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Goudappel Coffeng

ATTITUDES AND TRAVEL BEHAVIOUR: CHANGING MODE PREFERENCES TO CHANGE BEHAVIOUR?

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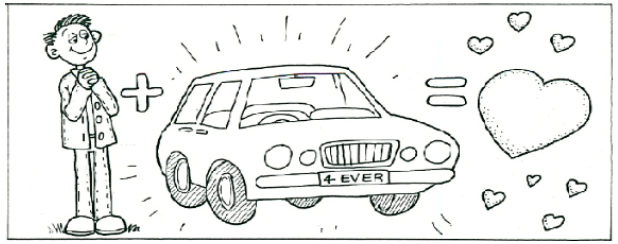
ATTITUDES AND PREFERENCES

DIFFERENT TYPES OF CAR RIDERS

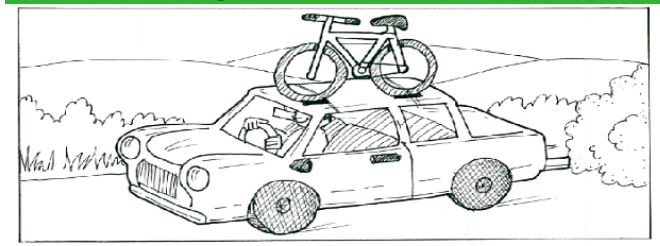
Die Hard Drivers



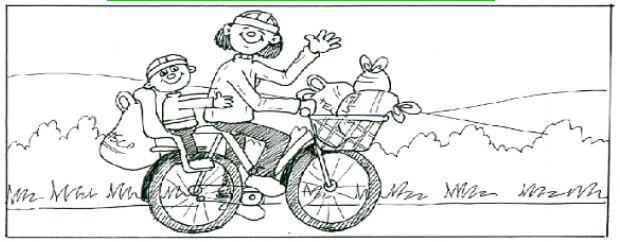
Car Complacents

