a qualitative method which is a technique for exploring and understanding the meaning associated with social problems (Creswell, 2018). Data was obtained from the results of a questionnaire survey distributed online to the general public. The questions in the questionnaire are open-ended to collect public opinion regarding the bicycle shelter facilities needed. The results of the questionnaire were filled in by 119 respondents, with an age range of 17 – 69 years. From the age groups obtained, it is hoped that they will be able to provide a variety of answers and be able to provide more objective answers regarding cycling habits in urban areas. Correspondents came from 7 different regions in Indonesia, with the majority of correspondents coming from West Java Province with 78 people (66.1%). The large number of correspondences originating from West Java makes West Java the main object for urban examples in this research, specifically the city of Bandung. Of the 119 respondents, 83 people (69.7%) were female, and 36 people (30.3%) were male. Apart from distributing online questionnaires, the sources we obtained also came from online surveys and field observations to find out the situation of bicycle user activity in the city of Bandung. The data obtained was then analyzed using 3 analysis steps, namely open coding, axial coding and selective coding (Creswell, 2018).

Result and Discussion

Based on the questionnaire distributed, open questions regarding the purpose of bicycle use in urban areas allowed respondents to provide more than one answer. Examples of respondents' answers regarding the purpose of bicycle use in urban areas. *"A place close to home, just take a walk, stop by shopping, around the complex, nearest supermarket, around the complex, sports, sports venue, park, field, still around the city which is quite far from home"*, the answer is then identified based on the keywords such as "Leisure Cycling", "Shopping", "House Complex", "Park", "Sports Place", and "Tourist Attractions".

From the results of the analysis of the distribution of questionnaires on cycling habits in urban areas, it can be seen in the pictures below.

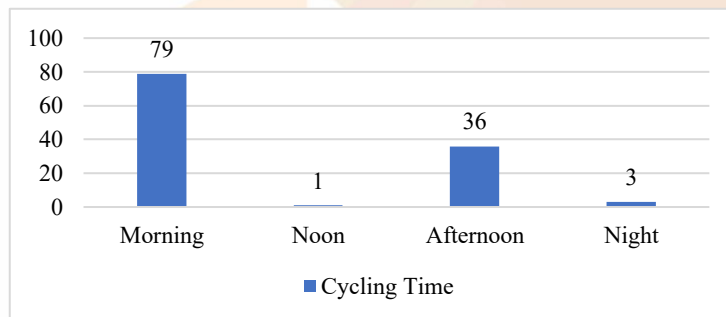


Figure 1. Respondent's Cycling Time

Figure 1 shows that 79 people (66.4%) cycled in the morning and 36 people (30.3%) cycled in the afternoon.

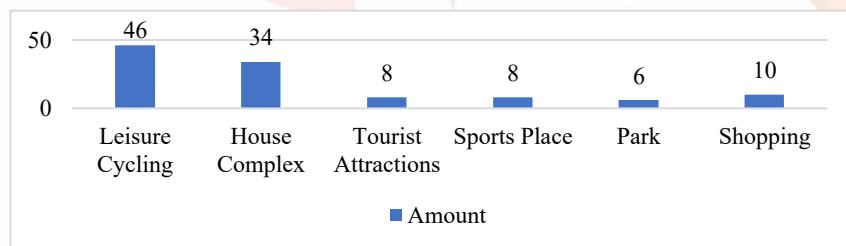
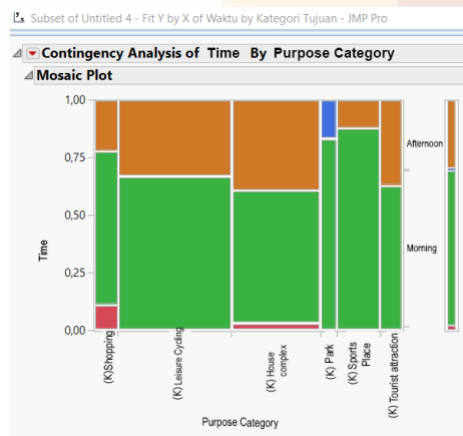


Figure 2. The Purpose of Cycling

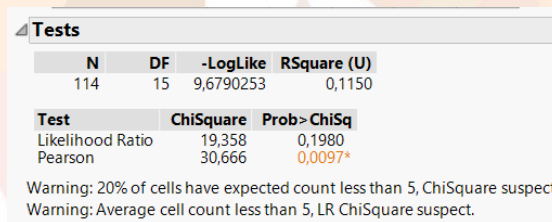
In Figure 2, the purpose of using a bicycle most often during bicycle activities is in the subcategory of "leisure cycling" as many as 46 people (38.6%), followed by cycling around the "house complex" as many as 34 people (28.5%), and to "shopping" as many as 10 people



(8.4%).

Telkom University Figure 3. Correlation Analysis between Cycling Time and The Purpose of Cycling
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The results show that correspondents who cycle in the morning usually spend their time walking around the complex and shopping. This phenomenon then continued in the afternoon while waiting for night to come. From the findings found, it can be proposed in designing cycling facilities to place seating areas for chatting and meeting each other, bicycle shelter facilities for storing bicycles in crowded places, one example being around residential areas.



Tests			
	N	DF	-LogLike RSquare (U)
	114	15	9,6790253 0,1150
Test	ChiSquare	Prob>ChiSq	
Likelihood Ratio	19,358	0,1980	
Pearson	30,666	0,0097*	

Warning: 20% of cells have expected count less than 5, ChiSquare suspect.
Warning: Average cell count less than 5, LR ChiSquare suspect.

Figure 4. Pearson Correlation between Time Variables and Purpose Categories.

When calculating the correlation between two variables, Time and Purpose Category using JMP software, the result of Pearson number is below 0.05, spesifically 0.0097, which means the level of inaccuracy is low. The correlation between these two variables proves that people prefer to cycling in the morning or afternoon with the aim of just cycling casually around where they live.

Conclusions

The current trend among society is cycling, whether used as the main means of mobility or just for exercising and walking around. There are very few bicycle shelters in Bandung and unfortunately Bandung people rarely use them because they only go around their house complex and because they don't feel safe storing their bicycles in bicycle shelters. The solution is to create shelters that are located in residential areas and not on main roads and arteries and improve security. For example, with shelters placed on one layer behind protocol roads and arterial roads, users can leave their bicycles in shelters that are facilitated by small stalls. Then users can walk to the main road to use public transportation to get to work or school in the morning. In the afternoon, when returning home from school or work, users can take their bicycles back at the shelter and use their bicycles.

This research can be used as a reference for designing facilities to support cycling activities such as bicycle shelters and help find strategic places to build shelters. This way the shelter will function well and will not be neglected. This research method can also be used to help determine strategic placement of other public facilities.

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