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CLIMATE CHANGE AWARENESS AND CLIMATE-FRIENDLY ACTIVITIES

IDENTIFYING TYPOLOGIES OF RESIDENTS IN KOŠICE, SLOVAKIA

Veronika Tóth

Technical University of Košice, Faculty of Economics

Veronika.toth@tuke.sk

Co-authors: *Miriam Šebová*

Technical University of Košice, Faculty of Economics

Outline

- Motivation

- Literature review

- Data

- Methodology

- Results

- Discussion

- Policy implications

Motivation

- Climate change – both global and local threat

- Need to act at all levels

- Adaptation and mitigation simultaneously

- Designing policies for adaptation and mitigation - different impact on various socioeconomic groups, different efficiency of various measures

- Finding typologies of residents - policies addressing the needs of the main groups of people

- Important component of fighting climate change – awareness and education (public engagement campaigns)

- Audience segmentation –> targeted policies -> better impact (efficient and socially just)

Eurobarometer (2019)

AWARENESS

- 78% of respondents in Slovakia consider climate change to be a 'very serious' problem
    - *an increase of 11 percentage points (pp) since 2017, the EU average – 79%*

ACTION

- 66% took personal action to fight climate change in the past six months
    - *an increase of 22 pp, the EU average - 60%*

Literature review – climate change awareness

Factors influencing climate change perceptions (Hornsey et al., 2016; Czarnek et al., 2021):

- the effect of obvious factors such as education, gender, subjective knowledge or personal experience is overshadowed by the magnitude of the effect of values, worldviews and political orientation

- Role of cognitive heuristics

- and identities (New Ecological Paradigm, Theory of Cultural Cognition)

- Awareness-action gap:
    - belief in climate change is not a sufficient predictor of environmentally friendly action

Literature review
Leiserowitz et al. (2009), Maibach et al. (2011)

- **Global Warming's Six Americas** – since 2008

- Representative survey of American adults (n=2,164)

- measures of global warming beliefs, behaviors, policy preferences, and issue engagement

Six groups of Americans:

1. **The Alarmed** - most engaged in the issue of global warming, already making changes in their own lives and support an aggressive national response

2. **The Concerned** - global warming = serious problem, support a vigorous national response, but are less involved in the issue

3. **The Cautious** - global warming = a problem, but not a personal threat, less likely to act

4. **The Disengaged** - haven't thought much about the issue, most likely to change their minds about global warming

5. **The Doubtful** – global warming - natural changes in the environment, that it won't harm people for many decades into the future, if at all, and that America is already doing enough to respond to the threat

