

# Do social norms matter?

Evidence from stated preference studies varying  
communicated social norm levels

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# Do social norms matter?

- experimental evidence of social norm information effectiveness (identified a phenomenon) → increase in popularity
- heterogeneous effects of information & only average treatment effects observed
- little understanding of underlying mechanisms (understand the psychology of the phenomenon)
- new approach: individual-level data from DCE with information treatments

# Earlier studies

- Czajkowski, M., Kądziela, T., and Hanley, N., 2014. We want to sort! – assessing households' preferences for sorting waste. *Resource and Energy Economics*, 36(1):290-306.
- Czajkowski, M., Hanley, N., and Nyborg, K., 2015. Social Norms, Morals and Self-interest as Determinants of Pro-environment Behaviours: The Case of Household Recycling. *Environmental and Resource Economics*, 1-24.

Choice Situation 1.	Alternative 1	Alternative 2	Alternative 3
Method of sorting in household	Into 5 categories	Into 2 categories	None
Frequency of collection	Once every 4 weeks	Once every 2 weeks	Once every week
Monthly cost for your household	75 PLN	50 PLN	100 PLN
Your choice:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## The results – MNL model (WTP-space in EUR)

Variable	Coefficient (s.e.)
Sort in 2 categories (vs. 1)	4.25*** (0.77)
Sort in 5 categories (vs. 1)	9.03*** (0.68)
Collect 2 times per month (vs. 1)	5.58*** (0.69)
Collect 4 times per month (vs. 1)	7.50*** (0.93)
- Monthly cost per household (EUR) * scale	0.12*** (0.01)

- Many people “want to sort”, preferring to sort their own household waste even when there was a free alternative of getting a central facility to sort for them

# But why?

- Recycling is costly in terms of household time and effort, space etc.
- Positive WTP for recycling may reflect:
  - Altruism: desire to reduce externalities from other sources of waste disposal, to reduce waste, etc.
  - Cost saving: belief that if everyone complies eventually the cost will decrease
  - Warm glow: utility from action itself, irrespective of outcome
  - ... but also – to promote a social image, and a positive self image
- What is the role of moral and social norms in determining recycling behavior?

# Moral and social norms

- Moral norm – individual sanctions self
- Social norm – sanction comes from others (social pressure)
  - Social norms are “shared views of ideal forms of behavior” (Ostrom, 2000, Bicchieri 2006) which individuals are predisposed to comply with
  - Predisposition depends on level of compliance within the relevant group
  - 2 factors matter: what I believe others are doing (% complying) and what I think other people expect me to do (Thorgensen, 2008)
- Relevant to our work Brekke et al. (2003, 2010), Nyborg (2011) model:
  - Duty-orientated individuals derive utility from an image of themselves as socially responsible people
    - willing to recycle even at a personal cost, when consider it personal responsibility
  - Recycling motivated by gap between my level of action and the social norm, since warm glow depends on the size of this gap
    - in doubt whether they are in fact personally responsible for recycling, they may look to the behaviour of their peers

# Moral, social and economic motives

– Budget constraint:

$$W = c + pg$$



– Utility function:

$$U = u(c, G) + S + J$$

– Self image:

$$S = -a(g - g^*)^2$$

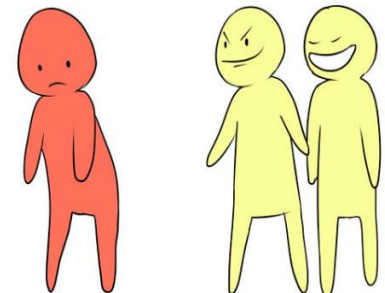


– Judgement from others:

$$J = -b(g - g^{**})^2$$

– FOC:

$$g = \frac{ag^* + bg^{**} - 2pu'_c}{a + b}$$



# Results – hybrid choice model

- We were able to identify 3 major factors (latent variables) which:
  - Explain the variation in respondents' attitudinal responses, regarding their motives to sort
  - Can be linked with respondents' socio-demographic characteristics
  - Can be associated with significant differences in respondents' preferences
- We observe the effects of the underlying norm-based motivation
  - Moral norms matter
  - The importance of social norms less evident
- Still social norms are one channel through which information influences choices
- Let's investigate social norms further ...



