

Privacy and Security Perceptions of European Citizens

A first look into the mirror



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Outline of the presentation

- Survey – methodology
- Perceptions, attitudes and beliefs on privacy and security
 - Testing the security-privacy trade off
- Privacy and security perceptions in different contexts
- A more detailed look at three vignettes
 - ISPs selling (your) data
 - Crown monitoring (demonstration and football match)
 - Smart metering
- Conclusions and outlook
 - Conclusions on the trade off
 - Conclusions on the vignettes
 - Outlook

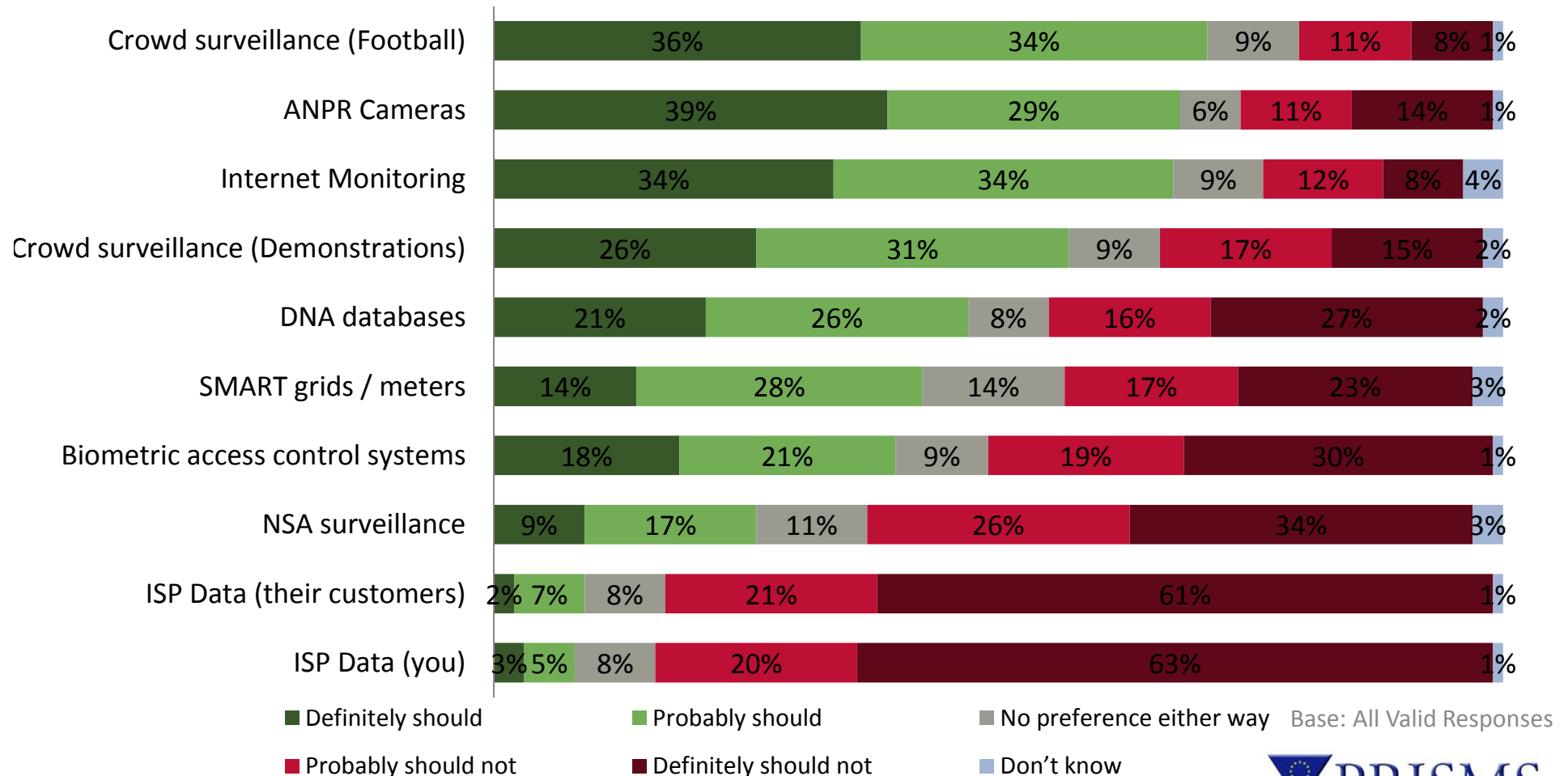
Questionnaire structure

- Trust (government, police, business)
- Vignettes/scenarios (split-sampled)
 1. Government monitoring of charities
 2. School access by biometrics
 3. Smart meters and use of energy data
 4. Monitoring of terroristic site visits at internet
 5. Speed control in neighbourhoods by ANPR
 6. Selling (your) data by ISPs
 7. Providing DNA data to police
 8. Surveying crowds (demonstration/football match)
- Security concerns (general and personal)
- Privacy importance
- Specific attitudes to privacy and data protection practices
- Social values (political, value of science and technology)
- Demographics

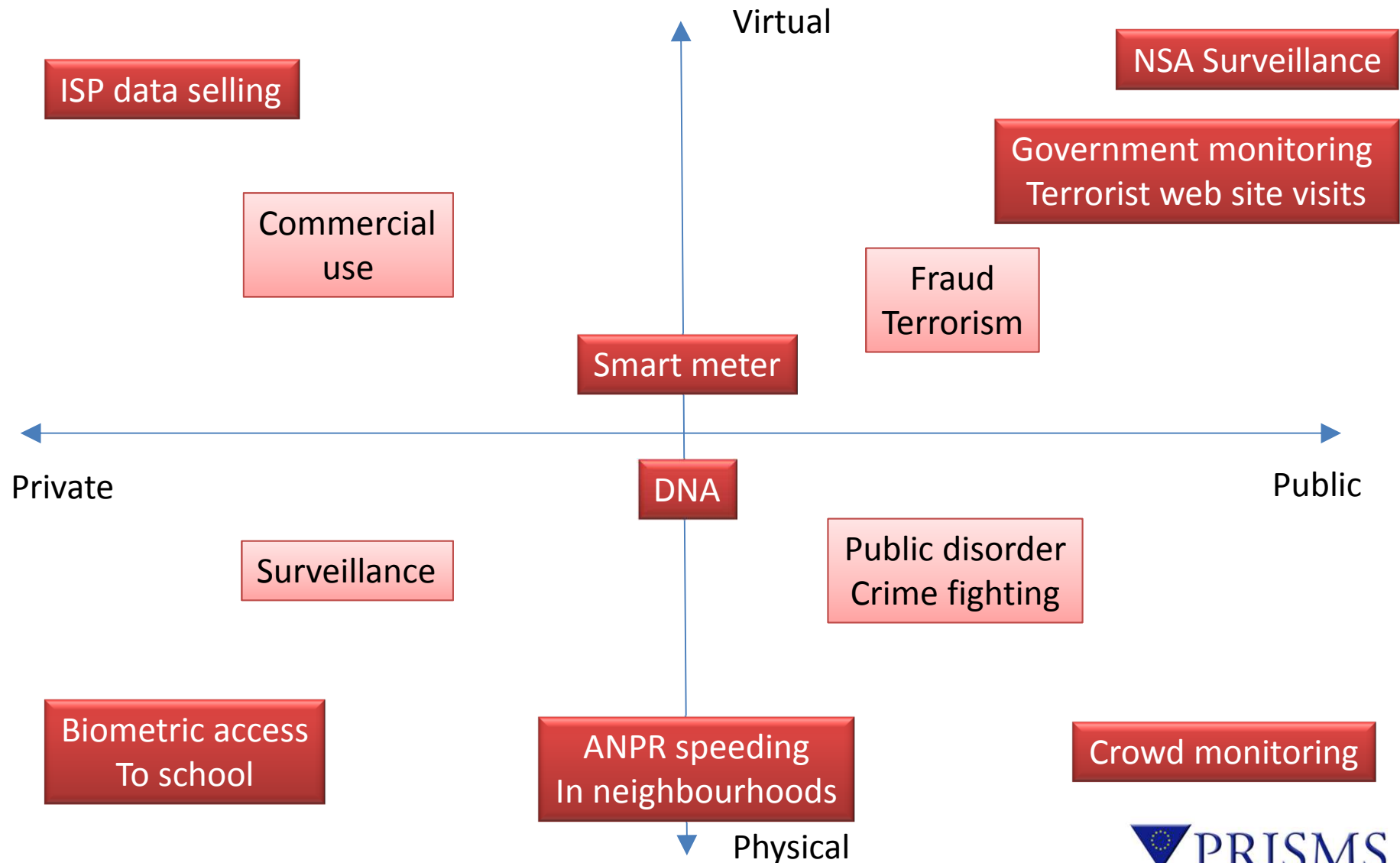
Privacy and security perceptions in different contexts