Malcontented Motorists

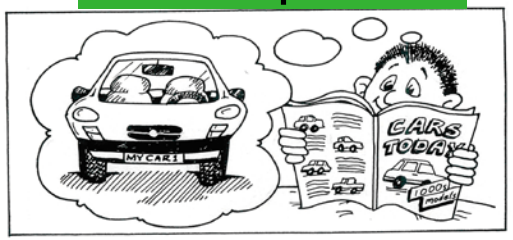
Aspiring Environmentalists



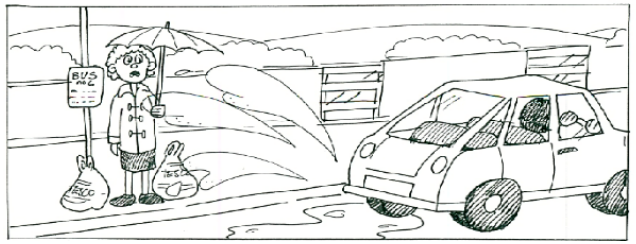
Car Sceptics



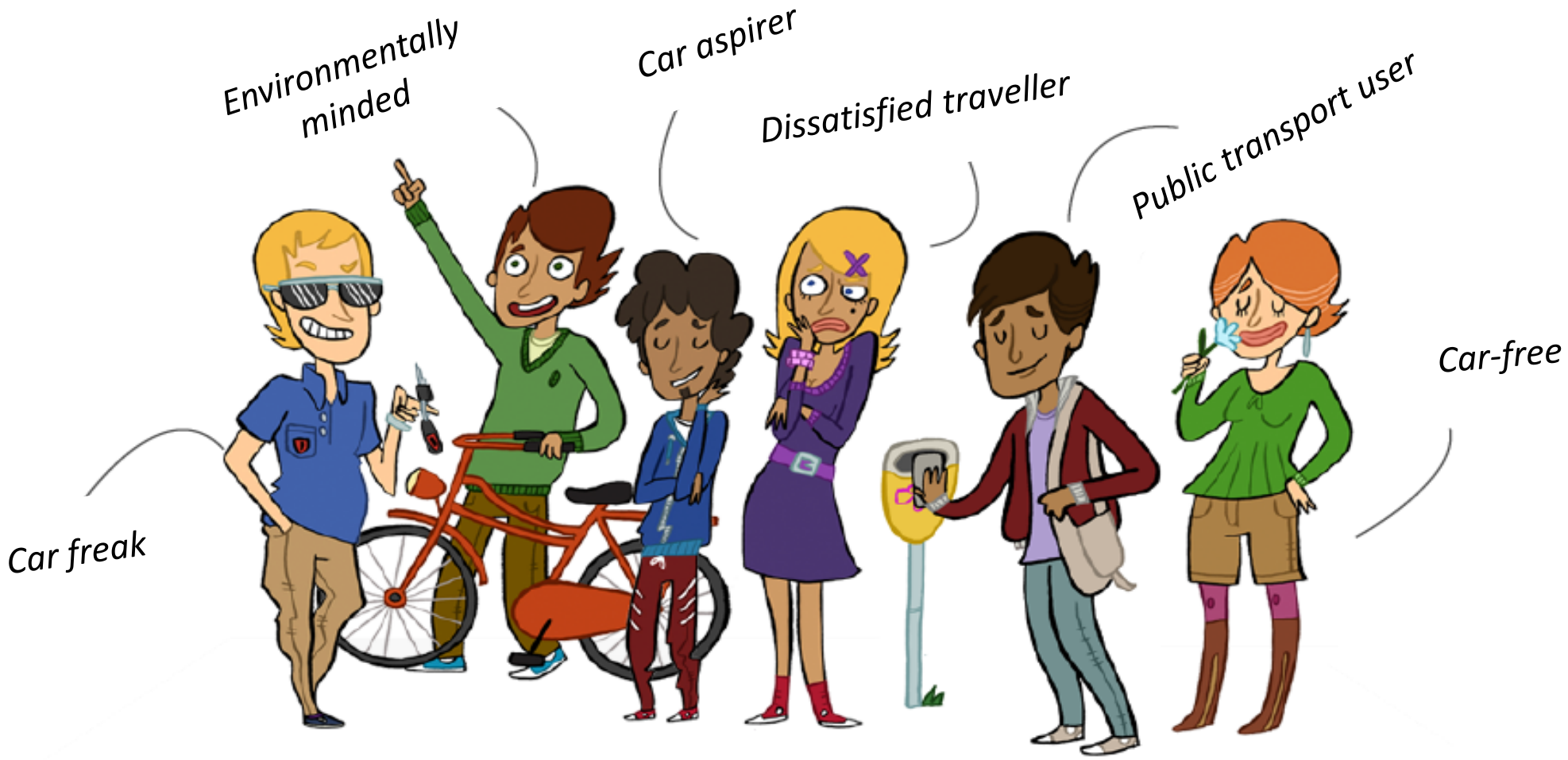
Car Aspirers



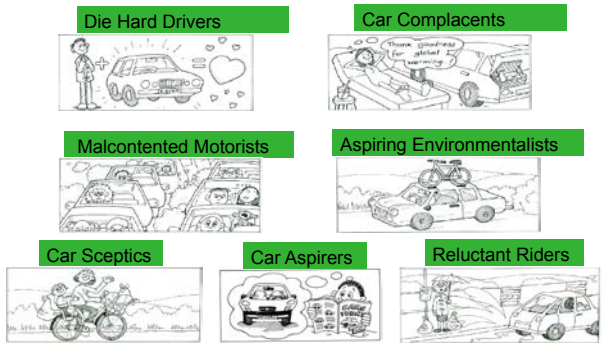
Reluctant Riders



DIFFERENT TYPES OF TRAVELLERS



ATTITUDES & TRAVEL BEHAVIOUR

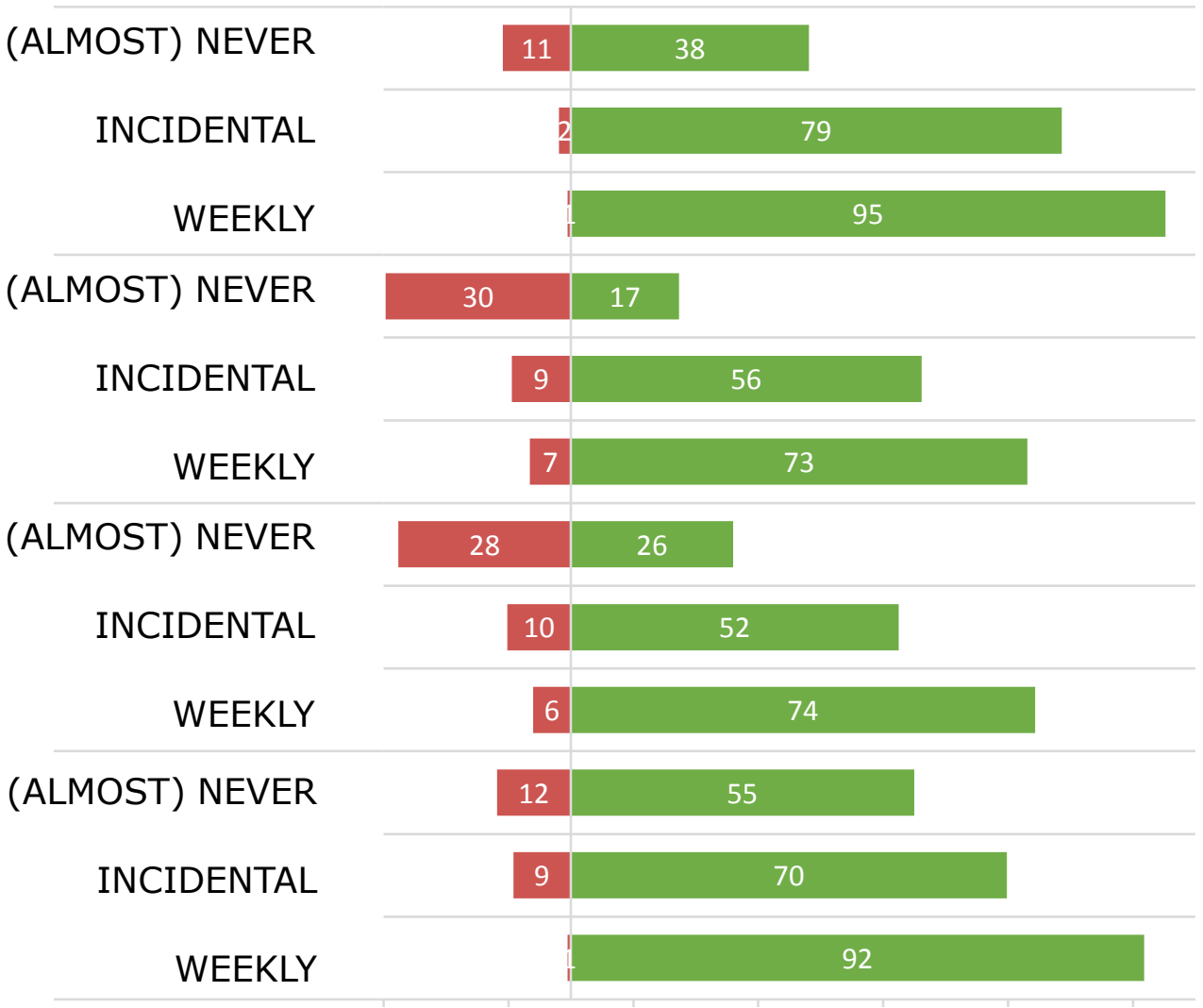


NETHERLANDS MOBILTY PANEL (MPN)