6. **The Dismissive** - actively engaged in the issue, but on the opposite end of the spectrum
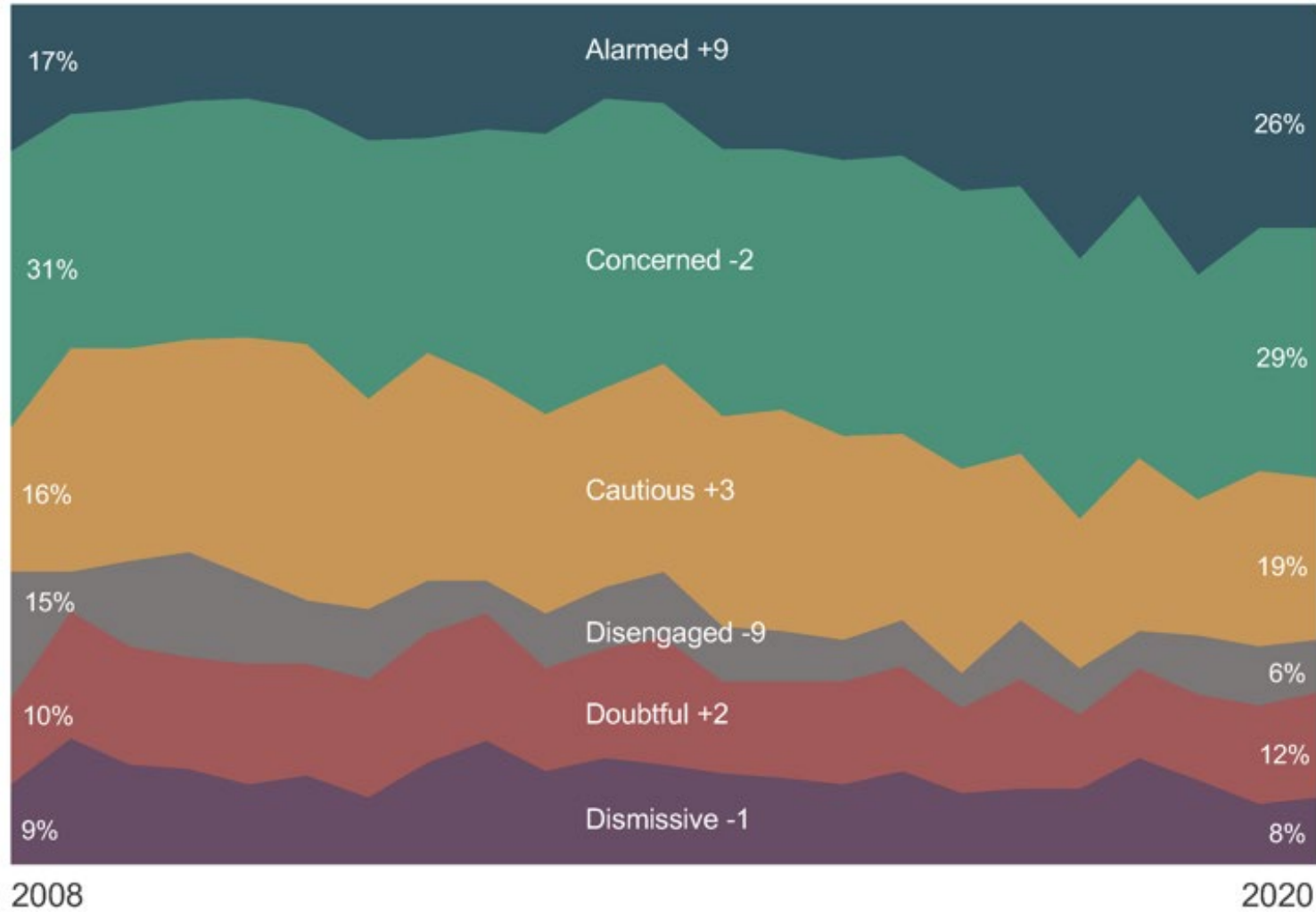
Source: Leiserowitz et al. (2021)

Data

- Data gathered as one part of the process of preparation of adaptation strategy for Košice
- Questionnaire – available at the webpage of the project Košice +/- 40
- september – december 2019
- Valid responses: 598
- Used sample n = 368 (although probably biased)
  - *Stratified random sampling based on: 1. Sex, 2. Age, 3. Address (four districs of Košice)*

Questions to assess

- Socioeconomic status
- Vulnerability
- Level of knowledge and perceptions about climate change
- Climate-friendly activities

Perception of climate change

DO YOU CONSIDER CLIMATE CHANGE TO BE A LOCAL AND/OR GLOBAL THREAT?

