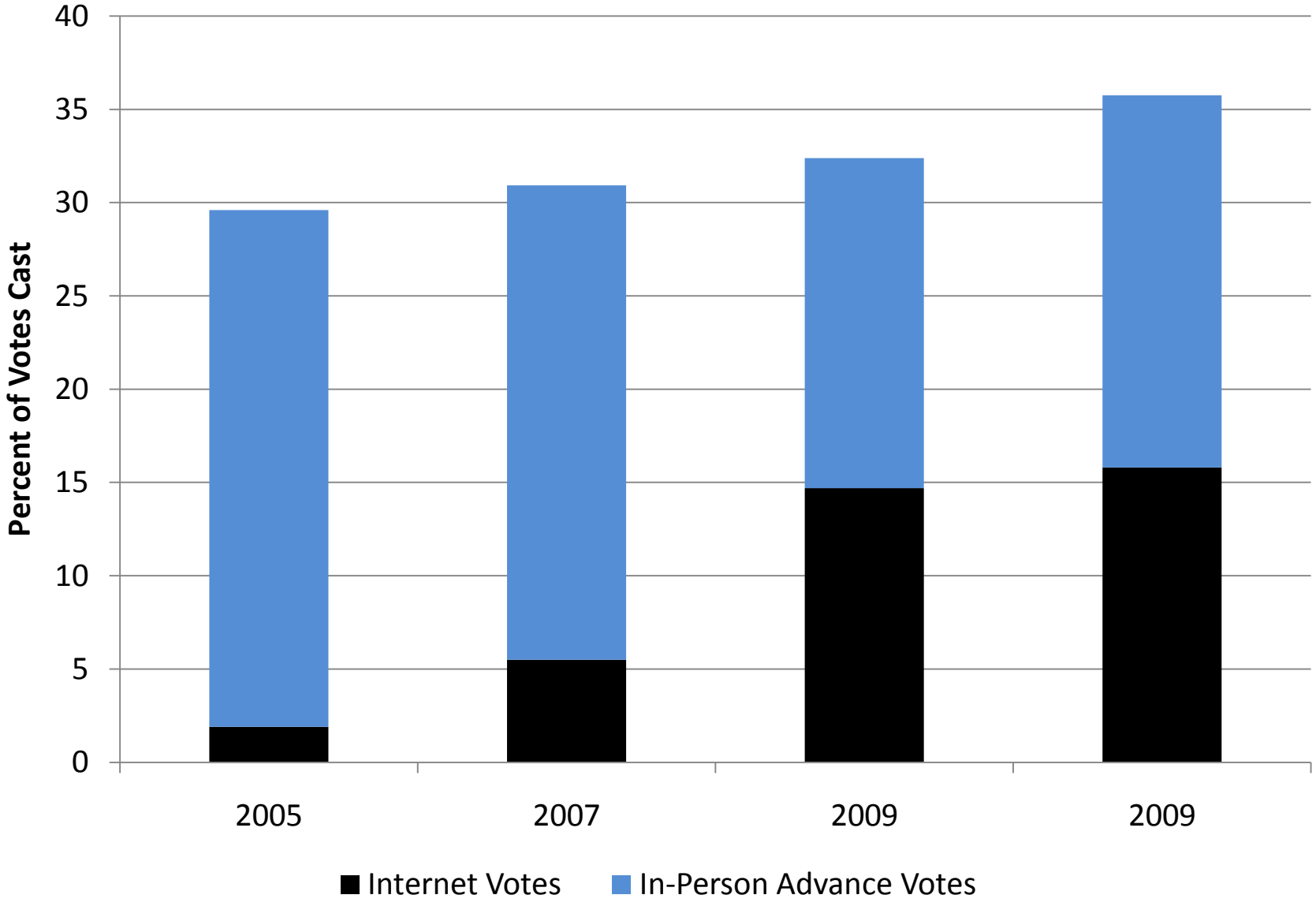
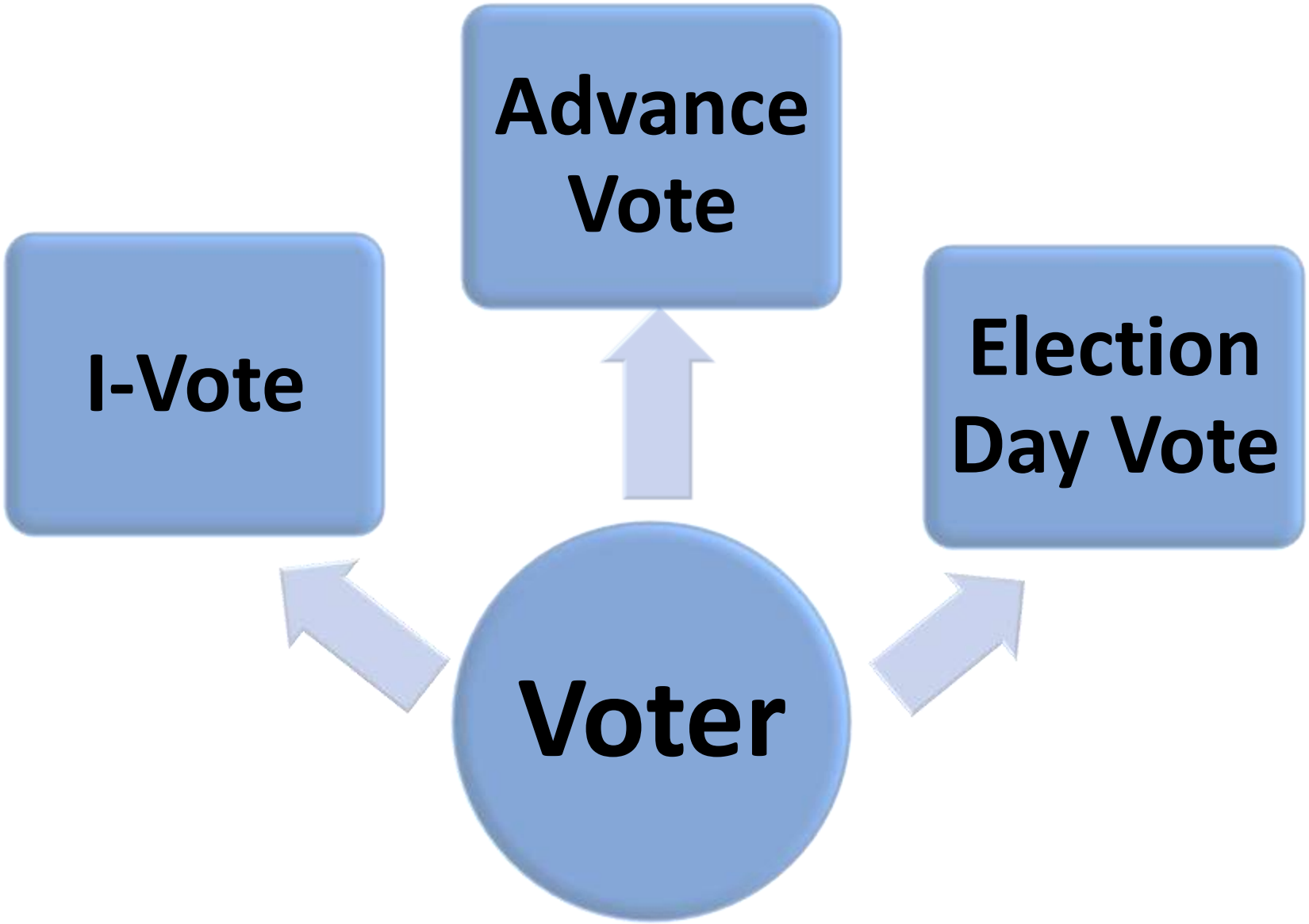
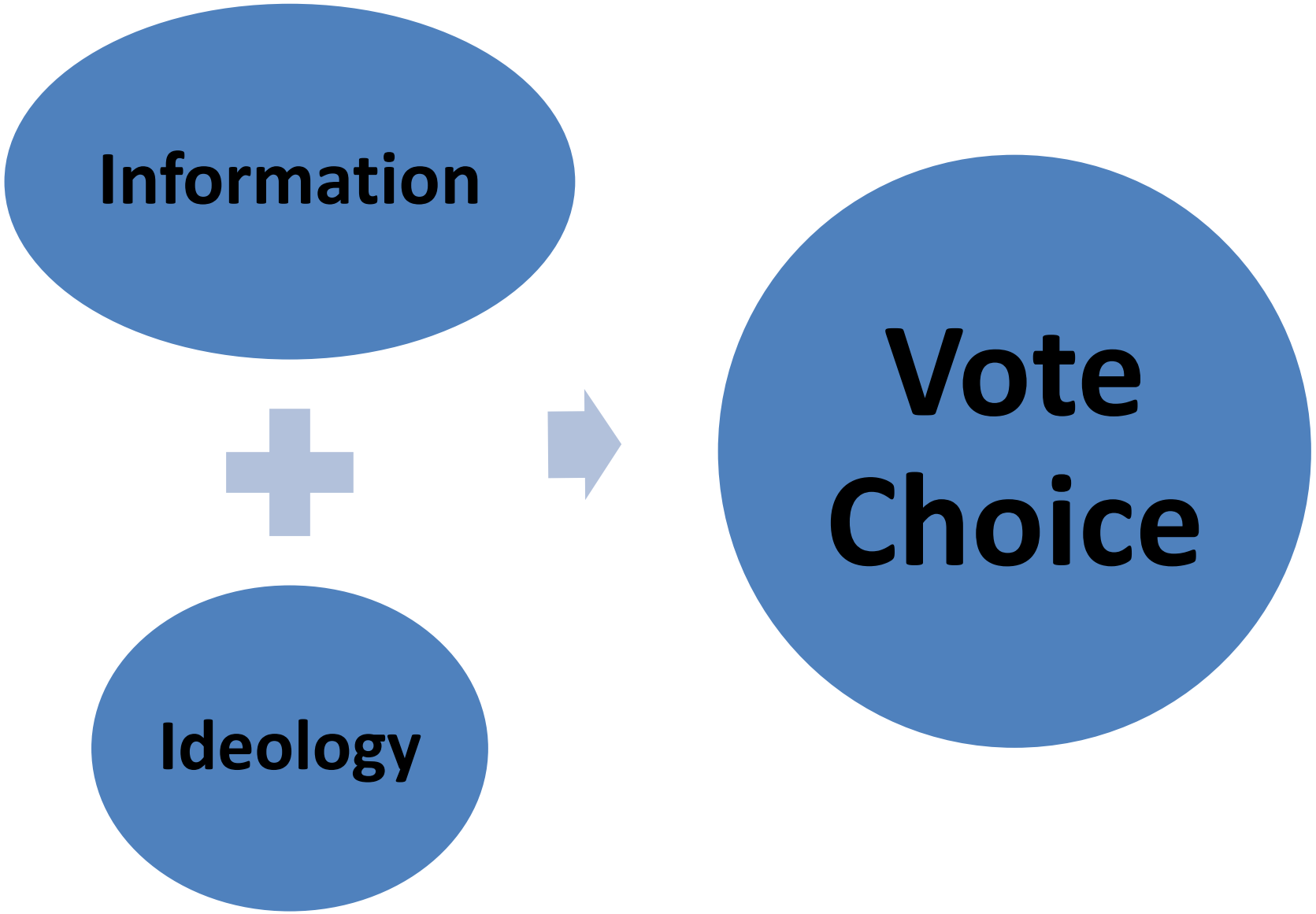
Latest Trends in Elections and ICT

Thad Hall

University of Utah, USA


40
35
30
25
20
15
10
5
0
Percent of Votes Cast
2005
2007
2009
2009
Internet Votes
In-Person Advance Votes


Advance Vote
I-Vote
Election Day Vote
Voter


Information
Ideology
Vote Choice

2005

- Internet Voting Estonia
- Blogs/Websites

2007

- Social Media Gain Critical Mass in the United States

2009

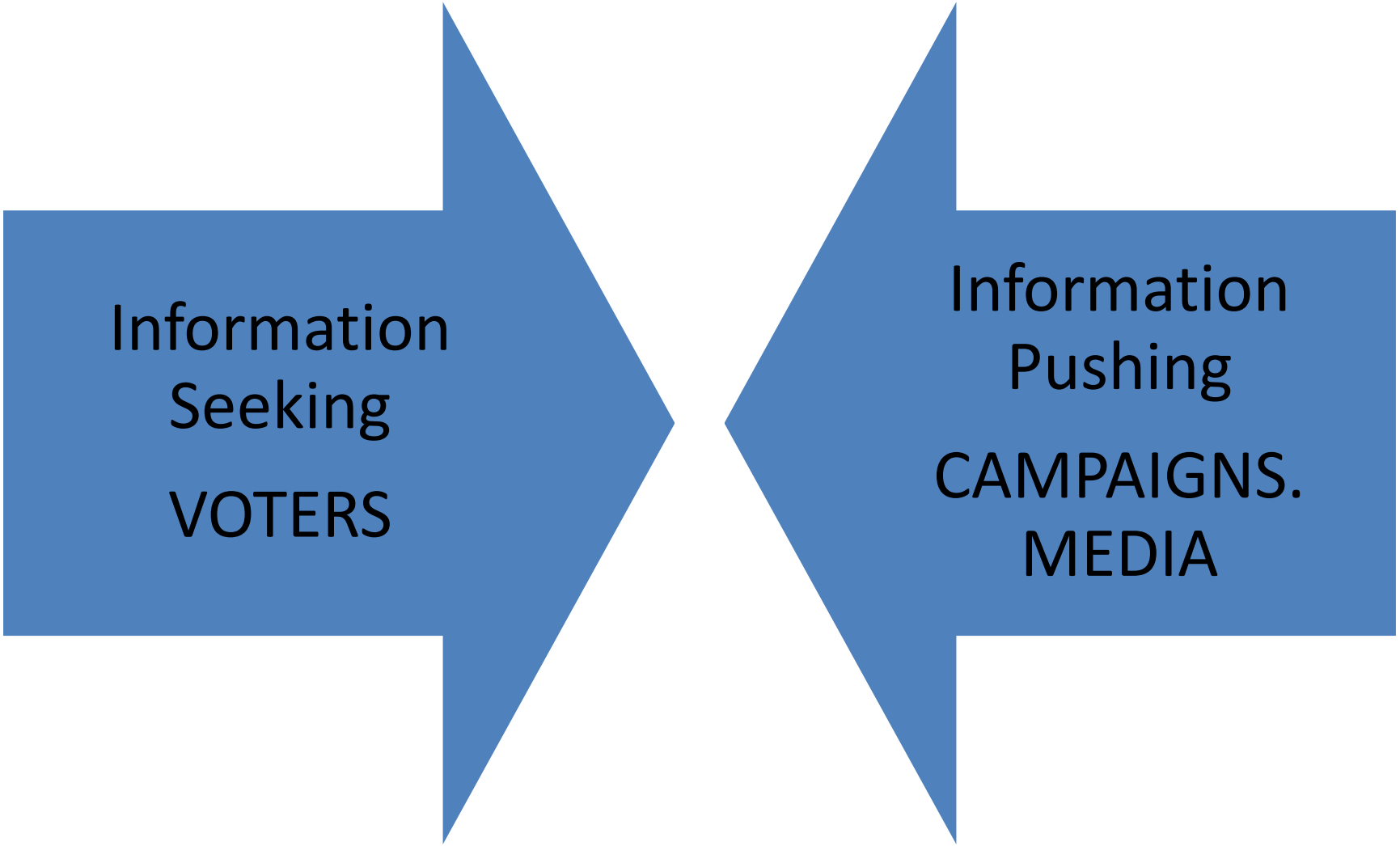
- Social Media Worldwide

Face to face best.

Your family.

Your friends

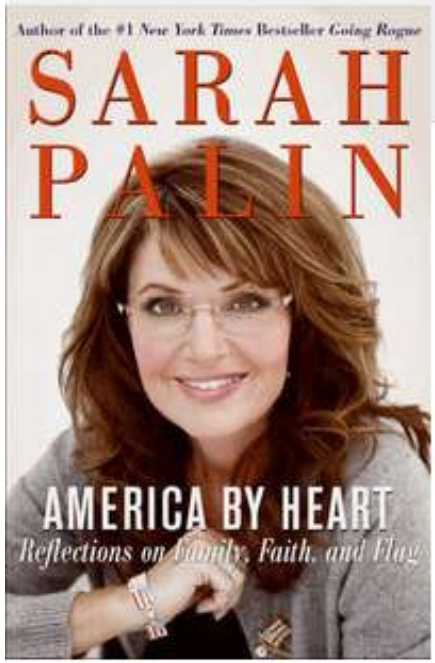
Your neighbor.


Information Seeking
VOTERS
Information Pushing
CAMPAIGNS. MEDIA

The Online Yard Sign

Energizing the Base

Energizing the Base



Information

Hometown:
Wasilla, Alaska

Birthday:
February 11

About:
http://www.SarahPAC.com/
http://twitter.com/SarahPalinUSA

Sarah Palin Like

Wall | Info | Notes | Donate to S... | Discussions | YouTube Box | »

Filters

Sarah Palin

Union Brothers and Sisters: Seize Opportunity to Show True Solidarity
The union-led school closures and demonstrations in Madison have left most ordinary Americans shaking their heads in disbelief. Months ago, I penned a message to my fellow union brothers and sisters when I found myself on the receiving end of union boss Richard Trumka's wrath. ...

February 18 at 9:32pm · View Feedback (16,657) · Share

Sarah Palin

The Truth Behind the White House's Budget Spin
Today the White House finally produced its proposal for the 2012 budget...

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Sarah Palin

On Sputnik vs. Spudnut
Please read this article by the Hoover Institution's Research Fellow Peter Schweizer. ...