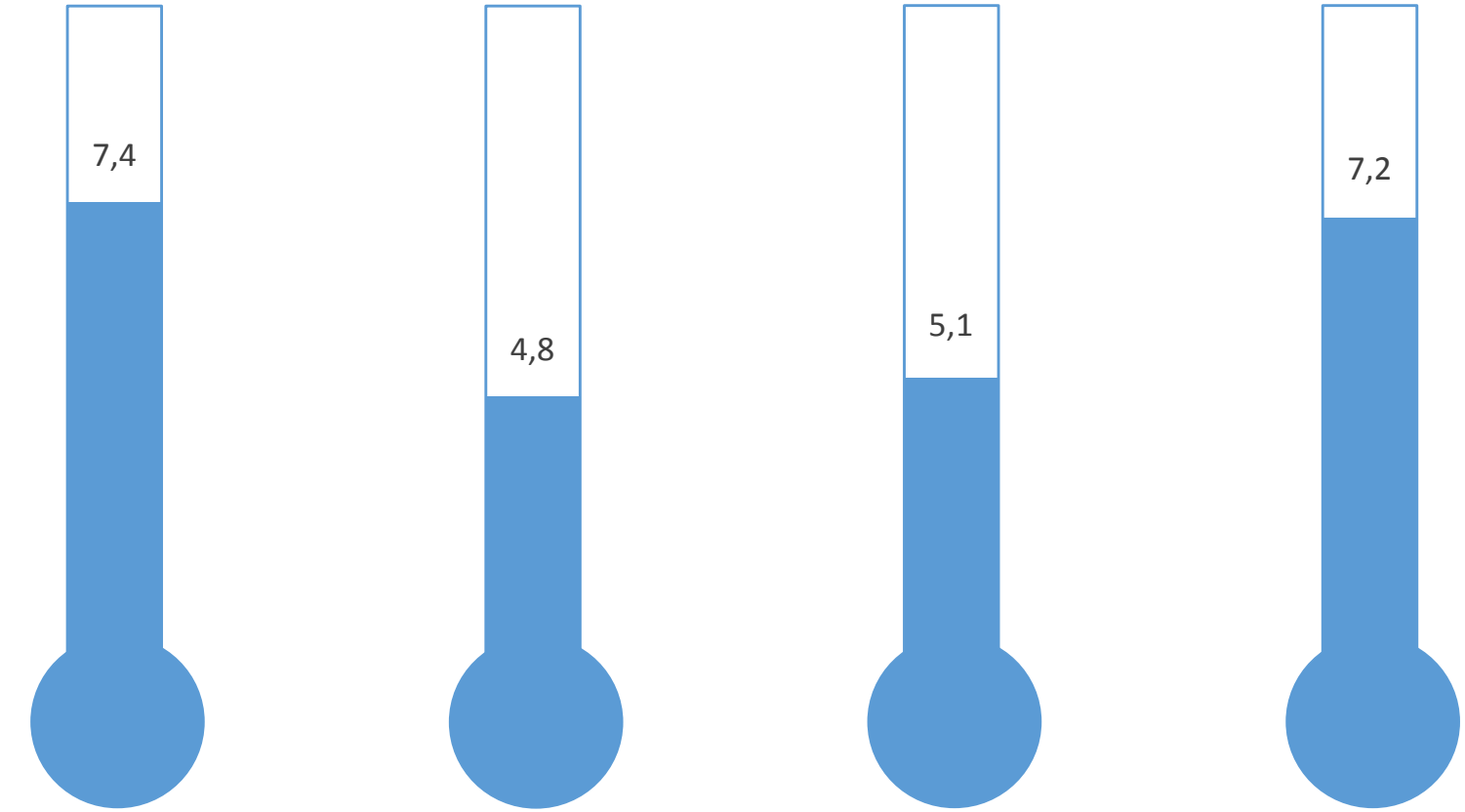
Yearly (since 2013):

- 2.000 households
- 4.000 individuals
- 3-day trip diary

PERSONAL JUDGEMENT



ATTITUDE SCORE: FLEXIBILITY



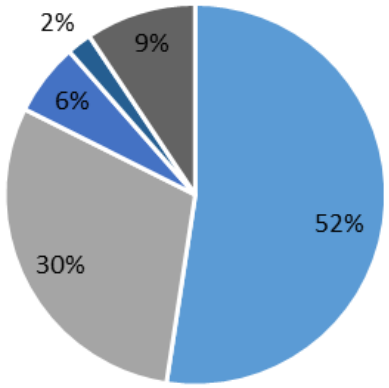
- Flexibility
- Comfort
- Relaxing
- Safety
- Travel time
- Pleasure
- Status

ATTITUDE STATEMENTS

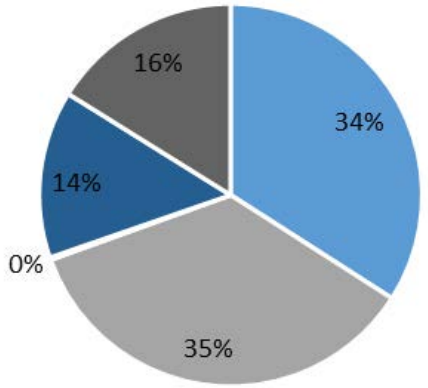
MY FRIENDS THINK CONGESTION PROBLEMS IN THE NETHERLANDS SHOUD NOT BE EXAGGERATED	36	9
I CANNOT LIVE WITHOUT A CAR	19	58
CAR DRIVING IS FUN	10	64
MY FRIENDS THINK YOU SHOULD ONLY USE THE CAR IF IT IS REALLY NECESSARY	37	17
IT MAKES NO SENSE TO DRIVE LESS BECAUSE OF OUR ENVIRONMENT, OTHER PEOPLE KEEP DRIVING	39	27
I WOULD CONSIDER TO SELL MY (SECOND) CAR, IF MY FINANCIAL SITUATION GETS WORSE	15	36