# New study #1 on waste-sorting (work in progress)

- Similar policy setting: changes in municipal recycling scheme
- Goal: analyzed the impact of information on social norms
- 8 information treatments:
  - Descriptive social norms
  - Vary the social norm in terms of the level of ambition  
„In 2012  $y$ % of households in Poland / your city recycled”  
varying  $y$  across treatments
  - Vary the social norm in terms of how local it is: (Poland vs. your city vs. both)
  - Levels: 10%, 44%, 69% for Poland, 6/11/15% and 58/65/72% for Bialystok/Warsaw/Cracow
  - used different sources of statistics and slightly different wording to communicate what is the overall share of households who sort
- 3 main cities, over 1,800 respondents, CAWI

# Results – MNL in WTP-space (extraction)

	Main effects	Social norm level (country)	Social norm level (local)	Including national reference (vs. local only)
	Coefficient (s.e.)	Coefficient (s.e.)	Coefficient (s.e.)	Coefficient (s.e.)
SQ	-8.65*** (0.16)	-0.36 (0.25)	0.38 (0.35)	1.66*** (0.35)
Sort in 2 categories (vs. 1)	0.64*** (0.18)	-0.44 (0.35)	0.51 (0.51)	1.30** (0.51)
Sort in 3 categories (vs. 1)	1.11*** (0.21)	0.05 (0.40)	1.05* (0.59)	0.95 (0.60)
Sort in 5 categories (vs. 1)	-0.52*** (0.18)	-0.09 (0.35)	1.14** (0.51)	1.02** (0.51)
No sorting inertia	1.29*** (0.26)	-0.61 (0.52)	1.92*** (0.73)	1.71** (0.74)
2 categories inertia	1.74*** (0.27)	0.62 (0.56)	-0.25 (0.77)	-0.93 (0.78)
3 categories inertia	-0.43 (0.26)	0.06 (0.52)	-0.70 (0.75)	-0.36 (0.75)
5 categories inertia	5.76*** (0.49)	-5.87*** (1.25)	-0.93 (1.27)	-0.67 (1.27)

# Results #1 – summary

- The effect of communicating high levels of social norm is asymmetric for individuals who currently do ‘a lot’ or ‘a little’ of recycling
- The influence of social norms varies for geographically (city vs. country)
- Level of perceived similarity with a given reference group

# New study #2 on GMO (work in progress)

- Changes in national policy for GMO labelling and availability on the market
- Treatments:
  - Vary the social norm in terms of the levels of communicated social trust in GMO safety for health/environment
    - „GM food is safe for my health and that of my family.”
    - „GM food does not harm the environment.”
    - „y% of citizens agreed with this statement” varying y across treatments
  - Vary the social norm in terms of how local it is: Poland vs. EU
  - Levels: 5/25/50/75% for environment, 5/20/35/60% for health
- Representative sample of 6,600 citizens of Poland

# Attributes and levels used in the DCE

Attribute	Description	Levels
Food for direct consumption	such as grains, fruits and vegetables and foods that consist, contain or are made from GMOs	<ol style="list-style-type: none"> <li>1. labeling ban (no labels)</li> <li>2. voluntary labeling</li> <li>3. obligatory labeling</li> <li>4. banning GMO from the market</li> </ol>
Processed foods not directly consumed by humans	not directly consumed by humans, but instead are processed in ways that remove DNA and its immediate products (proteins), so considered foods made "with the help of GMOs,,	<p>Reference levels (status quo):</p> <p>obligatory labeling – food voluntary labeling – processed food, commercial and pharmaceutical products</p>
Commercial products	derived from GMO, which are not used for food and feed purposes.	
Pharmaceutical products	GMO used to produce proteins used as medicines; source of human therapeutics	
Cost	annual cost for respondent's household	10, 20 50, 100 zł [0 zł for SQ]

# Results – MXL in WTP-space

	Mean	Standard deviation	Communicated agreement	Health vs. environment	EU vs. PL
Status quo	1.09***	3.78***	0.16***	0.16	-0.3**
GM Food - voluntary label	-1.03***	0.7***	-0.05	-0.14**	0.09
GM Food - no label	-1.35***	0.88***	-0.11**	-0.09	-0.07
GM Food - ban	-0.13*	1.38***	-0.02	0.06	-0.08
GM Food processing - obligatory label	0.35***	0.34***	0.03	-0.03	-0.05
GM Food processing - no label	-0.21***	0.55***	-0.04	-0.03	-0.07
GM Food processing - ban	0.21***	0.63***	0.03	-0.02	-0.06
GM Pharmaceuticals - obligatory label	0.24***	0.41***	0.06**	0.01	-0.02
GM Pharmaceuticals - no label	-0.27***	0.51***	0	-0.06	-0.03
GM Pharmaceuticals - ban	-0.04	0.62***	0.04	0.02	0.02
GM Commercial products - obligatory label	-0.04	0.35***	0.06*	0.15***	-0.1*
GM Commercial products - no label	-0.03	0.27***	-0.02	0.05	-0.01
GM Commercial products - ban	-0.16***	0.57***	0.01	0.14**	-0.01
- Cost (PLN)	-0.07	0.69***	-0.04***	-0.06*	0.01

## Results #2 – summary

- Behavior largely driven by existing threats concerns
  - Information about higher level of social trust for bioengineering leads to stronger preferences for increasing labeling requirements
    - Banning considered infeasible?
- Innovation context

## Overall

- Communicated social norms do seem to have some effect
- Much weaker than expected (in hypothetical choice situations)
- Not always straightforward in interpretation

Thank you!

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