

Study of e-voting in the 2005 local elections in Estonia

Presentation of the Report for the Council of Europe
Prof. Alexander H. Trechsel

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Florence



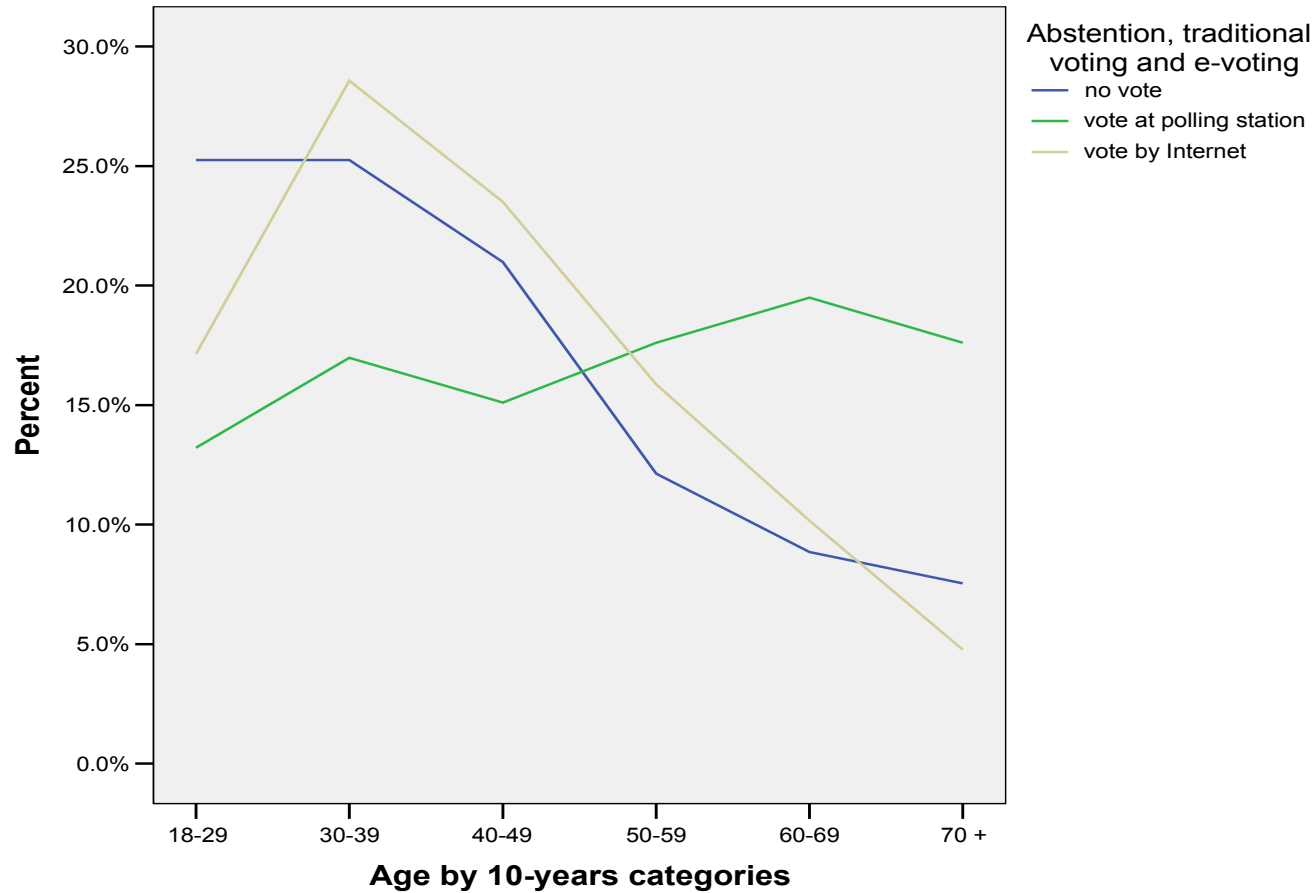
Goals of our study

- Determine who votes over the internet
- Explain the choice of the voting channel
- What is the impact of e-voting on participation?
- What are the political effects (if there are any) of electronic voting?

