

Understanding Mobility Strategies of Micromobility Users: Insights from Barcelona

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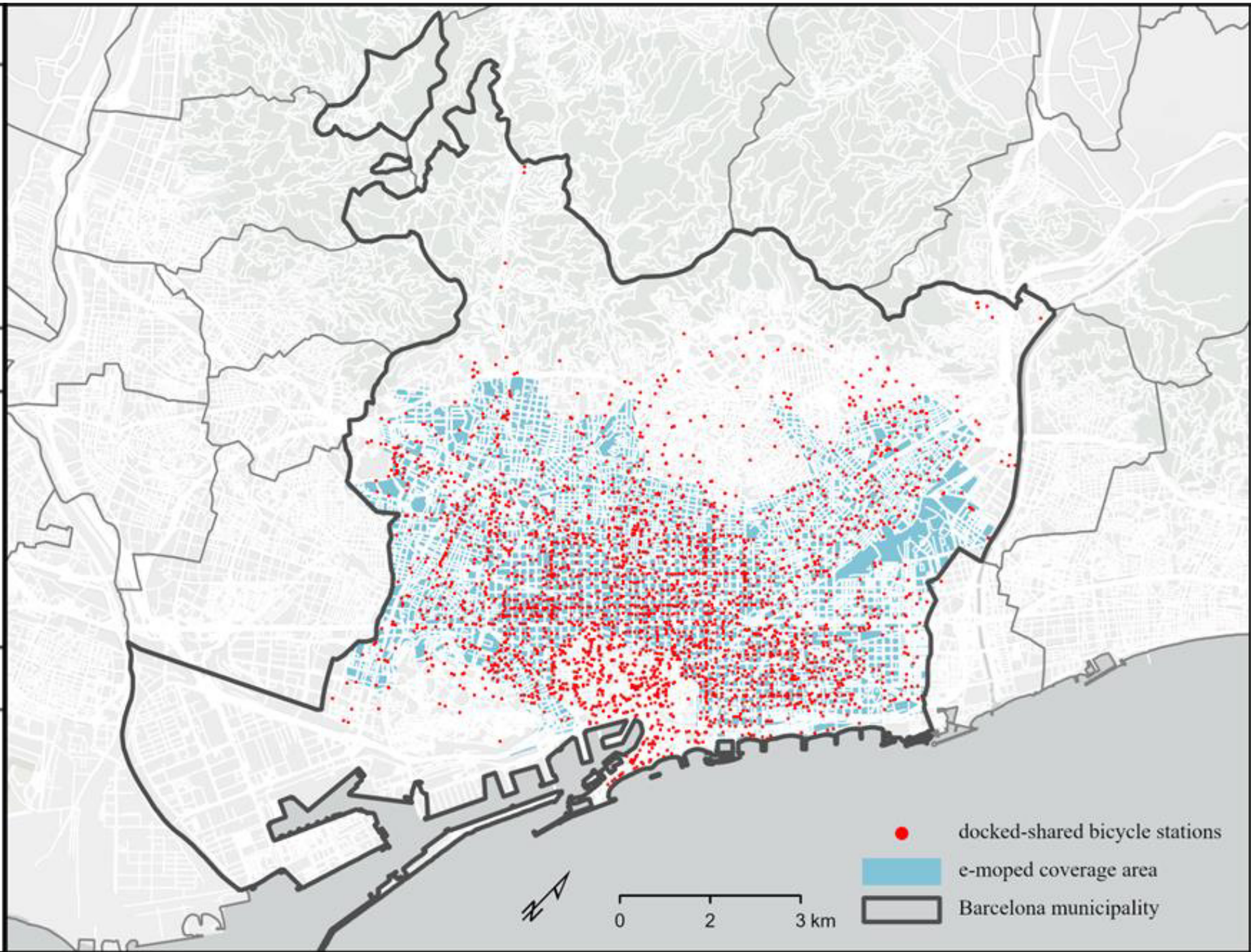
Bicycle-sharing (*Bicing*)



Private e-scooter



Moped-style scooter sharing





1. INTRODUCTION

From **trip**: The relationship between micromobility and traditional modes of transport has been studied through



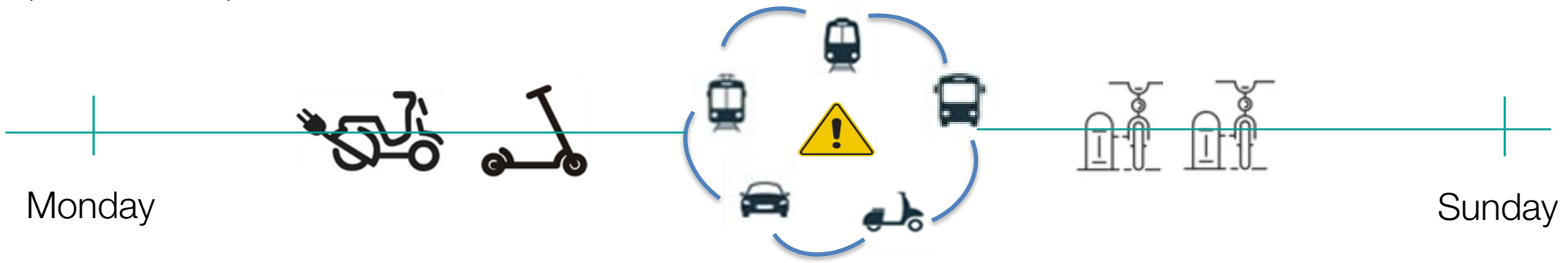
Substitution effect

Micromobility trips replacing trips formerly made by another mode of transport
(Replacement scheme)

Integration effect

The potential of micromobility to complement other modes of transportation
(First/last mile)

To **week** (Nobis, 2007):



MODAL MIX



2. RESEARCH QUESTIONS

- (1) Which are the distinct profiles of micromobility users in Barcelona?
 - (1) How do different micromobility profiles design their modal strategies?
- (1) What key factors drive the adoption of multimodal travel behaviors among micromobility users in Barcelona?



3. METHODOLOGY

| | | | |
|----------------------|--|---|---|
| | (1) | (2) | (3) |
| Statistical analysis | <p>Cluster analyses of micromobility user groups (n=902)</p> <p><i>K-modes algorithm</i></p> | <p>Bivariate analysis to identify multimodal travel behaviours</p> <p><i>Chi-squared test (X2)</i></p> | <p>Multivariable analysis to estimate likelihood of belonging to each cluster</p> <p><i>Binary logistic models (x6)</i></p> |
| Key variables | <p>Self-declared use of <u>micromobility</u> modes</p> <p>“In the last seven days, have you used the following micromobility mode of transport?”</p> <p>(1) Yes, 3 or more days (<i>Often</i>); (2) Yes, 1 or 2 days (<i>Sometimes</i>); (3) No, I have not (<i>Never</i>).</p> | <p>Self-declared use of <u>traditional</u> modes of transport</p> <p>“In the last seven days, have you used the following mode of transport?”</p> <p>(1) Yes, 3 or more days (<i>Often</i>); (2) Yes, 1 or 2 days (<i>Sometimes</i>); (3) No, I have not (<i>Never</i>).</p> | <p>Socioeconomic and built environment variables</p> <p><i>Age</i> <i>Gender</i> <i>Professional status</i> <i>Access to car</i> <i>Place of residency</i> <i>Place of work</i></p> |

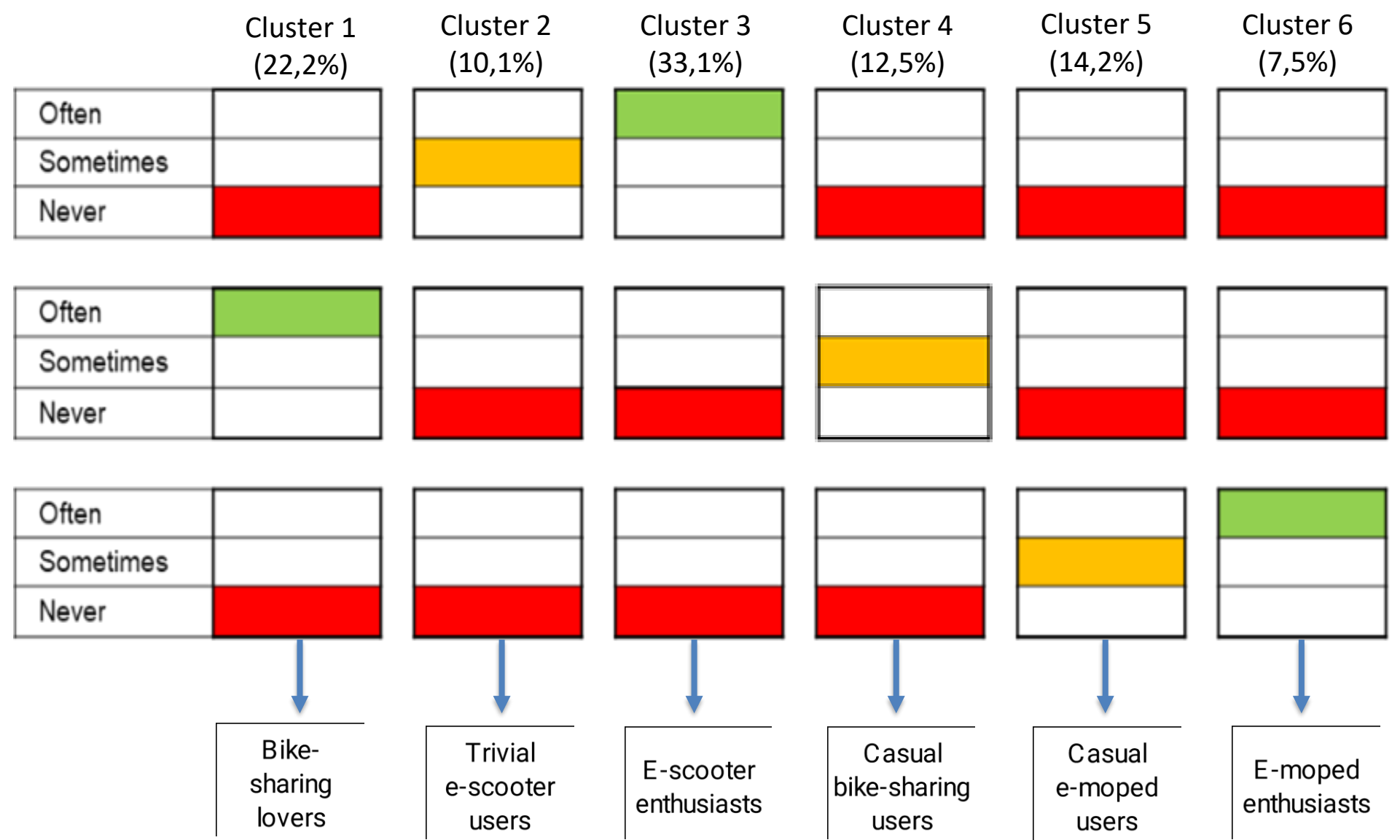
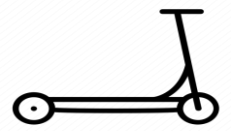