January 28 at 11:40am · View Feedback (8,598) · Share

Sarah Palin

Obama's Message to America: The Era of Big Government is Back, Now Help Me Pay For It
The President's State of the Union address boiled down t
government is here as long as I am, so help me pay for it

Chat (Offline)

Looking for Information

POLITICO

2012 LIVE | 44 | CONGRESS | CLICK | ARENA | OPINION | POLICY | VIDEO

How a shutdown could happen

By JONATHAN ALLEN & CARRIE BUDOFF BROWN | 02/22/11 1:48 PM

Looking for Information

Looking for Information

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The STATE of the NATION

HOME § PEOPLE § GROUPS § DIARIES § TAGS § FAQ

Search GO

COMMUNITY SPOTLIGHT

California State Parks You Should Know - Torrey Pines State Natural Reserve
by TheOrchid
32 comments

A New Permanent Underclass
by abe57 65 comments

The Hardest Death to Watch
by I love OCD
99 comments

Making Sense of Revolutions
by cabaretic 13 comments

Hello DK4, My name is...
by Aaron Krager
43 comments

The Day the WI Governor Opened Fire
by thenekkidtruth
51 comments

NEXT »

TUE FEB 22, 2011 AT 03:03 PM EST

Midday open thread

by kos

FEATURE

PolitiFact: Walker's 'pants on fire' on collective bargaining

Read report here.

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www.TeaPartyExpress.org

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The Great Defeat Obama Presidential Weekend! http://bit.ly/dLWgm5 #tcot #gop #teaparty #sgp

MEDIA REPORT: Wisconsin Mob An Attempt to Silence Tea Party Movement http://bit.ly/idGxYC #tcot #teaparty #gop #tlot #sgp

BREAKING NEWS: Obama Behind Wisconsin Hysteria http://bit.ly/hvHrv2 #tcot #gop #witcot #teaparty

BREAKING NEWS: Obama Behind Wisconsin Hysteria http://bit.ly/hvHrv2 #tcot #gop #witcot #teaparty

To Ben Nelson, Debbie Stabenow, Olympia

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WWW.OURCOUNTRYDESERVESBETTER.COM

2010 US Congressional Elections

- 25% voters get email from candidates or interest groups.
- 20% visit candidate websites or follow them on Facebook or Twitter.
- Under 30 do online politics twice as much as Over 65

Political Internet Use – US

- Better educated
- Democrats
- Political Activists (Donors)
- Connected to Campaign (“Friend/Email List)

Political Internet Use – Estonia

- Traditional Media Still Most Important
- 40% of Voters Use Internet for Politics
  - Looking for Issue Positions
- Small percentages sign up for emails from parties.
  - Parties could use social media more?

Elections in Information Society: *online*-campaigns 2011 in Estonia

Kristina Reinsalu, *PhD*
e-Governance Academy

Topics to be covered

- **background, earlier studies**
- **research questions and methods**
- **preliminary findings**
- **conclusions**

Background

- **Elections as one of the most important milestones to evaluate the level of democracy in society**

- **Estonia as good case for describing possible influence and effects of internet on democracy**

Earlier studies

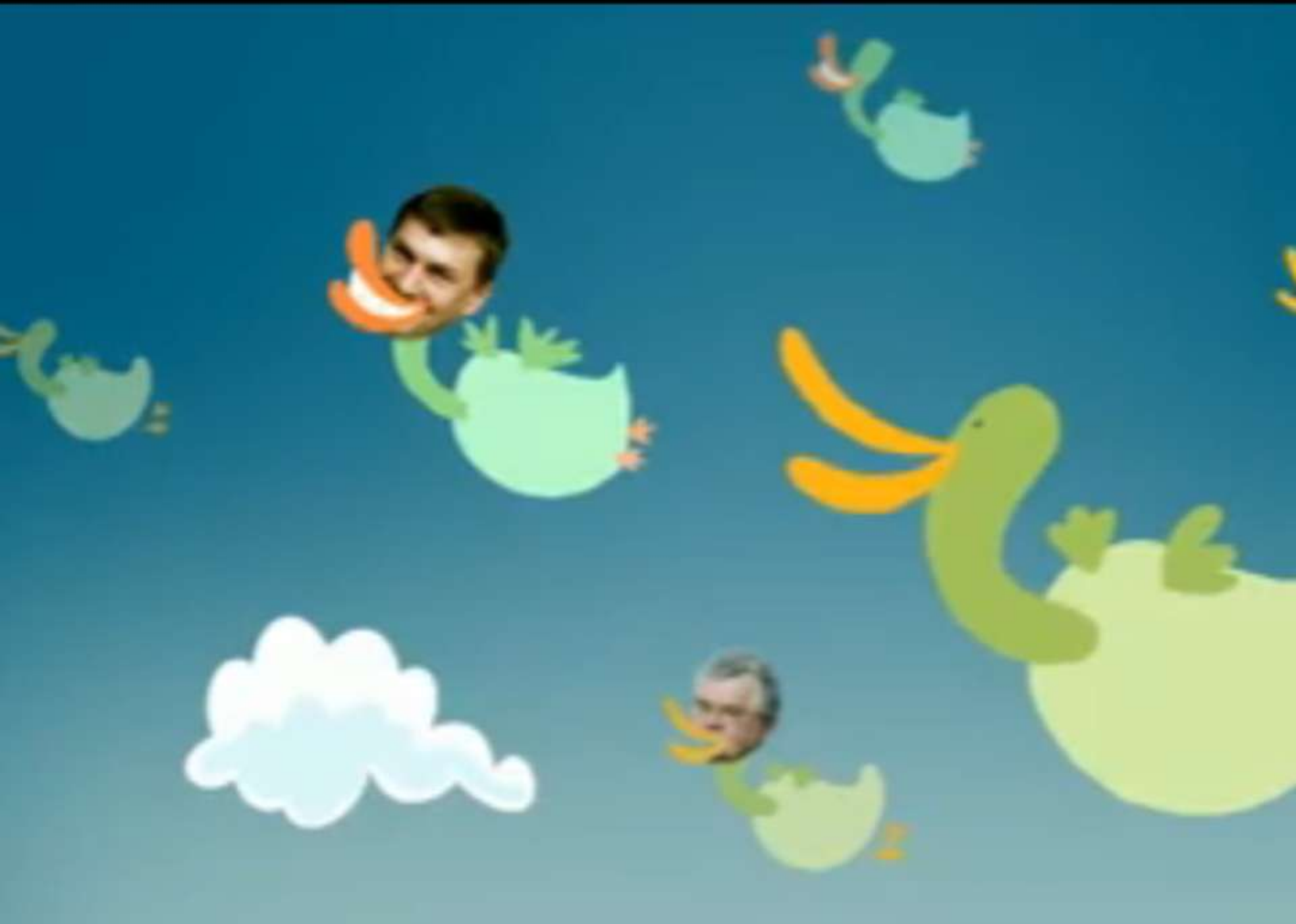
June 2009 EP elections and –

discourse analysis of online-campaigns in various *online*-environments, including social media

October 2009 local elections –

Altogehter 227 official web pages of local governments, 472 items of social media (includes Facebook, Twitter, blogs), 29 online newspapers were analysed using observation, content and discourse analysis methods

2010 - Study on use of social media among members of last Estonian Parliament



What characterizes political communication in *online*-environments in period preceding Estonian Parliamentary elections 2011?

Methods

- **Quantitative and qualitative content analysis methods combined**
- **Analyzed by experts of eGA and MA studends of communication studies of Univesrity of Tartu**
- **Research period 13.02 – 3.03.2011**

Analyzis

- **<u>Parties</u> – campaigns on a) official websites; b) social networks; c) *online*-newspapers**

- **<u>Candidates</u> – campaigns on a) blogs , b) social networks, c) *online*-media**

- **Confirmity of campaign to the Code of Good Practices on Elections**

FINDINGS

official websties of parties

- **Linked to FB and blogs (Reform Party actively sharing almost every sub-page through social networks, Central Party linking to blogs)**
- **2 parties promote e-voting**

- **3 parties remarkably invested on website before elections**
- **no interactivity**
- **tricks and slogans as**

  “Enough”,

  “New Start”,

  “It ´s time!

parties in social media

- **Leading party in social media seems to be Reformist Party: has 2300 “likers”, every day 6-8 postings, 420 followers in Twitter, 25 videos in Youtube**
- **However, the use of social media is suprisingly modest**

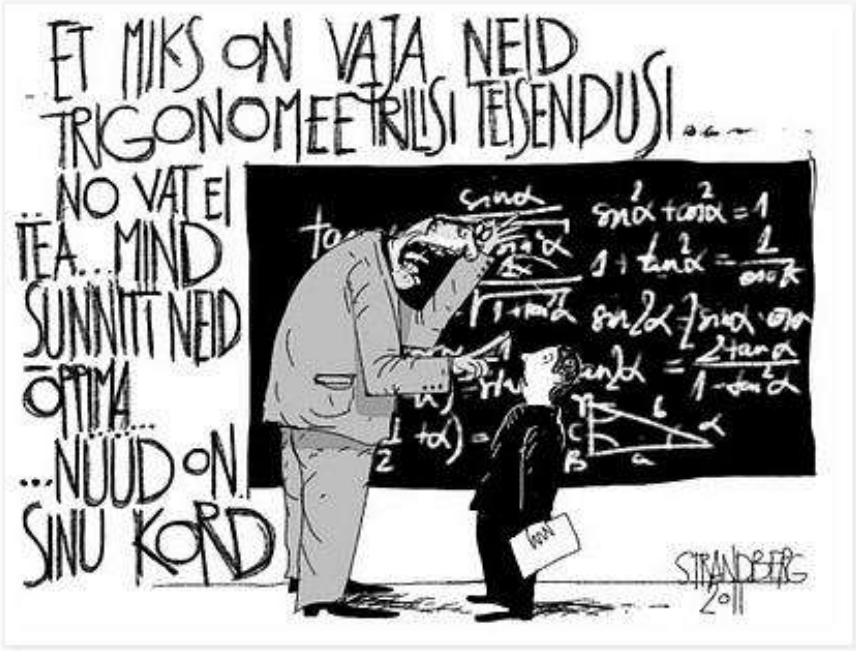
candidates in social media

- **FB is dominating – 70% of candidates are there, but not very actively**

- **No network, fight is individual**

blogs

- **14% of candidates are bloggers, 51% of them present political message**
- **Less than half of the candidates refer to program or link the blog with social networks**
- **Only couple of “top-bloggers” are getting commented**



Candidates and parties in *online*-newspapers

- **Very modest and unfashionable**
- **Game “Help to clean up Tallinn and win iPad!”**

conformity of *online*-campaign to Good Practices on Elections

Cases of threatening, smearing or mocking of oponents

Picking words of oponents out of context

Conclusions

- **Webpage is place for showing your own strengths and desires, social media for oponents´ weaknesses and evils**
- **Confusion of roles and individualism**
- **Still, political argument is clearer than before**
- ***online*-environments 2011 are more educative – electors´ compasses and games**

What next?

- **Elements of campaign and real outcome**
- **Parties´self-evaluation of campaign**
- **Real effect of online-campaigns on election behaviour**

Thank you!

kristina@ega.ee

2011 valijakompass

Very short overview

Traffic

Effects

1 2 3 4 5 6 **7** 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

Eestis ei ole naiste ja meeste võrdõiguslikkusega selliseid probleeme, mis nõuaks riigi sekkumist

Lähim erakond

Erakondade pingerida väljendab Sinu hoiakute kokkulangevust erakondade hoiakutega. Mida suurem protsent, seda suurem on nõustumine Sinu ja erakonna vahel.

Poliitiline radar

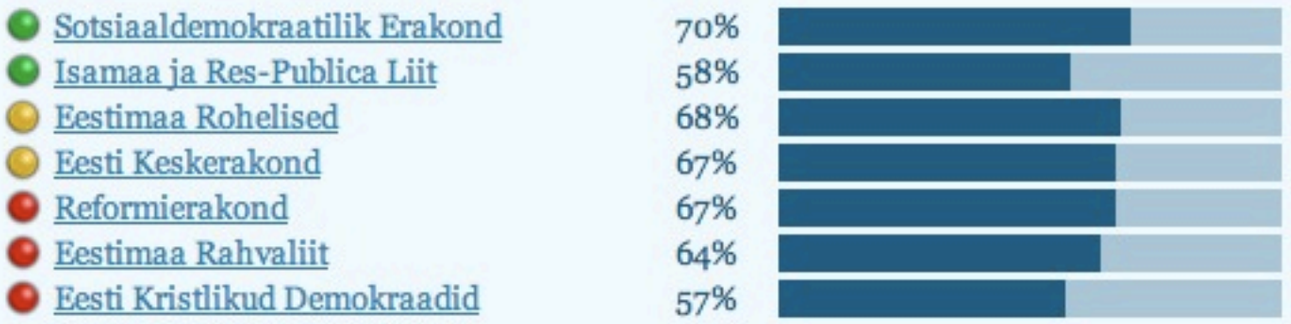
Maastik

Salvesta tulemus

Jaga tulemust

Lähim erakond

Lülita foor välja | Lülita kaalud välja

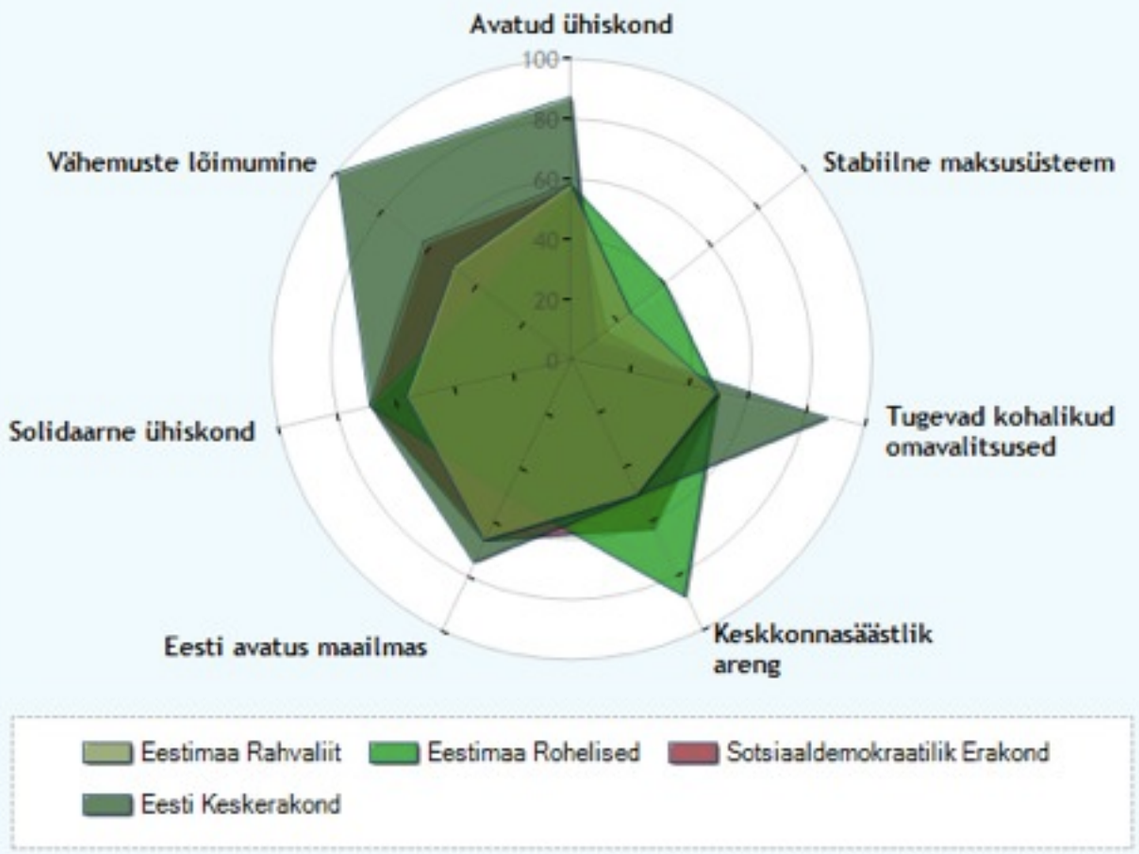


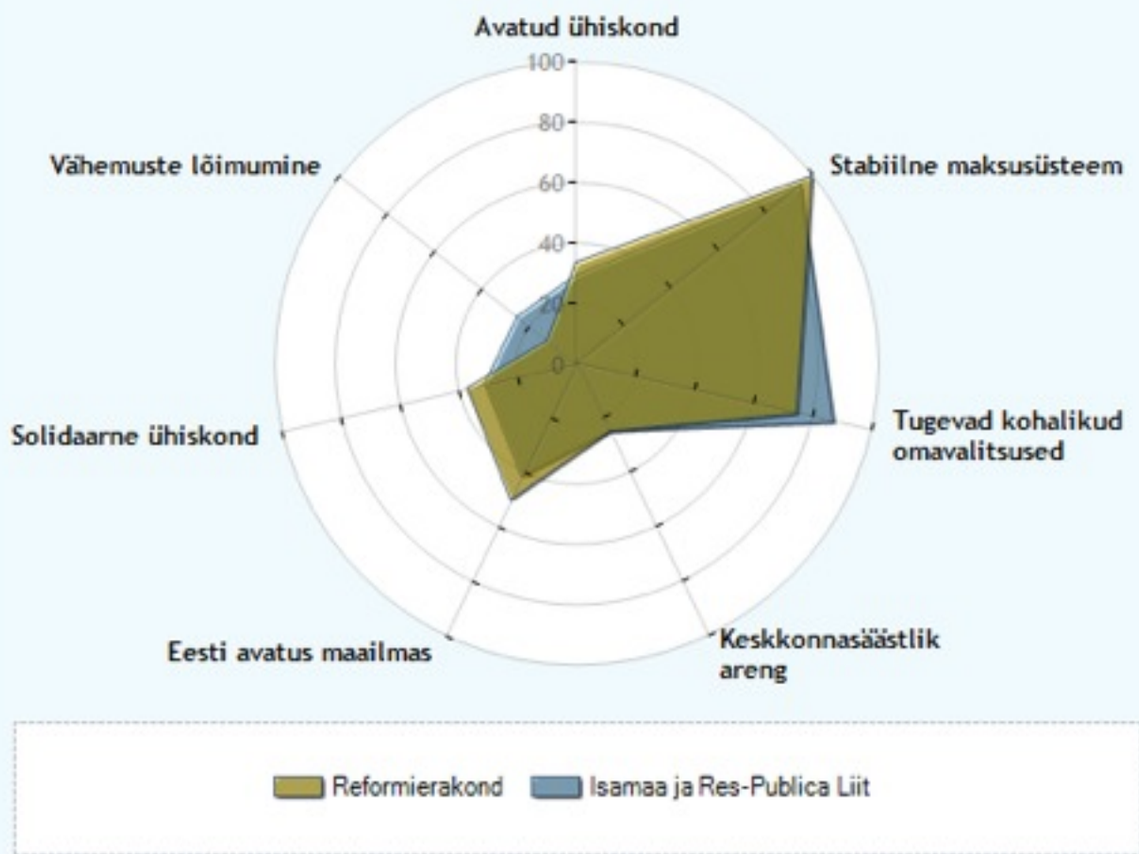
Foor reastab erakonnad selle järgi, millise erakonna poolt Sa oled valmis hääletama. Foori välja lülitades jäävad kattuvuse protsendid samaks. Muutub vaid erakondade järjestus, sest Sinu hinnangut vastava erakonna poolt hääletamise tõenäosusele kompass siis ei arvesta. Julgustame Sind foori välja lülitama ja süvenema ka nende erakondade positsioonidesse, kelle poolt hääletamist pead vähem tõenäoliseks, kuid kellega Su vaated väidetes sisalduvatele küsimustele on tegelikult lähedased.