MODE PREFERENCES

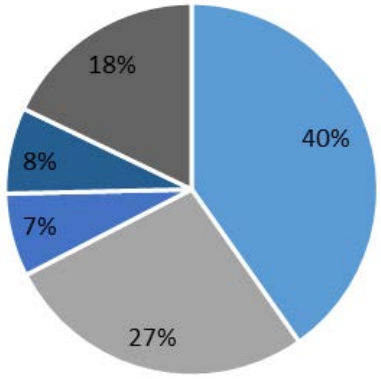
COMMUTING



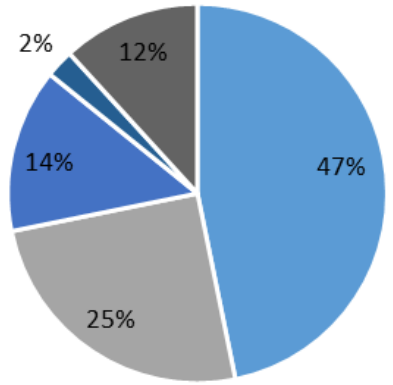
DAILY GROCERIES



SHOPPING



SCHOOL / EDUCATION



- car
- bicycle
- public transport
- walking
- different modes

PERCEPTION ACCESSIBILITY

Accessibility of my neighborhood by bicylce is good

86%

Accessibility of my neighborhood by PT is good

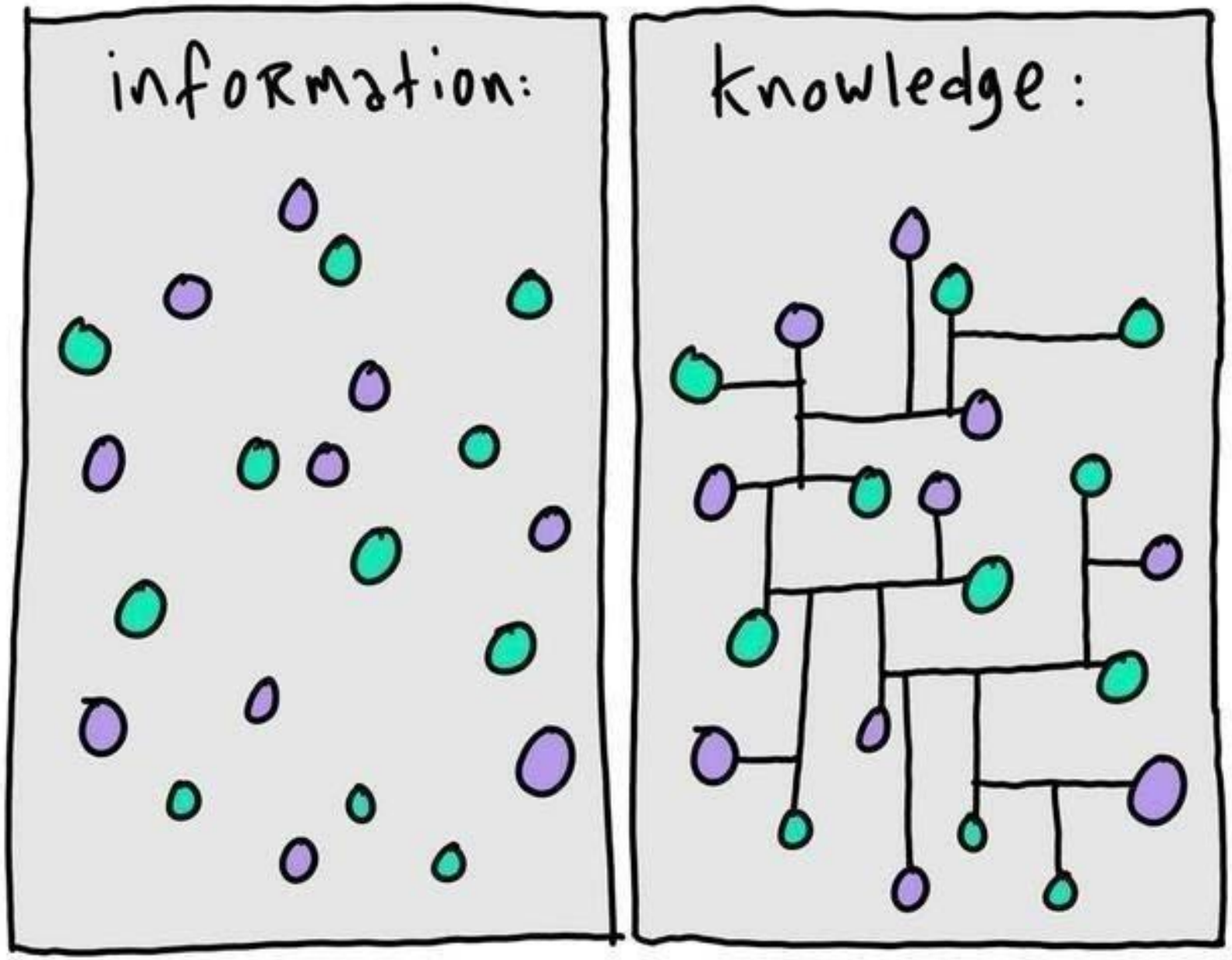
63%

Accessibility of my neighborhood by car is good

92%

My neigborhood has enough parking space

67%


information:
knowledge:

RESEARCH QUESTIONS

1. DO ATTITUDES AND PREFERENCES TOWARDS TRANSPORT MODES CHANGE OVER TIME, TO WHAT EXTENT AND FOR WHICH POPULATION SEGMENTS?

2. ARE CHANGES IN ATTITUDES AND PREFERENCES CORRELATED TO CHANGES IN INDIVIDUAL TRAVEL BEHAVIOUR?

APPROACH

- STEP 1: FACTOR ANALYSIS
- STEP 2: LATENT CLUSTER ANALYSIS
- STEP 3: LATENT TRANSITION ANALYSIS
- STEP 4: CORRELATION WITH MODE CHOICE