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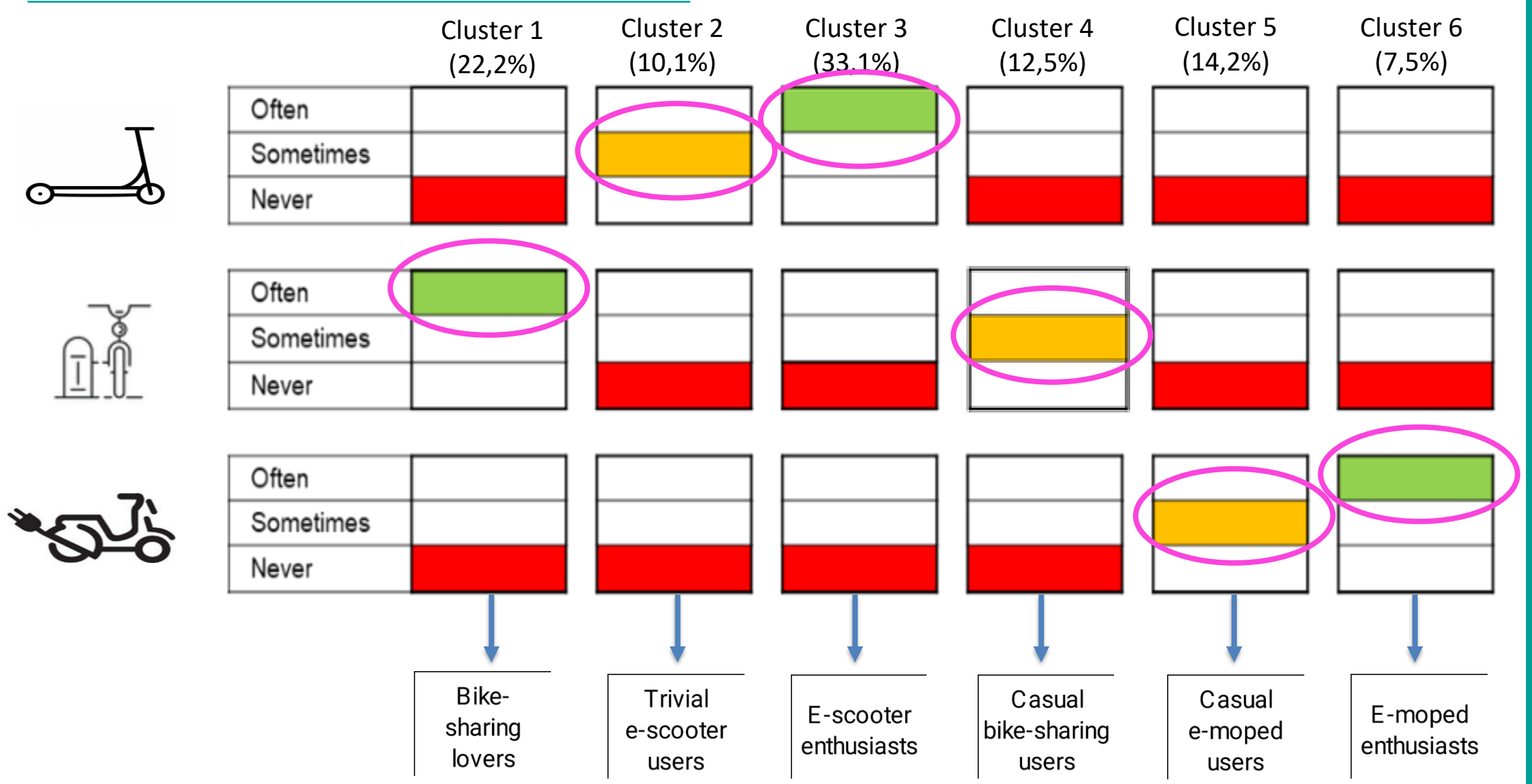


4. RESULTS (1)





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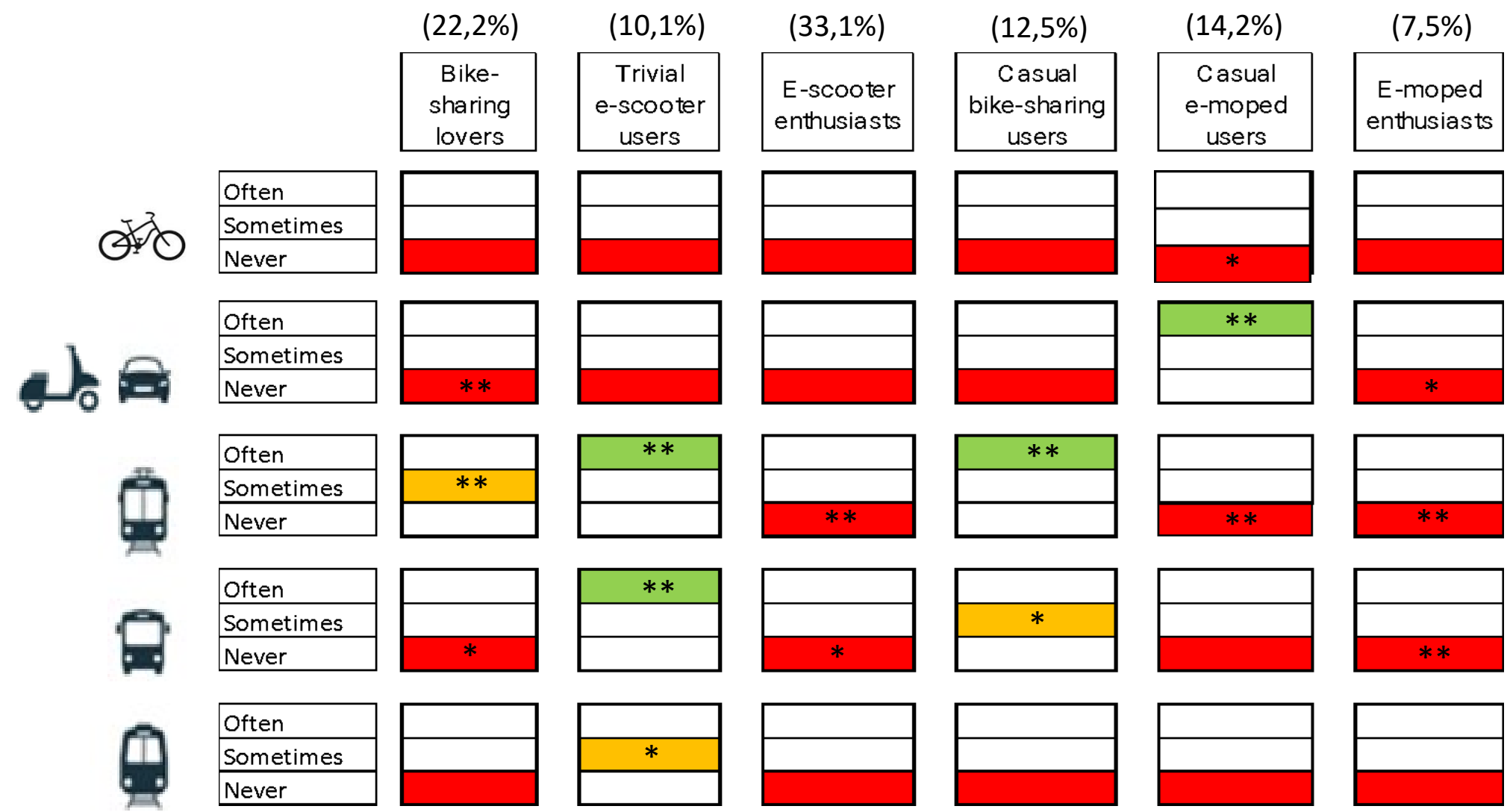




