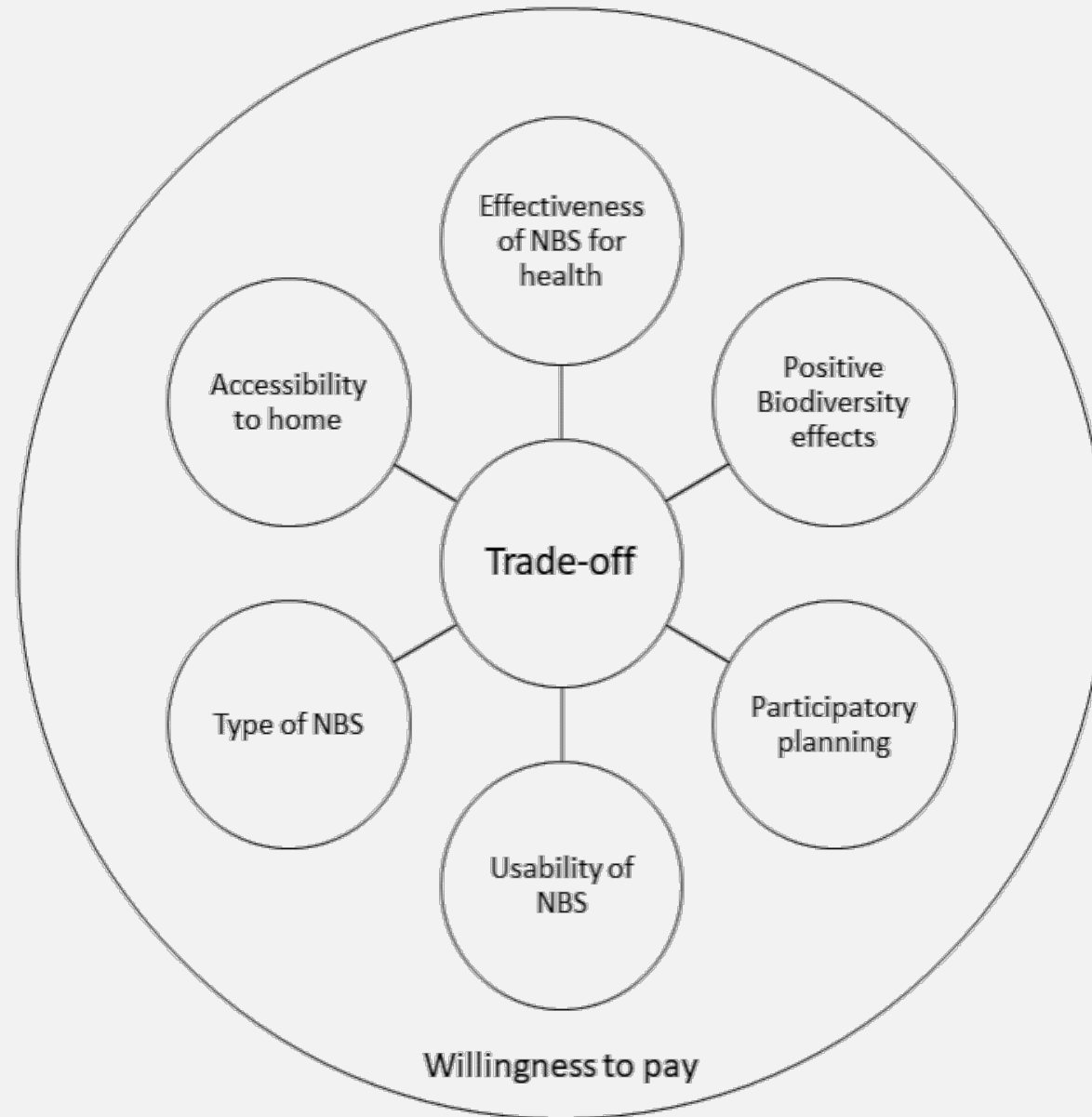


# CITY GREEN – KLIMAWANDELANPASSUNG DURCH ERHÖHUNG DES STADTGRÜNS

# CLIMATE ADAPTATION IN CITIES



We must understand urban populations preferences, desires and needs



And recognize the diversity among the population.