Method and Research Management

- Specifically designed survey containing answers from 939 respondents who had the right to vote in the local elections
- Sample consisted of 315 e-voters, 319 'traditional' voters and 305 non-voters.
- Method used was CATI ("computer-assisted telephone interviews")
- Survey itself has been outsourced to survey institute *OY Uringukeskus Faktum*.

Age and mode of participation



Gender and mode of participation

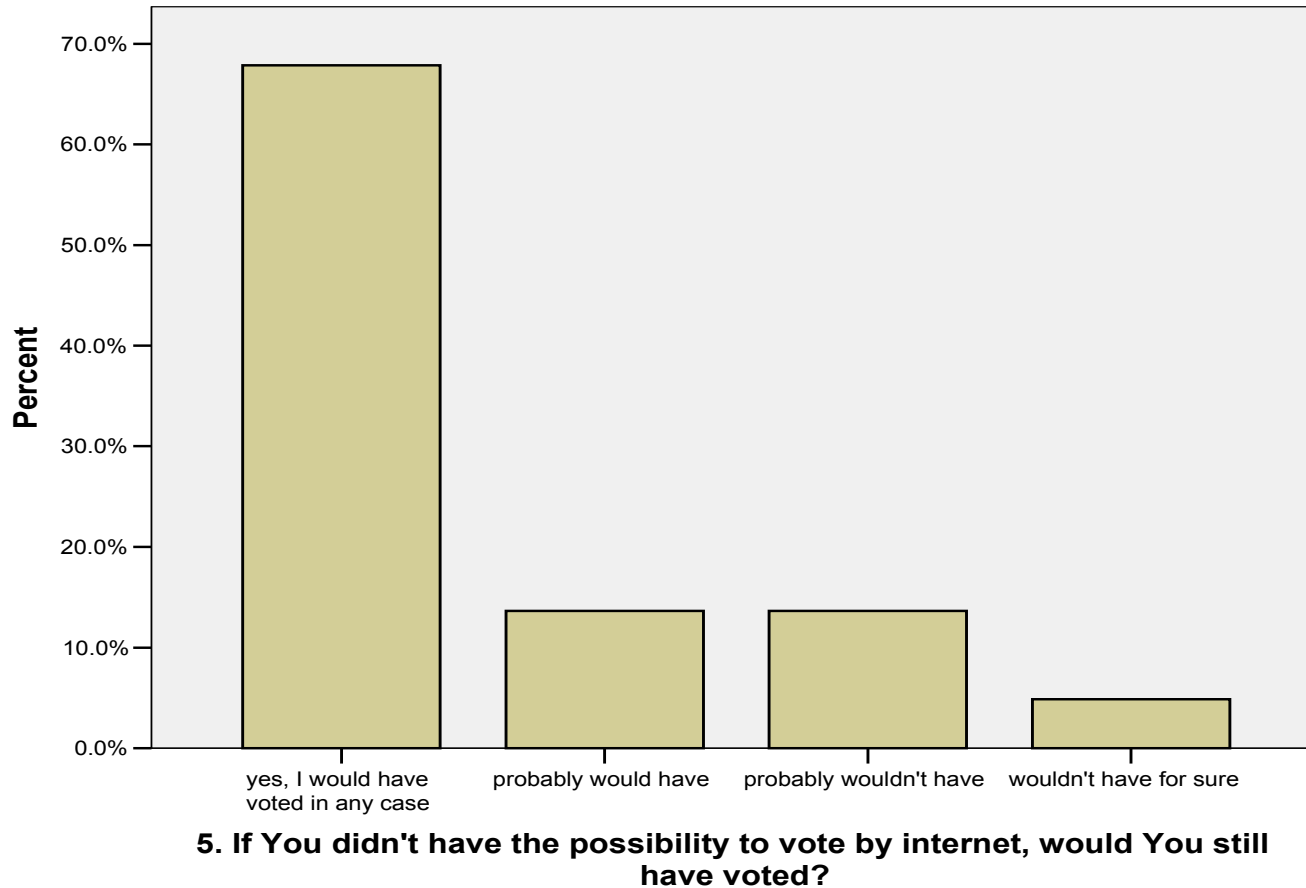
| Mode of participation | Gender | | |
|-----------------------------|--------|--------|-----|
| | male | female | n |
| no vote | 45.2 | 54.8 | 305 |
| vote at the polling station | 41.2 | 58.8 | 318 |
| e-vote | 49.8 | 50.2 | 315 |
| Overall n | 426 | 512 | 938 |

N=939, valid cases=938, missing cases=1.