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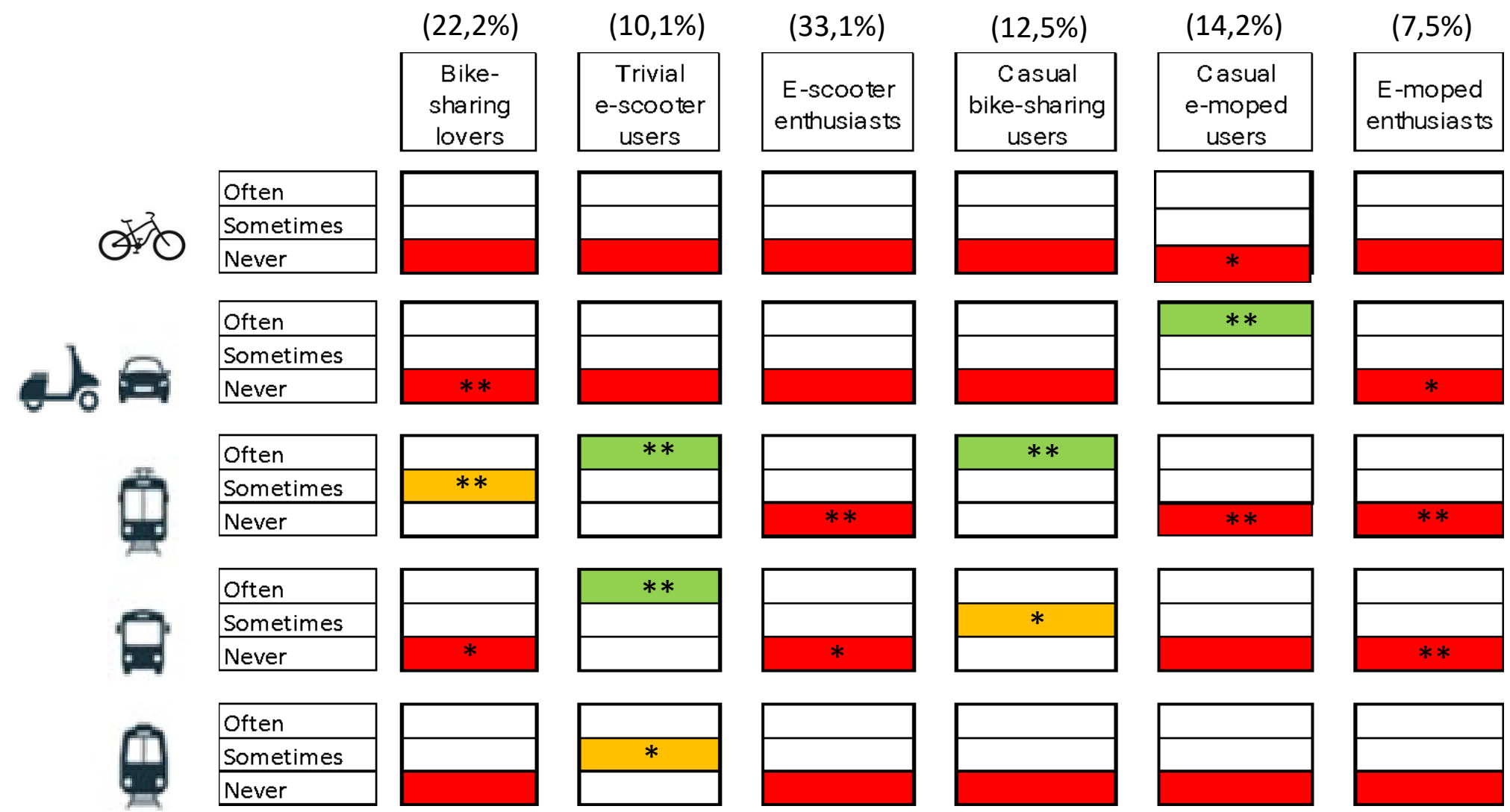
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Boxes with (*) indicate a statistically significant lower percentage compared to the overall distribution of the sample

Boxes with (**) indicate a statistically significant higher percentage compared to the overall distribution of the

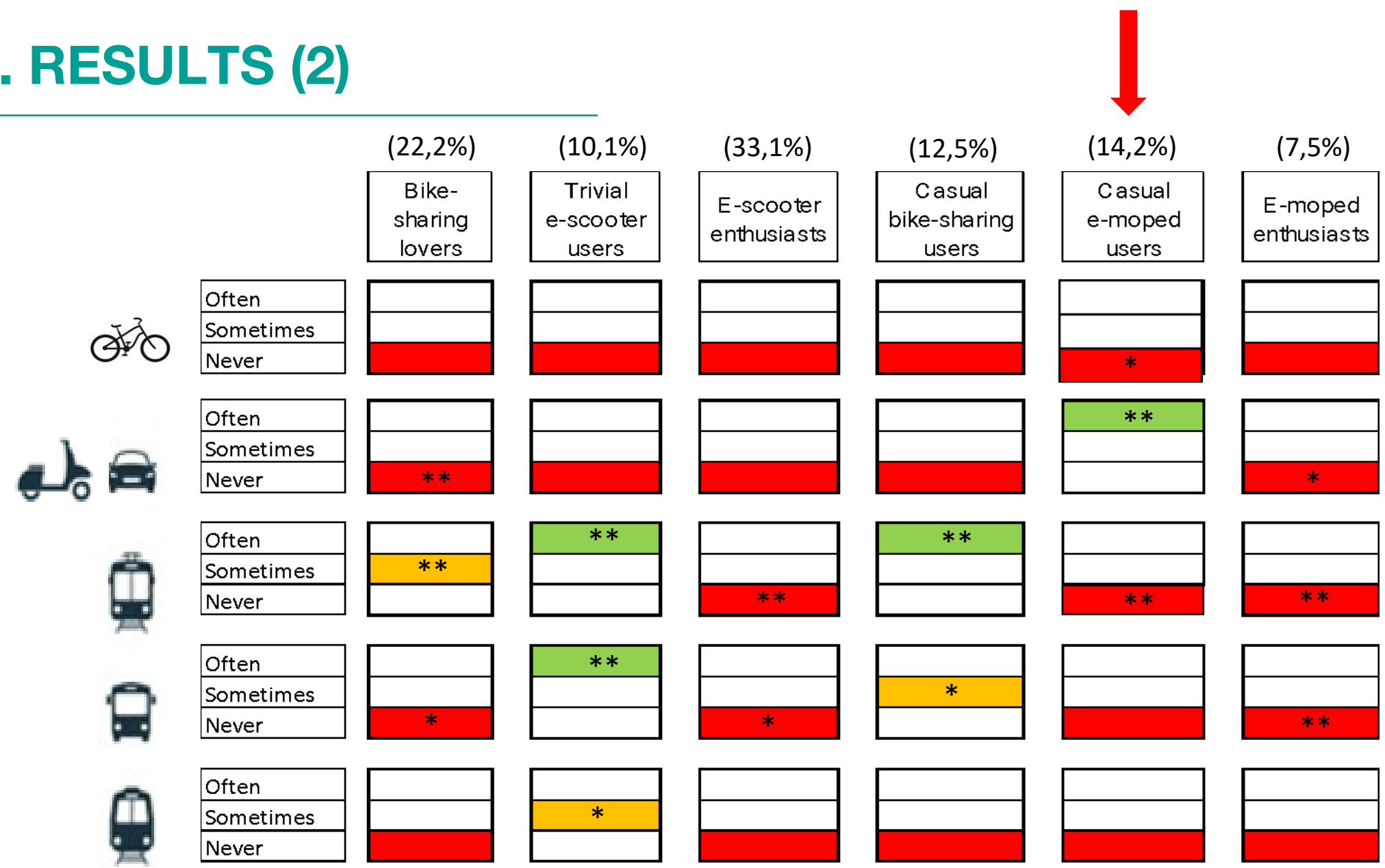
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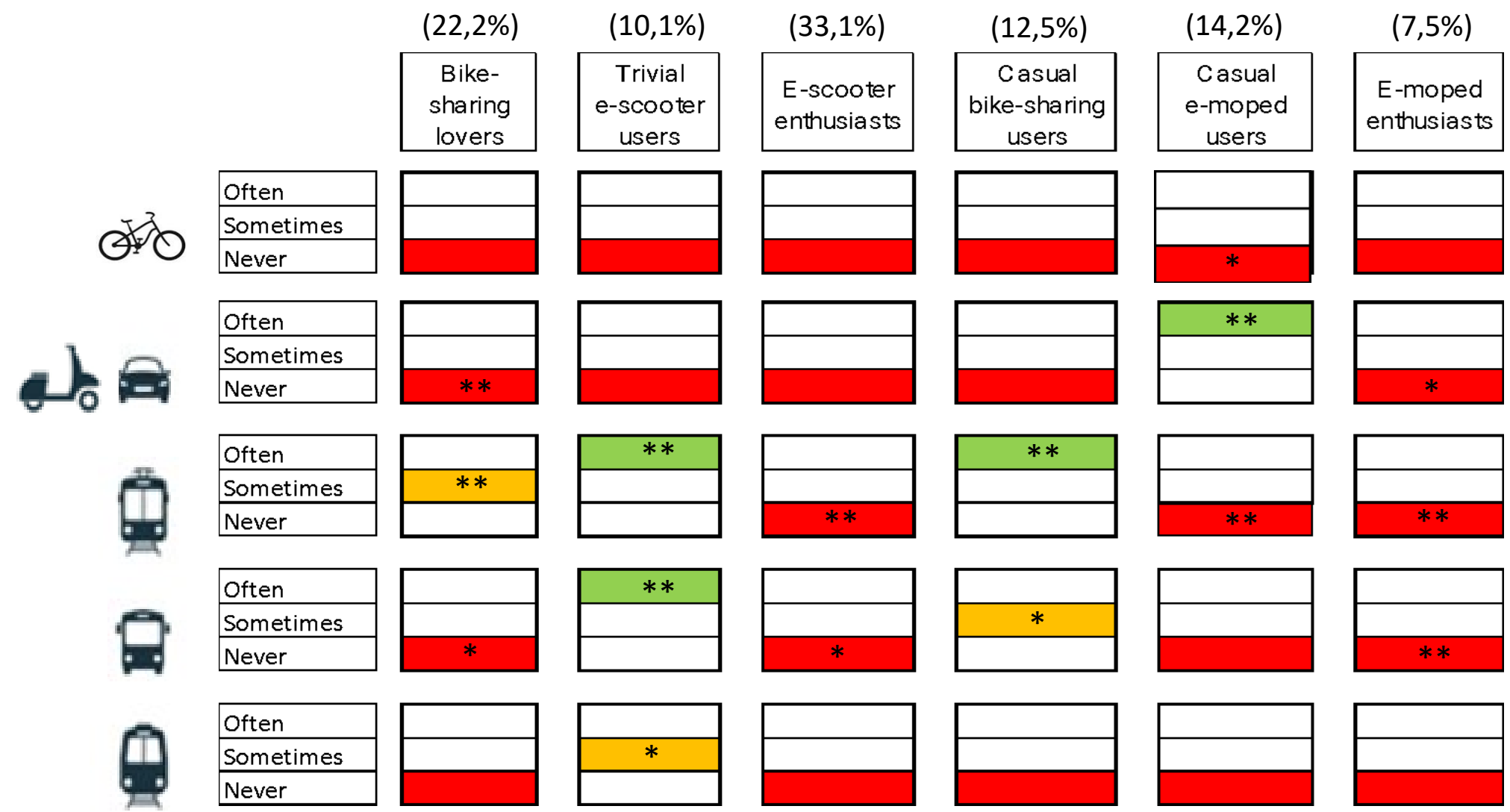
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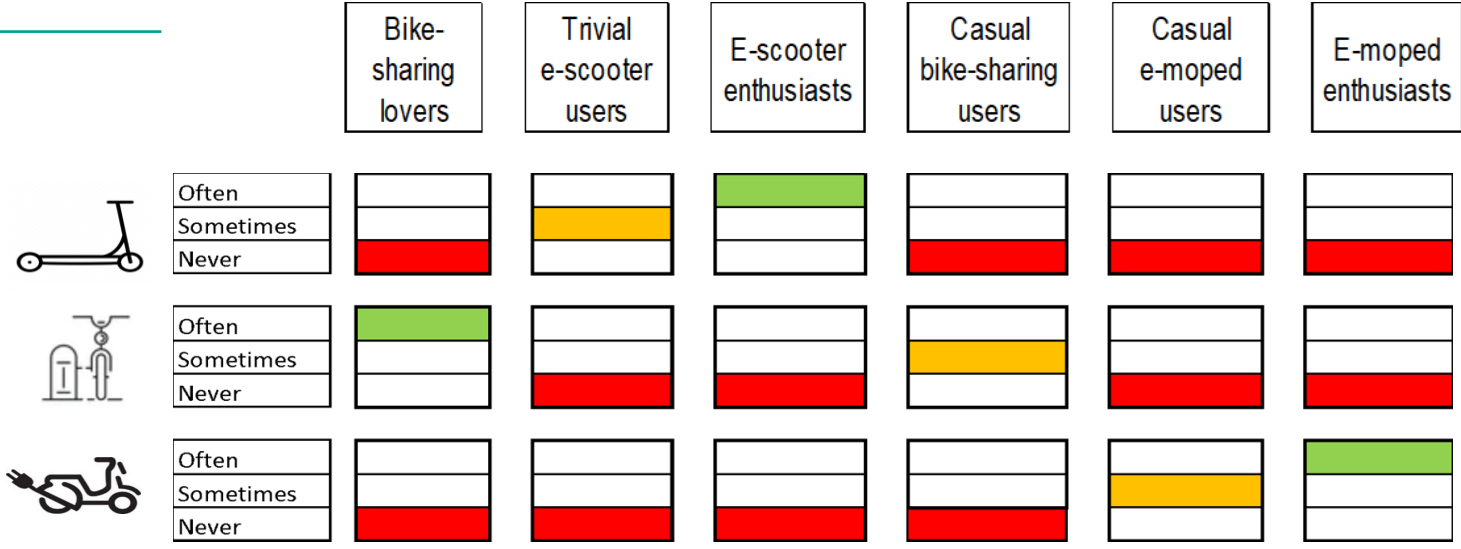