# SURVEY & CHOICE EXPERIMENT

Panel distribution (n= 1,055)

General survey:

- City size, housing quality, surrounding green space,
- Local infrastructure, mobility options, preferences for living in the city,
- Distance to green space, design quality of neighborhoods
- Climate change, heat experience, perceived need for adaptation in urban areas
- Demographics

• Choice Experiments

- Investigate trade-offs and decision making
- Statistical design based on attribute table
- Utilities show preferences and importance of the various attributes

## 18. Now, imagine....

Your city is promoting new green areas throughout all neighborhoods. A citizen survey is being sent out to determine which type of green areas fit local needs. Furthermore, the city aims to understand whether you as a resident would tolerate changes to the accessibility of your home and higher communal costs for these new green areas and improved environmental conditions.

*As you can see in the example below, you will be shown two options. Please choose which green area you would prefer in your neighborhood. You will be asked to choose between options "A" or "B" or to choose "neither" 6 times. The various influencing factors are explained below:*

The proposed two options will have effects on the air quality. They will reduce micro dust and Nitrogen Dioxide (NO<sub>2</sub>) to a certain degree.

Lower temperature on hot summer days may have a positive influence on health and wellbeing.

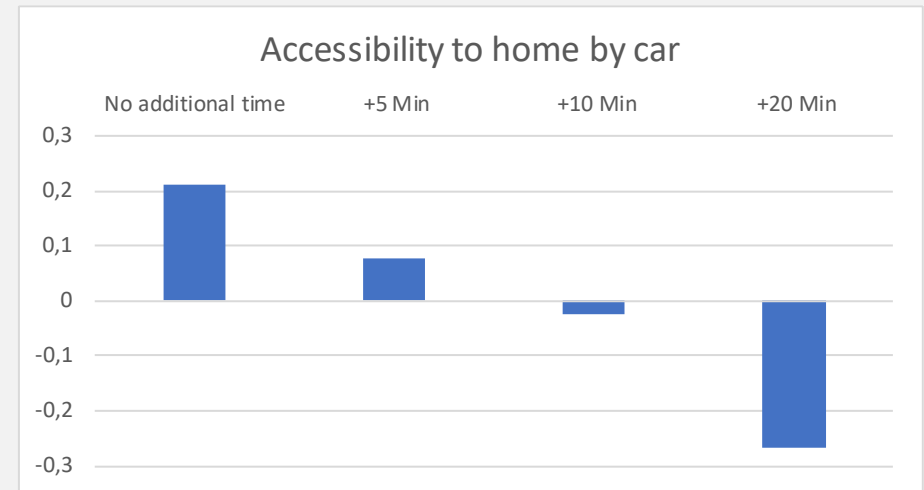
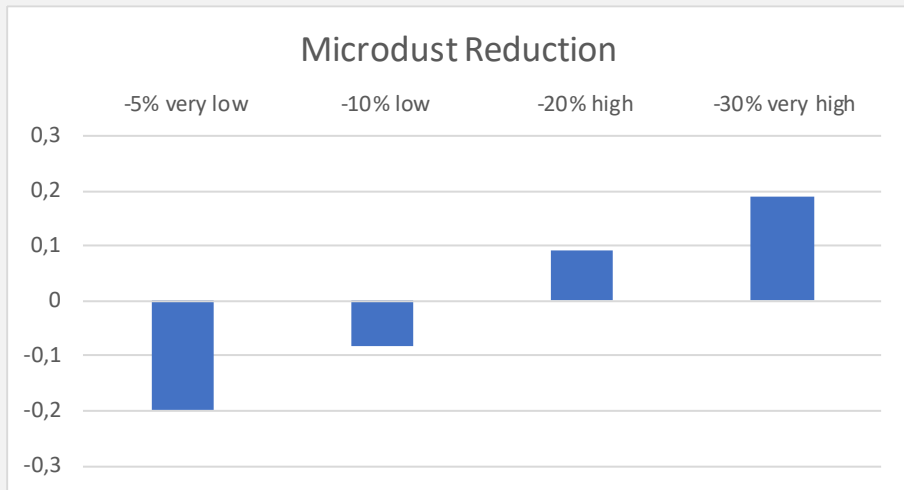
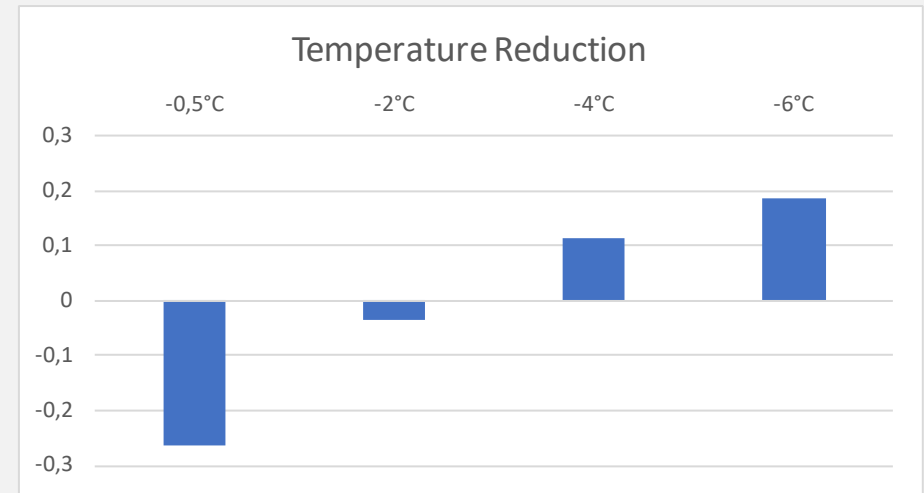
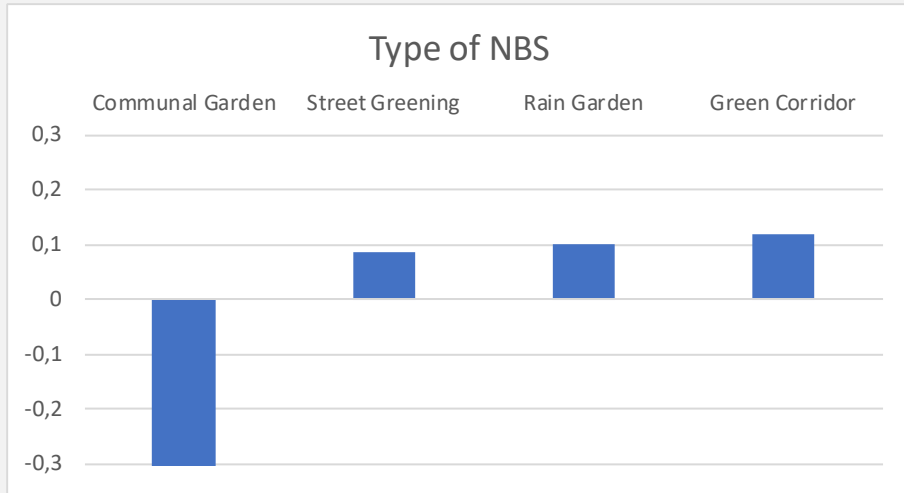
New green infrastructure may require more time to reach your home by car (e.g. due to a detour for parking).

Many communities use a waste bin charge to refinance investments in green infrastructure.