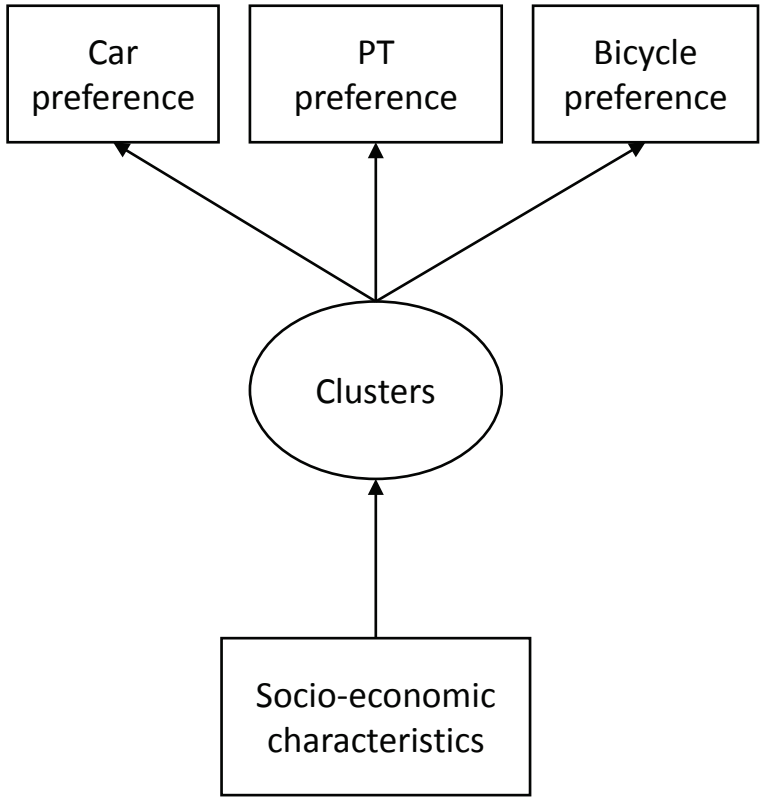
STEP 1: FACTOR ANALYSIS

LATENT ATTITUDES

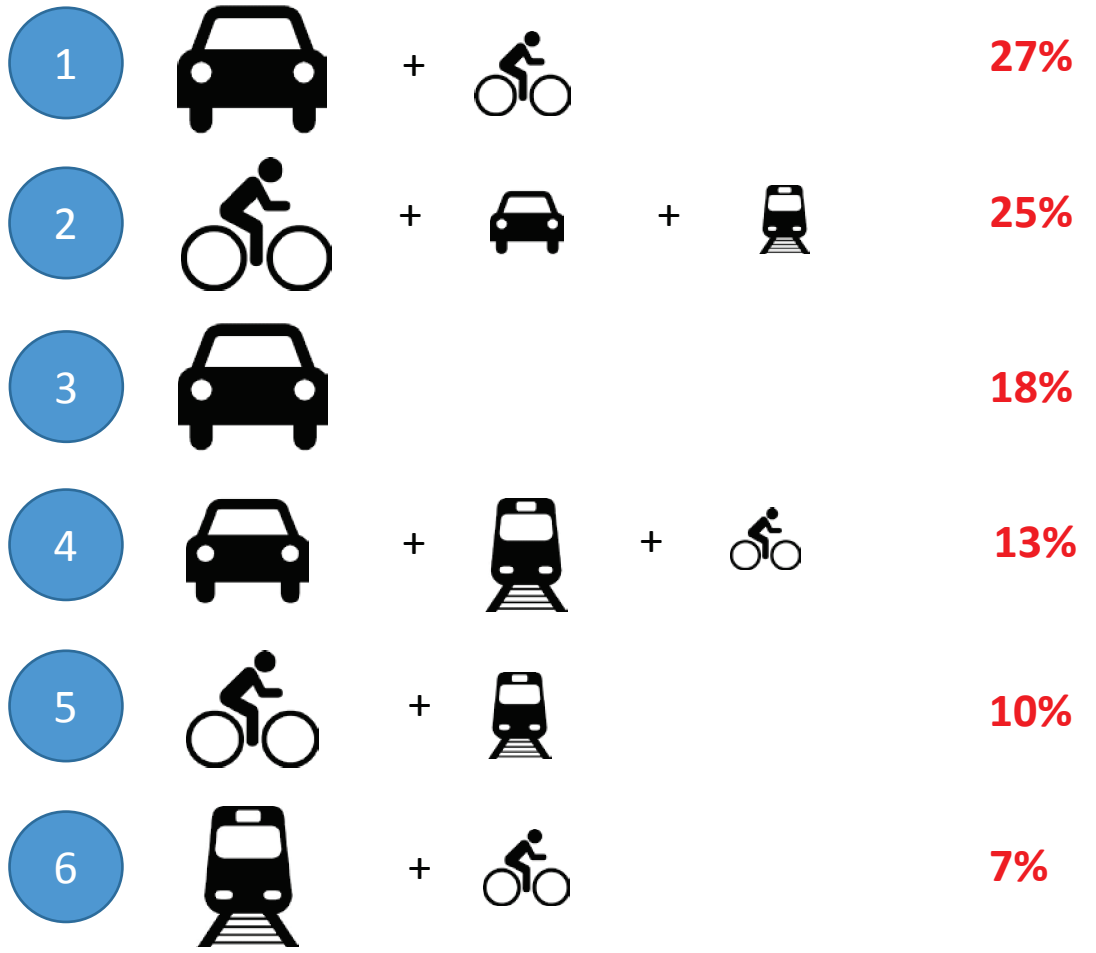
AUTO MINDED	COST SENSITIVE	CONSCIOUS CAR USE	STATUS	NOT ENVIRON-MENTALLY CONSCIOUS
				
men 25-64 yr rural employed with children	women 18-24 yr, >64 yr urban students, not employed single	women >64 yr rural not employed couples	men 18-24 yr urban students single	men >64 yr rural not employed couples

STEP 2: LATENT CLUSTER ANALYSIS

CONCEPTUAL MODEL



6 CLUSTERS BASED ON MODE PREFERENCES (N=2.934)



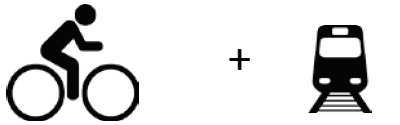
CHARACTERISTICS

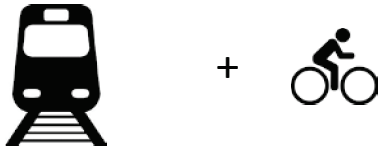
1 

2 

3 

4 

5 

6 

gender	education	urbanity	student
male	-	rural	no
-	-	suburban	-
male	no or low	rural	no
female	-	urban	-
male	high	urban	yes
-	high	urban	yes

TRAVEL BEHAVIOUR

1  + 

2  +  + 

3 

4  +  + 

5  + 

6  + 

trips pp pd	% car	% pt	% bike
3,2	64%	1%	19%
3,4	38%	3%	42%
2,8	79%	1%	6%
2,9	58%	8%	11%
3,3	14%	9%	58%
3,1	18%	17%	25%