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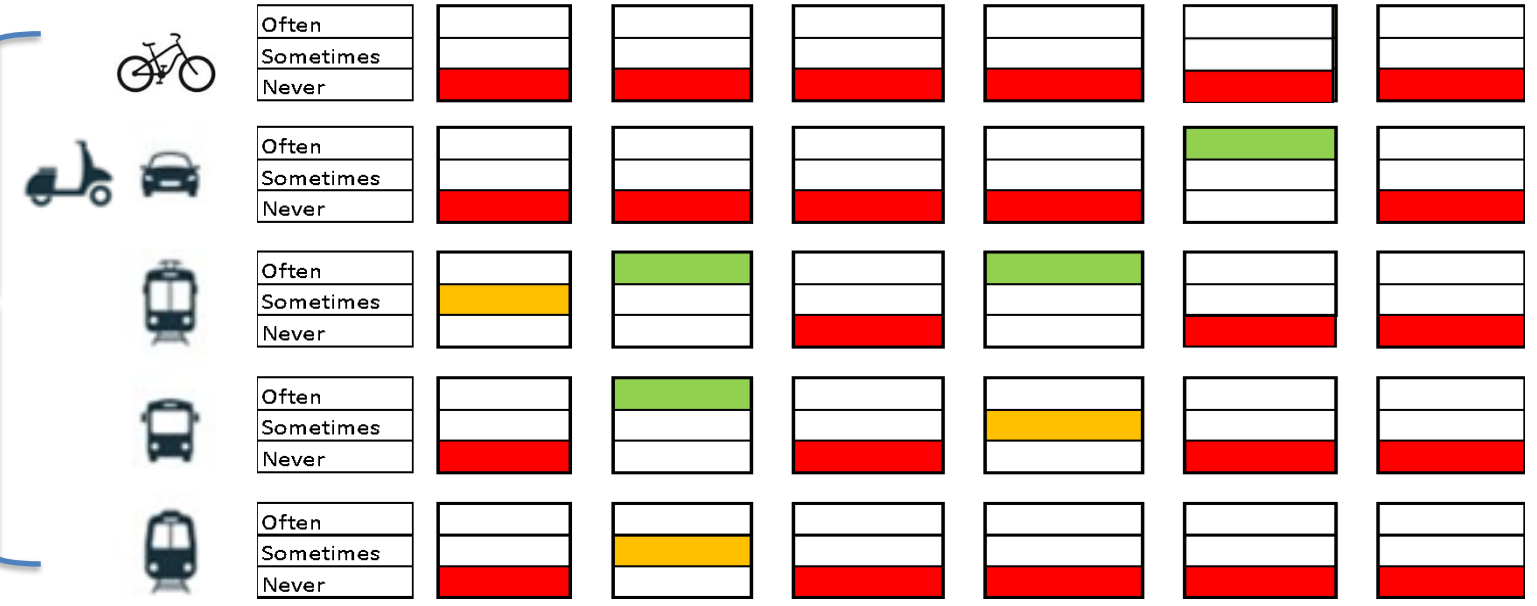
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4. RESULTS (1+2)