**EXAMPLE**

|   | Option A<br>Image redacted | Option B<br>Image redacted    |
|---|----------------------------|-------------------------------|
| Type of green area                                | Communal garden            | Green corridor                |
| Microdust reduction                               | -10% moderate              | -5% minor                     |
| NO <sub>2</sub> reduction                         | -20% NO <sub>2</sub> major | -12% NO <sub>2</sub> moderate |
| Temperature reduction (in summer)                 | -0,5°C                     | -2°C                          |
| Biodiversity level                                | high                       | low                           |
| Effect on the accessibility to your home by car   | +20 min                    | +10 min                       |
| Waste bin charge increase (annually p. household) | 150€                       | 30€                           |
| Participation in the design process               |                            | <del></del>                   |
| I choose...                                       | <input type="radio"/> A    | <input type="radio"/> B       |

|  | Level 1                  | Level 2                      | Level 3                   | Level 4                     |
|--|--------------------------|------------------------------|---------------------------|-----------------------------|
| Type of green area                                 | Communal garden          | Street greening              | Rain garden               | Green corridor              |
| Microdust reduction                                | -5% minor                | -10% moderate                | -20% major                | -30% extreme                |
| NO <sub>2</sub> reduction                          | -3%NO <sub>2</sub> minor | -12%NO <sub>2</sub> moderate | -35%NO <sub>2</sub> major | -50%NO <sub>2</sub> extreme |
| temperature reduction (in summer)                  | -0,5°C                   | -2°C                         | -4°C                      | -6°C                        |
| Biodiversity level                                 | (low)                    | (low)                        | (high)                    | (high)                      |
| Effect on the accessibility to your home by car    | no extra time            | +5 min                       | + 10 min                  | +20 min                     |
| Waste bin charge increase (annually per household) | 10 €   30 €              | 50 €   100 €                 | 100 €   150€              | 200 €   250 €               |
| Participation in the design process                |                          |                              | <del></del>               | <del></del>                 |



## Class 4

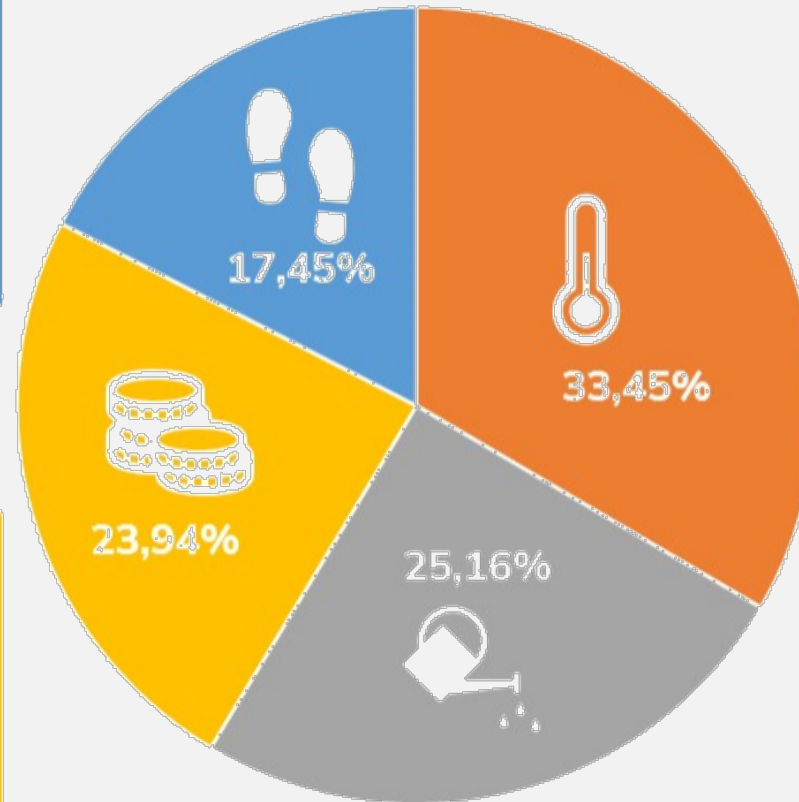
### Accessibility-sensitive

- High interest in new green spaces
- High willingness to pay for green measures
- Climate-sensitive
- No longer distance to the car is tolerated

