Exercise1

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1.1 Goal and system defintion

System boundaries

- Spatial reference: Europe
- Time reference: 2019 - 2050
- Substantial reference: E-Bikes

Guiding questions

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* Which impact factors and interrelations among them determine...
  * The penetration of different types of e-bikes and battery technologies on the EU market?
  * How the adoption of e-bikes changes the mobility behavior and what modes of transport are being repl
  * in Europe in the year 2050.
* What scenarios can result from different constellations of the identified impact factors?

By the way:
* What other consequences could a large scale adoption of e-bikes have?
* What factors could lead to a rebound effect?
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Knowledge base

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Actors to be involved

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Target group

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2.1 Impact factors

preliminary identification:

Table 1: Names of preliminary impact factors

E-Bike price	electricity prize	bike transport
status of biking	Battery tech	road safety
Bike lanes	laws and regulations	air pollution
gasoline price	Commuting distances	traffic congestion

Impact factors structuring, clustering, relevance assessment
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Impact factors selection

Table 2: Description of seleceted impact factors

ImpactFactor	Indicator	Current_Stat
E-Bike price	NA	NA
status of biking	NA	NA
Bike lanes	NA	NA
gasoline price	NA	NA
electricity prize	NA	NA
Battery tech	NA	NA
laws and regulations	NA	NA
Commuting distances	NA	NA
bike transport	NA	NA
road safety	NA	NA
air pollution	NA	NA
traffic congestion	NA	NA
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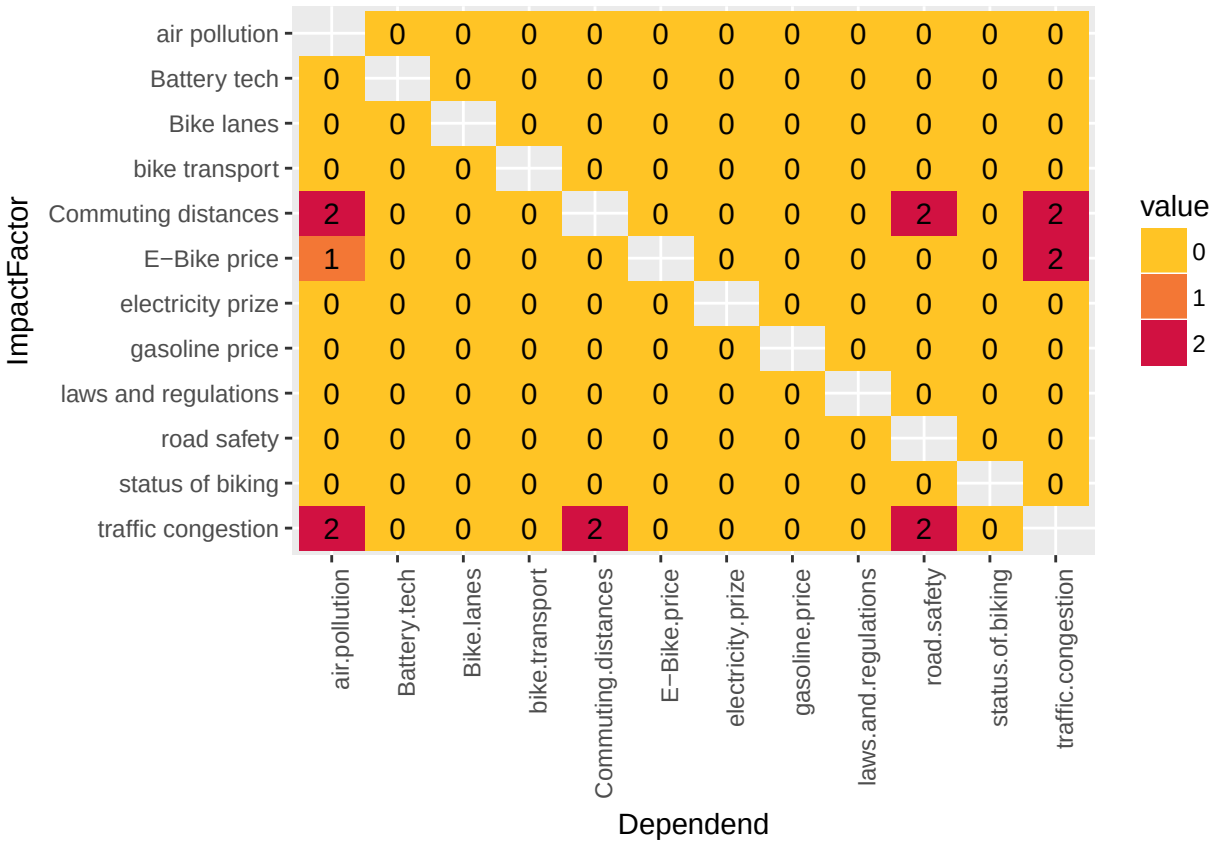
2.2 Impact assessment