The Vignettes - Overview

To what extent, if at all, do you think that _____ should or should not...?



The Vignettes - Overview



Factors determining the vignettes

red = significant	Government monitoring	School access by biometrics	Usage of smart meter data	Monitoring terrorist website visits	Speed control in neighbourhoods by ANPR	ISPs sell data of you	ISPs sell data of customers	DNA	Police surveys demonstration	Police surveys football match
Country	0,012	0,000	0,000	0,000	0,000	0,019	0,001	0,000	0,000	0,000
Privacy	0,000	0,000	0,000	0,000	0,000	0,008	0,000	0,000	0,000	0,000
Personal security	0,000	0,000	0,153	0,000		0,001	0,027	0,000	0,001	0,009
General security					0,000					
Privacy invasion	0,278	0,075	0,309	0,104	0,916	0,042	0,044	0,144	0,881	0,136
Trust in institutions	0,002	0,629	0,000	0,003	0,221	0,000	0,007	0,000	0,002	0,484
Age	0,001	0,033	0,000	0,511	0,950	0,002	0,000	0,005	0,625	0,005
Education	0,006	0,991	0,945	0,720	0,044	0,680	0,129	0,025	0,029	0,370
Gender	0,001	0,441	0,425	0,084	0,003	0,121	0,862	0,793	0,200	0,333
Political attitude	0,613	0,002	0,004	0,129	0,440	0,632	0,235	0,780	0,100	0,213
Internet usage	0,001		0,350	0,097		0,530	0,022	0,648		
Living area					0,004					
Work status					0,008					

Active privacy

Effect of saying that you have actively protected your privacy in some way on agreement with vignettes

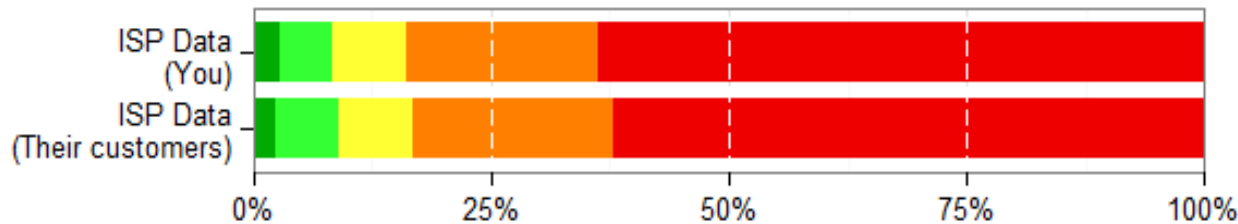
Vignette	Coefficient active privacy protection	Std. error	Sig.	R square
Government monitoring	-0.087	0.025	0.001	0.046
School access by biometrics	-0.052	0.028	0.068	0.023
SMART meters	-0.118	0.026	0.000	0.043
Monitoring terrorist web visits	0.004	0.023	0.851	0.035
Speeding in neighbourhoods ANPR	-0.182	0.025	0.000	0.044
Selling your data by ISP	-0.142	0.028	0.000	0.031
Selling customer data by ISP	-0.217	0.028	0.000	0.046
Providing DNA data to police	-0.130	0.028	0.000	0.058
Crowd surveillance (demonstr.)	-0.047	0.036	0.200	0.073
Crowd surveillance (football)	-0.047	0.033	0.159	0.058

Linear regression analysis with vignette as dependent, active privacy protection as independent and control variables privacy scale (importance of privacy), trust in institutions, satisfaction with life, age, gender, education

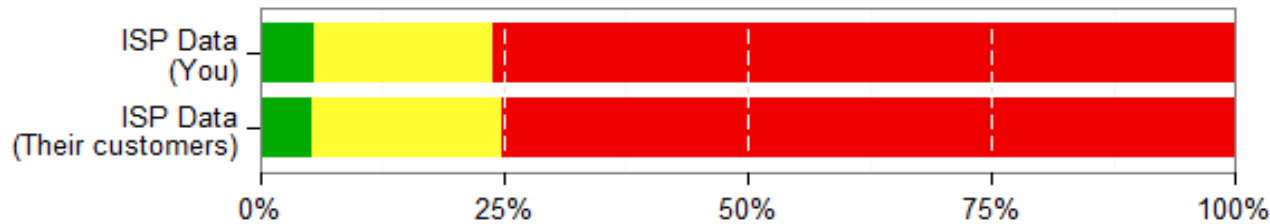
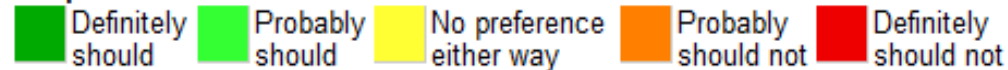
A more detailed look at three vignettes

ISPs selling (your) data

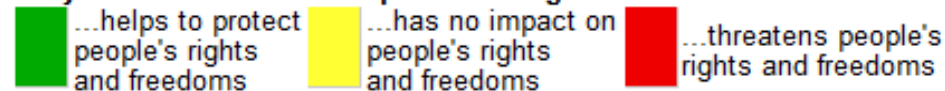
To what extent, if at all, do you think that companies offering services on the internet should or should not be able to sell information about [PEOPLE/YOU] in this way?