## Class 3

### Cost-sensitive

- Low interest in new urban green space
- Low willingness to pay for green measures
- Little climate sensitivity
- Older group of population



## Class 1

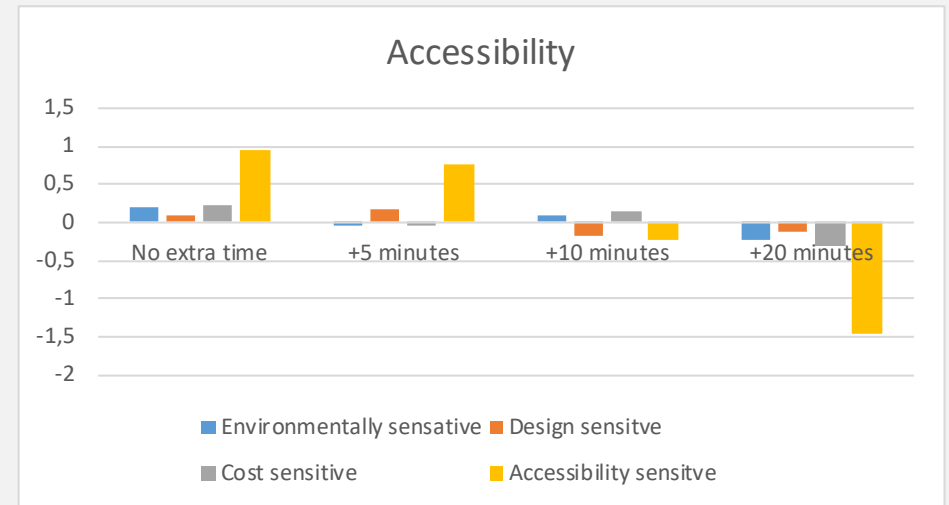
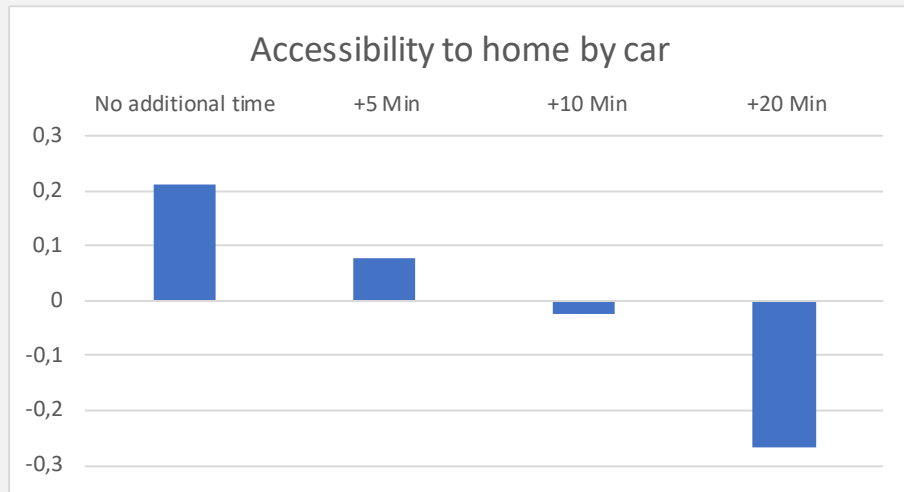
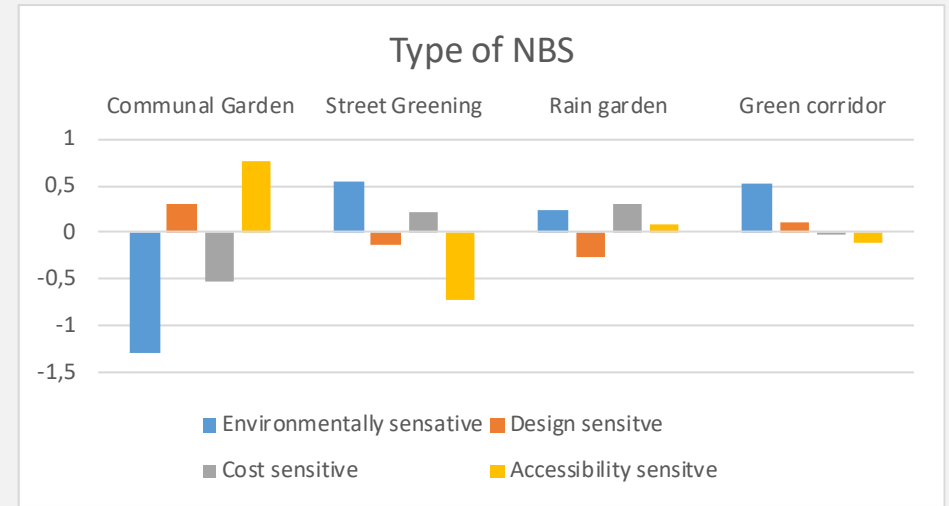
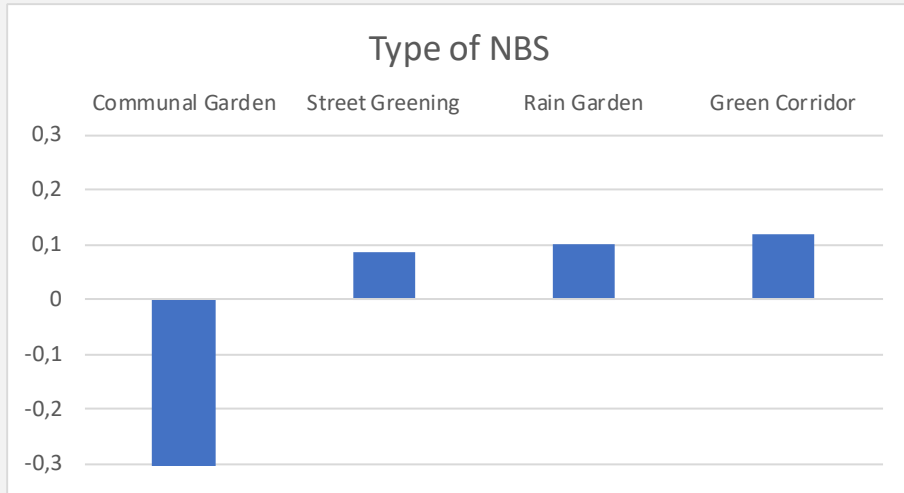
### Environmentally-sensitive