Kaalusid sisse välja lülitades võivad kattuvuse protsendid muutuda, sest muutub väidete suhteline tähtsus seisukohtade kattuvuse arvutamisel.

Lähim erakond väljendab Sinu vastuste kokkulangevust erakondade positsioonidega protsentides. See on kõige täpsem viis, kuidas analüüsida Sinu ja erakonna arvamuste kattuvust, kuna arvesse võetakse kõik 30 poliitilist väidet.

Sul on võimalus enda tulemust vaadata ka Poliitilisel radaril ning Poliitilisel maastikul. Mõlemal juhul on tegemist illustreerivate diagrammidega, mis on erakondade pingereaga võrreldes vähemtäpsused, kuna ei sisalda kõiki 30 väitet. Poliitilisel maastikul orienteerumiseks võib nendest siiski abi olla.


Avatud ühiskond
Stabiilne maksusüsteem
Tugevad kohalikud omavalitsused
Keskkonnasäästlik areng
Eesti avatus maailmas
Solidaarne ühiskond
Vähemuste lõimumine
100
80
60
40
20
0
Eestimaa Rahvaliit
Eestimaa Rohelised
Sotsiaaldemokraatilik Erakond
Eesti Keskerakond


Avatud ühiskond
Stabiilne maksusüsteem
Tugevad kohalikud omavalitsused
Keskkonnasäästlik areng
Eesti avatus maailmas
Solidaarne ühiskond
Vähemuste lõimumine
100
80
60
40
0
Reformierakond
Isamaa ja Res-Publica Liit

Liberaalne

Sotsiaalmajanduslik vasak

Sotsiaalmajanduslik parem

KESK

ERL

ROH

SDE

REF

EKD

IRL

Konservatiivne

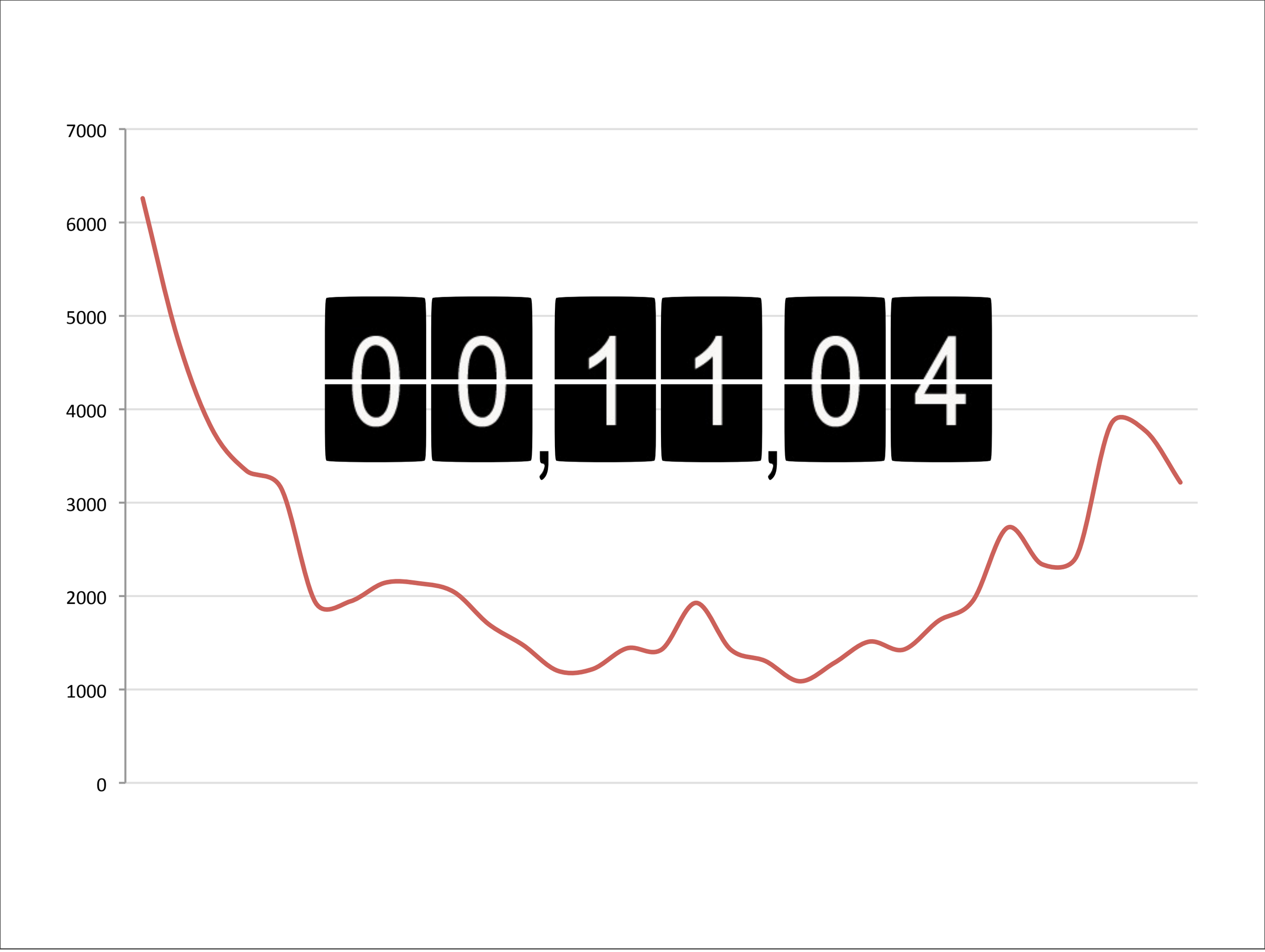
Traffic

in just 6 weeks

more than 2 min

110,000

10% of eligible voters



Thursday, March 10, 2011

Effects

a widget

a small gadget or mechanical device, one whose name is unknown or unspecified

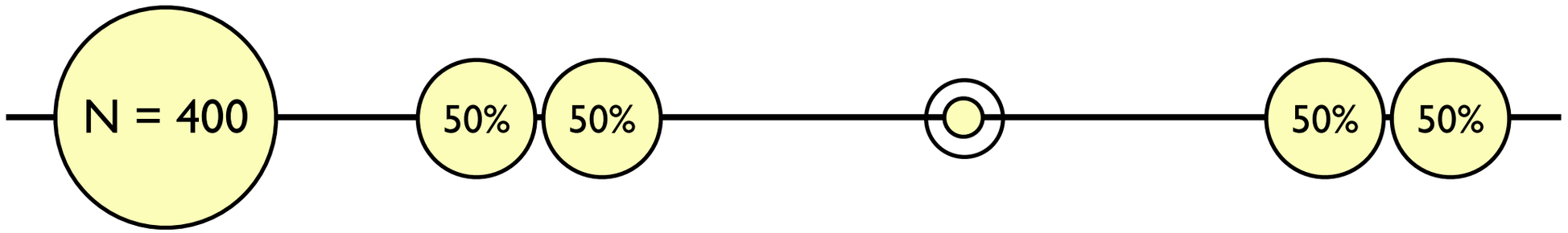
a toy

a gadget or machine, regarded as providing amusement for an adult

eu profiler
Leia enda asukoht politiilisel maastikul 2009. aasta Euroopa Parlamendi valimiste kontekstis
Vali riik:
Eesti Vabariik
Vali keel:
eesti
English
Start
European Union Democracy Observatory
Kieskompas.nl
help our research
Trouw
nccr democracy
smartvote.ch

Treatment
EU Profiler

Control
0



Pre-treatment survey

Election Day
June 7, 2009

Post-treatment survey

t

Erakonnad

Jätka

Eestis on mitmeid erakondi kes sooviksid Teie häält. Kui tõenäoline see on, et Te kunagi annate oma hääle järgnevatele erakondadele? Märkige oma eelistus skaalal 0 - 10, kus 0 tähendab "ei ole üldse tõenäoline" ning 10 tähendab "väga tõenäoline".

	0	1	2	3	4	5	6	7	8	9	10
Eesti Keskerakond	◉	○	○	○	○	○	○	○	○	○	○
Reformierakond	○	○	○	○	○	◉	○	○	○	○	○
Eestimaa Rohelised	○	○	○	○	◉	○	○	○	○	○	○
Isamaa ja Res-Publica Liit	○	○	○	○	○	○	○	○	◉	○	○
Sotsiaaldemokraatilik Erakond	○	○	○	○	○	○	○	○	○	◉	○
Eestimaa Rahvaliit	○	◉	○	○	○	○	○	○	○	○	○

t-1

Erakonnad

Jätka

Eestis on mitmeid erakondi kes sooviksid Teie häält. Kui tõenäoline see on, et Te kunagi annate oma hääle järgnevatele erakondadele? Märkige oma eelistus skaalal 0 - 10, kus 0 tähendab "ei ole üldse tõenäoline" ning 10 tähendab "väga tõenäoline".

	0	1	2	3	4	5	6	7	8	9	10
Eesti Keskerakond	◉	○	○	○	○	○	○	○	○	○	○
Reformierakond	○	○	○	○	○	◉	○	○	○	○	○
Eestimaa Rohelised	○	○	○	○	◉	○	○	○	○	○	○
Isamaa ja Res-Publica Liit	○	○	○	○	○	○	○	○	◉	○	○
Sotsiaaldemokraatilik Erakond	○	○	○	○	○	○	○	○	○	◉	○
Eestimaa Rahvaliit	○	◉	○	○	○	○	○	○	○	○	○

$Diff_t$ = PTV 1^{st} - PTV 2^{nd}

t											
Party A	0	1	2	3	4	5	6	7	8	**9**	10
Party B	0	1	2	3	4	5	**6**	7	8	9	10
Party C	0	**1**	2	3	4	5	6	7	8	9	10

$Diff_{t-1}$ = PTV 1^{st} - PTV 2^{nd}

$t-1$											
Party A	0	1	2	3	4	5	6	7	8	**9**	10
Party B	0	1	2	3	4	5	6	**7**	8	9	10
Party C	0	**1**	2	3	4	5	6	7	8	9	10