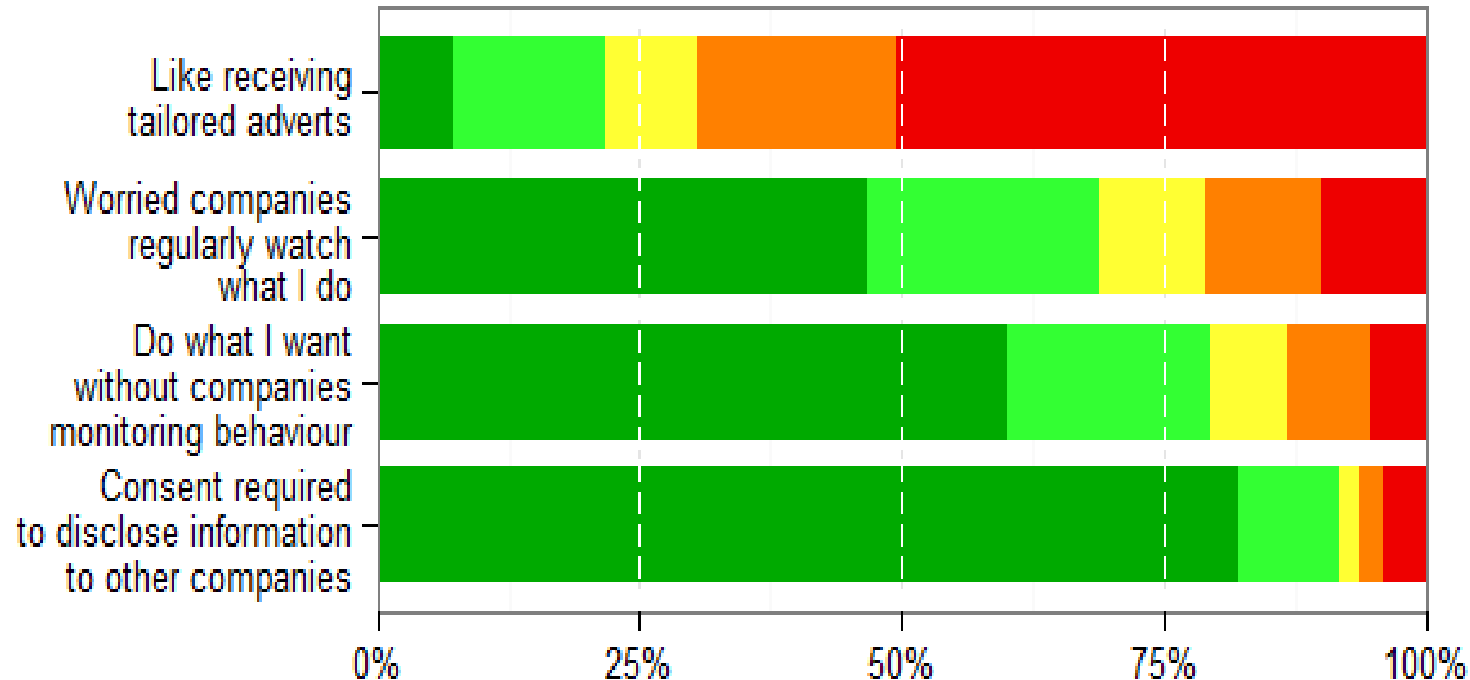
Response



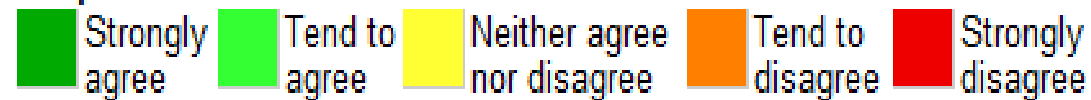
Do you think internet companies doing this...



ISPs selling (your) data



Response



ISPs selling (your) data

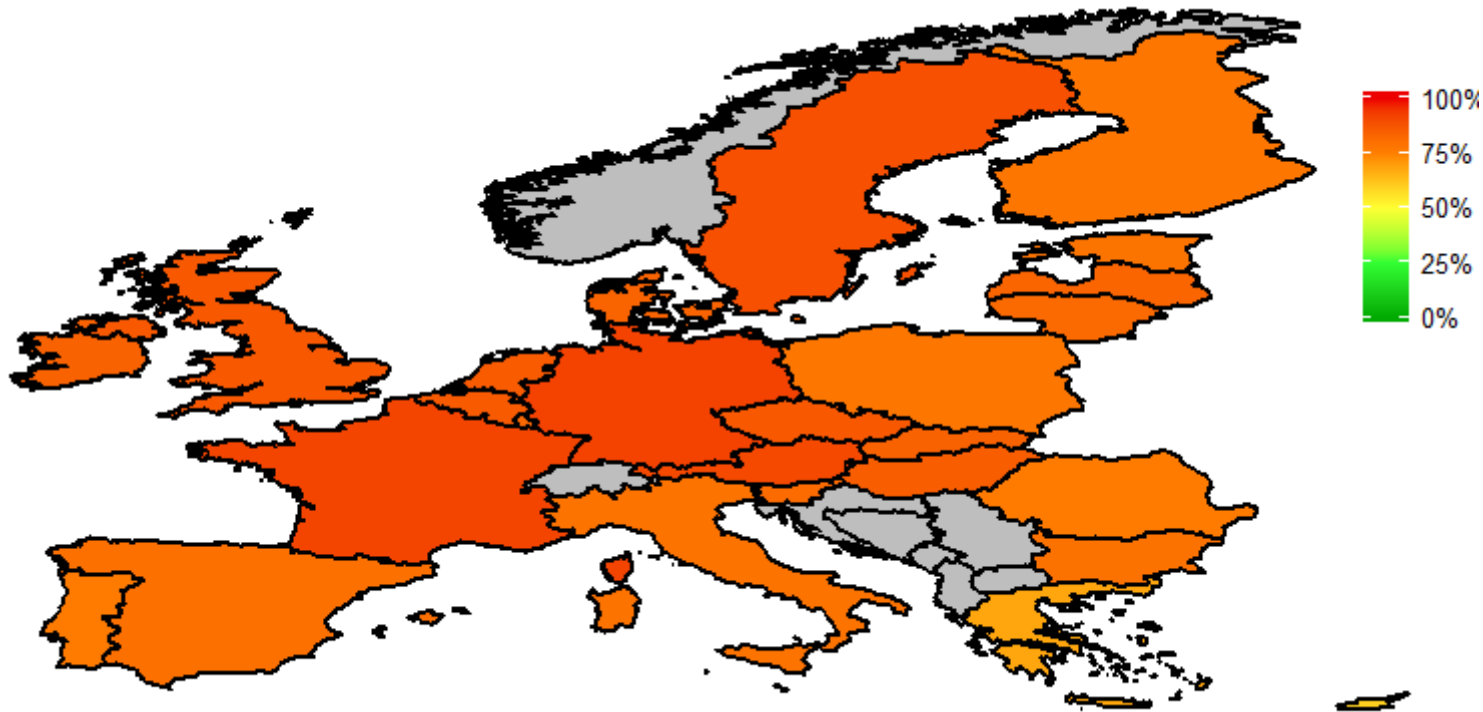
Linear regression analysis vignette ISP data (you)