(1)
Cluster analyses of
micromobility
modes frequencies
of use

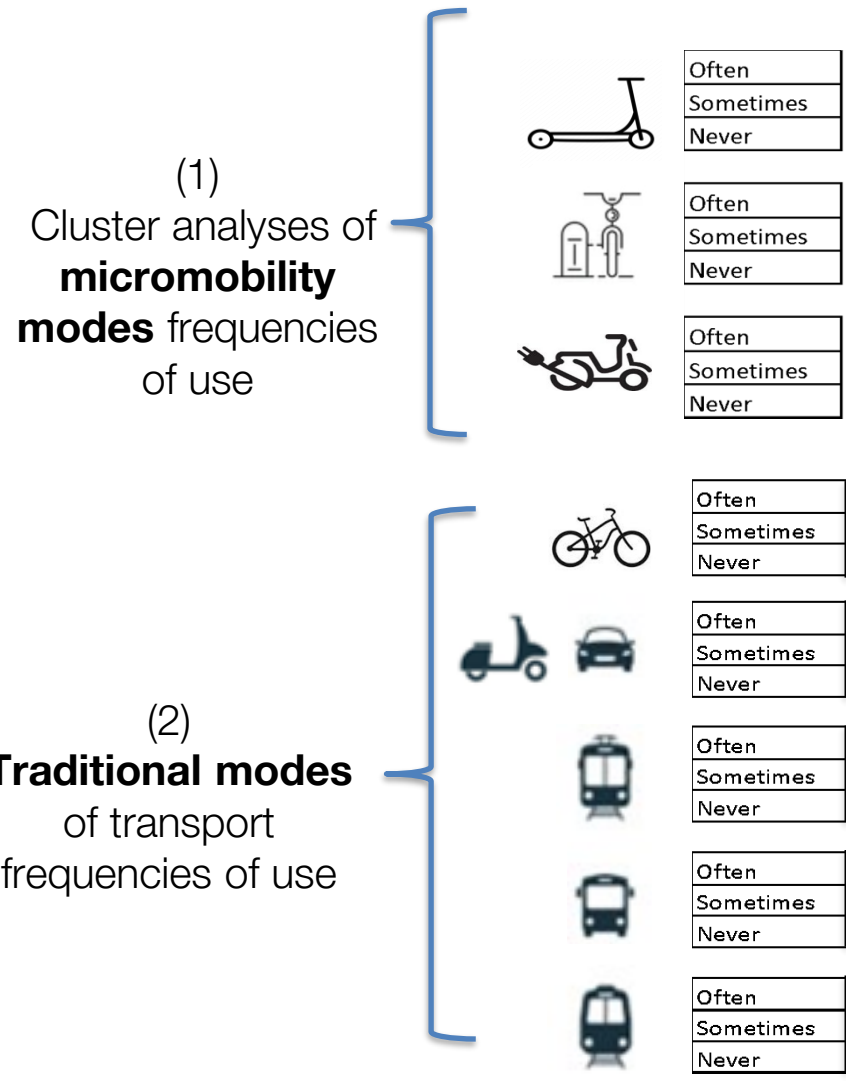


(2)
Traditional modes
of transport
frequencies of use

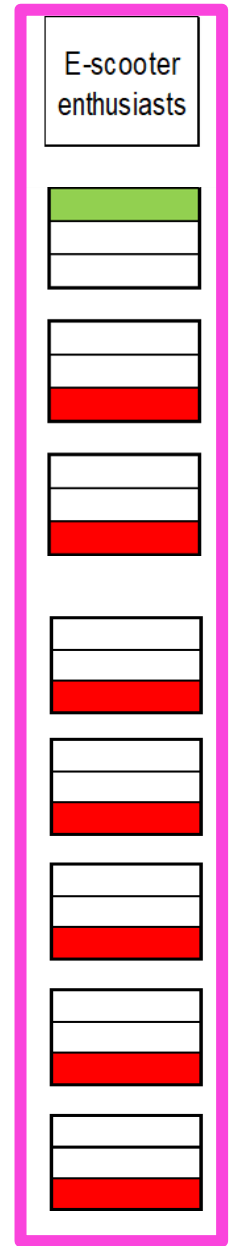


MODAL MIXES

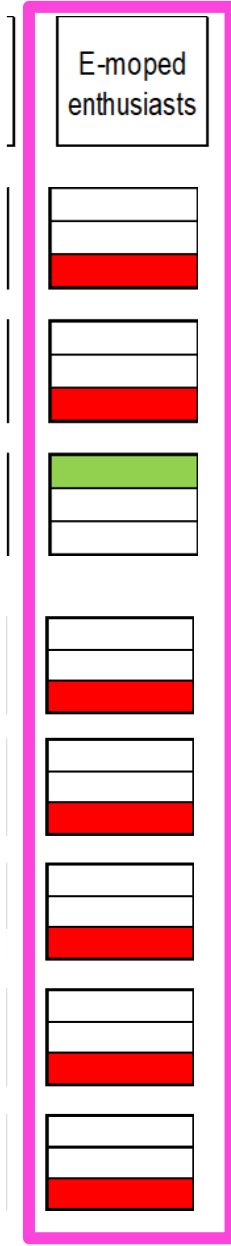
4. RESULTS (1+2)



Cluster 3 (33,1%)



Cluster 6 (7,5%)



(1) **Monomodal** travel behavior

4. RESULTS (1+2)

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(2)
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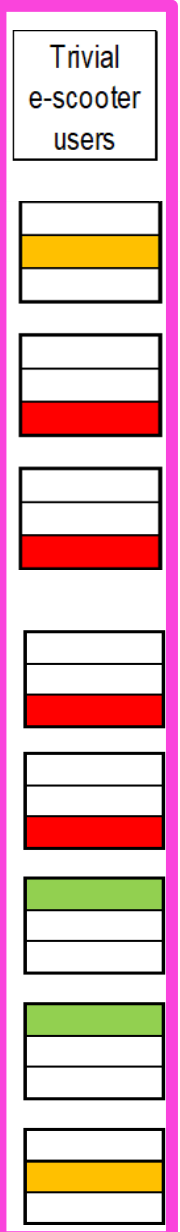
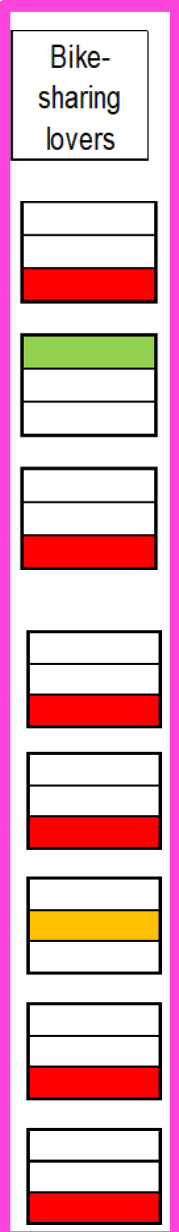
| | |
|--|-----------------------------|
| | Often Sometimes Never |
| | Often Sometimes Never |
| | Often Sometimes Never |
| | Often Sometimes Never |
| | Often Sometimes Never |
| | Often Sometimes Never |
| | Often Sometimes Never |
| | Often Sometimes Never |

Cluster 1
(22,2%)

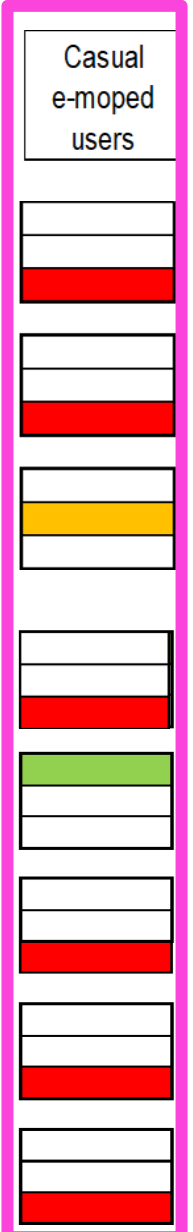
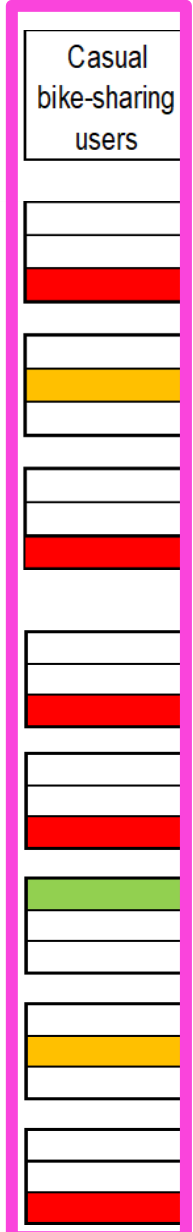
Cluster 2
(10,1%)

Cluster 4
(12,5%)

Cluster 5
(14,2%)