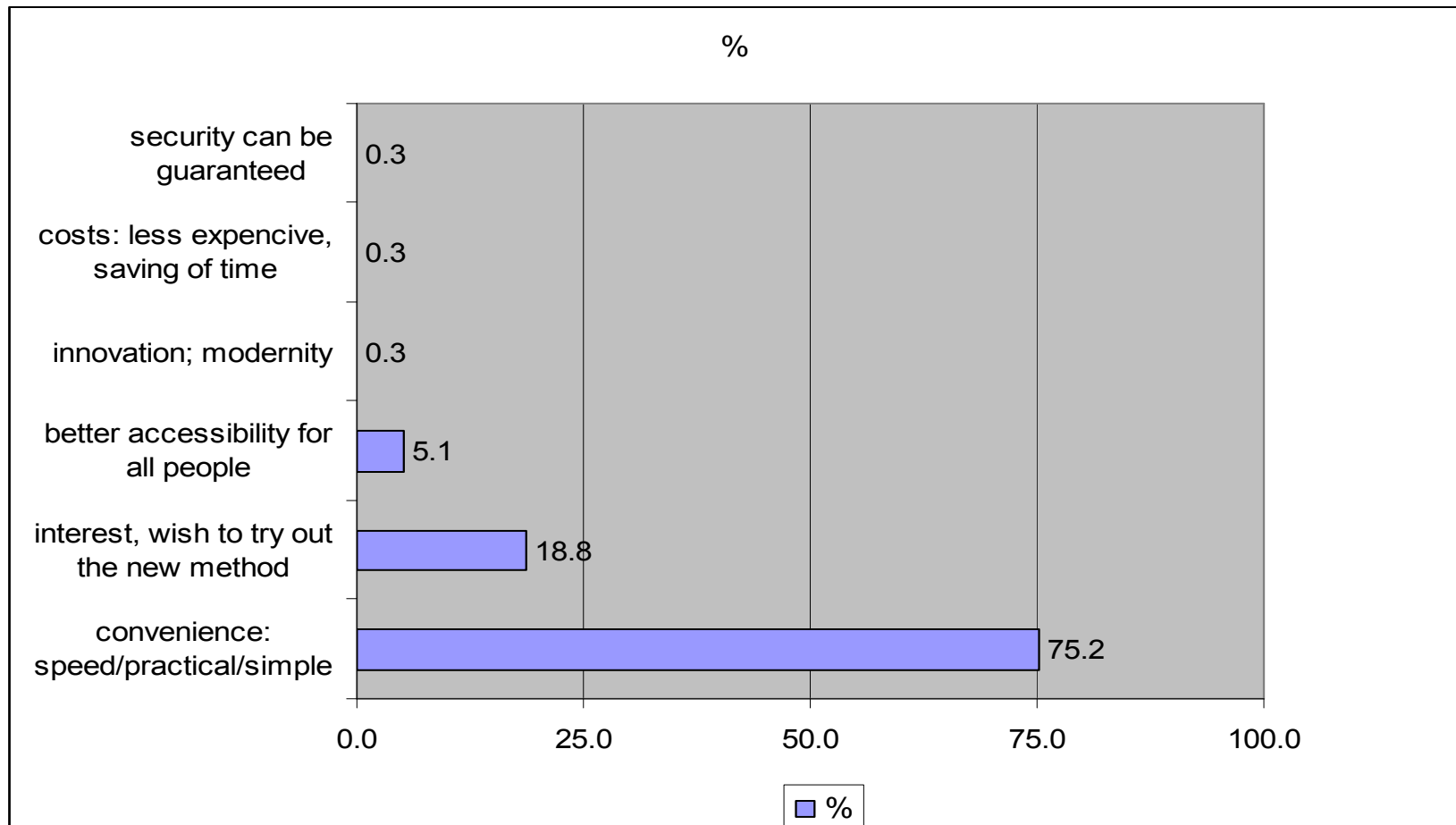
Frequency of usual political participation and mode of vote in 2005

| Vote in 2005... | Frequency of usual political participation | | | | | Total (% n) |
|----------------------|--|-------------------|-------------------|-------|--|--------------|
| | in all elections | in some elections | from time to time | never | | |
| at the polling place | 77.6 | 18.0 | 3.5 | 0.9 | | 100.0 |
| by internet | 70.2 | 24.4 | 4.8 | 0.6 | | 100.0 |
| Total (n) | 467 | 234 | 26 | 5 | | 100.0 632 |