	Coefficiënt	Std. Error	Sig.
(Constant)	1.498	0.066	0.000
Actively protect your privacy	-0.165	0.028	0.000
Trust in institutions	0.401	0.078	0.000
How satisfied are you with your life as a whole nowadays?	-0.084	0.070	0.232
Gender (1=female)	-0.119	0.027	0.000
Lower education	0.031	0.039	0.427
Medium education	0.027	0.029	0.354
Young adults	0.372	0.038	0.000
Adults	0.185	0.035	0.000
R2 = 0,026			

Question: To what extent, if at all, do you think that companies offering services on the internet should or should not be able to sell information about you? (0=definitely should not, 1 = definitely should)

ISP Data (You)

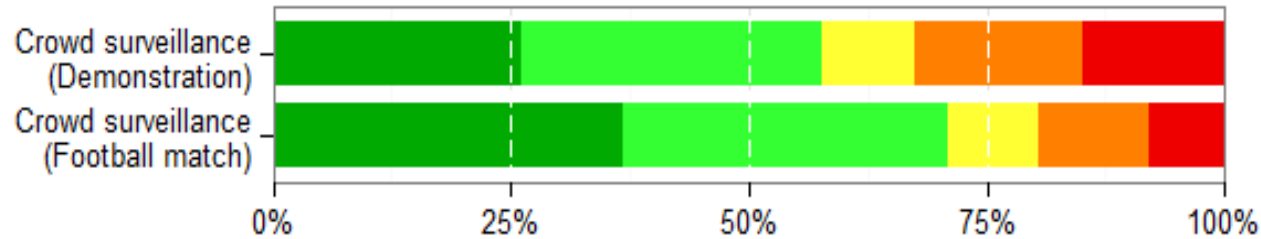
To what extent, if at all, do you think that companies offering services on the internet should or should not be able to sell information about YOU in this way?



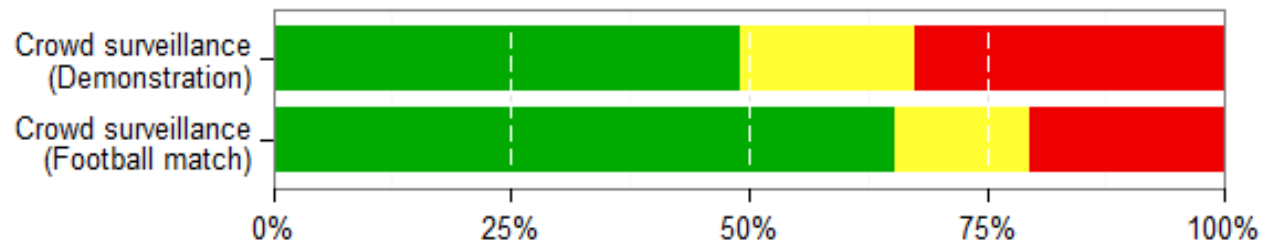
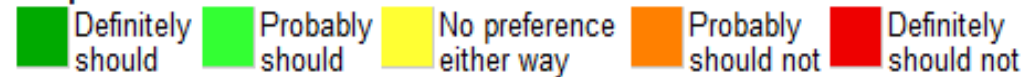
Sceptical attitude in all EU countries
Cyprus, Greece least negative

Police monitoring crowds

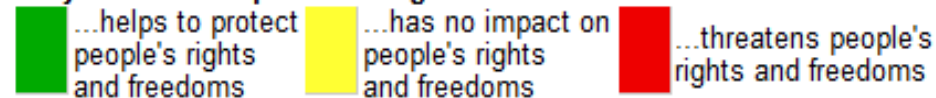
To what extent, if at all, do you think that the police should or should not monitor the [DEMONSTRATION/CROWD] in this way?



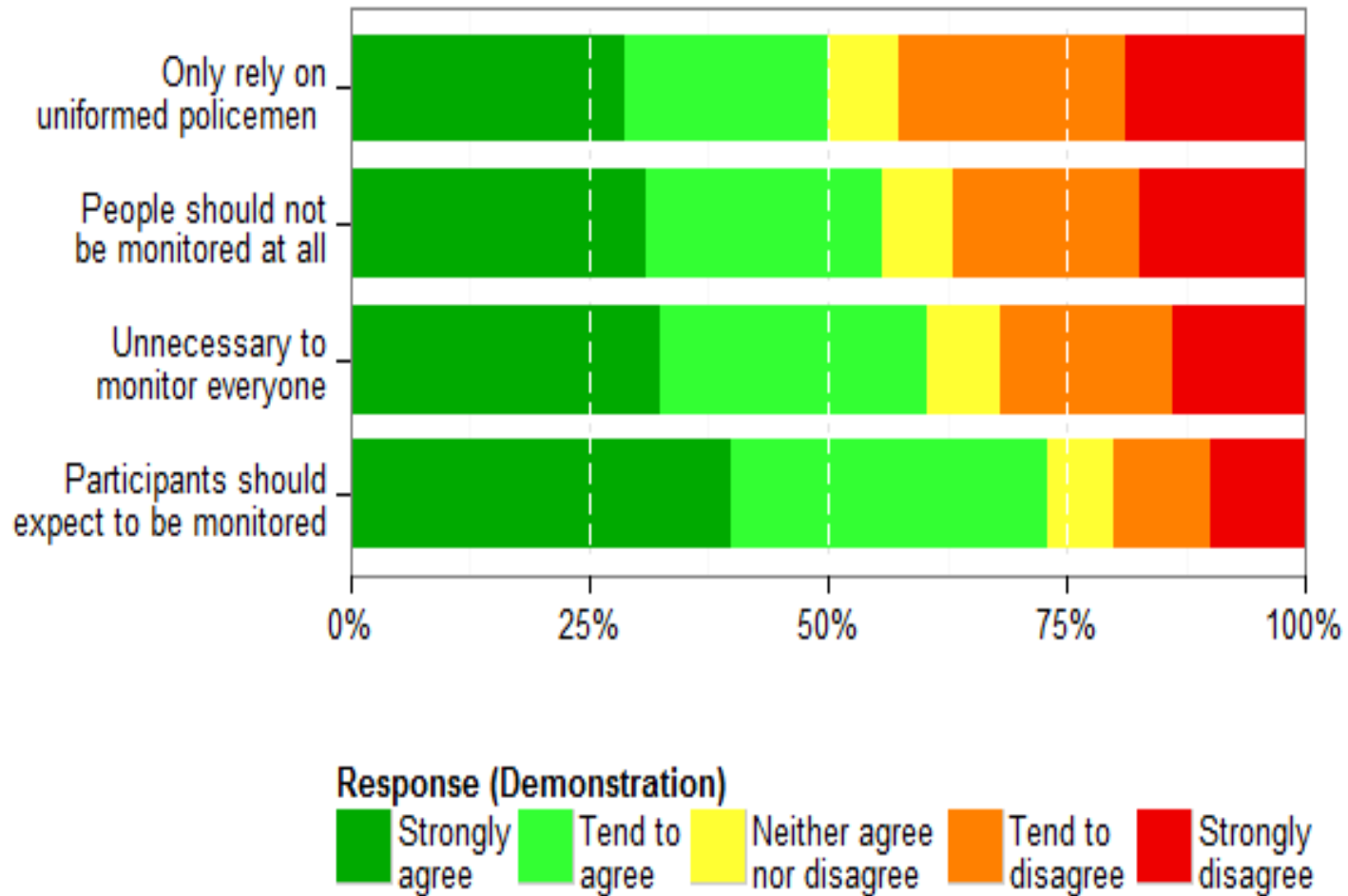
Response



Do you think the police doing this...