E-scooter enthusiasts



E-moped enthusiasts

(2)
Multimodal
travel behavior

4. RESULTS (1+2)

(1)
Cluster analyses of
micromobility modes frequencies
of use



| |
|-----------|
| Often |
| Sometimes |
| Never |

(2)
Traditional modes
of transport
frequencies of use



| |
|-----------|
| Often |
| Sometimes |
| Never |

Bike-sharing lovers

| | |
|-----------|--|
| Often | |
| Sometimes | |
| Never | |

Trivial e-scooter users

| | |
|-----------|--|
| Often | |
| Sometimes | |
| Never | |

E-scooter enthusiasts

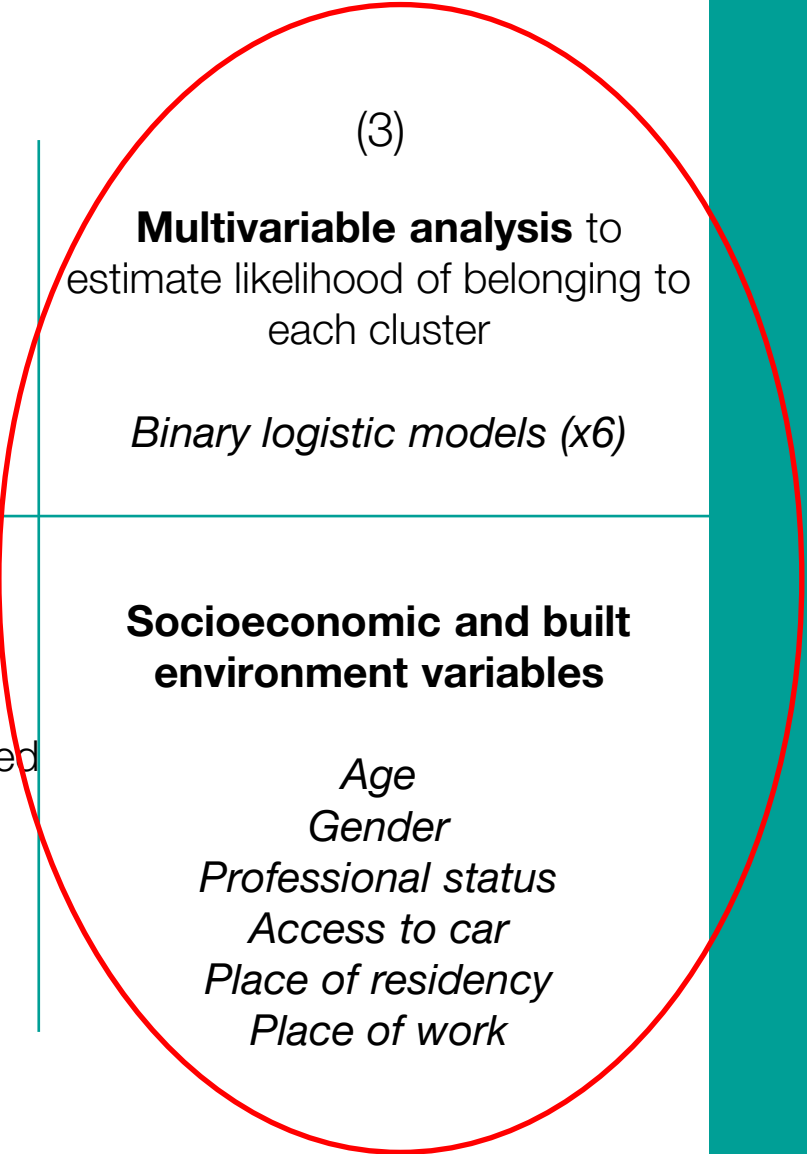
Casual bike-sharing users

Casual e-moped users

E-moped enthusiasts

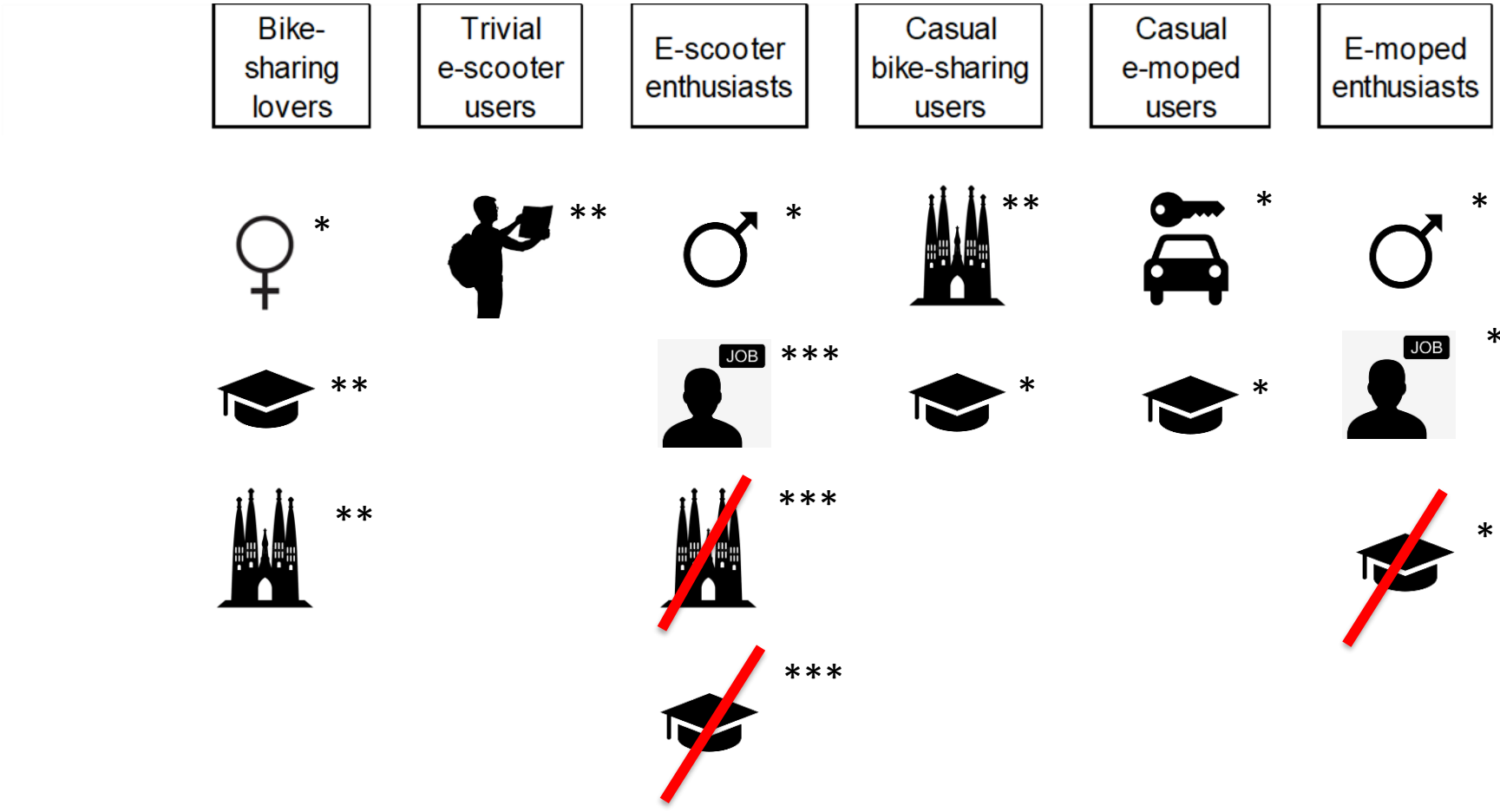
(2)
Multimodal
travel behavior
↓
Micromobility as
the **PILAR**

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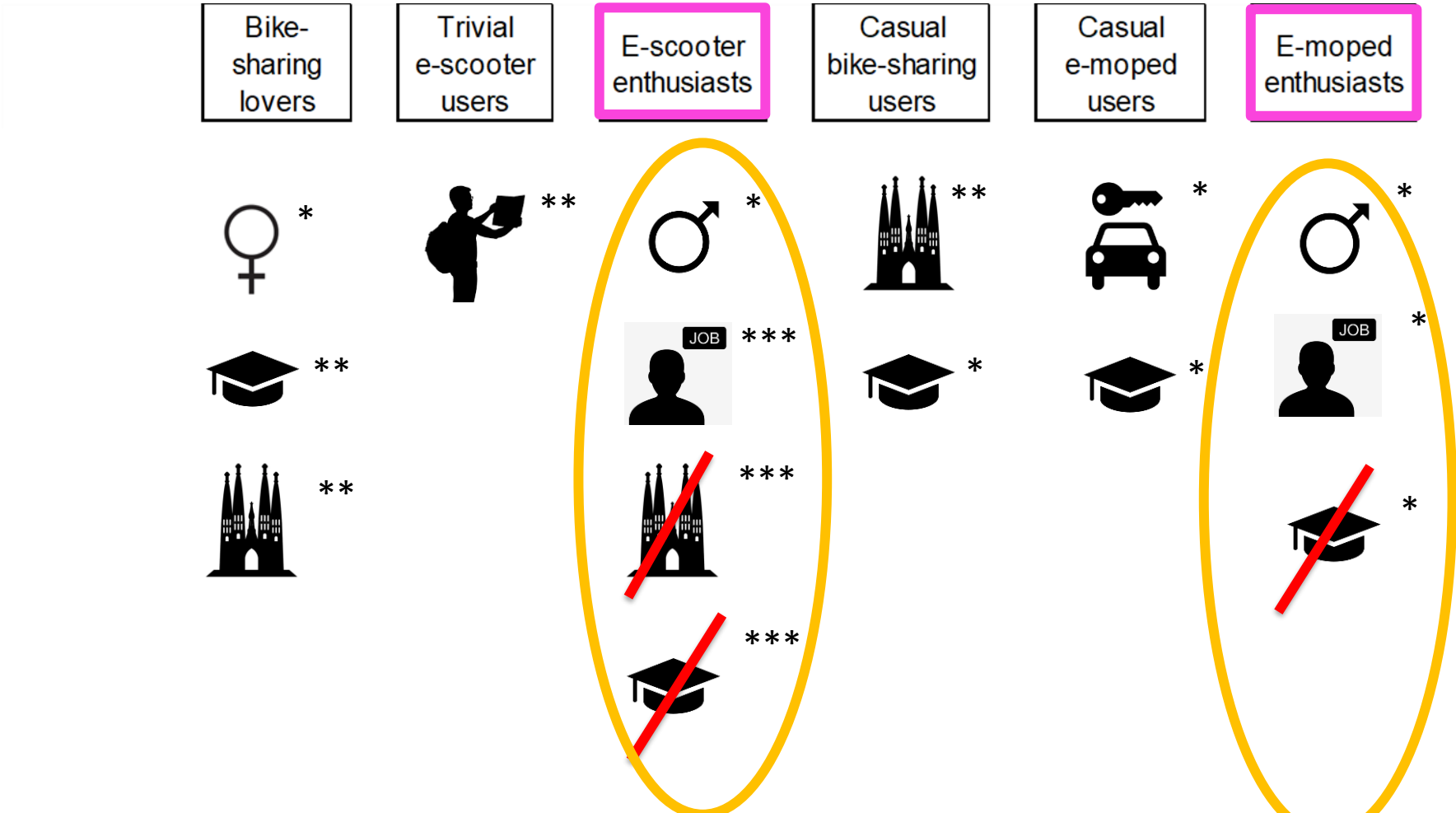
(3) Who are them?