$$Y = Diff_t - Diff_{t-1}$$

sheer randomness of the world

or

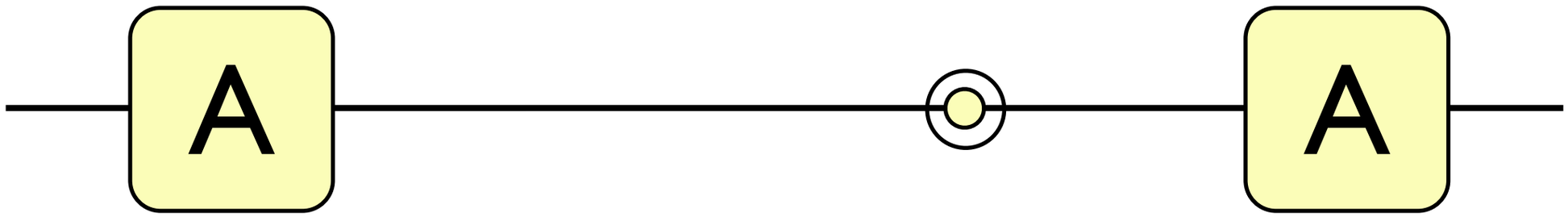
the effect of EU Profiler

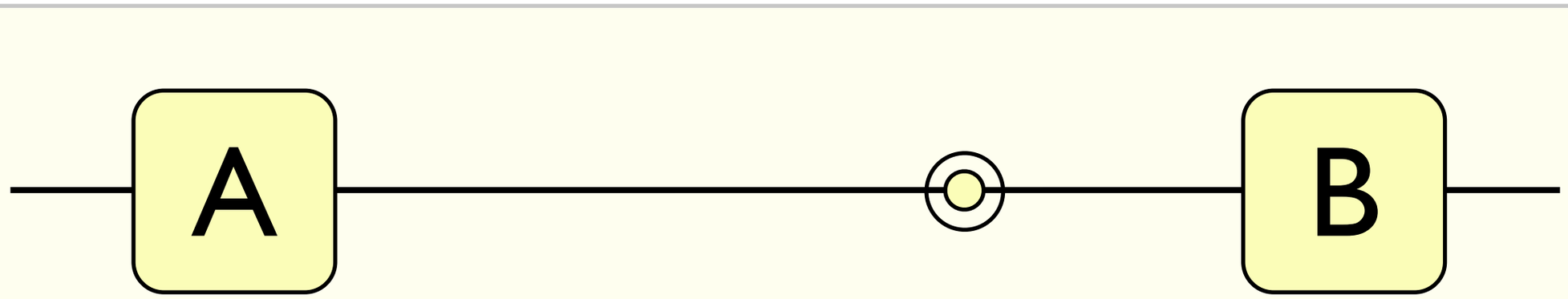
younger than 30

older than 30

younger than 30

older than 30





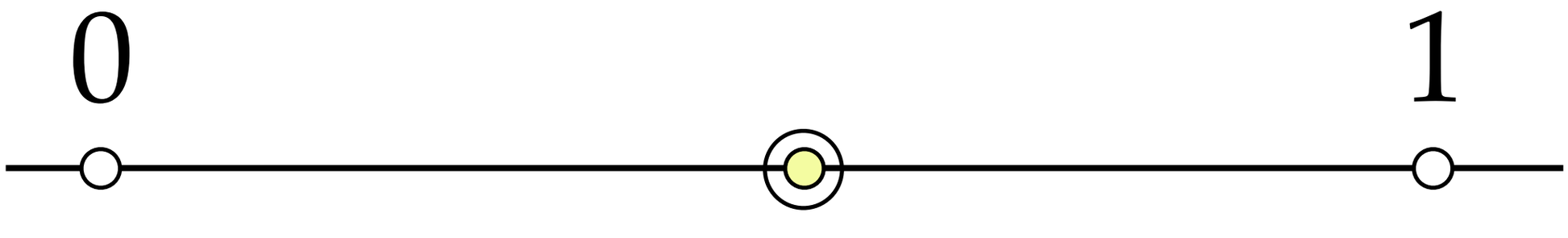
sheer randomness of the world

or

the effect of EU Profiler

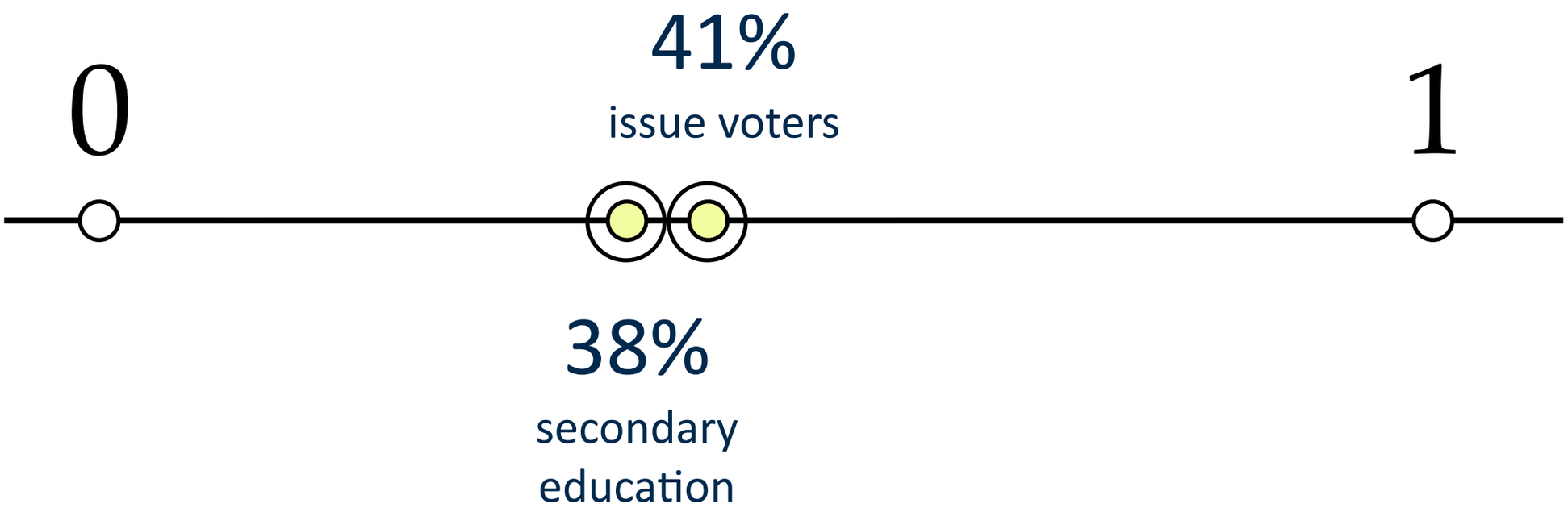
$$\{0\ ;\ 1\}$$

0
1


0
1

38%

secondary
education


0
41%
issue voters
1
38%
secondary
education

The causal effect on mobilization is virtually absent

a widget

a small gadget or mechanical device, one whose name is unknown or unspecified

a toy

a gadget or machine, regarded as providing amusement for an adult

One has to either reconsider what a
widget *or a* ***toy*** *really means*

or

return to the playground and rediscover
the importance of toys

2011
valijakompass

Robert Schuman Centre for Advanced Studies

Internet Voting in Estonia

A Comparative Analysis of Four Elections since 2005

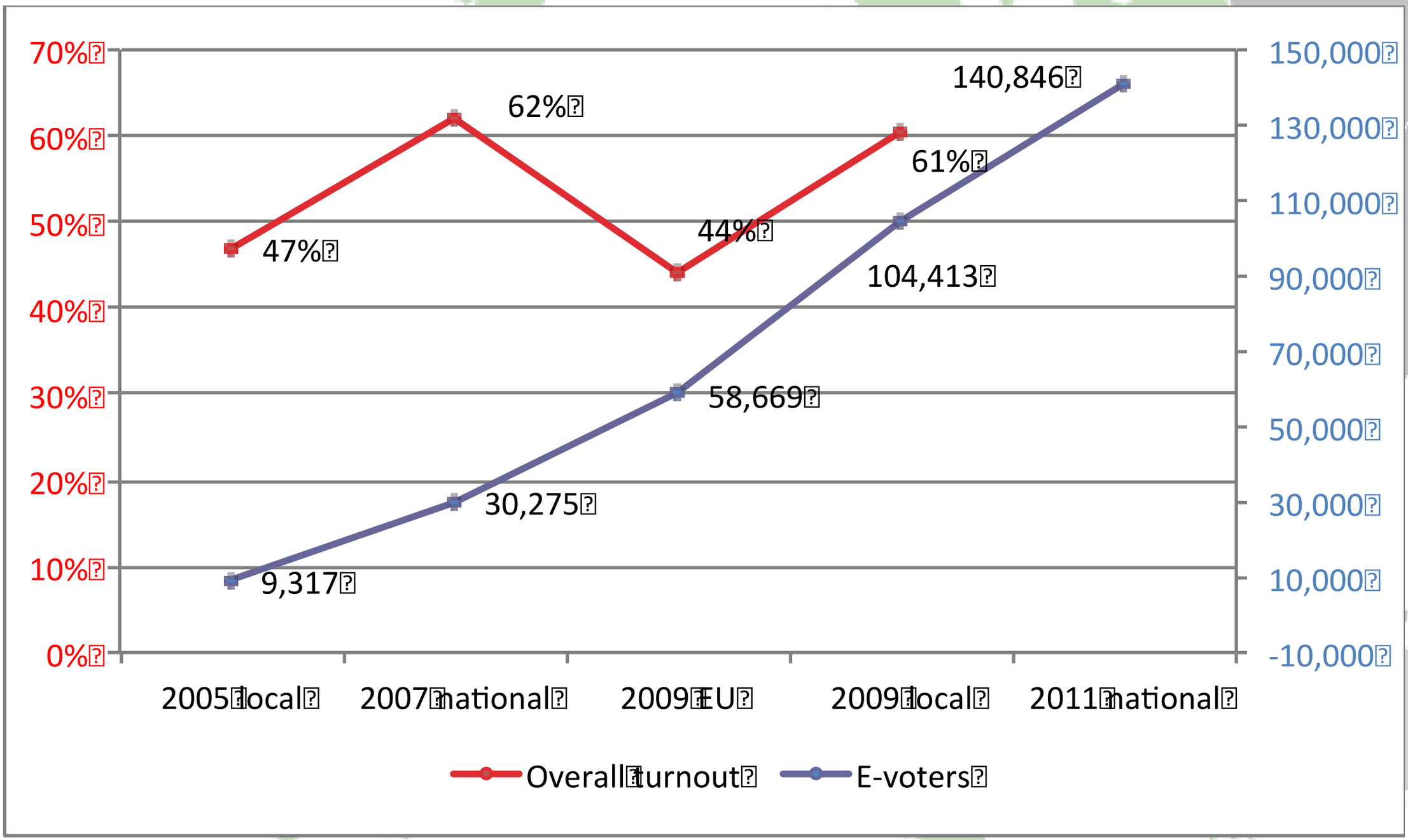
Prof. Alexander H. Trechsel
European University Institute
Florence, Italy

March 5, 2011
Riigikogu, Tallinn, Estonia

1 Turnout

2 Setup of the studies

3 Main findings


70%
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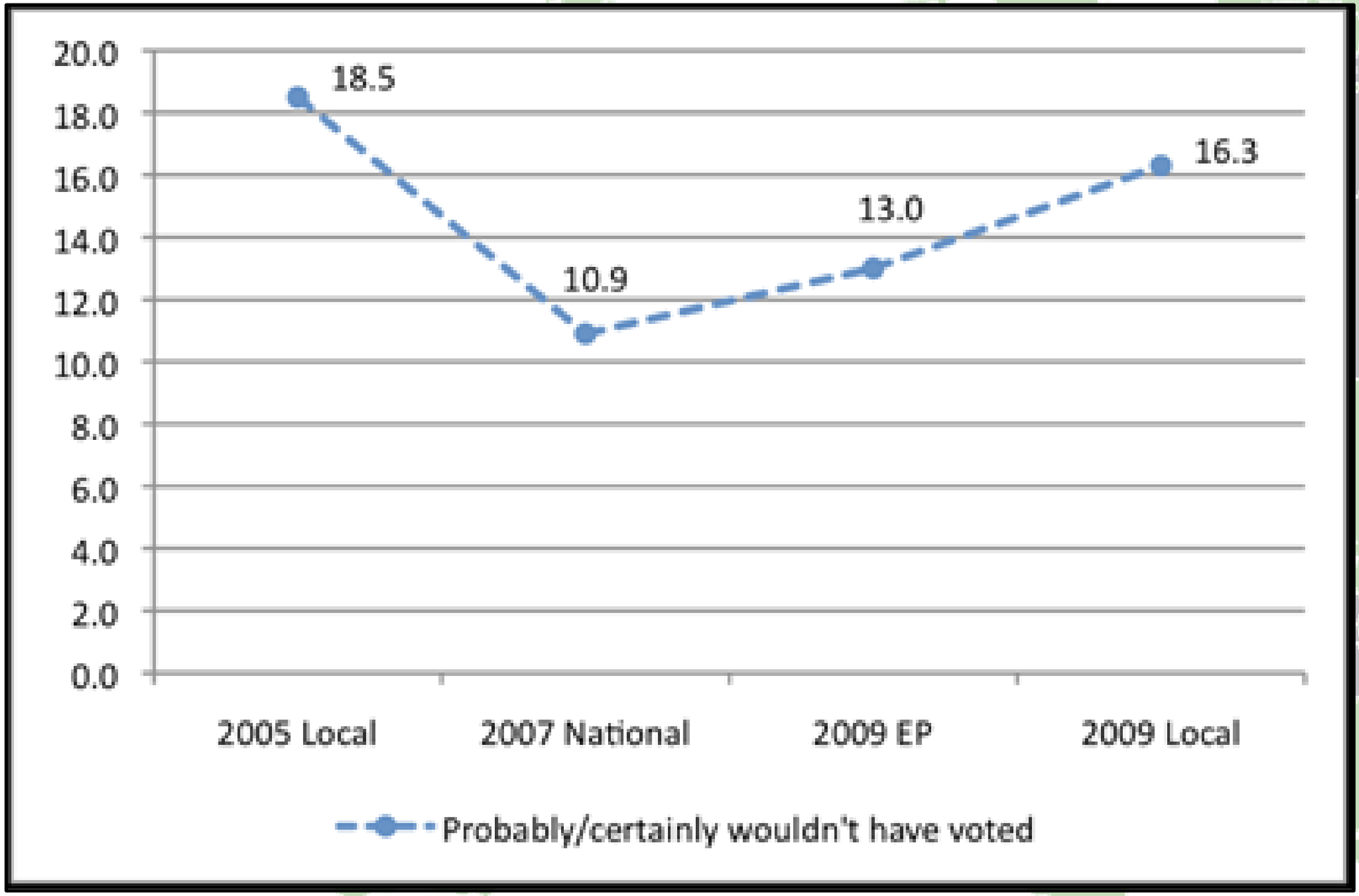
10,000
-10,000
47%
62%
44%
61%
9,317
30,275
58,669
104,413
140,846
2005 local
2007 national
2009 EU
2009 local
2011 national
Overall turnout
E-voters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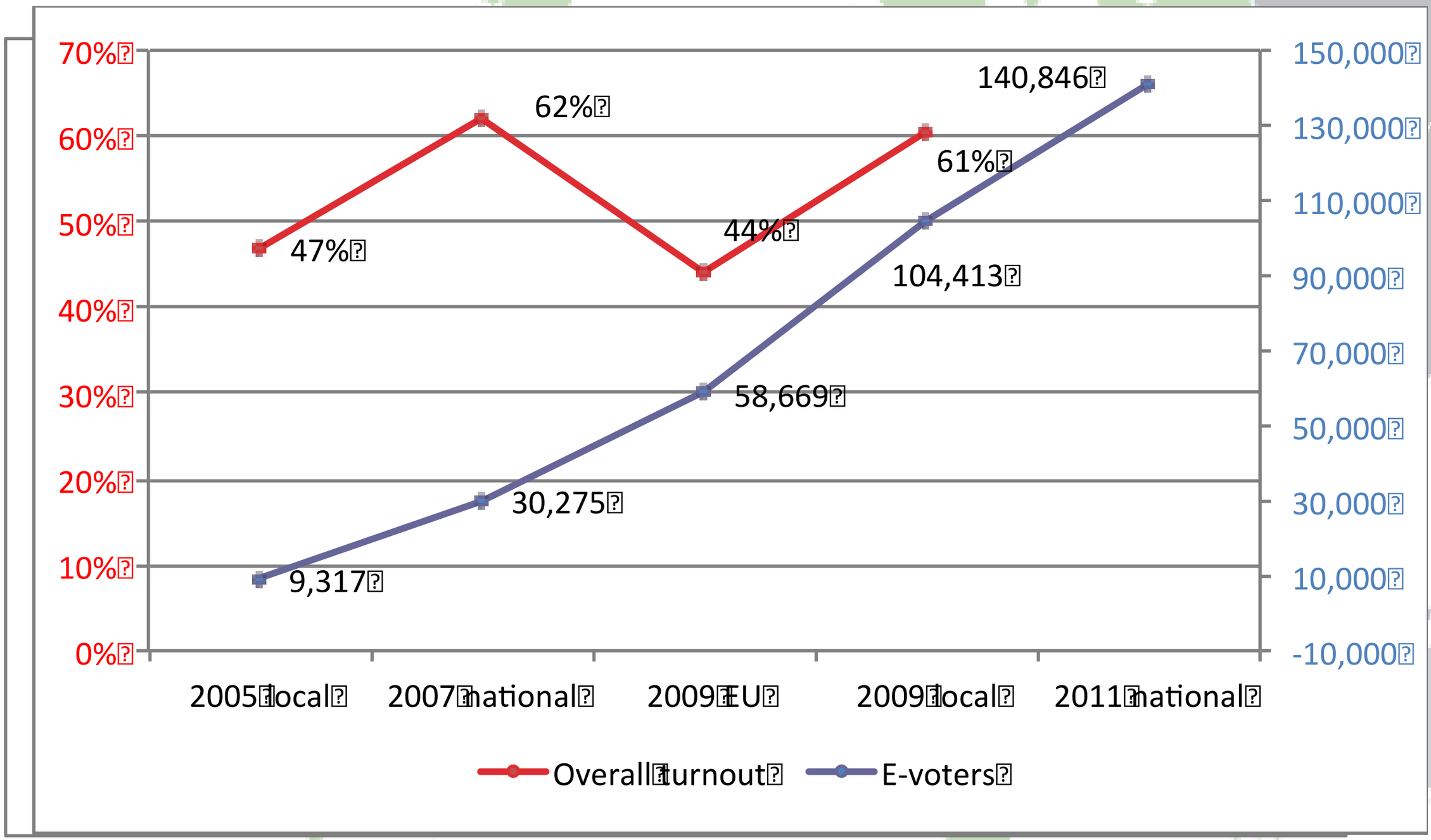
16.3
2005 Local
2007 National
2009 EP
2009 Local
Probably/certainly wouldn't have voted


70%
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0%
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30,000
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-10,000
47%
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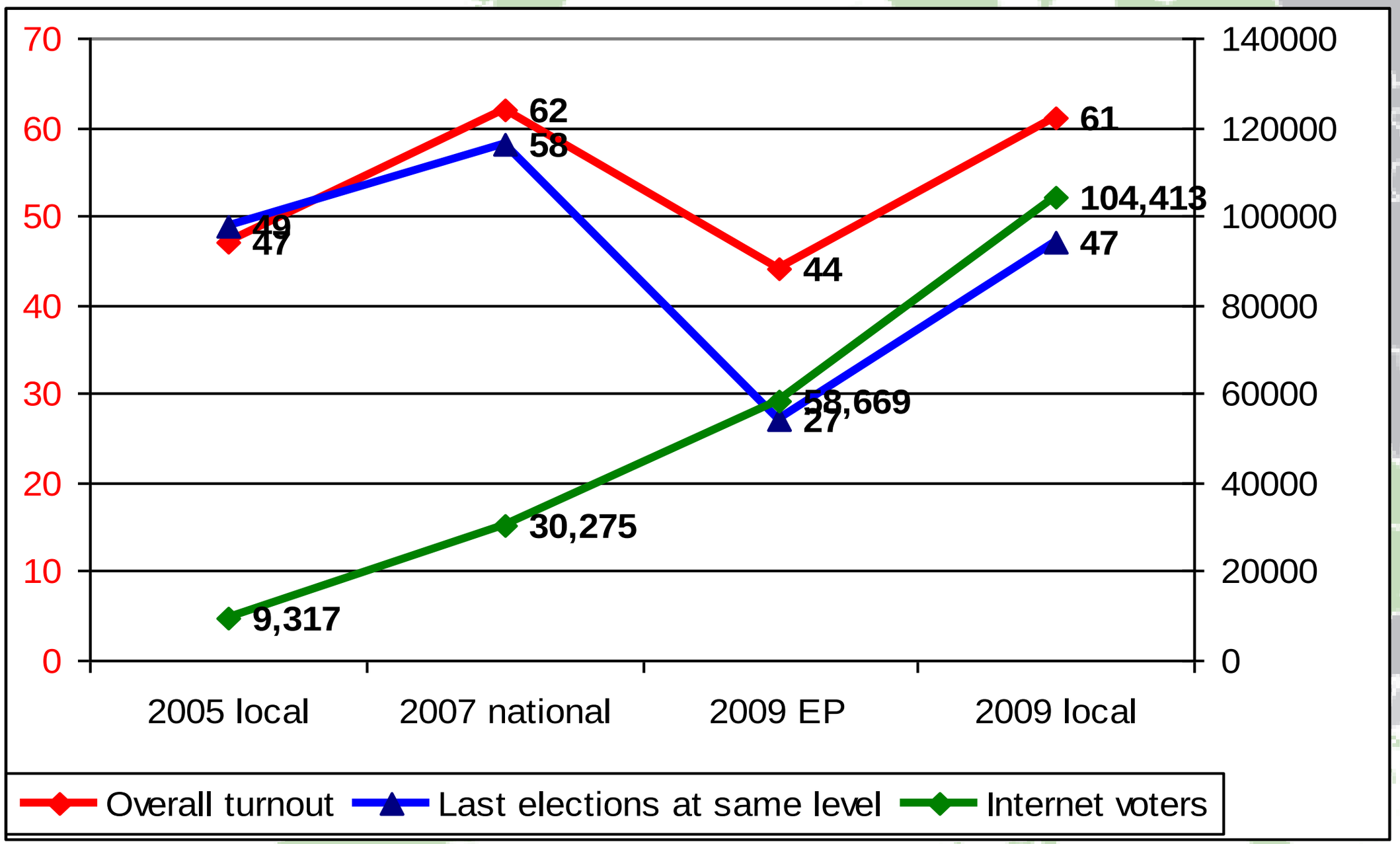
58,669
104,413
140,846
2005 local
2007 national
2009 EU
2009 local
2011 national
Overall turnout
E-voters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80000
60000
40000
20000
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61
104,413
47
28,669
27
30,275
9,317
2005 local
2007 national
2009 EP
2009 local
Overall turnout
Last elections at same level
Internet voters

2

Setup of the study

Partnerships

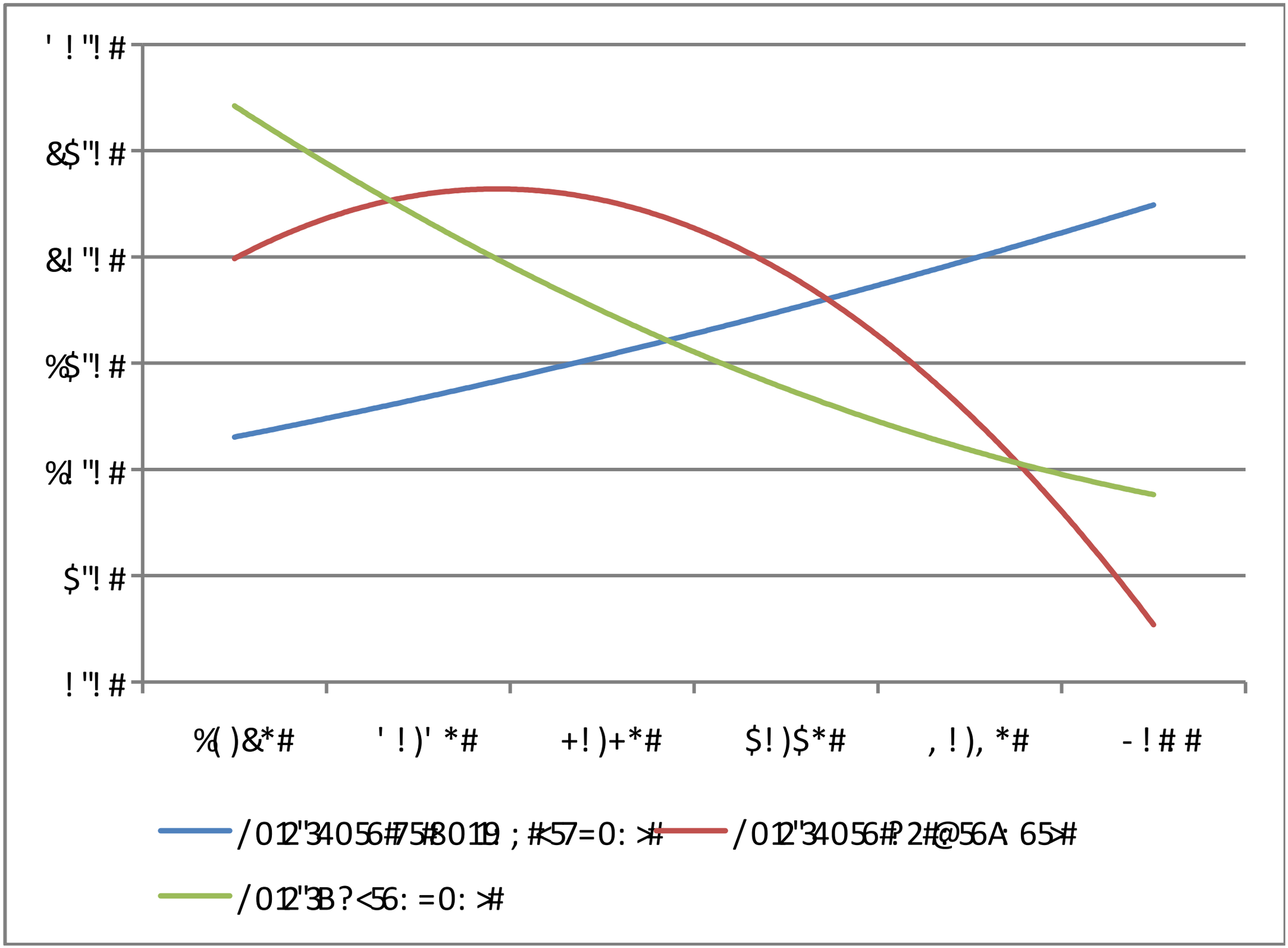
- European Union Democracy Observatory, Florence
- Council of Europe, Strasbourg
- e-Governance Academy, Tallinn
- Estonian Electoral Committee, Tallinn
- California Institute of Technology, Pasadena
- University of Utah, Salt Lake City
- Ifo, Munich

Why some choose to vote by Internet while others don’t?