Police monitoring crowds

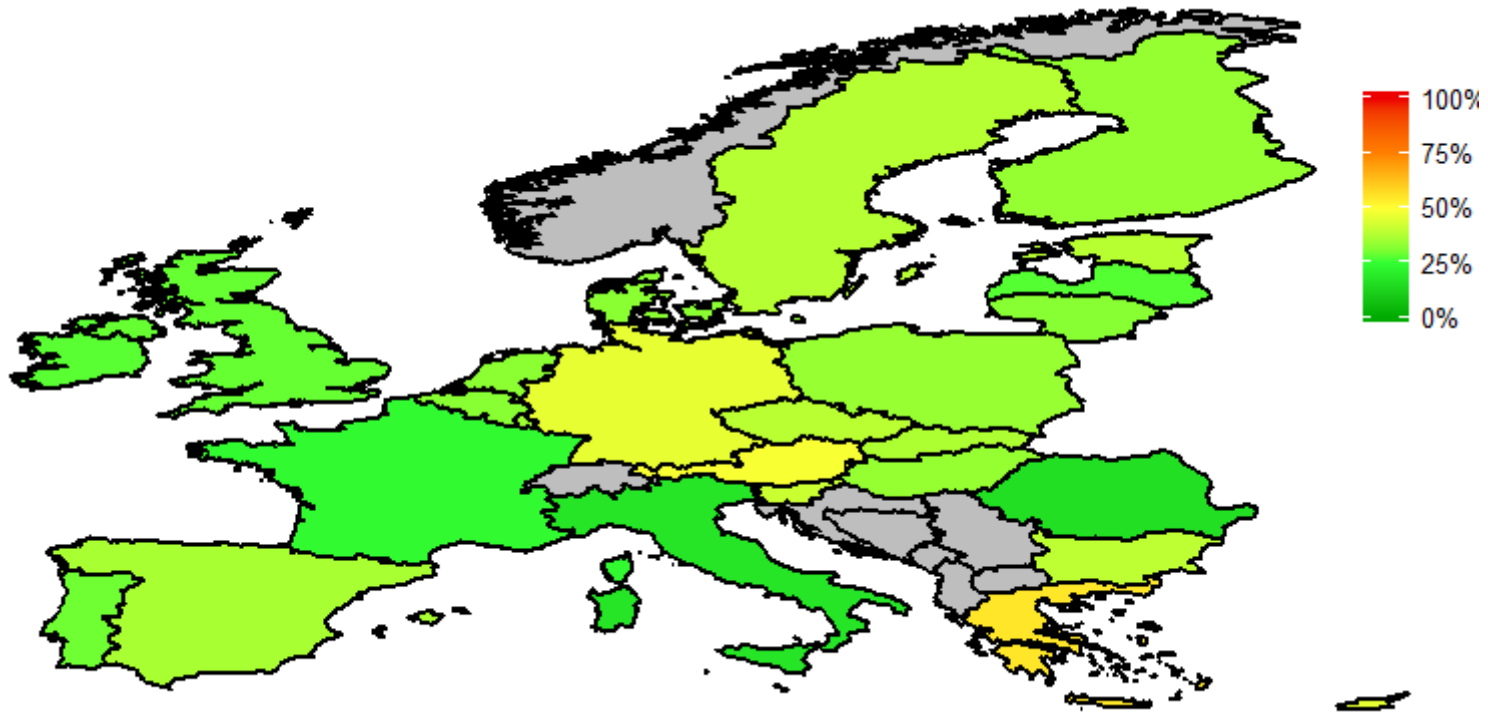


Police monitoring crowds

Linear regression analysis vignette Crowd surveillance (demonstration)			
	Coefficiënt	Std. Error	Sig.
(Constant)	2.591	0.080	0.000
Actively protect your privacy	-0.127	0.037	0.001
Trust in institutions	0.929	0.100	0.000
How satisfied are you with your life as a whole nowadays?	-0.097	0.085	0.252
Gender (1=female)	0.110	0.035	0.002
Lower education	0.481	0.049	0.000
Medium education	0.308	0.040	0.000
Young adults	0.052	0.048	0.279
Adults	0.052	0.041	0.213
R2 = 0,035			
Dependent Variable: To what extent, if at all, do you think the police should or should not monitor the demonstration in this way?			