Neither
2%

Only local
38%

Both global and local
48%

Only global
12%
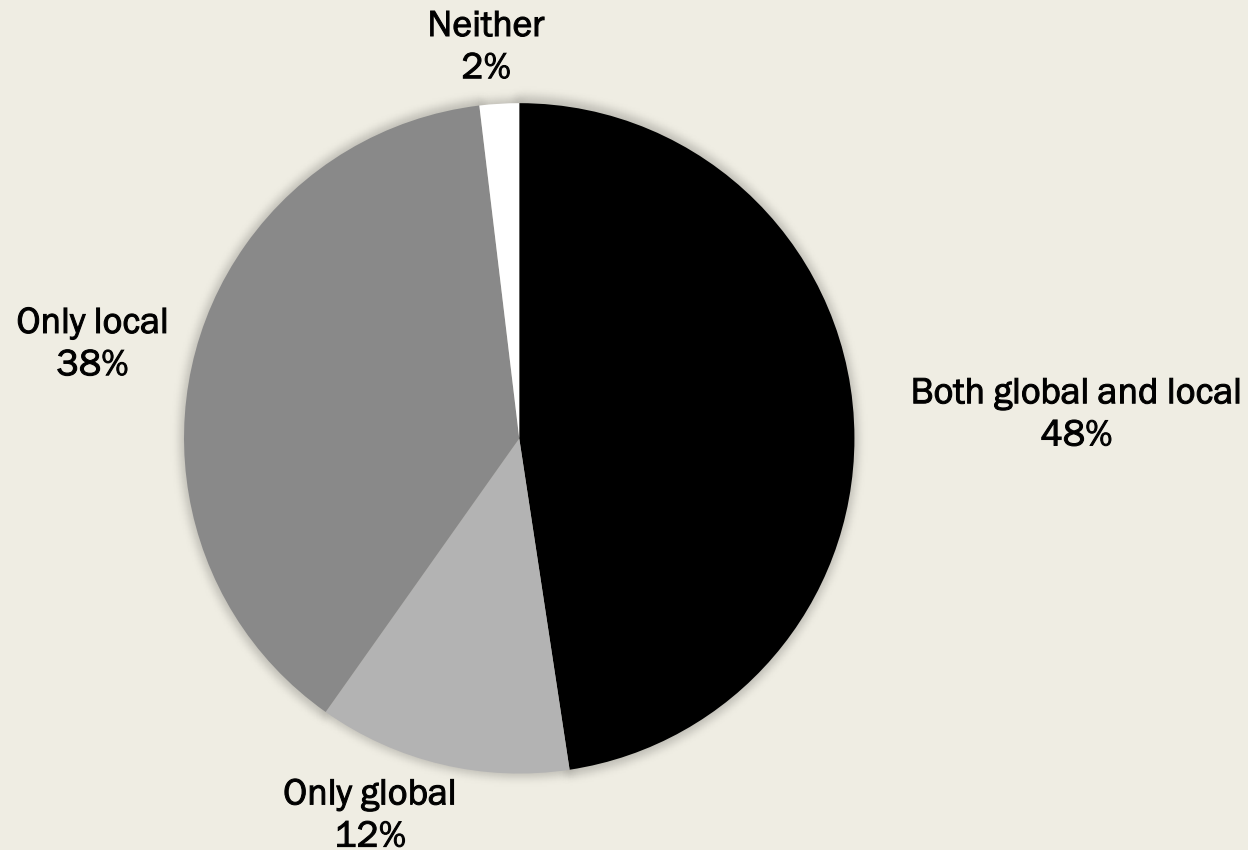
Climate-friendly activities

How often do you engage in climate-friendly activities?
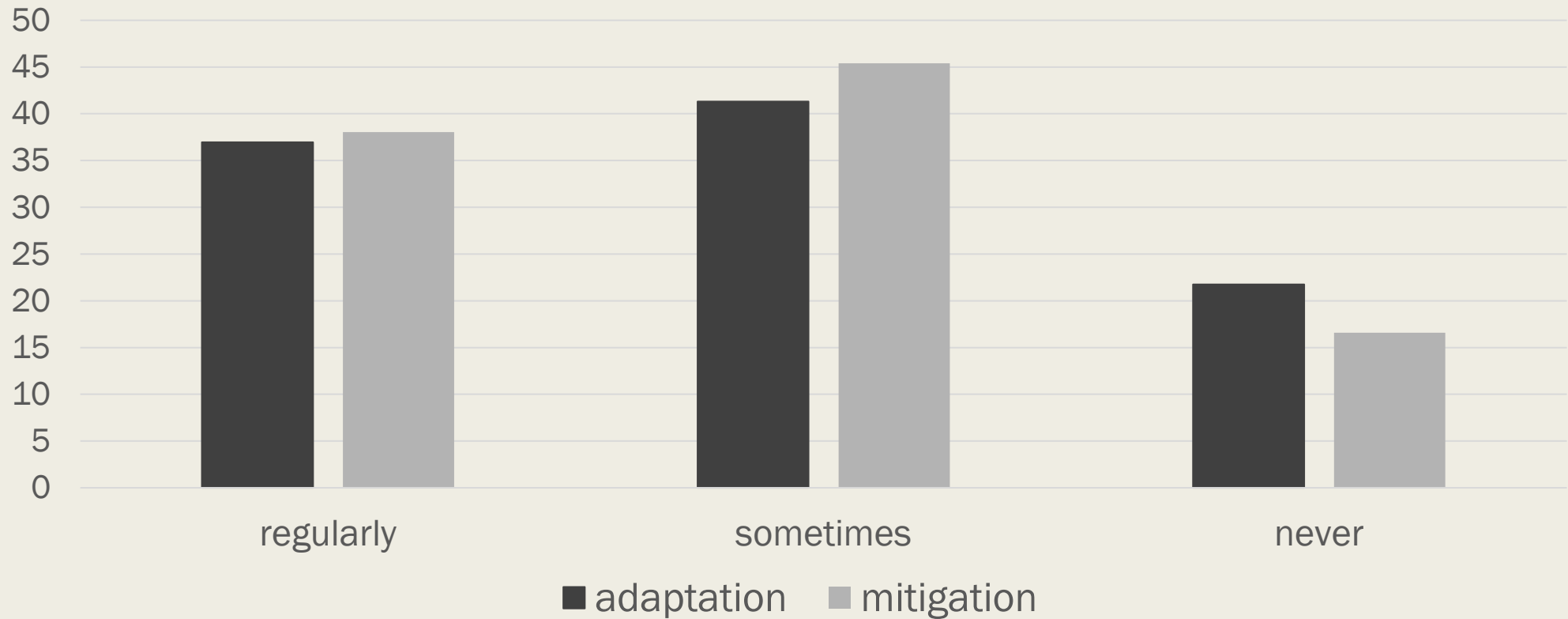
Methodology:
Latent Class Cluster Analysis