ATTITUDES

1  + 

2  +  + 

3 

4  +  + 

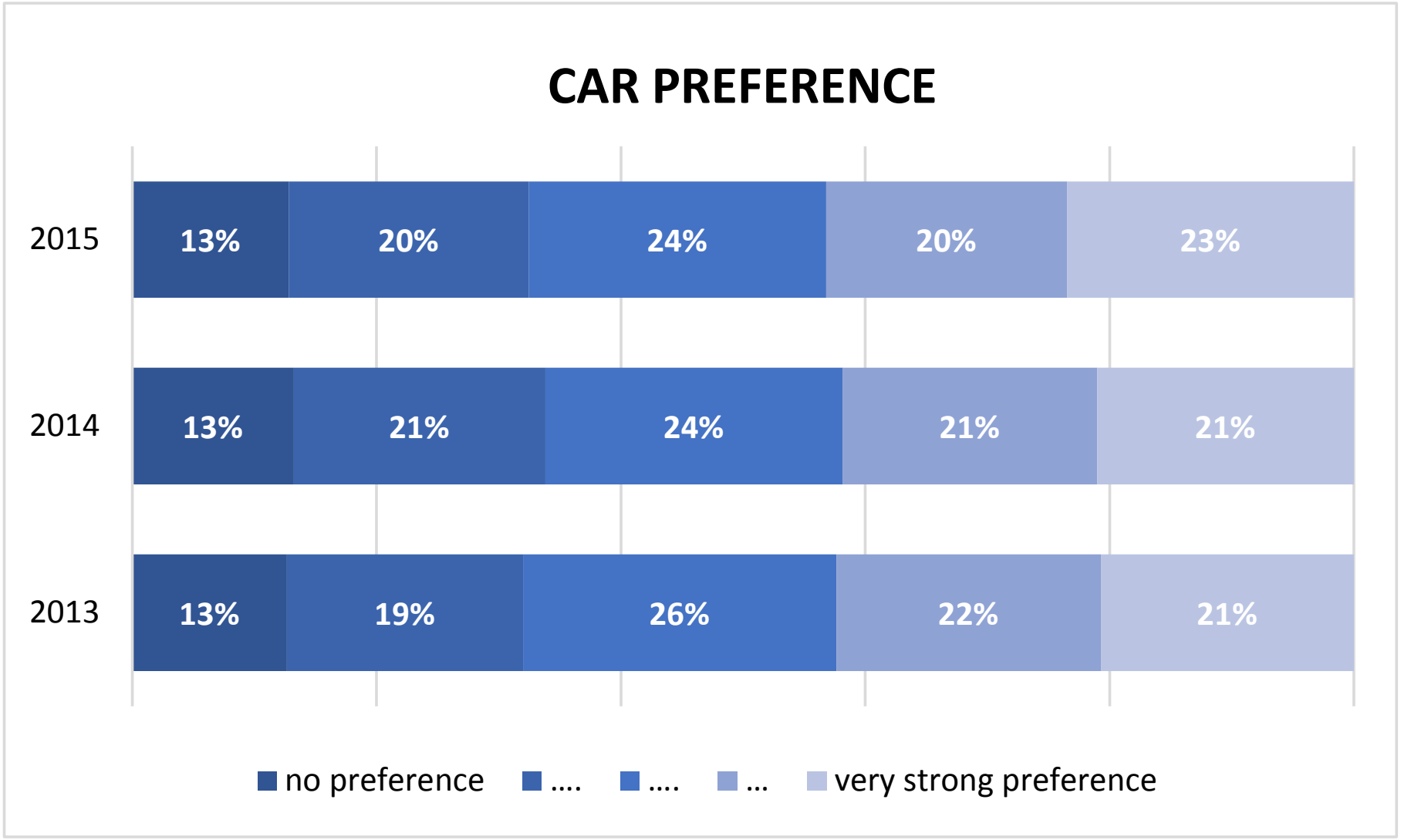
5  + 

6  + 

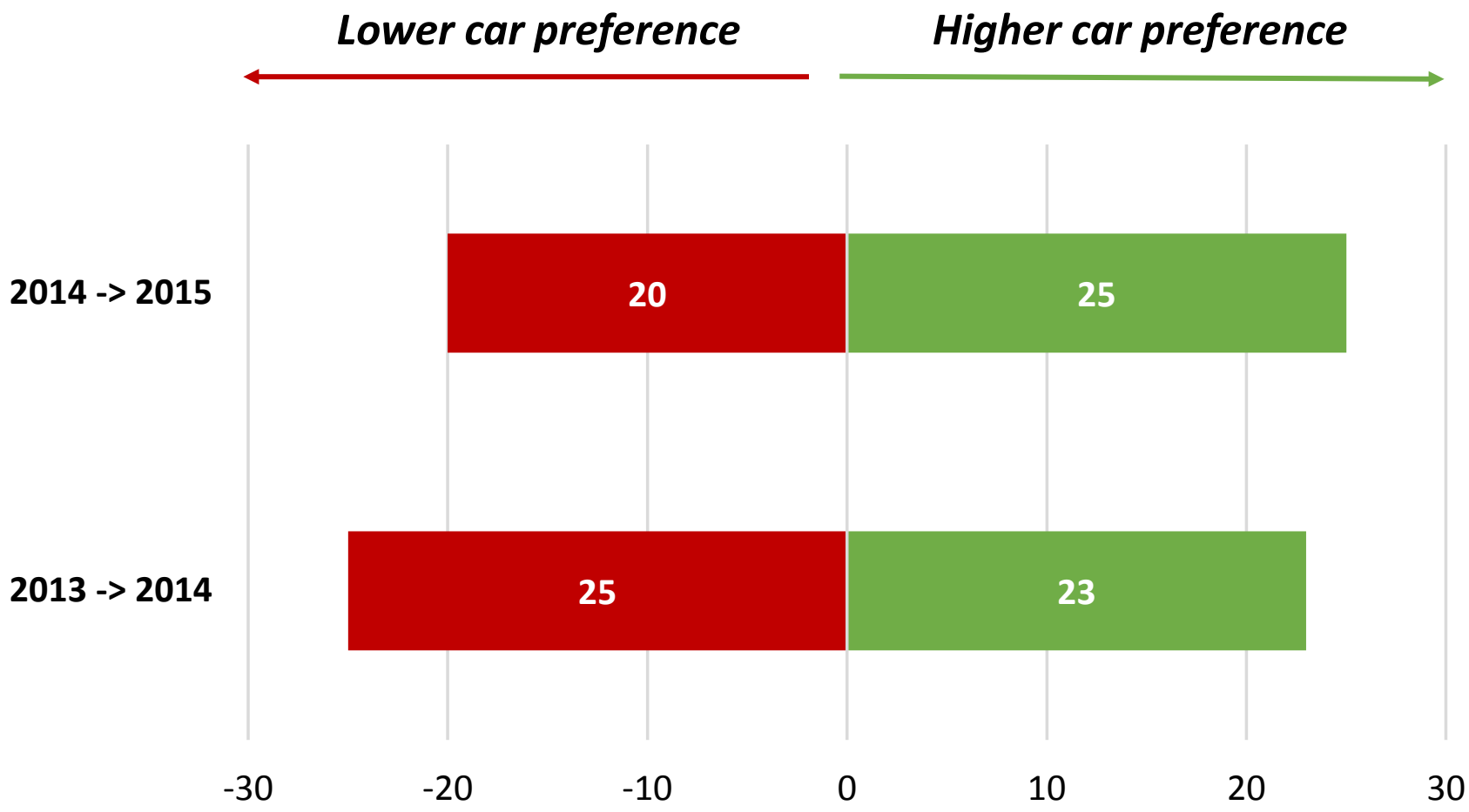
auto-minded	cost sensitive	conscious car use	status	environ-ment
++	--	--	0	-
-/0	0	++	-/0	++
++	-/0	--	0	--
0	0	0	0	0
--	+	0	0	+
--	+	0	0	0/+