Crowd surveillance - Demonstration

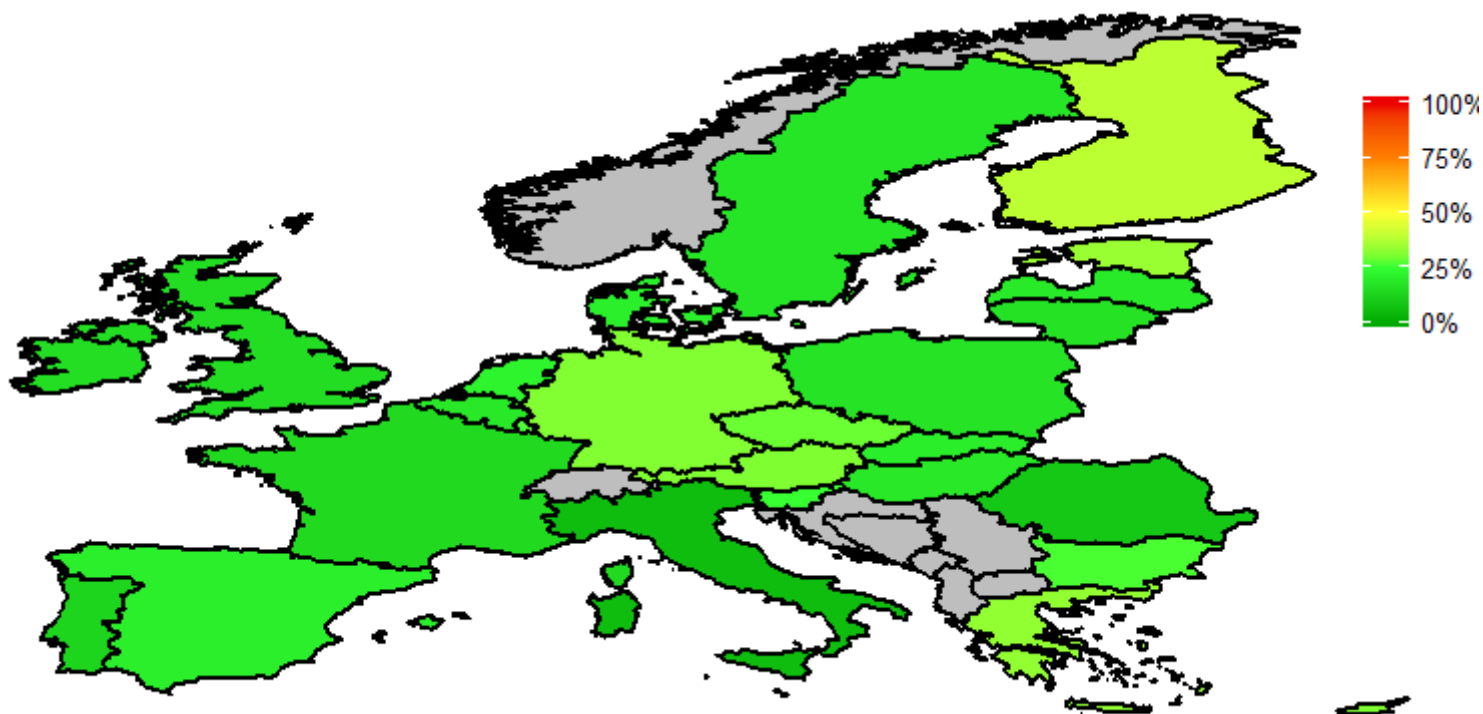
To what extent, if at all, do you think that the police should or should not monitor the DEMONSTRATION in this way?



Greece, Austria, Germany most sceptical
Romania, Italy most positive

Crowd surveillance – Football match

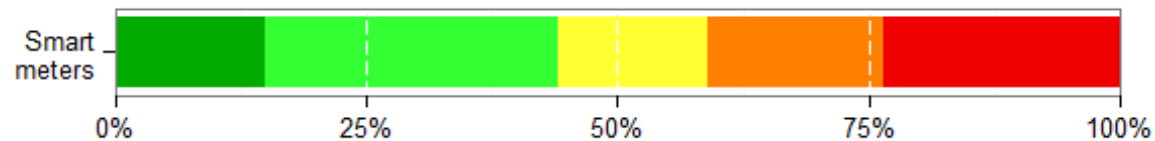
To what extent, if at all, do you think that the police should or should not monitor the FOOTBALL MATCH in this way?



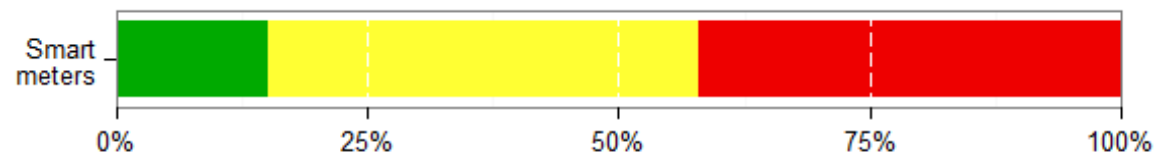
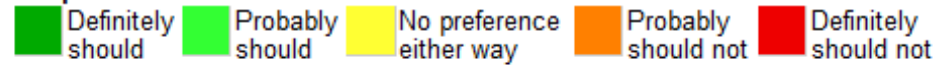
Finland most sceptical
Italy, Romania most positive

Smart metering

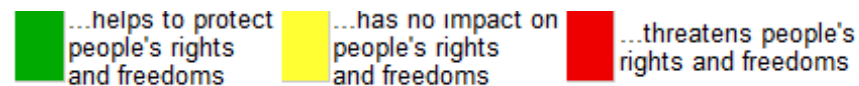
To what extent, if at all, do you think that energy companies should or should not use data from smart meters to get a more detailed picture of how their customers use energy?