- E-voters
- Traditional voters
- Non-voters

3

Main findings (a): Age and gender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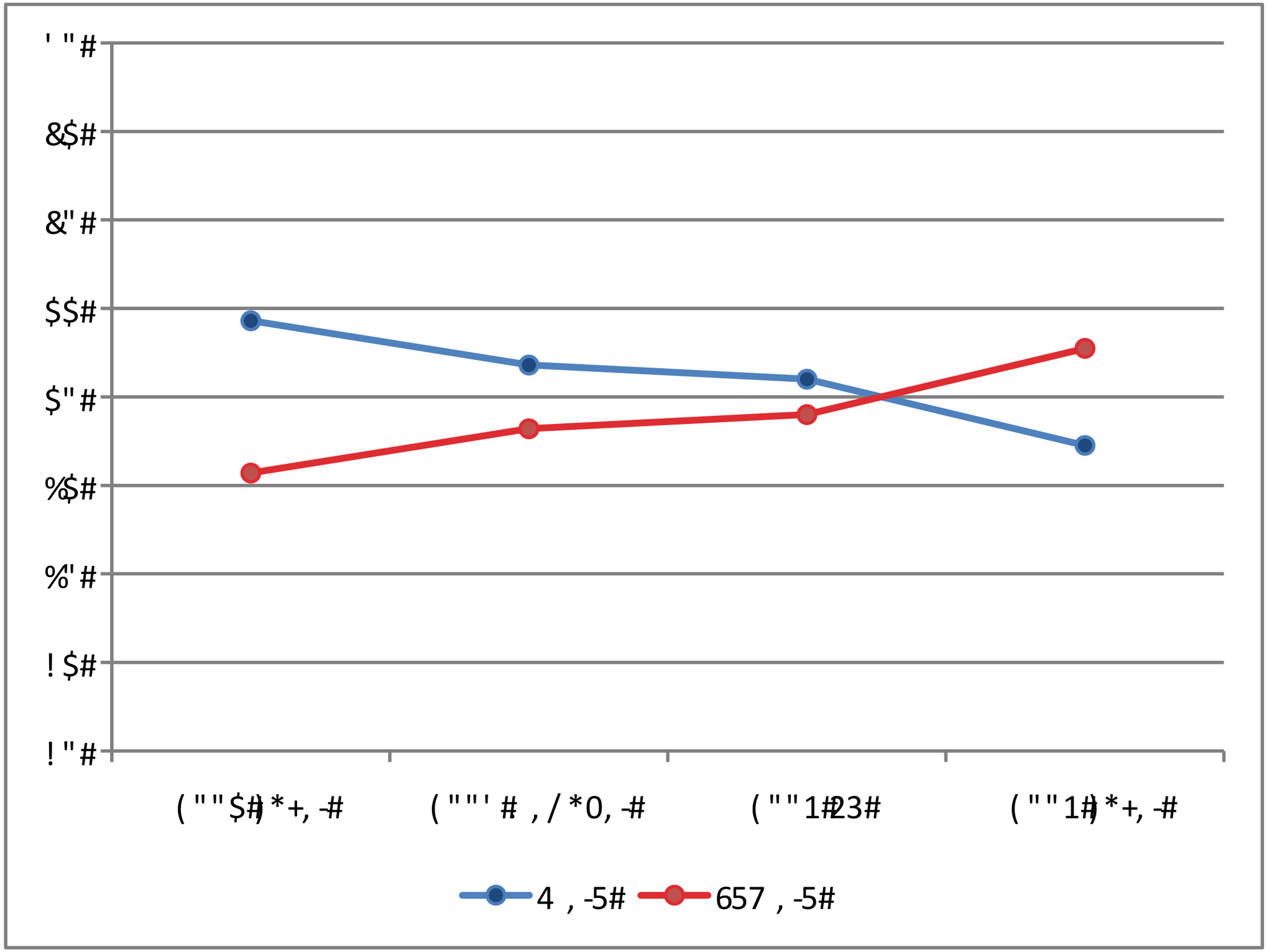
/012"34056#?2#@56A: 65>#
/012"3B?<56: =0: >#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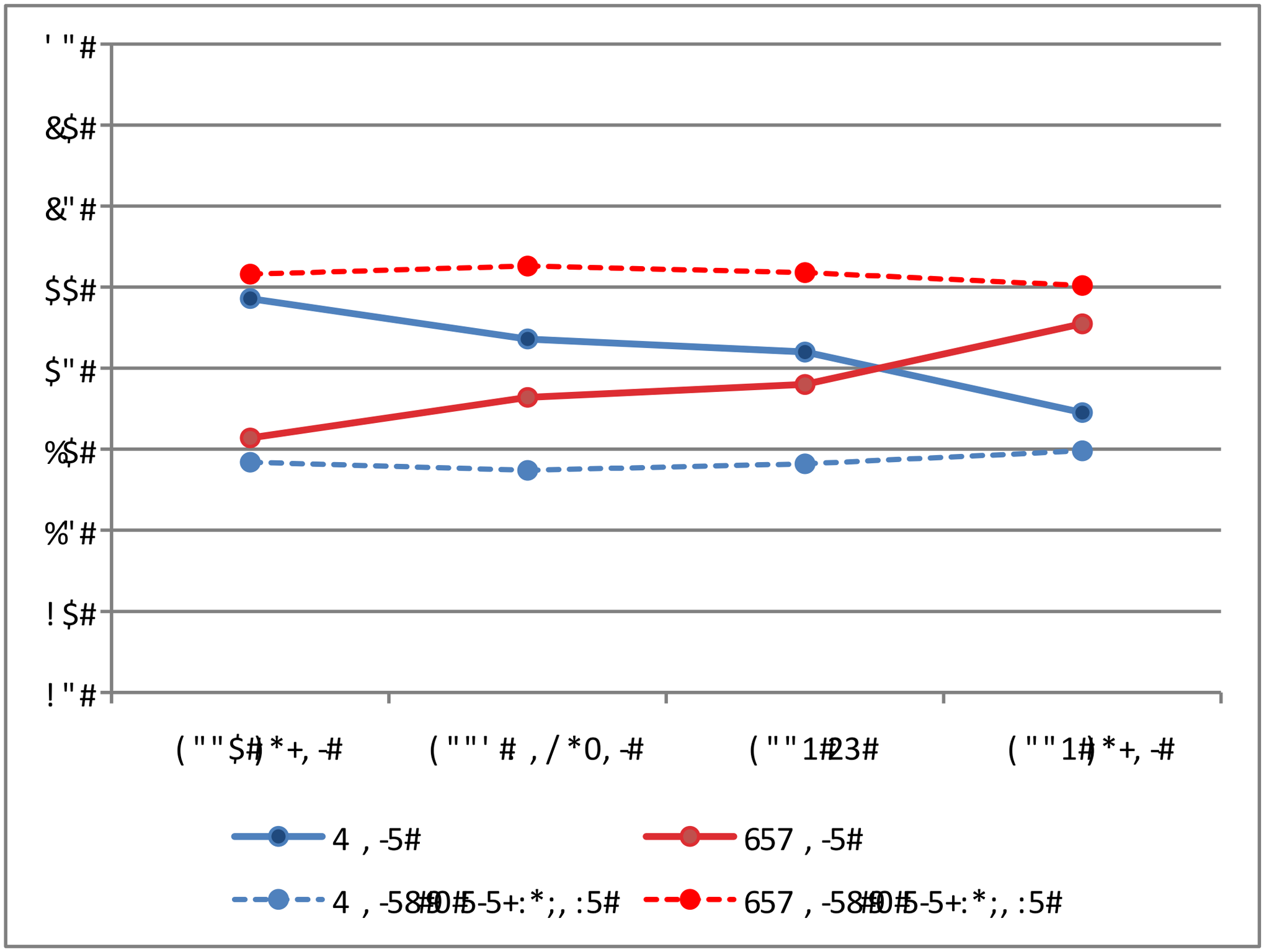
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3

Main findings (b): Multivariate models

Socio-economic

Political

ICT

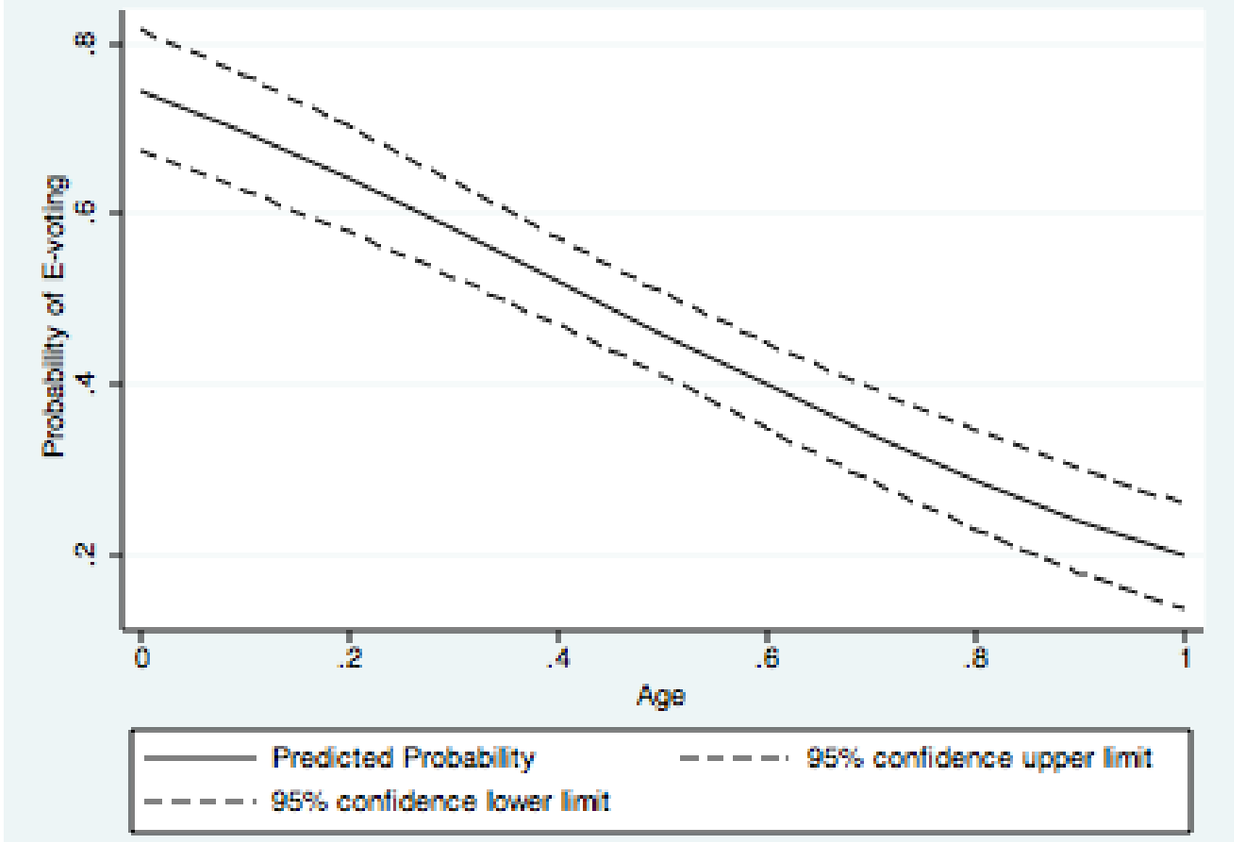
Global

Predicting e-voting over traditional voting

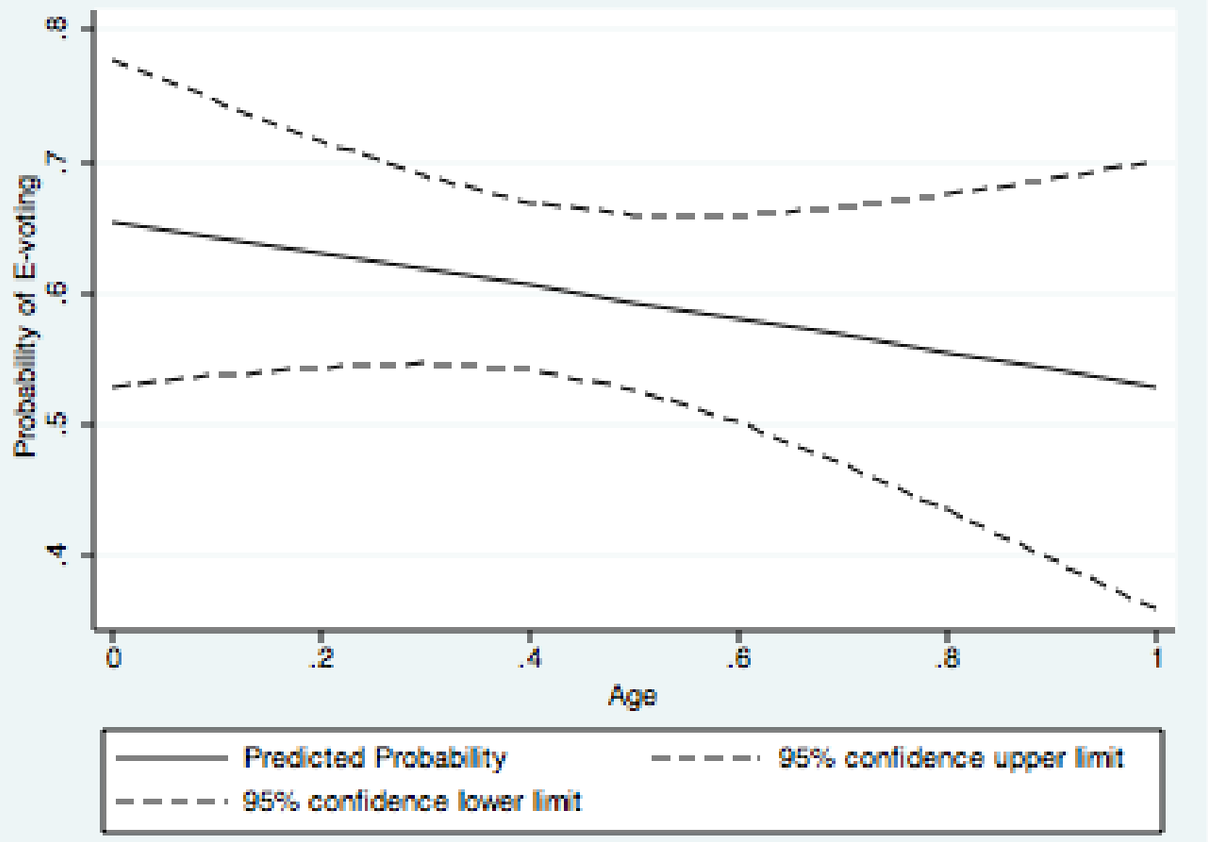
Coefficient	2005 Local	2007 National	2009 EP	2009 Local
Age	0.27**	0.36***	-0.05	-0.10
	(0.12)	(0.11)	(0.12)	(0.11)
Gender	0.41	-0.06	-0.43	0.08
	(0.29)	(0.26)	(0.30)	(0.28)
Settlement	0.36	-0.01	0.30	0.56*
	(0.32)	(0.27)	(0.31)	(0.31)
Education	0.29	0.03	0.31*	0.23
	(0.18)	(0.15)	(0.19)	(0.17)
Income	-0.17	0.12	0.10	0.16
	(0.14)	(0.12)	(0.11)	(0.10)
Language	-1.38***	-2.35***	-2.30***	-1.25***
	(0.55)	(0.65)	(0.72)	(0.48)
Left-right scale	-0.01	-0.06	0.04	-0.08
	(0.07)	(0.07)	(0.08)	(0.07)
Political discussions	0.27*	-0.08	0.19	-0.15
	(0.16)	(0.16)	(0.17)	(0.17)
Trust in Parliament/ government	0.27	-0.21	-0.92***	0.24
	(0.34)	(0.34)	(0.33)	(0.29)
Trust in politicians	-0.19	0.85**	0.63**	-0.16
	(0.32)	(0.34)	(0.29)	(0.28)
Trust in the State	-0.52*	0.10	-0.70***	-0.16
	(0.28)	(0.26)	(0.28)	(0.23)
Computing knowledge	0.41**	0.65***	0.04	0.34**
	(0.18)	(0.17)	(0.19)	(0.17)
Frequency of Internet usage	0.15*	0.19***	0.18***	0.07
	(0.08)	(0.06)	(0.07)	(0.08)
Location of Internet access	0.25	-0.10	0.23	0.16
	(0.17)	(0.10)	(0.19)	(0.19)
Trust in transactions on the Internet	0.32	0.16	0.29	-0.22
	(0.23)	(0.21)	(0.24)	(0.22)
Trust in the procedure of e-voting	1.68***	1.22***	1.48***	1.49***
	(0.24)	(0.25)	(0.28)	(0.25)
Constant	1.00	6.34***	0.72	2.21
	(1.72)	(1.75)	(1.78)	(1.85)
Observations	399	425	419	374
Pseudo R^2	0.36	0.28	0.35	0.29