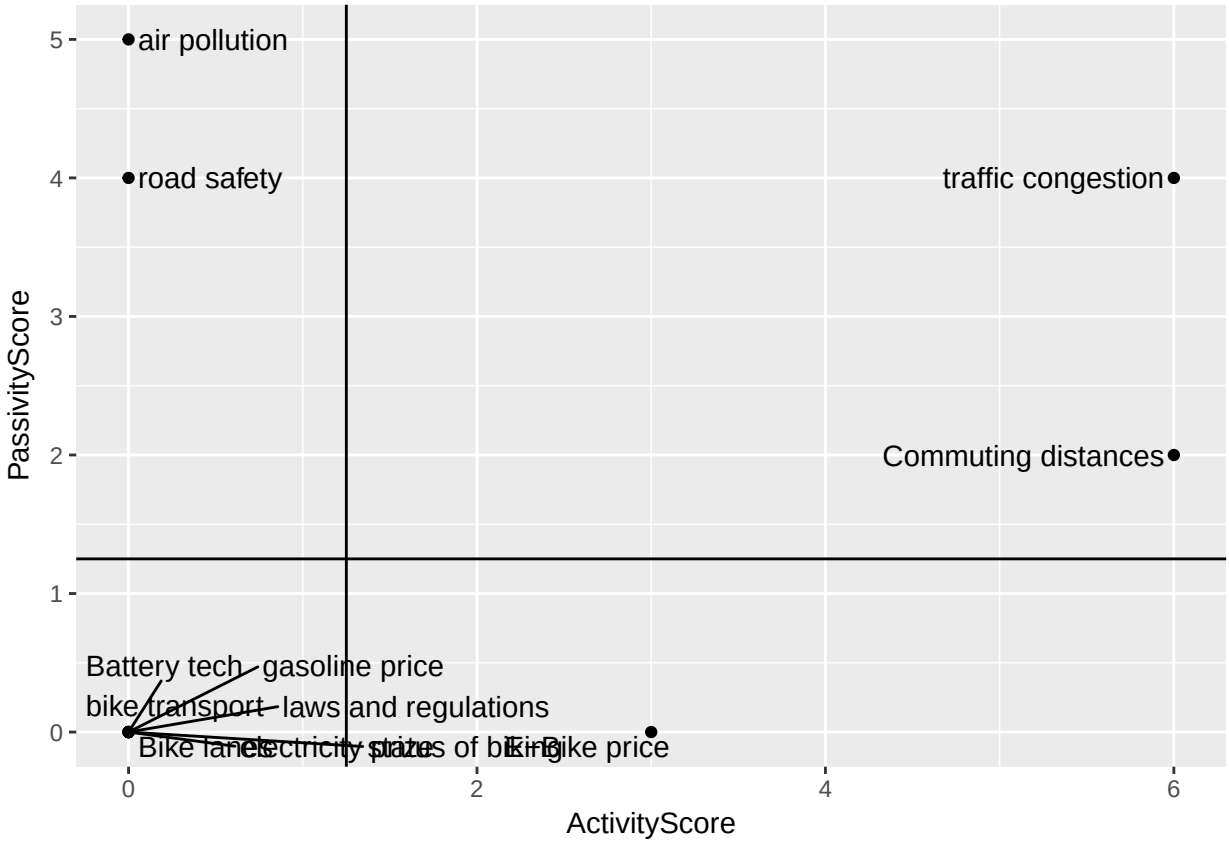
m x m matrix of direct impacts



2.3 Impact analysis

	E-Bike price	Commuting distances	road safety	air pollution	traffic congestion	status of bil
E-Bike price	NA	0	0	1	2	
Commuting distances	0	NA	2	2	2	
road safety	0	0	NA	0	0	
air pollution	0	0	0	NA	0	
traffic congestion	0	2	2	2	NA	
status of biking	0	0	0	0	0	
Bike lanes	0	0	0	0	0	
gasoline price	0	0	0	0	0	
electricity prize	0	0	0	0	0	
Battery tech	0	0	0	0	0	
laws and regulations	0	0	0	0	0	
bike transport	0	0	0	0	0	
PassivityScore	0	2	4	5	4	

System grid



Feedback loops

System structure

3.1 Future level definition

3.2 Consistency assessment

3.3 Scenario construction

4.1 Scenario selection

4.2 Scenario description and interpretation