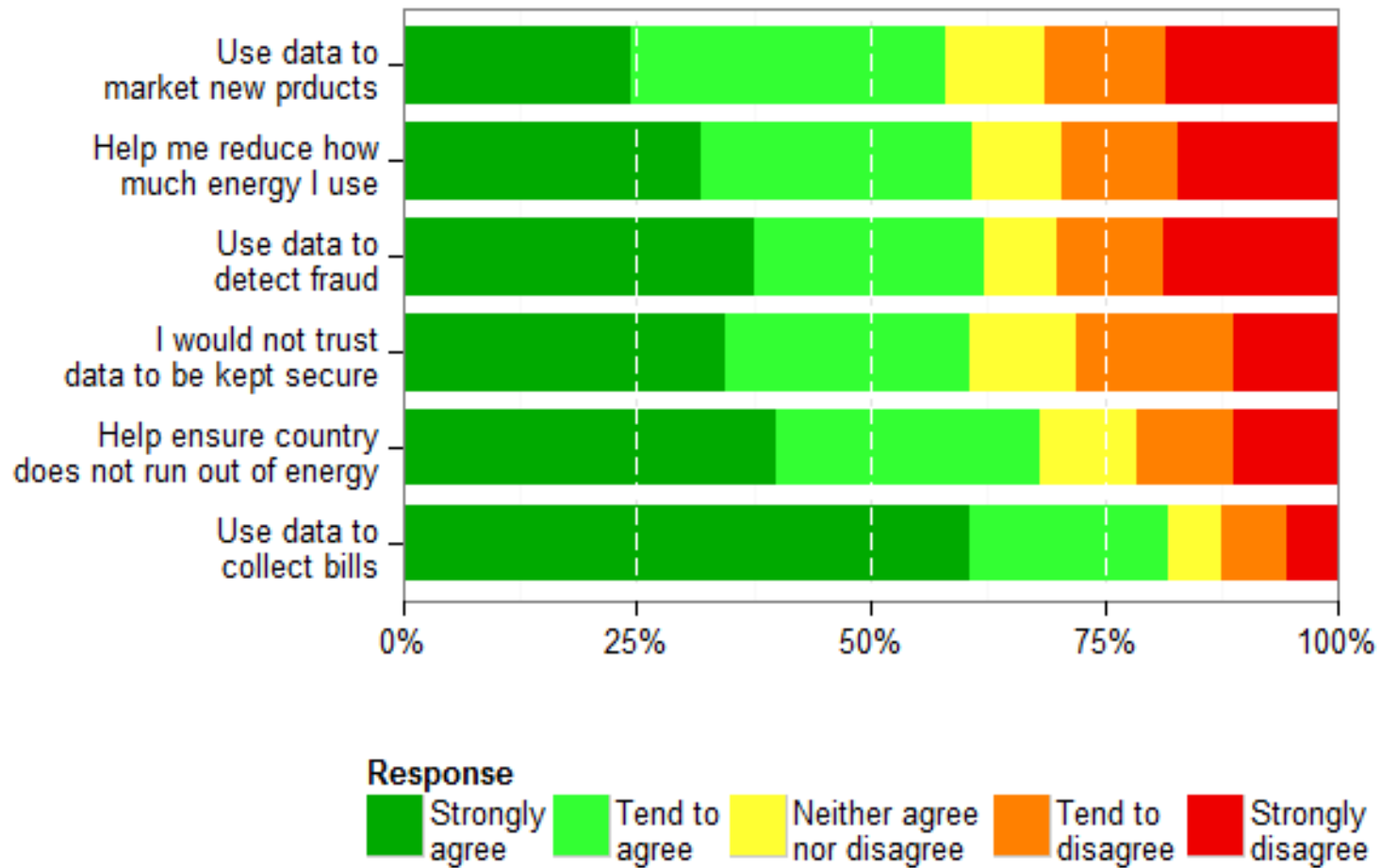
Response



Do you think the energy company doing this



Smart metering

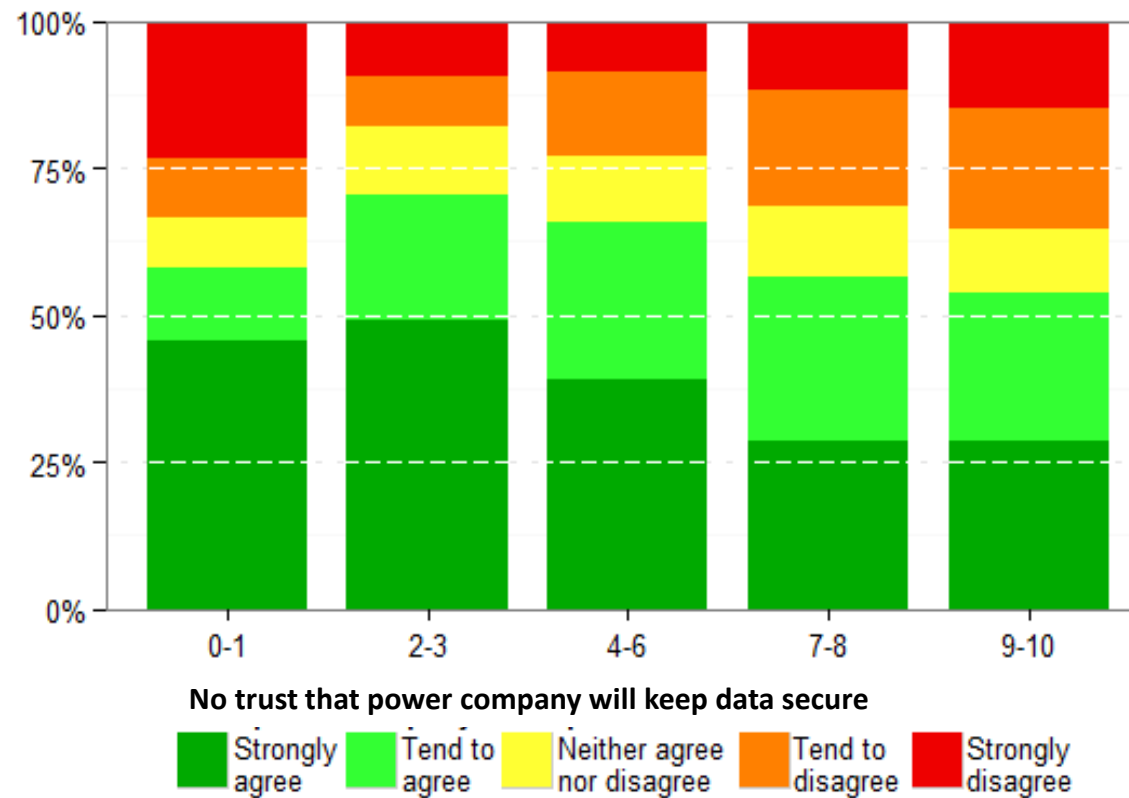


Smart metering

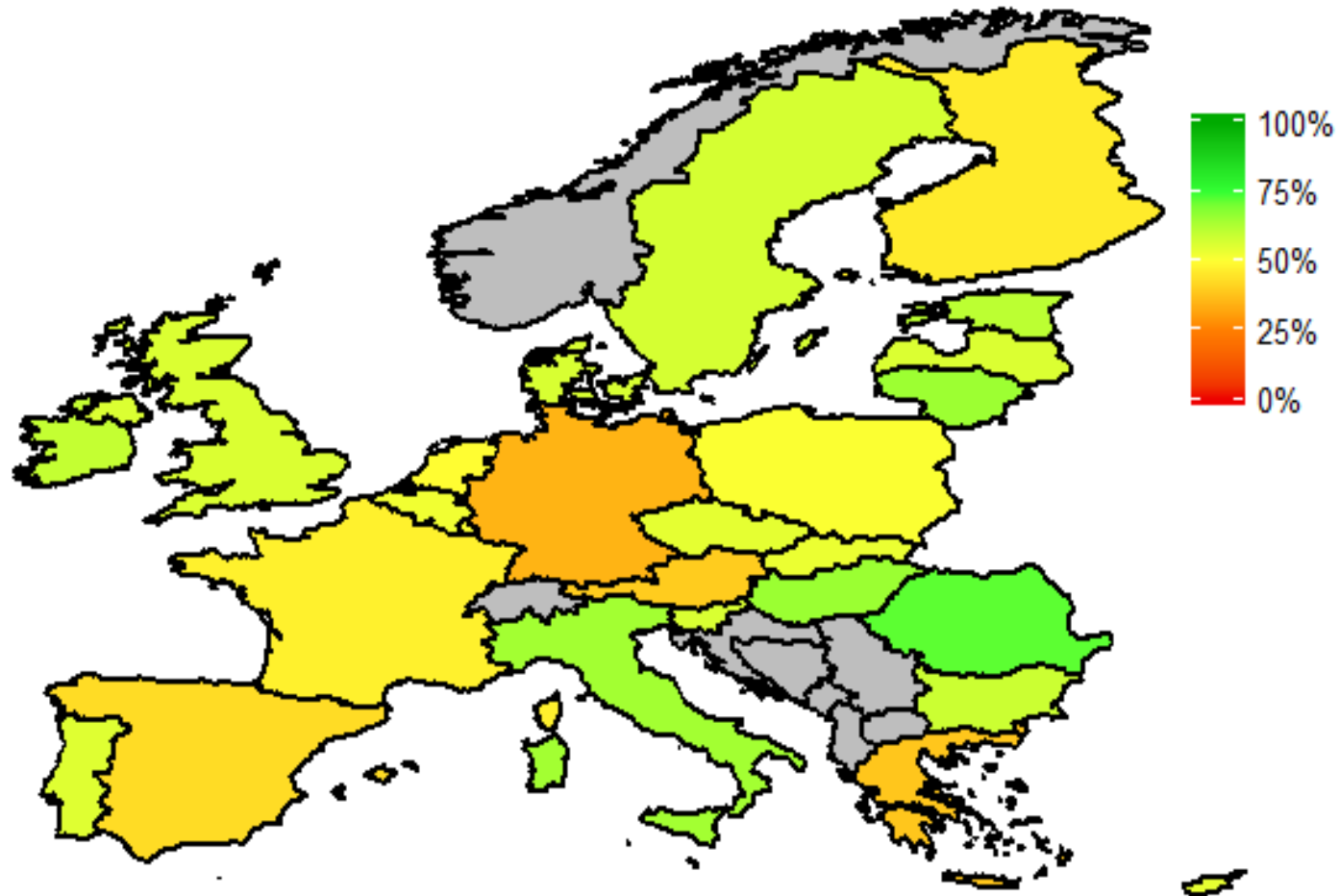
I would not trust the power company to keep this data secure