- Statistical method used to find groups (clusters) of observations with similar characteristics
- Assumption: unobserved latent variables → observed indicators
- Suitable for data with categorical variables
- In this case – groups of respondents with similar attitutes towards climate change
- Number of classes – determined based on model fit (BIC/AIC)
- Implemented e.g. in Latent Gold

Results

- *4 types of residents*
  - What do people in groups have in common?
    - *Degree of vulnerability, climate change perception, adaptation and mitigation activities, socioeconomic characteristics*

Group 1 – Potentially resilient

- 29 % of respondents
- Two thirds – women aged 40+, employed, have children
- Middle income
- Climate change – global rather than local threat
- Good level of knowledge about climate change
- Experience the impacts of the climate change in their lives
- They perceive themselves as well informed
- Extremely important that cities and people adapt
- The most active in adaptation and mitigation activities, civic participation

Group 2 – Aware but passive

- 27 % of respondents
- In their thirties, no children
- Live in city centre, middle income
- Very well aware about the impact of climate change, both global and local threat
- Well informed
- Aware of the need to adapt
- Critical about the activities of the local authorities (information about climate change)
- Not very active

Group 3 – Aware but lacking the means to act

- 24 % of respondents
- Less than 35 years old, usually at high school or university
- No children, not married
- Middle income
- Less aware of the threat but still see the need to adapt
- Less informed
- The least active group – probably lacking the means to act due to young age

Group 4 - Vulnerable

- 20 % of respondents

- More than half – men aged 60+

- Employed, or retired

- High education level, have children

- Often low income, living in peripheries, in houses

- Lack knowledge about the climate change

- Do not perceive it as a threat

- They may in practice take some climate-friendly actions, but without realizing it

Discussion

Contribution

- Context = city, implications for local authorities

Data

- Potential bias in the data sample – more people interested in climate change in our sample than in population – careful interpretation

Further research

- Awareness-participation gap

Policy implications

– *Target* policies to those who are vulnerable

– *Encourage* those who are already active or those who might be active once they have the right conditions

– *Educate* those who feel they lack knowledge about the climate change

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Thank you for your attention!

Questions? Comments?