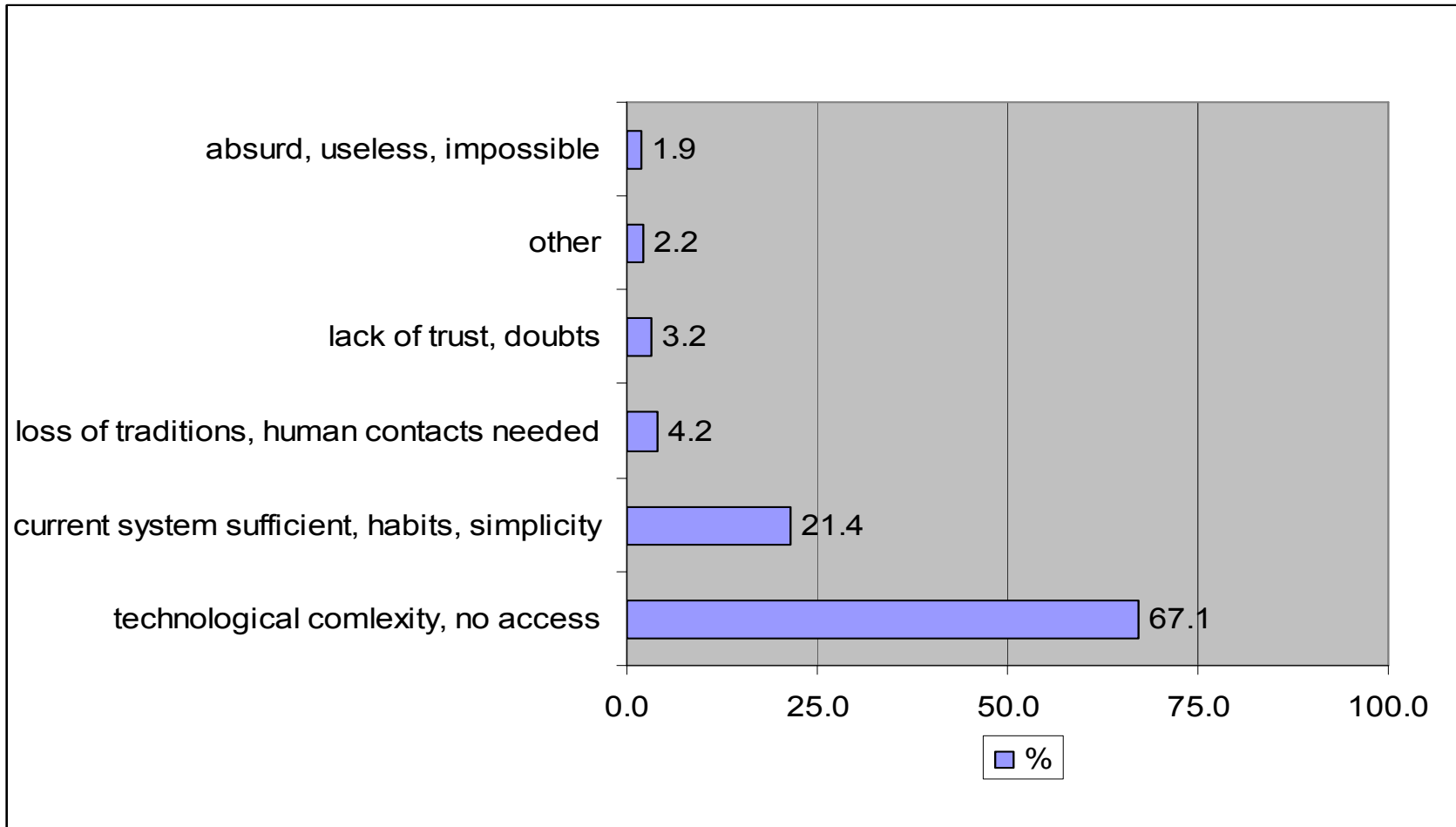
Subjective estimation of participation in the absence of e-voting