*** p-value<0,001; ** p-value<0,01; *p-value<0,05

4. RESULTS (3)

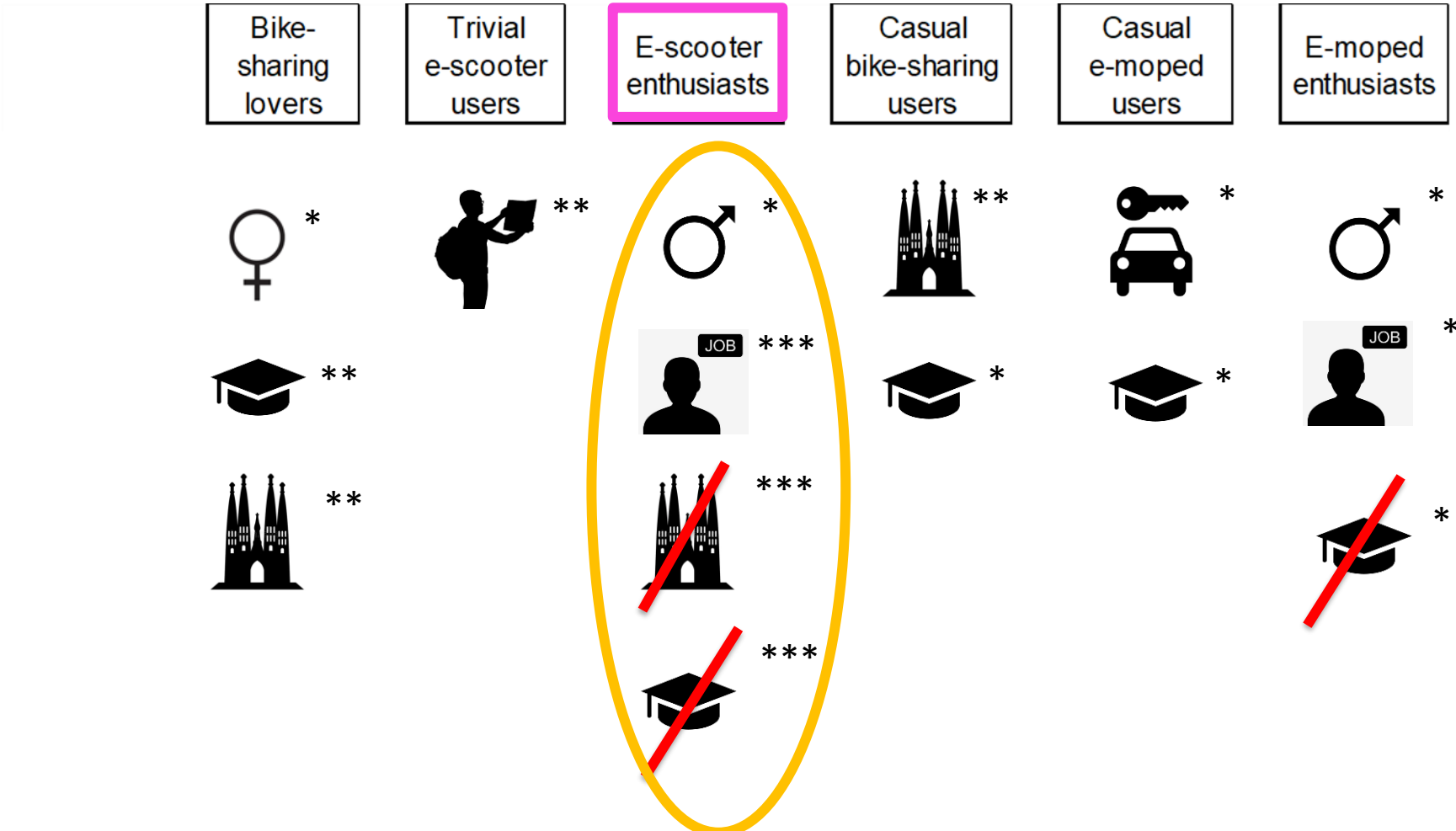
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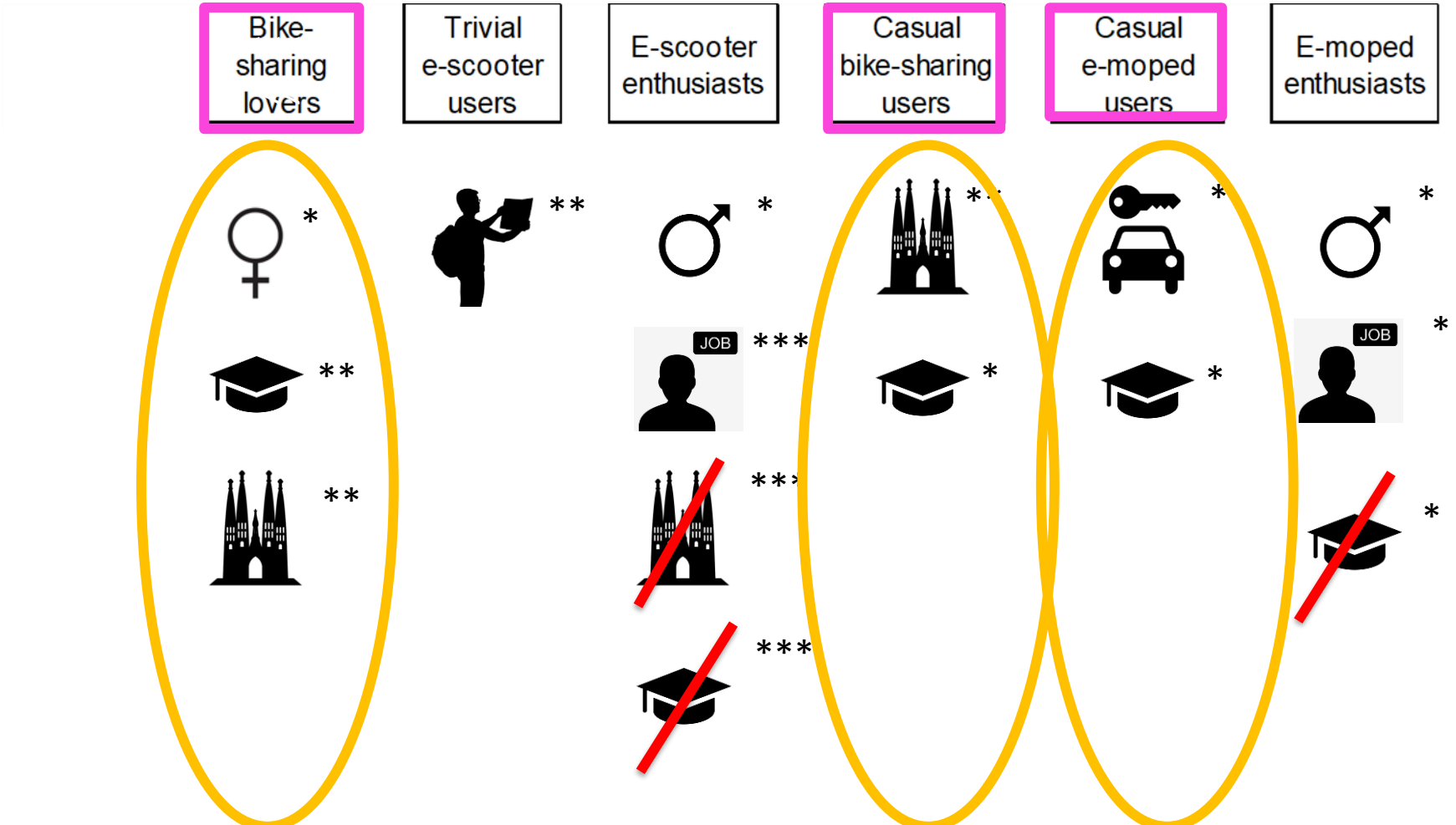
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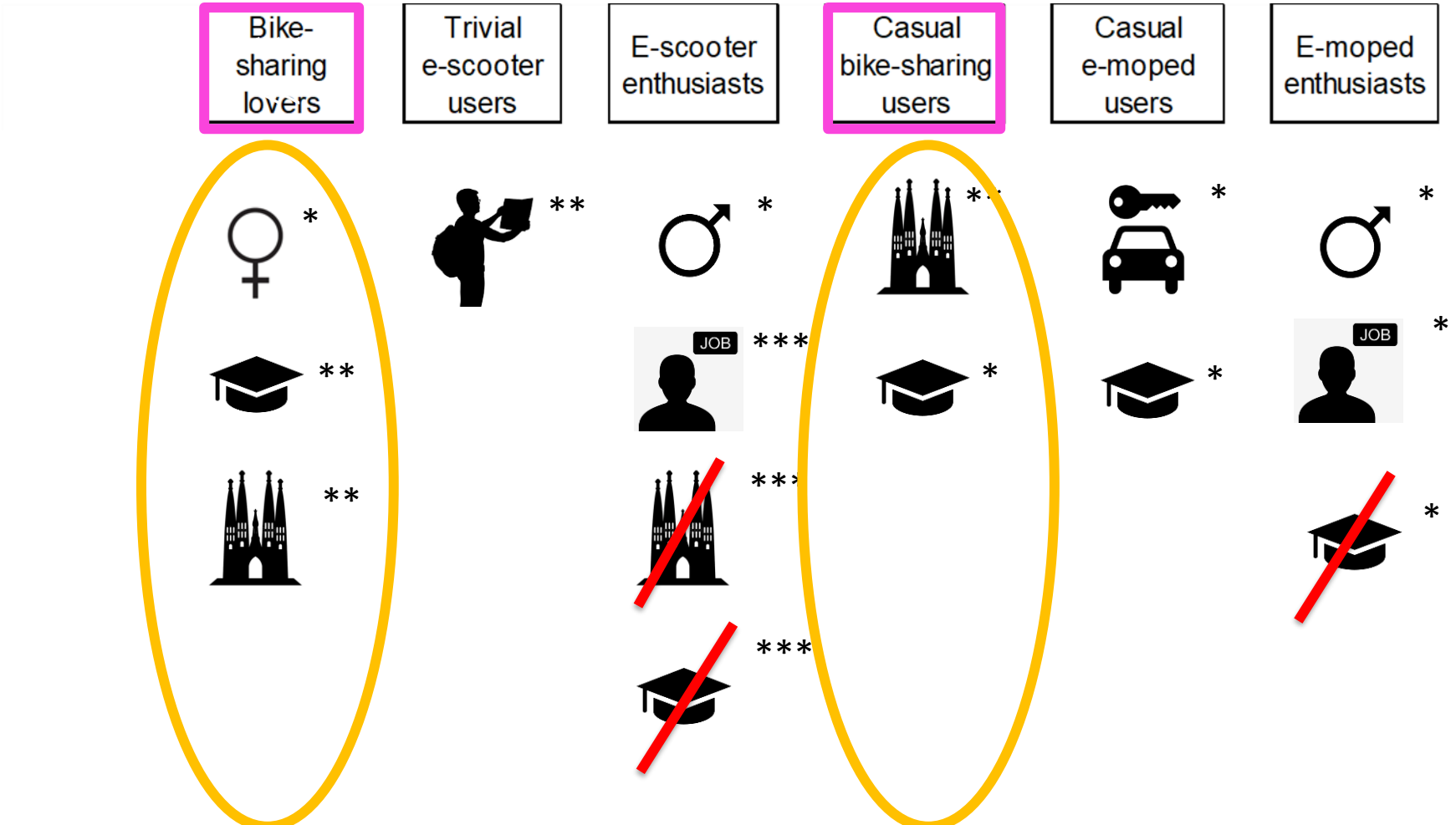
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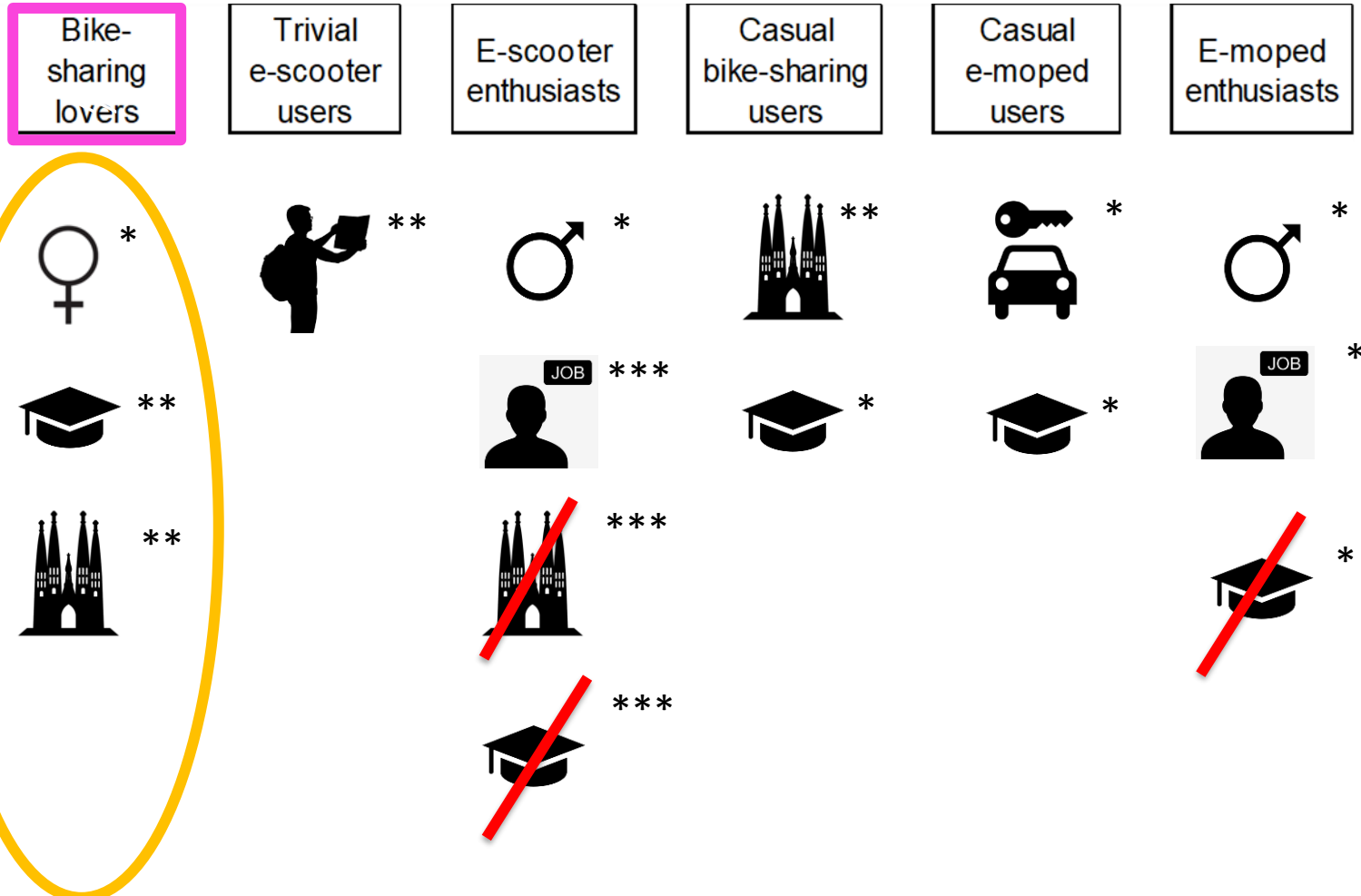