Appendix – literature review

Metag et al. (2015)

- – *Studying typologies and their sources of information*
- ■ nationwide representative survey of 3000 German adults
- ■ Dimension reduction – principal axis factor analysis, hierarchical cluster analysis

- – *5 types of people in Germany:*
  - ■ Alarmed
  - ■ Concerned activists
  - ■ Cautious
  - ■ Disengaged
  - ■ Doubtful

Kuthe et al. (2019)

- ■ 760 teenagers between 13 and 16 years of age
- ■ Methodology: dimension reduction with pricipal components analysis, then two step hierachical cluster analysis

- – *4 types of teenagers in Austria and Germany*
  - ■ **Charitables:** well informed, behaving in climate-friendly manner, not very concerned
  - ■ **Paralyzed**: very concerned, but few activities
  - ■ **Concerned activists**: high level of awareness, eager to act, but not very well informed about the impacts of climate change
  - ■ **Disengaged**: not concerned, badly informed, inactive

Appendix – results

Percentual representation of respondents with given characteristics

LCA INDICATORS	Group 1	Group 2	Group 3	Group 4
Share	29%	27%	24%	20%
Awareness about the threat of climate change at global level				
0 – not aware	24%	12%	41%	85%
1 - aware	76%	88%	59%	15%
Awareness about the threat of climate change at local level				
0 – not aware	75%	60%	89%	97%
1 - aware	25%	40%	11%	3%
Knowledge about climate change and its impacts				
1 – high level	78%	82%	51%	21%
2	22%	18%	45%	62%
3 – low level	1%	0%	4%	16%
Vulnerability to climate change				
1 - high	44%	40%	4%	7%
2	47%	48%	37%	42%
3 - low	10%	11%	59%	51%
Awareness about the need to adapt				
1 – not aware	1%	0%	3%	10%
2	26%	6%	38%	54%
3 - aware	73%	94%	59%	36%
Frequency of engaging in adaptation activities				
1 - regularly	77%	25%	15%	23%
2 - sometimes	22%	50%	48%	50%
3 - never	2%	25%	37%	27%
Frequency of engaging in mitigation activities				
1 - regularly	65%	36%	16%	28%
2 - sometimes	32%	50%	51%	52%
3 - never	3%	14%	33%	20%
Information level of impact of climate change on the city				
1 - high	32%	9%	18%	18%
2	36%	28%	34%	33%
3 - low	32%	63%	48%	49%
Participation in public life				
1 - regularly	50%	45%	7%	37%
2 - sometimes	31%	32%	22%	34%
3 - never	19%	22%	71%	29%

LCA COVARIATES	Group 1	Group 2	Group 3	Group 4
Sex				
1 - male	0,34	0,45	0,57	0,61
2 - female	0,66	0,55	0,43	0,39
Age				
do 19	0,03	0,03	0,20	0,01
20-29	0,07	0,29	0,27	0,08
30 - 39	0,16	0,42	0,23	0,10
40 - 49	0,21	0,19	0,20	0,17
50 - 59	0,25	0,05	0,00	0,20
60+	0,28	0,02	0,10	0,44
Place of residency				
1 - city centre	0,20	0,24	0,21	0,19
2 - large boroughs	0,60	0,63	0,77	0,60
3 - peripheries	0,20	0,13	0,02	0,22
Education				
primary school	0,03	0,05	0,10	0,01
high school	0,02	0,02	0,07	0,04
high school with diploma	0,35	0,20	0,31	0,28
university	0,60	0,73	0,53	0,67
Family status				
1 - single	0,18	0,57	0,63	0,05
2 - married	0,71	0,43	0,27	0,56
3 - divorced	0,07	0,00	0,09	0,14
4 - widowed	0,04	0,00	0,01	0,25
Children				
0 - no	0,15	0,65	0,64	0,09
1 - yes	0,85	0,35	0,36	0,91
Economic status				
0 - other	0,00	0,00	0,00	0,01
1 - employed	0,66	0,58	0,58	0,40
2 - self-employed	0,06	0,13	0,09	0,07
3 - student	0,08	0,20	0,33	0,05
4 - unemployed	0,00	0,04	0,00	0,08
5 - retired	0,18	0,00	0,01	0,37
6 - maternity leave	0,02	0,06	0,00	0,01
Type of building				
1 - apartment building	0,13	0,27	0,12	0,16
2 - block of flats	0,70	0,51	0,72	0,61
3 - family house	0,17	0,22	0,16	0,23
Income				
1 - low	0,10	0,16	0,00	0,42
2 - middle	0,90	0,84	1,00	0,58