Standard errors in parentheses, significant at .1 ** significant at .05 *** significant at .01

2005


Probability of E-voting
.2
.4
.6
.8
0
.2
.4
.6
.8
1
Age
Predicted Probability
95% confidence upper limit
95% confidence lower limit

2009


Probability of E-voting
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0
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1
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95% confidence upper limit
95% confidence lower limit

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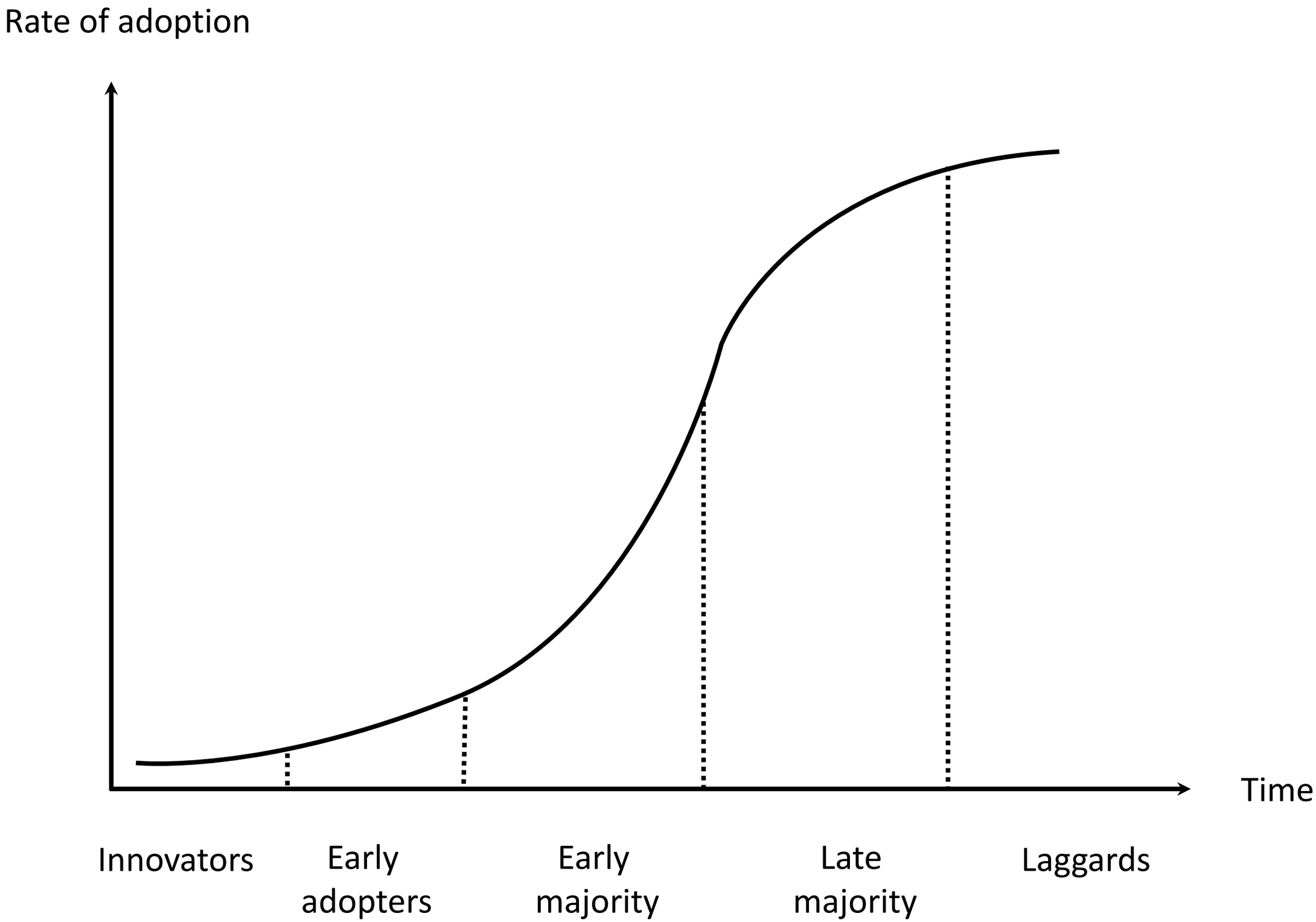
Summing up

Age and other socio-demograhic factors gradually lose power -> people “grow into e-voting”

Diffusion of Innovations

(Everett Rogers 1962)


Rate of adoption
Time
Innovators
Early adopters
Early majority
Late majority
Laggards

Summing up (continued)

Age and other socio-demograhic factors gradually lose power -> people “grow into e-voting”

Linguistic cleavage remains a problem

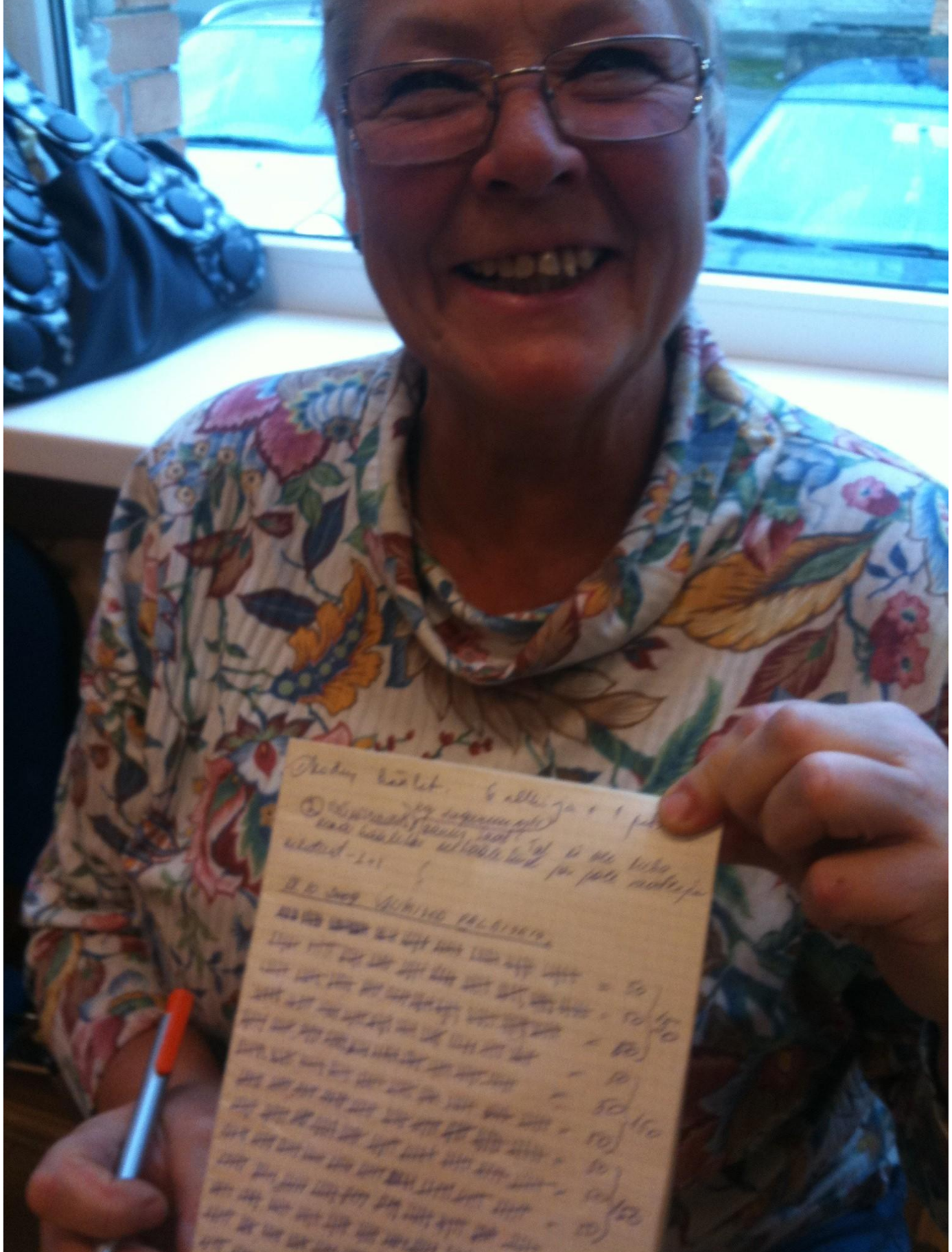
Political and ICT related variables become weaker over time

-> internet voting is predicted by PC-literate Estonians who trust in the procedure of e-voting

Future perspectives / new issues

- Auditing and Certification?
- Cyberterrorism?
- Diffusion?
- Inversion of security issue?

Paldiski, Local elections 2009



Paldiski, Local elections 2009

Robert Schuman Centre for Advanced Studies

Internet Voting in Estonia

A Comparative Analysis of Four Elections since 2005

Prof. Alexander H. Trechsel
European University Institute
Florence, Italy

March 5, 2011
Riigikogu, Tallinn, Estonia

Riigikogu (Parliamentary) Elections 2011

Heiki Sibul
Chairman of National
Electoral Committee

05.03.2011

Topics

- Electoral system
- Organizing elections
  - Electoral Committees
  - Tasks of NEC
  - Other Activities (Complaints, etc).
- Previous Riigikogu Elections
- Riigikogu Elections 2011
  - Statistics
  - Ways of Voting

Electoral system

- Simple quota and modified d'Hondt method is used
- Open and closed lists
- 5% national threshold
- 12 electoral districts

Elections as a National Event

4000 People organize elections in Estonia – as a side-job

625 Polling divisions across Estonia

Electoral Committees

625 Polling division committees

17 County electoral committees

1 National Electoral Committee

Tasks of NEC

- Issuing decrees about voting
- Training of electoral committees
- ICT solutions management
- Resolving complaints
- Informing voters
- Management and supervision of electoral processes

What does NEC not do?

- Voters' register is held by the Ministry of Internal Affairs
- Criminal/misdemeanor cases are investigated and prosecuted by the Police
- Election campaign costs are overseen by a special committee

Complaints

- There is a 3-day window for filing complaints
- Complaints can cover a procedure or resolution of an electoral committee
- The complaint is reviewed within 3 working days

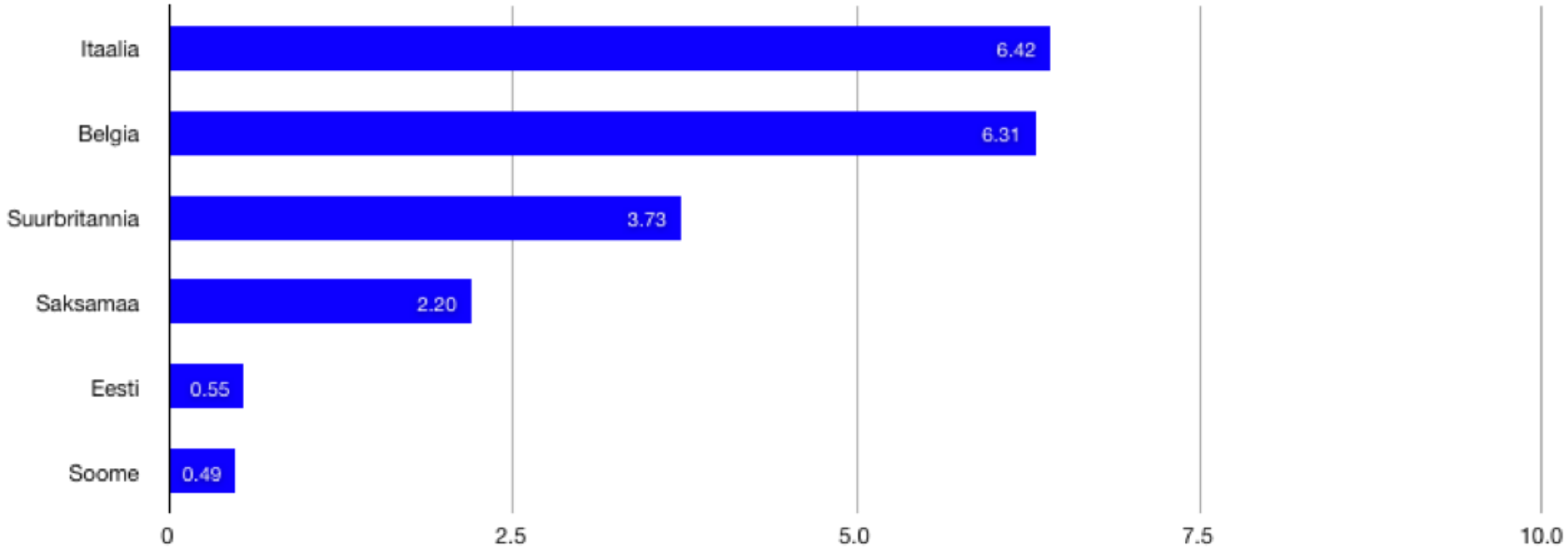
Supreme Court Decisions

67/9

that means

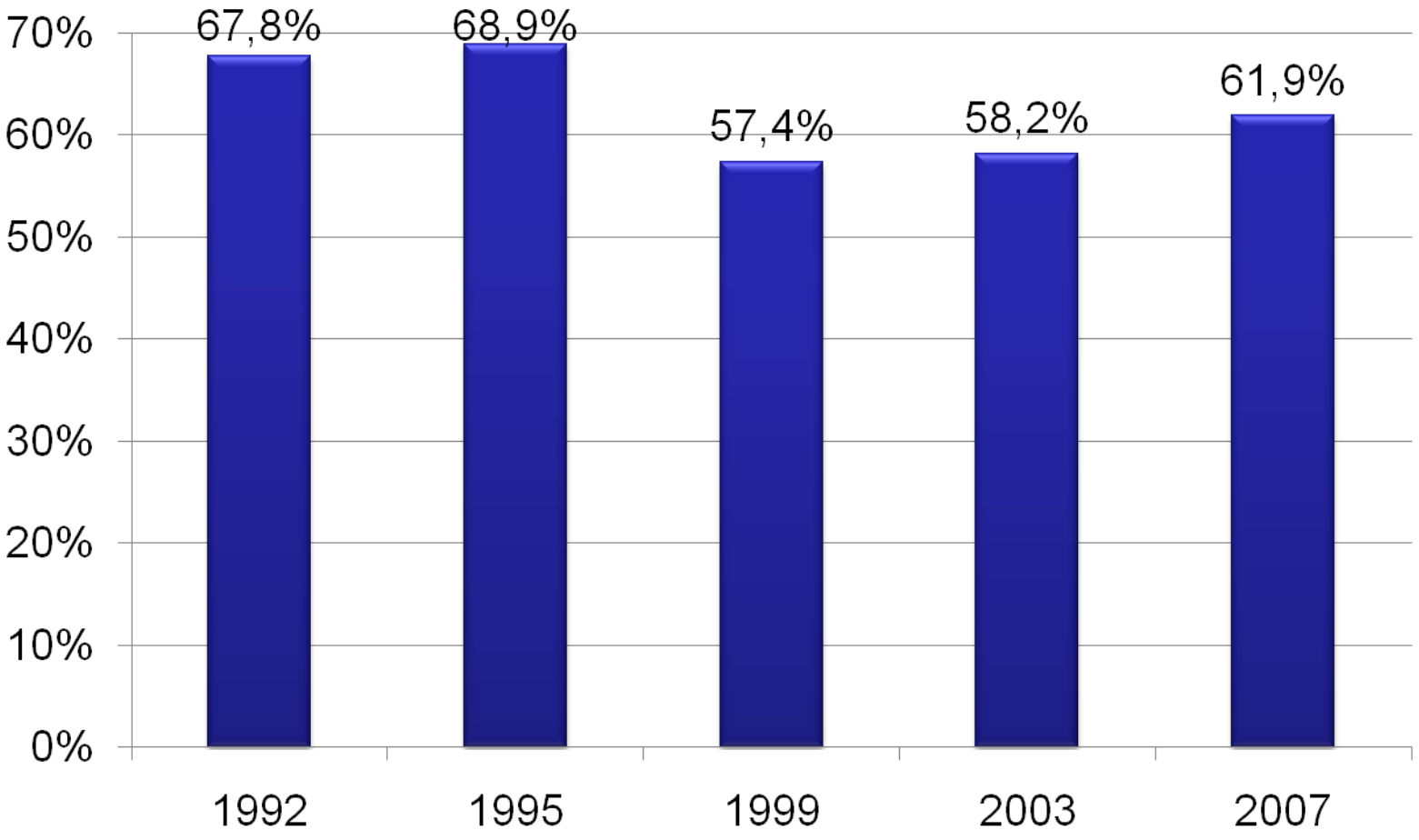
87% pro NEC

Invalid Ballot Papers



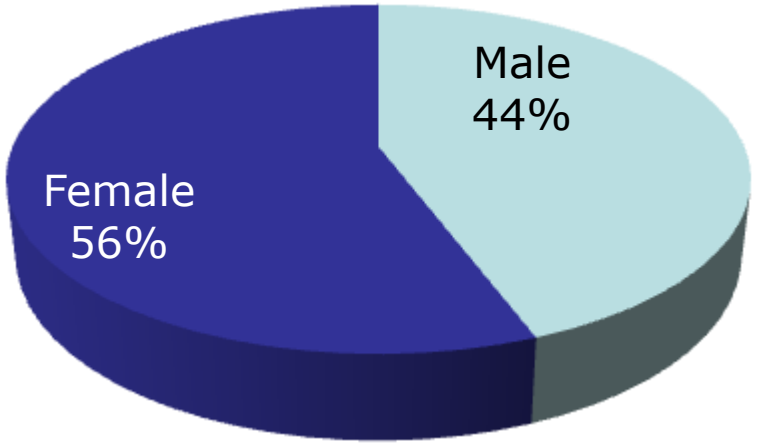
All data about EU Parliament elections 2009