CHANGING PREFERENCES

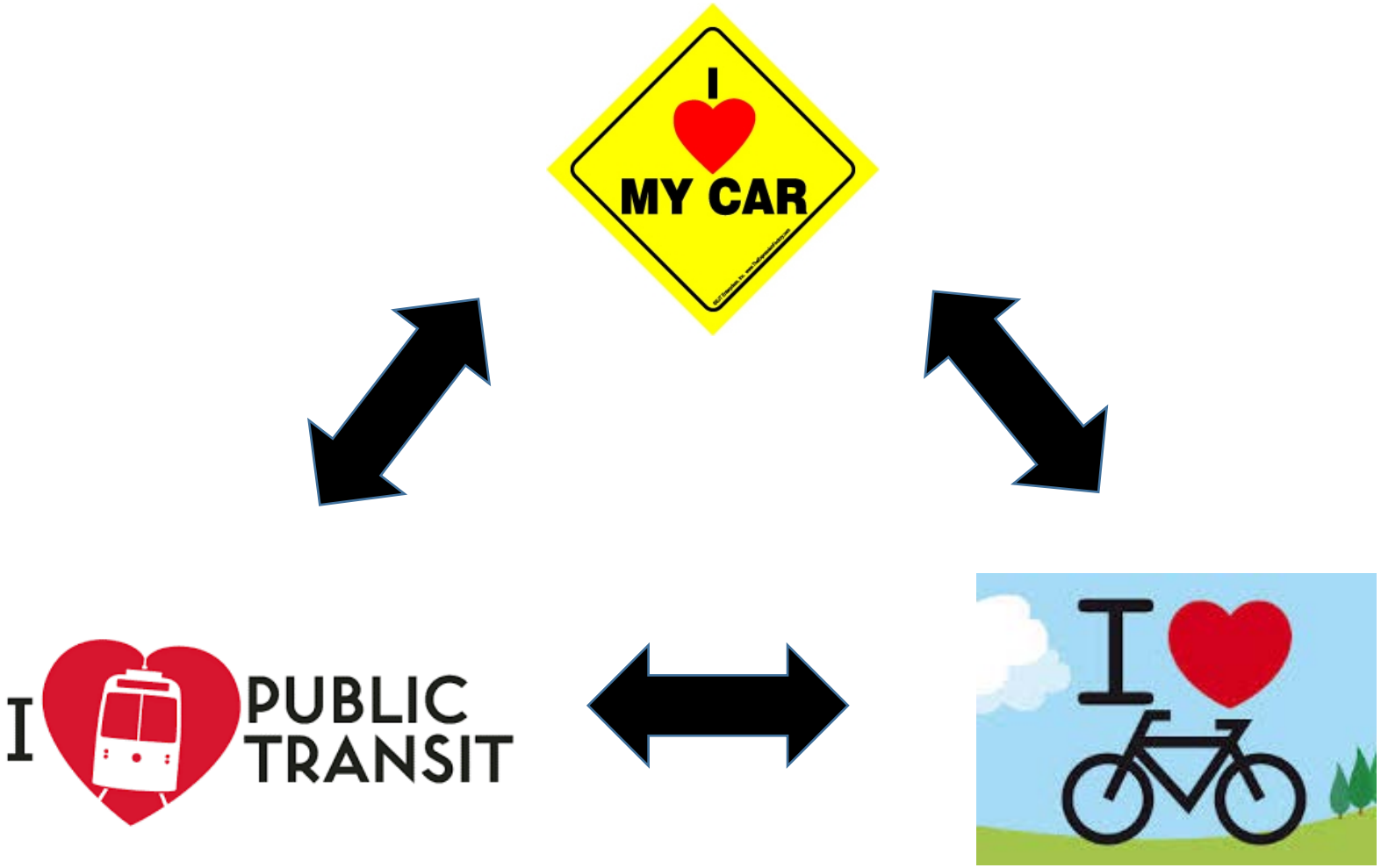
CHANGES ON CROSS-SECTIONAL LEVEL



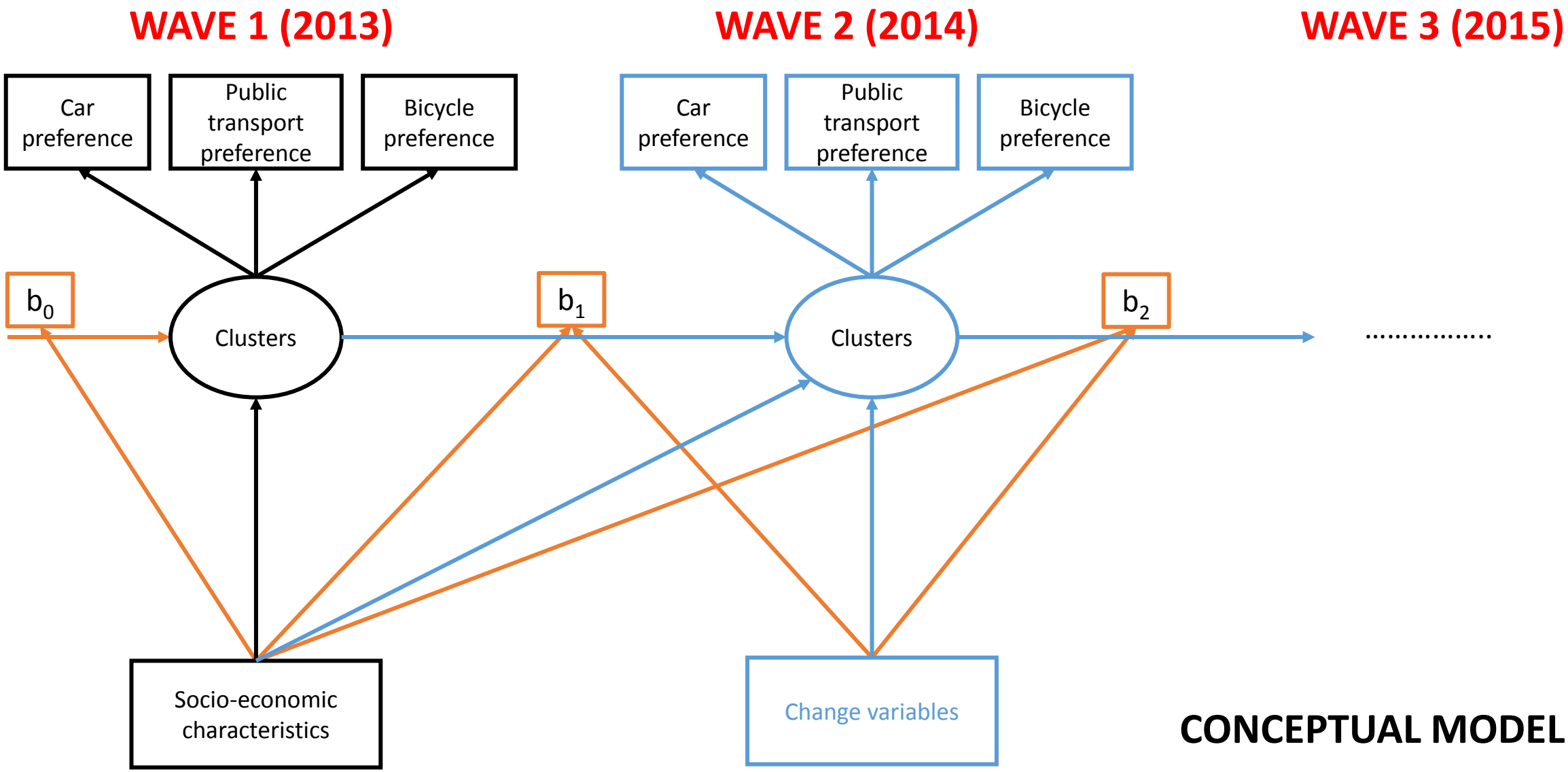
CHANGES ON INDIVIDUAL LEVEL



WHO IS CHANGING AND WHY?



STEP 3: LATENT TRANSITION ANALYSIS



CONCEPTUAL MODEL

AVERAGE TRANSITION PROBABILTIES

	1	2	3	4	5	6
1	83%	4%	12%	0%	1%	0%
2	3%	90%	1%	3%	3%	0%
3	13%	1%	83%	2%	0%	0%
4	2%	1%	9%	82%	0%	5%
5	2%	3%	1%	2%	92%	2%
6	1%	2%	1%	7%	3%	87%

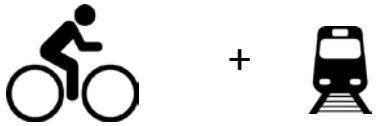
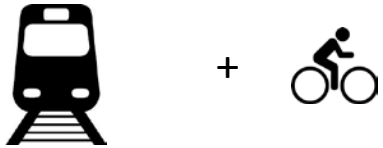
IMPACT LIFE-EVENTS

- More likely to switch to cluster with multi-modal preference
- More likely to switch to cluster with no or low PT preference

- More likely to switch to cluster with multi-modal preference
- More likely to switch to cluster with higher bike preference

- More likely to switch to cluster with multi-modal preference
- More likely to switch to cluster with higher bike preference

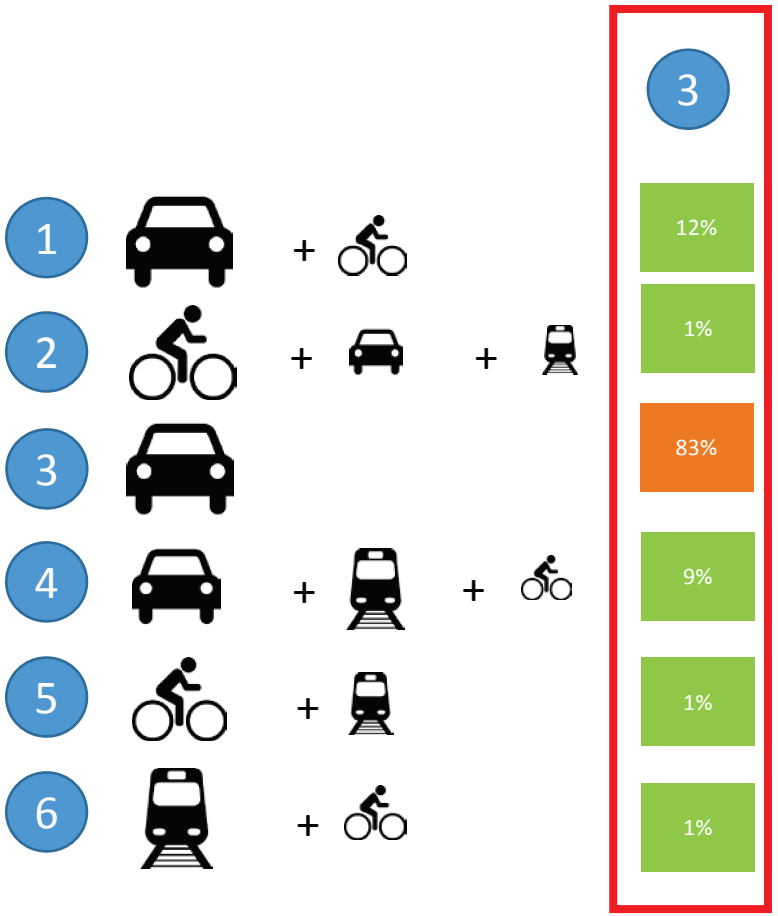
CHANGING PREFERENCES TO CHANGE BEHAVIOUR

		1	2	3	4	5	6
1		83%	4%	12%	0%	1%	0%
2		3%	90%	1%	3%	3%	0%
3		13%	1%	83%	2%	0%	0%
4		2%	1%	9%	82%	0%	5%
5		2%	3%	1%	2%	92%	2%
6		1%	2%	1%	7%	3%	87%

FROM CLUSTER 3 TO ....

- No significance change in car trips (p=.64)
- Significant change in PT trips (p=.04) -> more PT trips
- Significant change in bicycle trips (p=.00) -> more bicycle trips

FROM .... TO CLUSTER 3



- No significance change in car trips (p=.42)
- No significance change in PT trips (p=.59)
- Significant change in bicycle trips (p=.01)
  -> less bicycle trips

CONCLUSIONS

- There are individual changes in mode preferences and attitudes (almost 50% change in car preference between two years)
- Based on mode preferences and attitudes we can distinguish different travel groups
- There are also individual changes between travel groups
- Especially life-events have a significant impact on changing between groups
- But…. change from one group to another doesn’t (directly) mean a change in travel behaviour

FUTURE RESEARCH

- Testing other change variables (life-events)
- Estimating final model
- Journal paper

- Add data wave 4 (2016)

- Add data changing attitudes (special topic 2016)

- Integrate with latent choice model

- Policy implications

THANK YOU!

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