0-1: no trust at all; 9-10: full trust

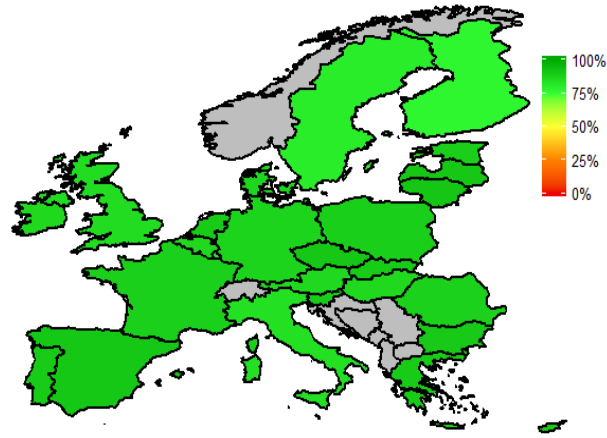
(figures for 0-1 and 2-3 categories are smaller than for the other categories)



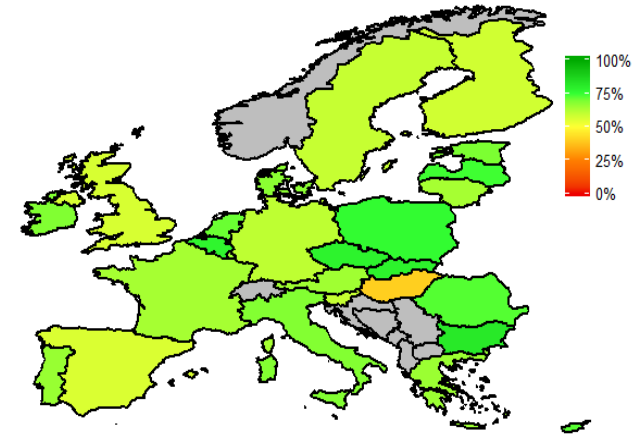
Smart metering



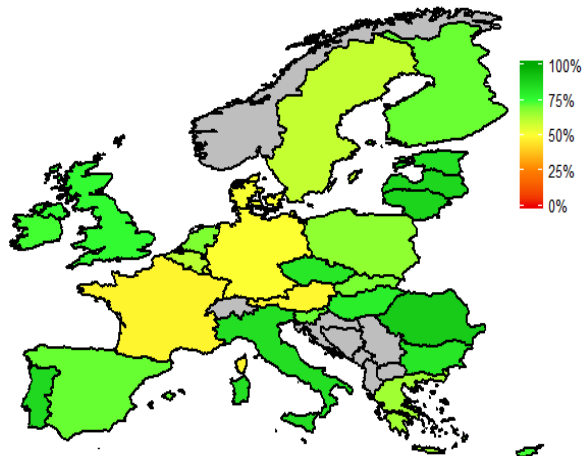
Smart metering



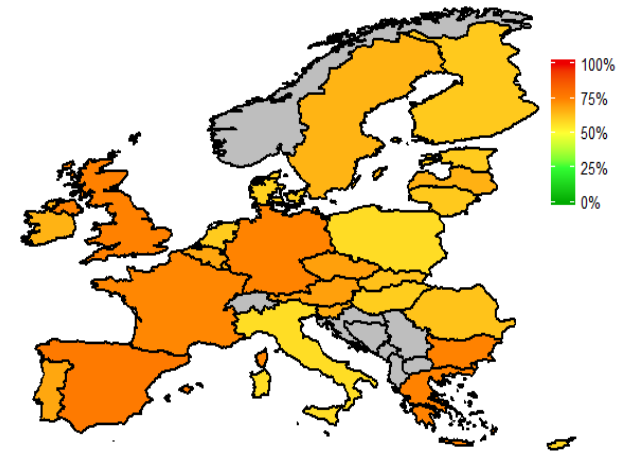
The power company should only use the information they collect to bill households, not for any other purpose



The power company should be able to use data collected to market new products to consumers



Energy companies should give information to public authorities to detect fraud or criminal behaviour



I would not trust the power company to keep this data secure

Conclusions and Outlook

Conclusions from VIGNETTES

- Crowd surveillance (for football scenario), ANPR (for speeding) and Monitoring terrorist web site visits are acceptable to citizens
 - People tend to accept security practices when it comes close to personal concerns and it affects others
- Other security related practices (school access by biometrics, selling data by ISPs, government monitoring of communications) are far less acceptable
 - People are uncomfortable with security practices when it confronts themselves
 - Proportionality and necessity seem to be points in respect
- Reluctance for specific practices which infringe upon privacy does not infer rejection of more fine-grained practices
 - People do reject using smart meter data for non-billing purposes but accept using data for fraud detection
 - People do reject selling data by ISPs but would be willing to accept if able to offer consent
- Distinction between public security practices (crowd monitoring, checking terrorist web site visits) and private security practices (DNA data for police investigations, government monitoring private communications)
 - People do oppose covert operations and operations that put data collections in a different perspective
 - Difference between fully virtual practices and virtual-physical practices

Conclusions from VIGNETTES

- Education – the higher the education the more the concern
 - (knowledge makes suspicious?)
 - In vignettes only in some cases significant (Government monitoring, speed control in neighbourhoods, DNA and crowd monitoring demonstrations)
- Gender
 - (affect of the personal?)
 - Only in some cases significant (Government monitoring, ISP selling data and speed control in neighbourhoods)
- Age significant in various directions
 - (younger adults not necessarily less interested?)
 - Significant in most cases (except for monitoring terrorist websites, speed control in neighbourhoods and crowd monitoring demonstrations)
- Rural vs. urban areas
 - (the global village?)
 - Hardly significant in vignettes, already removed in first stage; only significant in speed control in neighbourhoods)
- Work status
 - Hardly significant in vignettes, already removed in first stage; only significant in speed control in neighbourhoods)
- Political attitude (privacy as left-wing construct)
 - Only significant in School access biometrics and Smart metering

OUTLOOK

- Still on our wish list:
 - Correlation between Trust in institutions (public/private) and vignettes to be explored in more depth
 - Check specifics on country level
 - Are we able to construct a ‘model’ that relates privacy and (personal) security through a number of significant variables?
 - How can we use the results in our Decision Support System?