Voter Turnout in Riigikogu Elections



Riigikogu Elections 2011

912 565 Eligible Voters



Riigikogu Elections 2011

789 Candidates

9 Parties

32 Independent Candidates

13 Ways of Voting

Election Day

- In Polling Division
- At Home

Advance Voting

- In Local Polling Division
- In Another Polling Division
- In Prisons, Hospitals, Military Bases, etc.
- Internet Voting

Time of Voting

E 21.02 -	T 22.02 -	K 23.02 -	N 24.02	R 25.02	L 26.02	P 27.02
E 28.02	T 1.03	K 2.03	N 3.03 -	R 4.03 -	L 5.03 -	P 6.03

- Internet voting

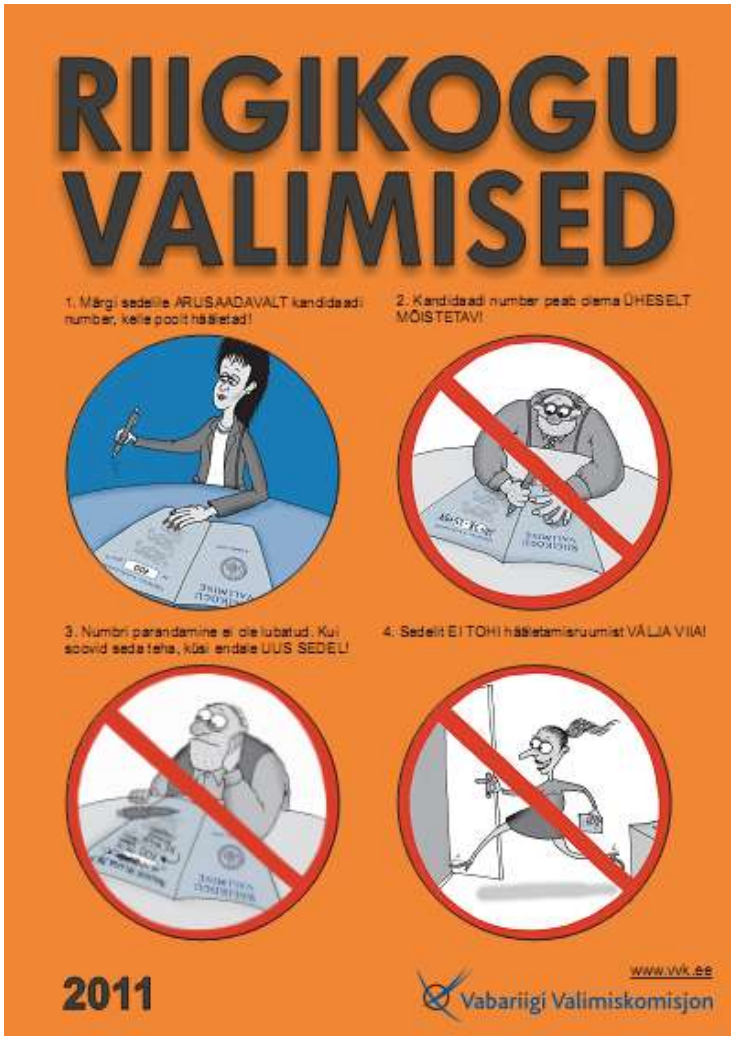
- Polling division voting

Innovation (spring 2011)

- Mobile-ID
- Updated I-voting environment
- New ballot boxes/Other electoral devices
- New Internet learning environment for the staff of electoral committee, observers and voters - koolitus.vvk.ee
- New training courses for the staff of electoral committee
- Media campaign: video clips (Valimiskool)

Media campaign (1)

- Traditional media (newspapers, radio, TV)
- Internet and new media (FaceBook, Twitter, YouTube)
- Posters, etc.



Media campaign (2)

Bilingual video clips and posters…

Thank You!

www.vvk.ee
www.facebook.com/valimiskomisjon
twitter.com/valimiskomisjon
info@vvk.ee

Internet Voting in Estonia

Tarvi Martens
I-Voting Project Manager

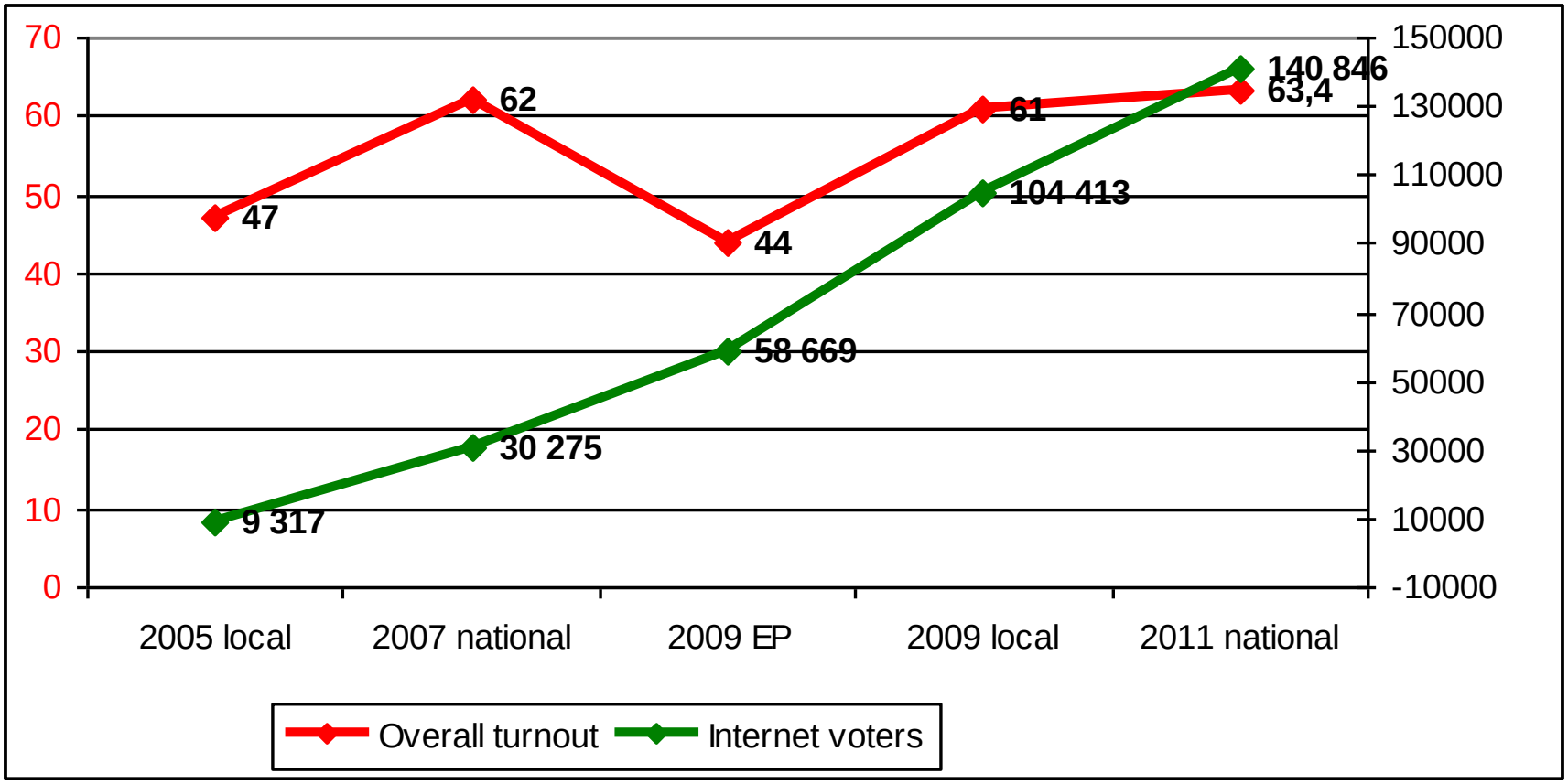
National Electoral Committee

Internet Voting?

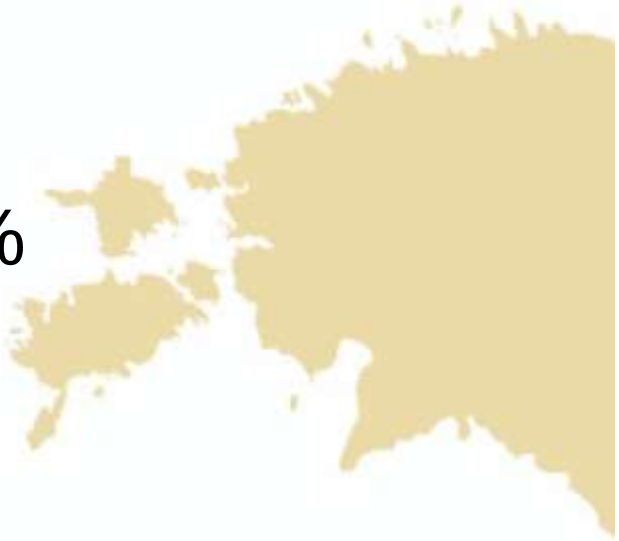
- In October 2005 Estonia had first-ever pan-national Internet Voting **with binding results**

- Ever since, i-voting has been used in **five** elections in total (last one closed 2 days ago)

The spread of internet voting



E-stonia ?



- Population: 1.35M
- Everyday Internet usage: 63%
- Internet banking: 88%
- Mobile penetration: >100%
- 1000+ Free Internet Access points
- Member of EU and NATO since 2003

- Electronic identity delivered: >90% (age 15+)

ID-card Project

- Started in 1997
- First card issued: Jan 28, 2002
- October 2006: 1 000 000th ID-card was issued
  - “rollout completed”

The Card

- “Compulsory” for all residents

- Contains:
  - Personal data file
  - Certificate for authentication (along with e-mail address Forename.Surname@eesti.ee)
  - Certificate for digital signature

Usage of the ID-card

- Major ID-document
- Replacement of
  - (transportation) tickets
  - library cards
  - health insurance card
  - driver documents
  - etc...
- **Authentication token for all major e-services**
- **Digital signature tool**

Internet Voting ?

- Not a nuclear physics
- Just another application for ID-card

  ...with some special requirements & measures...

I-voting Main Principles

- All major principles of paper-voting are followed
- I-voting is allowed during 7-day (was: 3-day) period before Voting Day
- The user uses ID-card or Mobile-ID
  - System authenticates the user
  - Voter confirms his choice with digital signature
- Repeated e-voting is allowed
  - Only last e-ballot is counted
- Manual re-voting is allowed
  - If vote is casted in paper during pre-voting days, i-vote(s) will be revoked

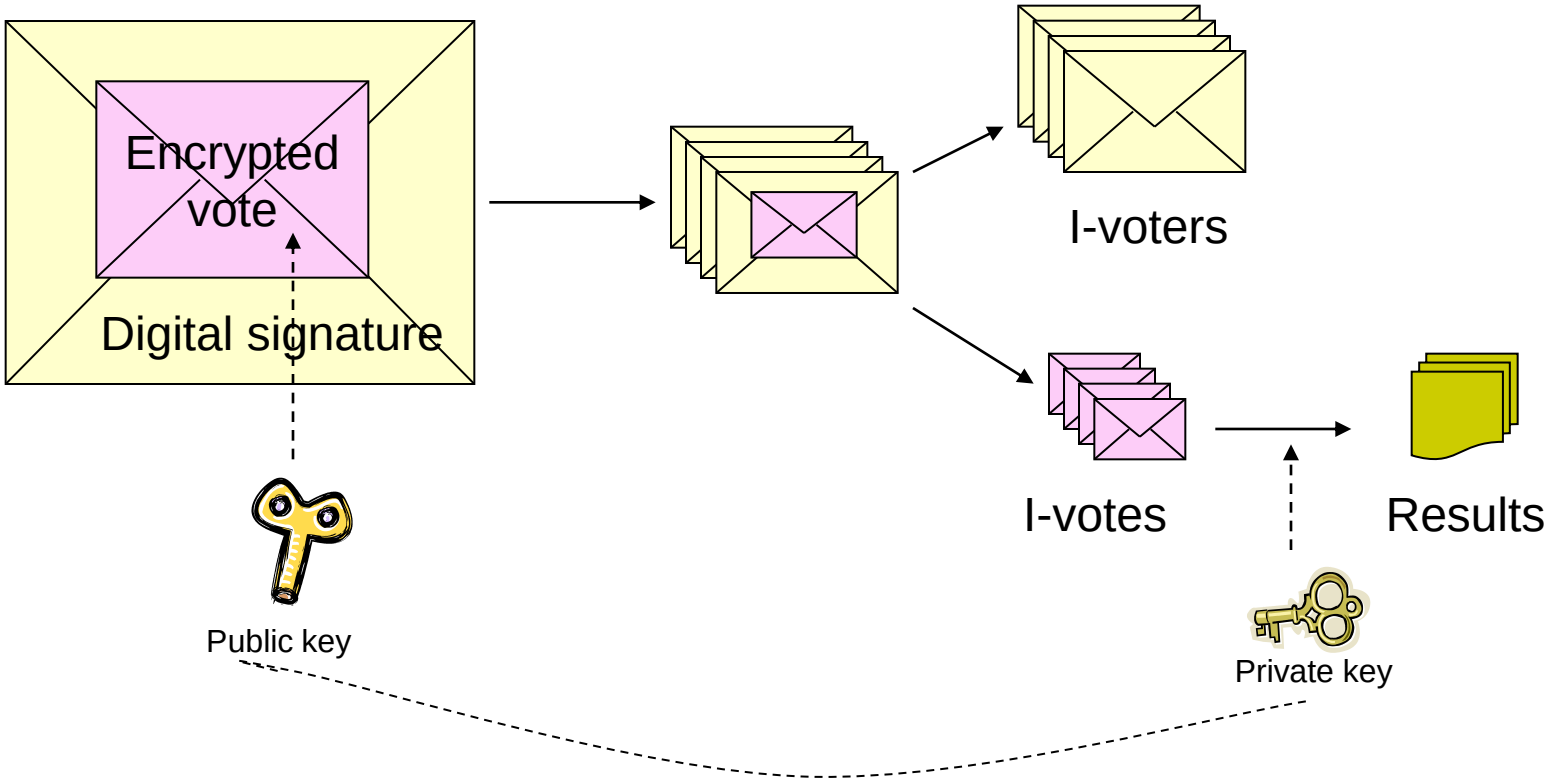
Voter registration

- Missing

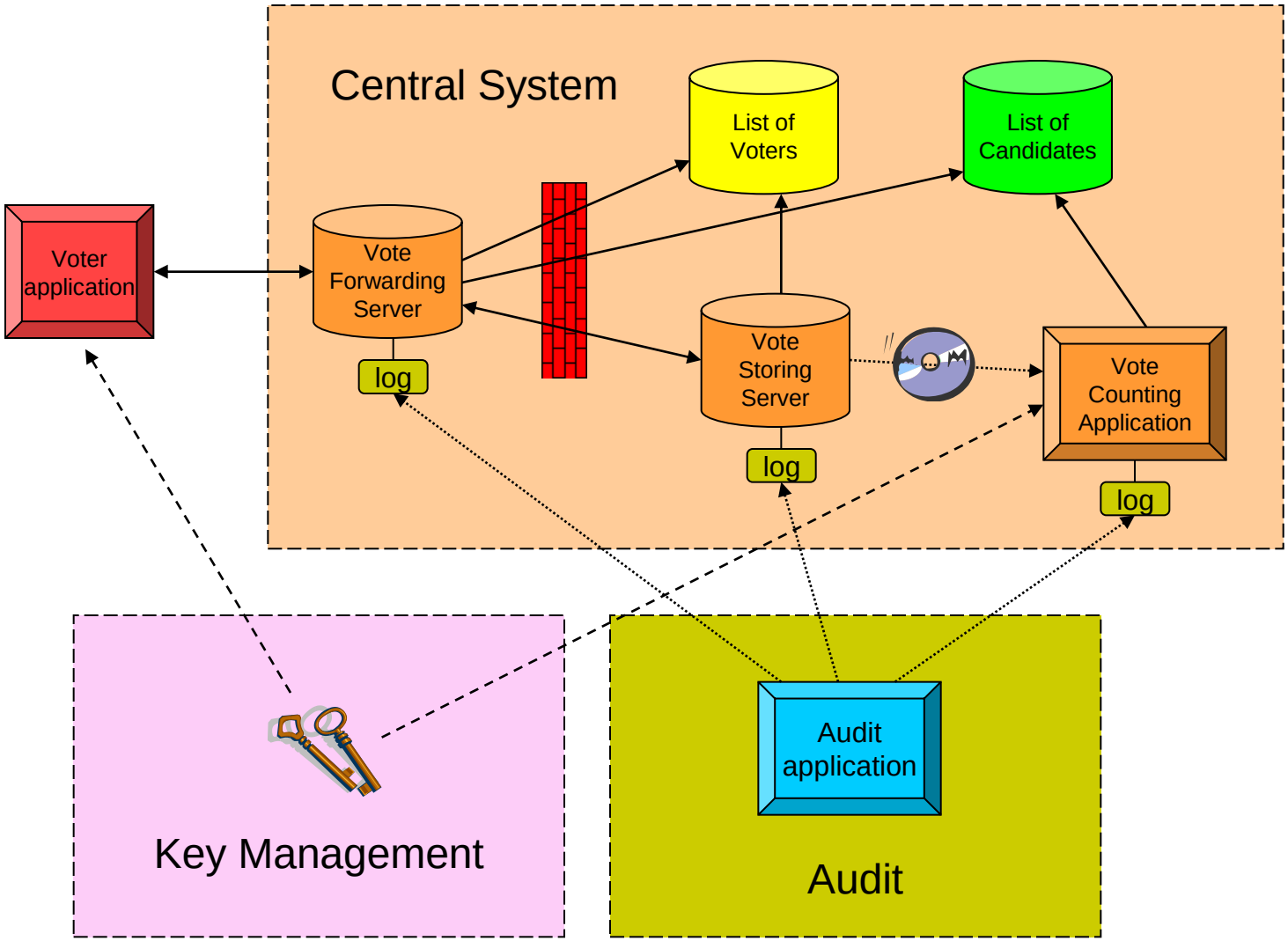
- All citizen (residents) should register their place of living in central population register
- Only voters with registered addresses are eligible