Subjective reasons for choosing e-voting



Subjective reasons for not using e-voting



Estimation of 3 models

- Socio-economic and demographic model
- Political model
- ICT model

Multi-variate model of the impact of socio-demographic and –economic variables on choosing e-voting over voting at the polling stations among (logistic regression coefficients)

| Independent variables | B | s.e. | sig. |
|-----------------------|---------------|-------------|-------------|
| Age | -.272 | .061 | .000 |
| Gender | -.009 | .183 | .963 |
| Settlement | -.017 | .195 | .929 |
| Education | .464 | .105 | .000 |
| Income | .208 | .087 | .016 |
| Language | -1.757 | .357 | .000 |
| Constant | .714 | .772 | .355 |

Pseudo R² (Nagelkerke): .233; n=609; bold = error prob. ? 5%.

Multi-variate model of the impact of political variables on choosing e-voting over voting at the polling stations among (logistic regression coefficients)

| Independent variables | B | s.e. | sig. |
|---------------------------------------|--------------|-------------|-------------|
| Left-right scale | .143 | .050 | .004 |
| Political discussions | .031 | .110 | .775 |
| Trust in Parliament/government | -.475 | .212 | .025 |
| Trust in politicians | -.055 | .210 | .795 |
| Trust in the State | .429 | .184 | .020 |
| Constant | -.355 | .597 | .553 |

Pseudo R² (Nagelkerke): .058; n=475; bold = error prob. ≤ 5%.

Multi-variate model of the impact of ICT variables on choosing e-voting over voting at the polling stations among (logistic regression coefficients)

| Independent variables | B | s.e. | sig. |
|--|---------------|-------------|-------------|
| Computing knowledge | -.308 | .141 | .029 |
| Frequency of internet use | .119 | .067 | .077 |
| Location of internet access | .145 | .136 | .284 |
| Trust in transactions on the internet | -.383 | .188 | .041 |
| Trust in the procedure of e-voting | -1.543 | .194 | .000 |
| Constant | 3.276 | .794 | .000 |