- Very high willingness to pay for new green spaces
- Interested in comprehensive environmental services
- Heat-stressed
- Climate-sensitive
- Rather privileged residential location

## Class 2

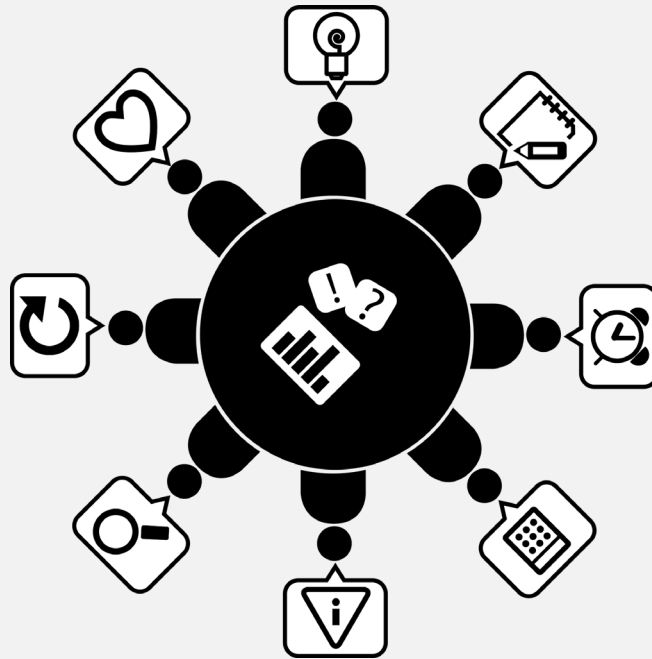
### Design-sensitive

- High interest in new community gardens
- Willing to pay for new green spaces
- Climate-sensitive
- High proportion of women with children



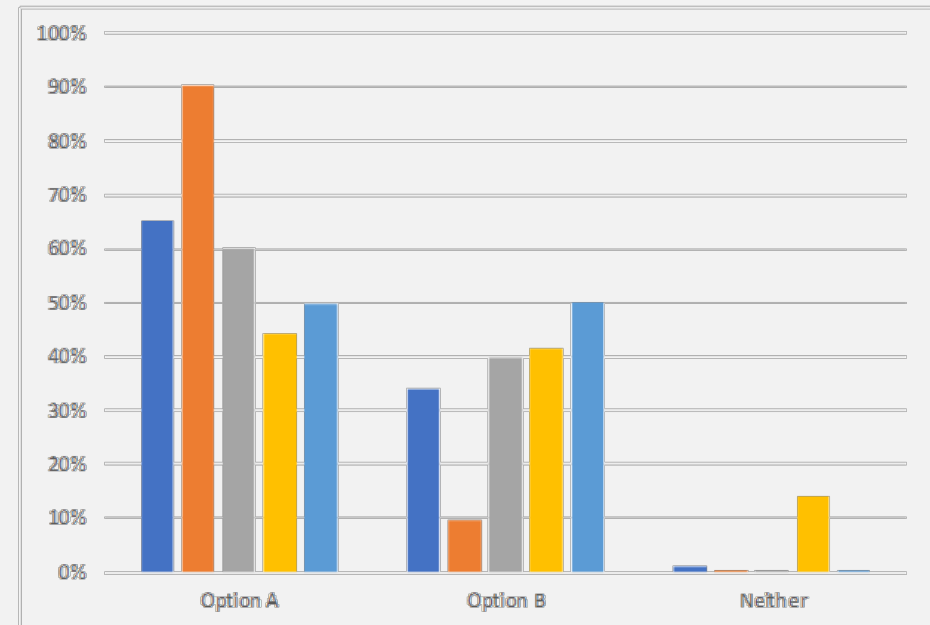


# TOOLS TO LINK RESEARCH AND PRACTICE



# CONCLUSIONS

|  | Option A           | Option B           |
|--|--------------------|--------------------|
| Type of green                                      | Street Greening    | Street Greening    |
| Microdust reduction                                | -30% very high     | -5% very low       |
| NO2 reduction                                      | -50% NO2 very high | -3% NO2 very low   |
| Temperature reduction                              | -6°C               | -0,5°C             |
| Biodiversity                                       | High               | High               |
| Accessibility to home                              | +10 Min            | No additional time |
| Waste bin charge increase (annually per household) | € 45,00            | € 0,00             |
| Participation                                      | Yes                | Yes                |



|         | Option A | Option B | Neither |
|---------|----------|----------|---------|
| All     | 65%      | 34%      | 1%      |
| Class 1 | 90%      | 10%      | 0%      |
| Class 2 | 60%      | 40%      | 0%      |
| Class 3 | 44%      | 41%      | 14%     |
| Class 4 | 50%      | 50%      | 0%      |

THANK YOU

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Let's connect!



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