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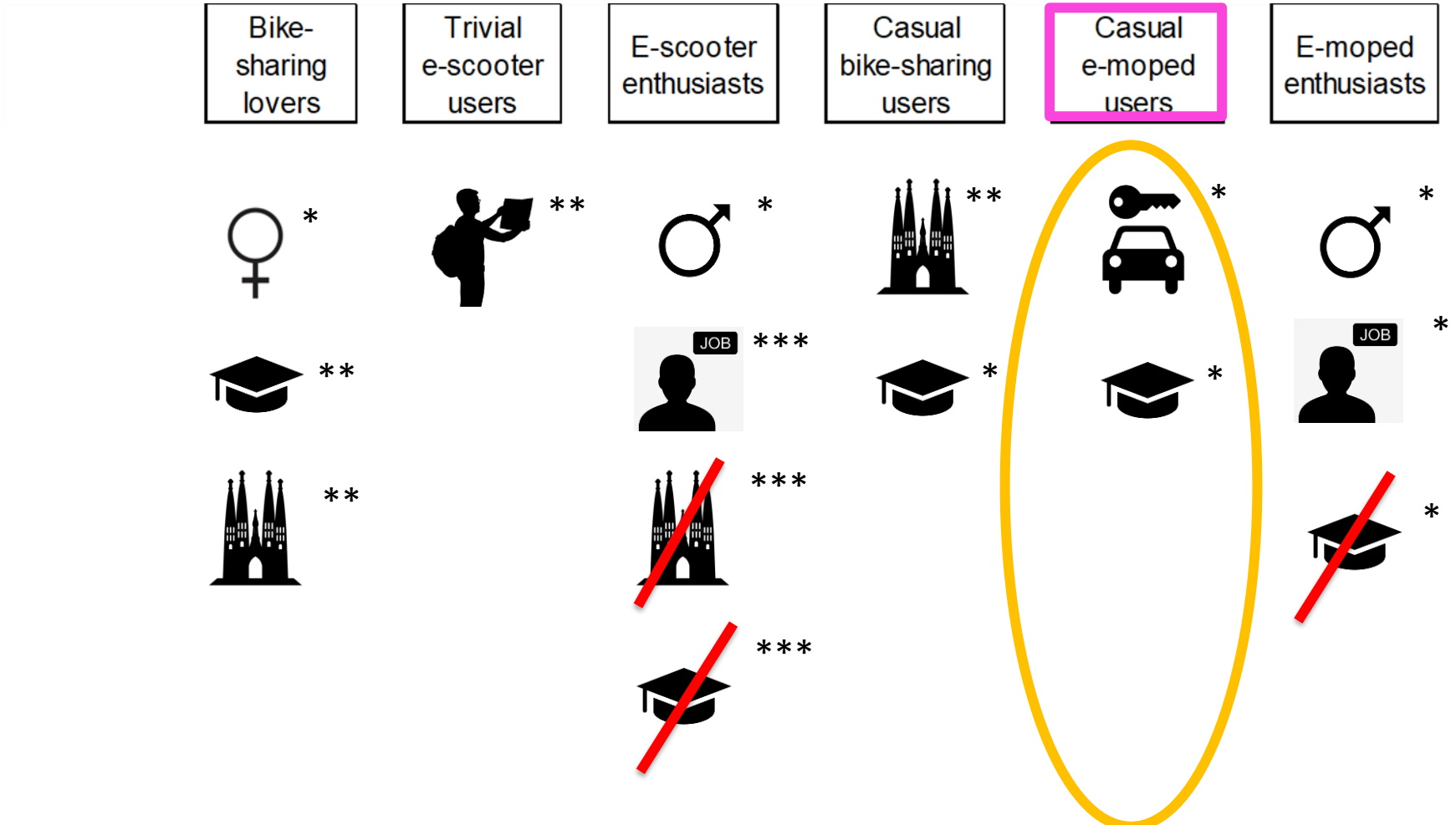
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5. CONCLUSIONS



| | | | | |
|---|---|---|---|---|
|  |  |  |  |  |
|---|---|---|---|---|

5. CONCLUSIONS



From habit
to
Real time need

5. CONCLUSIONS



From habit
to
Real time need



Multimodality
≡
High transaction
costs

Thank you!

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