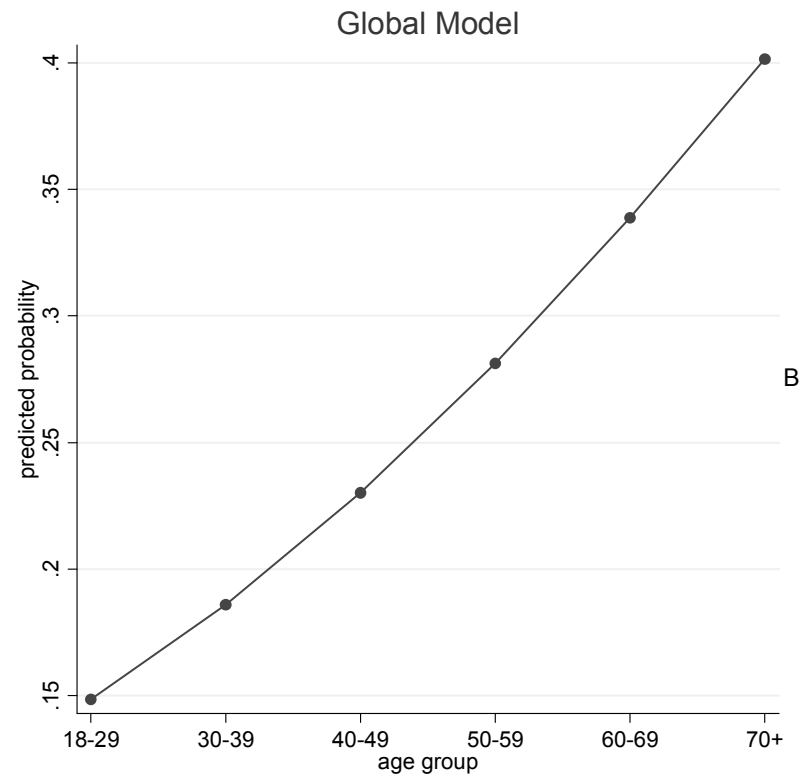
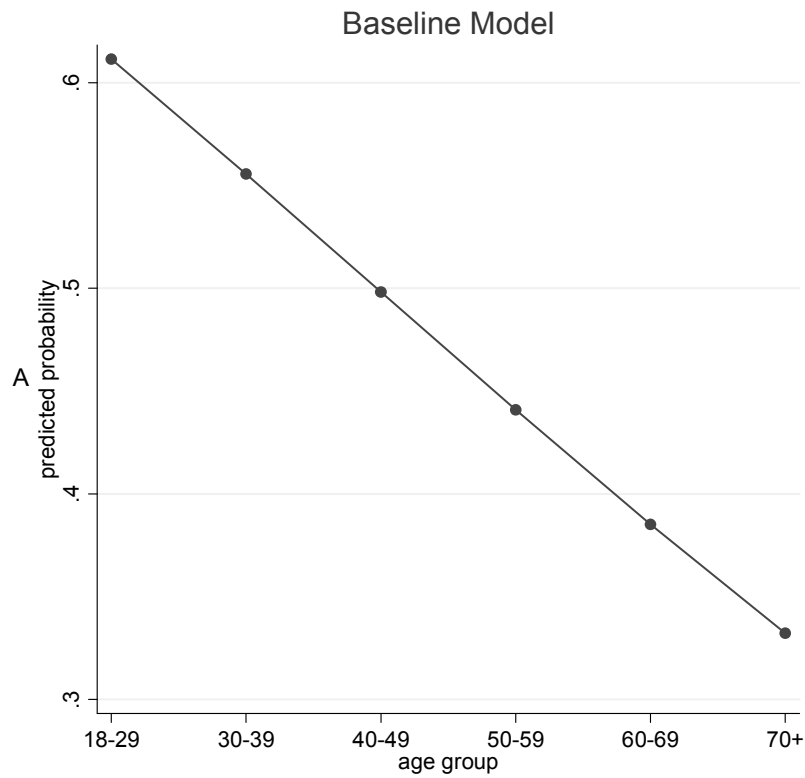
Pseudo R² (Nagelkerke): .477; n=508; bold = error prob. < 5%

