

MaasWheels case

MaasWheels is a bicycle sharing company in Maastricht. They offer rental bikes at various stations in Maastricht. After a recent funding round, they are able to invest in adding two new stations in the city.

The company has gathered data on usage of bicycles at each station (average number of daily rentals). This data, together with some characteristics of the area each station is in, is shown in Table 1. Table 2 shows the characteristics of the potential new stations.

You are asked which two stations they should open. To prepare for the session, please prepare answers to the following questions:

1. Make a prediction for the number of daily rentals that we should expect at each potential new station location
2. Suppose that another student suggests a different prediction method and comes up with different numbers. How should we evaluate which prediction is better?
3. Which two stations would you recommend MaasWheels to open?
4. What are some potential drawbacks to making predictions based on this data?

It's not necessary to have "perfect" answers to these questions. Ideally, you would come up with different answers from other students, and your disagreement will be a basis for discussions during the PBL session.

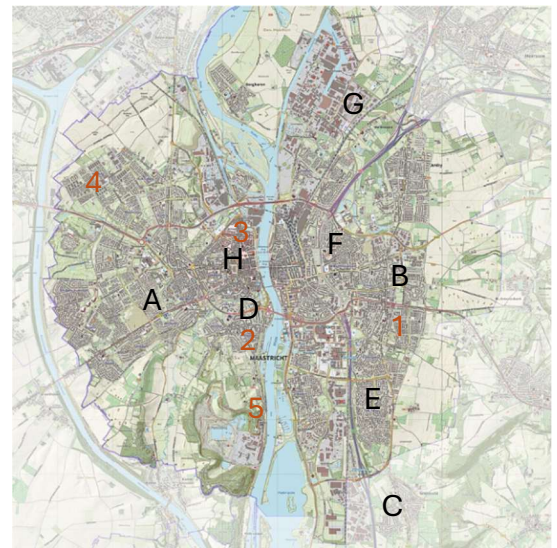


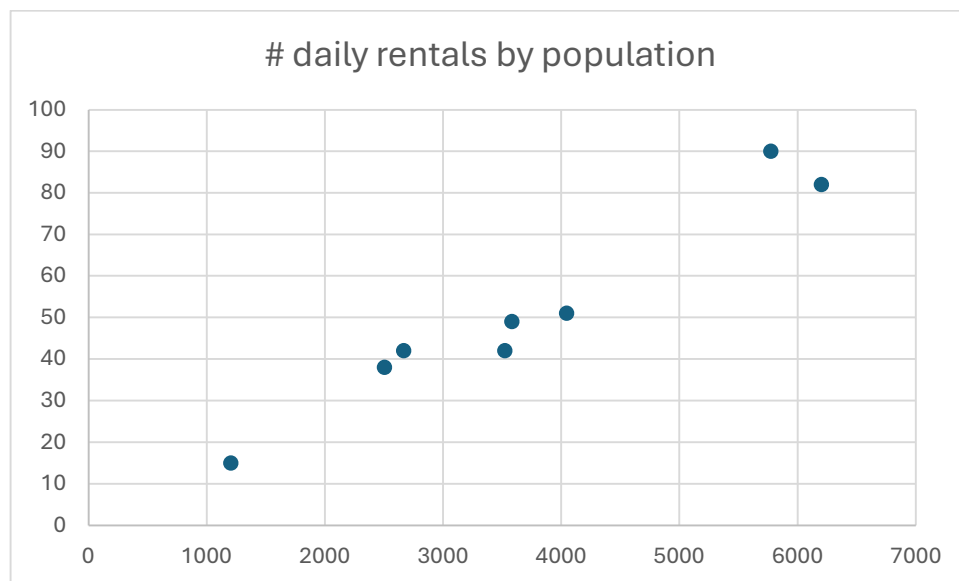
Figure 1: A map of Maastricht. [CC-BY Jan-Willem van der Aalst](#), cropped and locations of bicycle sharing stations added

Table 1: The existing stations are A-H.

Station	Population density (/km ²)	Distance to center (km)	#nearby POIs	# daily rentals
A	3523	3,3	10	42
B	2504	4,2	8	38
C	1203	5,7	11	15
D	5774	1	27	90
E	2668	4,3	5	42
F	3581	3,2	21	49
G	4045	6	15	51
H	6201	0,7	31	82

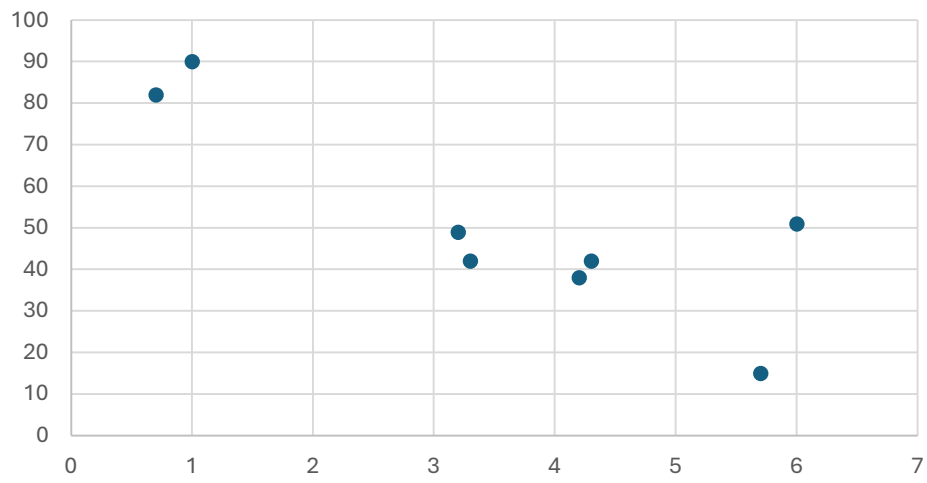
Table 2: The new potential locations are 1-5:

New location	Population density (/km ²)	Distance to center (km)	#nearby POIs	# daily rentals ??
1	2673	4,1	5	
2	5324	1,4	15	
3	5432	1,5	16	
4	1287	5,5	8	
5	3481	3,5	9	



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daily rentals by distance from center



daily rentals by nearby POI count