Global model

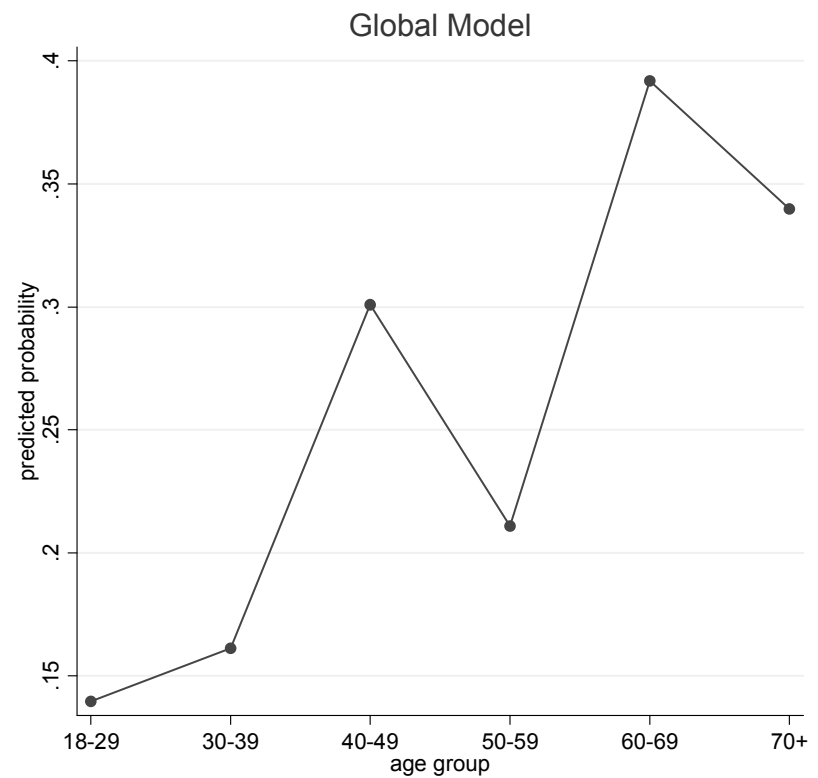
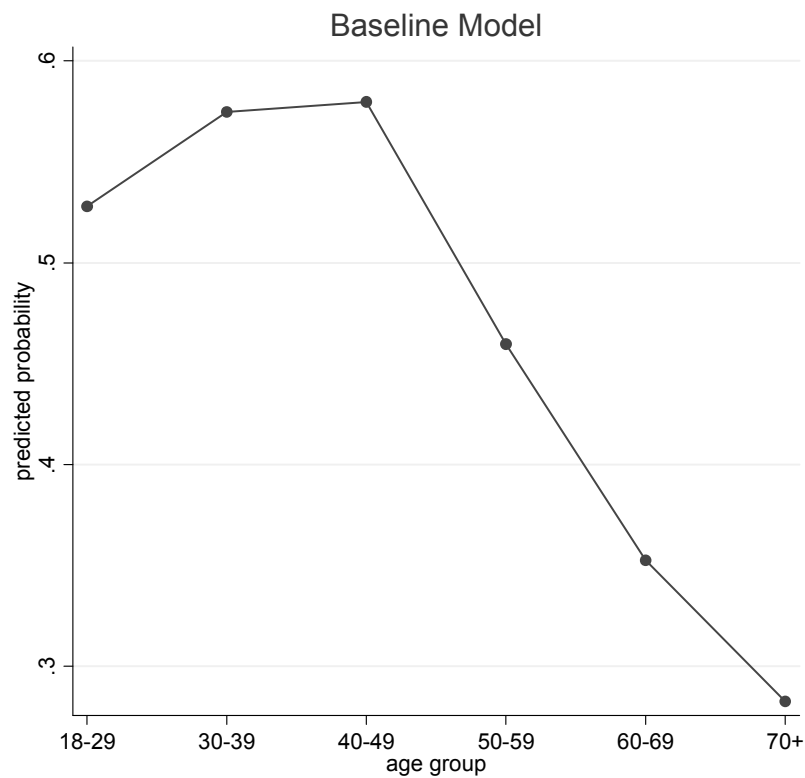
| Independent variables | B | s.e. | sig. |
|---|---------------|-------------|-------------|
| Age | .267 | .116 | .022 |
| Gender | .415 | .287 | .148 |
| Settlement | .361 | .316 | .254 |
| Education | .289 | .181 | .111 |
| Income | -.166 | .136 | .221 |
| Language | -1.377 | .546 | .012 |
| Left-right scale | -.008 | .073 | .908 |
| Political discussions | .270 | .162 | .095 |
| Trust in Parliament/government | -.265 | .342 | .438 |
| Trust in politicians | .188 | .316 | .551 |
| Trust in the State | .516 | .278 | .064 |
| Computing knowledge | -.410 | .181 | .023 |
| Frequency of internet use | .153 | .082 | .063 |
| Location of internet access | .247 | .172 | .150 |
| Trust in transactions on the internet | -.325 | .229 | .156 |
| Trust in the procedure of e-voting | -1.684 | .244 | .000 |
| Constant | 1.004 | 1.723 | .560 |

Pseudo R² (Nagelkerke): .525; n=399; bold = error prob. ≤ 5%.

Predicted Probabilities by age groups with ordinal age variable



Predicted Probabilities by age groups with dummy age variables



Some preliminary conclusions

- Language remains a problem
- Computer knowledge vs. Internet access
- Trust in e-voting is central → policy!
- Some important non-results: age, gender, income, education...
- Political neutrality of e-voting

2007? Our recommendations...

- ICT awareness is important -> develop
- Diffuse the model (best practice)
- Inclusiveness (language)
- Develop electoral e-platforms
- Extend the voting period

THANK YOU FOR YOUR
ATTENTION!

Alexander.Trechsel@eui.eu