- Population register is used

Envelope scheme



Architecture



Cancellation of i-votes

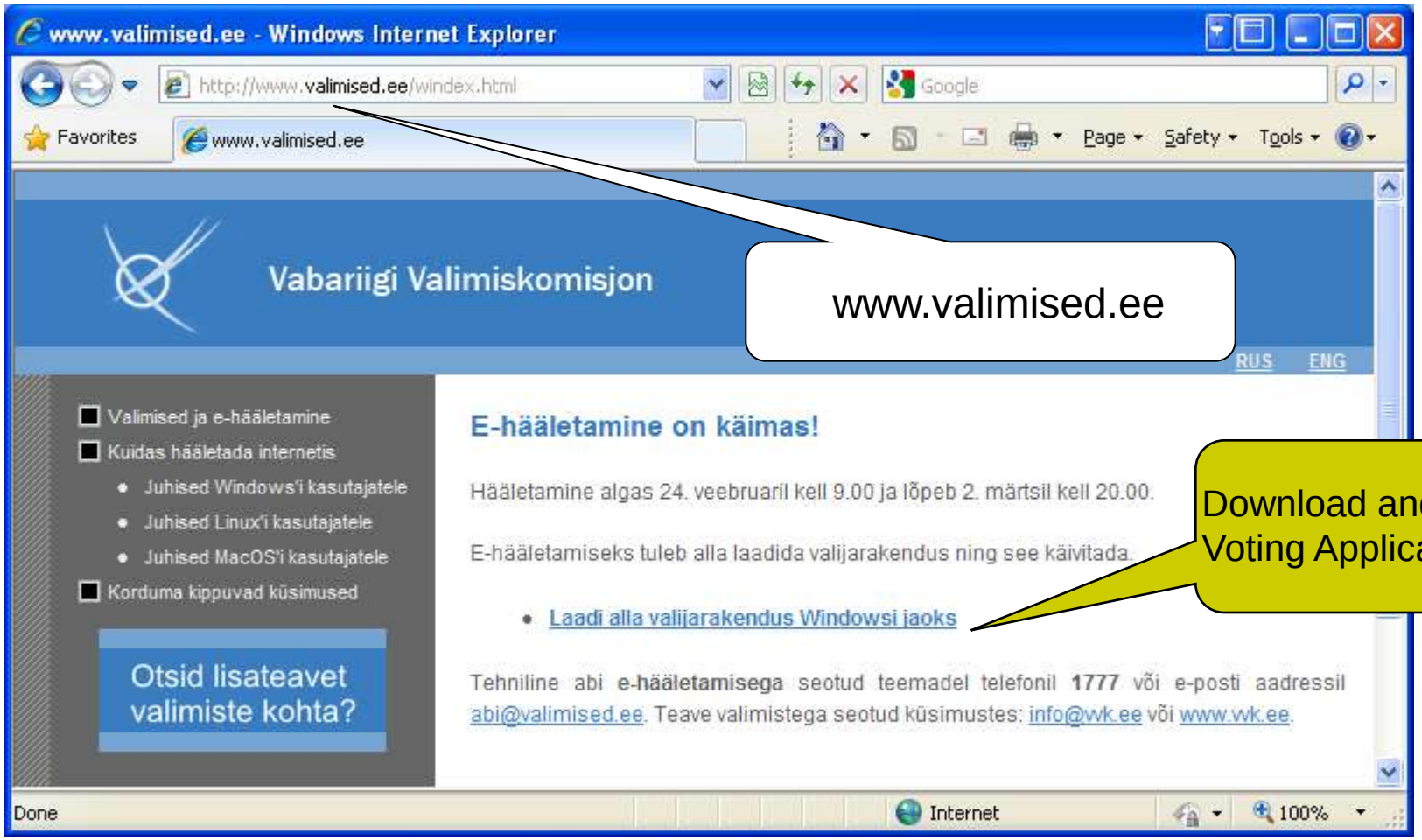
All Internet Voters' lists are printed and sent to polling stations two days before Election Day

Polling stations check the polling lists for possible Internet Voters who voted in the polling station on paper and mark all Internet Voters in the polling station list with "E"

If a double voter is found a note of cancellation is drafted in the Election Infosystem by the polling station and the I-vote is cancelled centrally

User view

Website for voting



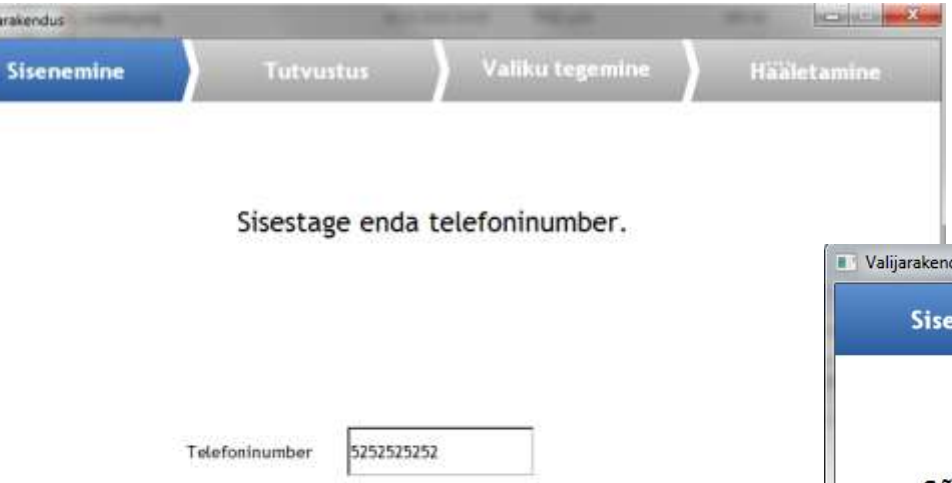
Run the Application

- Select your eID

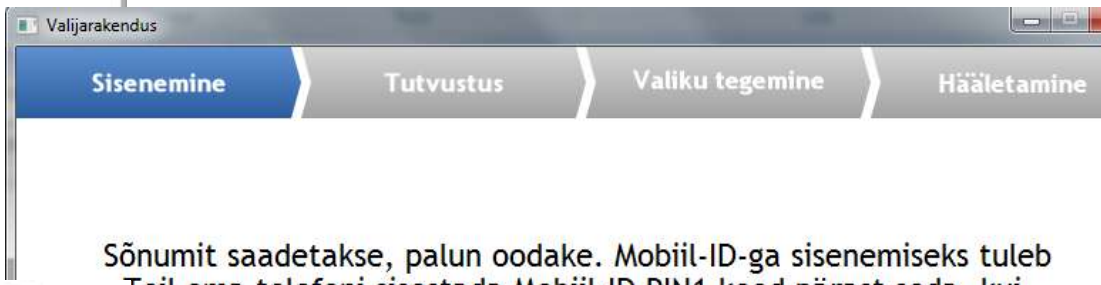
In case of ID-card... ****

- **Put your card into card reader**
- **Insert PIN 1**

In case of Mobile-ID...



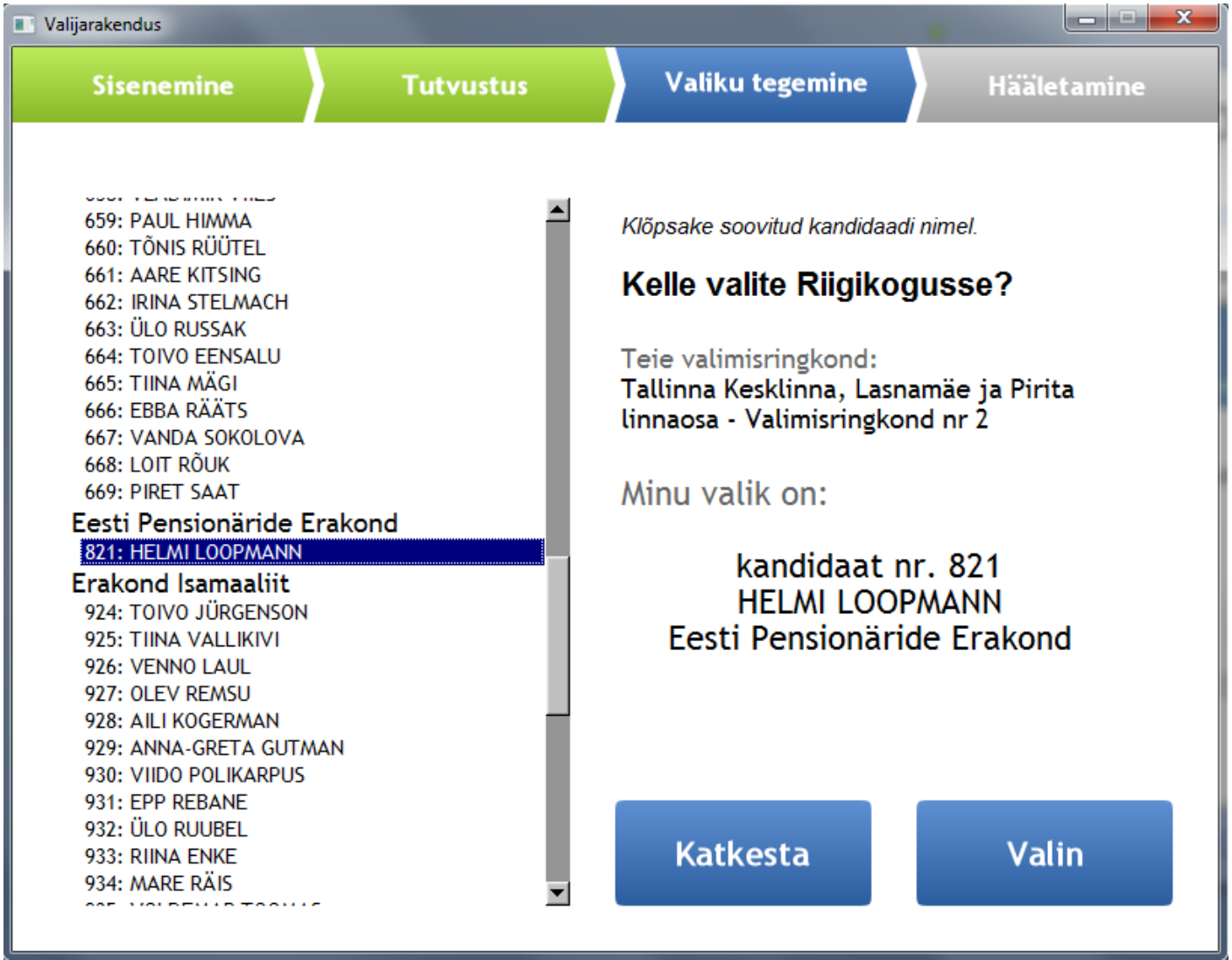
- **Enter phone number**
- **Verify verification code**
- **Insert PIN 1**



You are identified

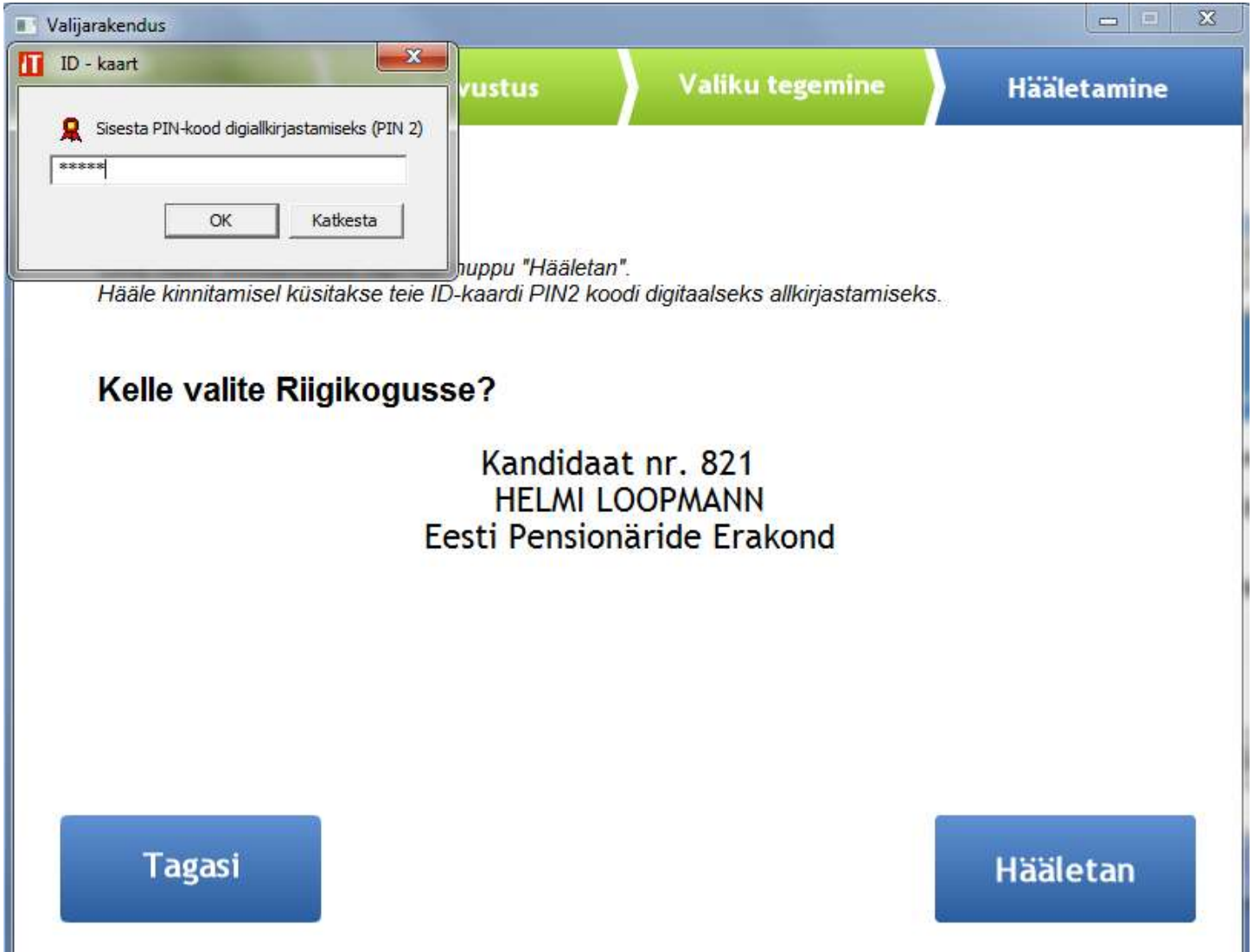
Ballot completion

- **Choose a candidate**



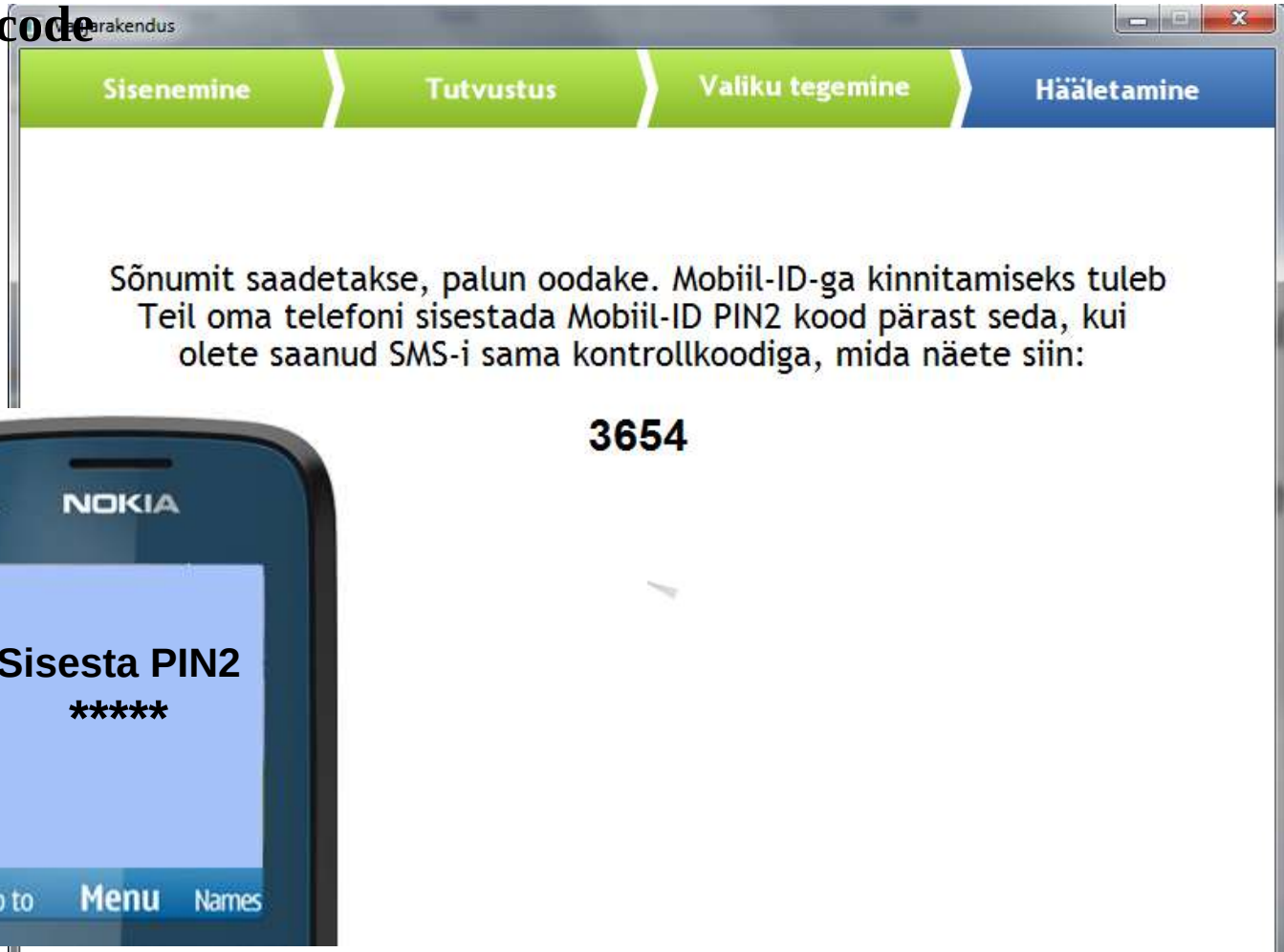
Confirmation (ID-card)

- **Confirm your choice with PIN2**

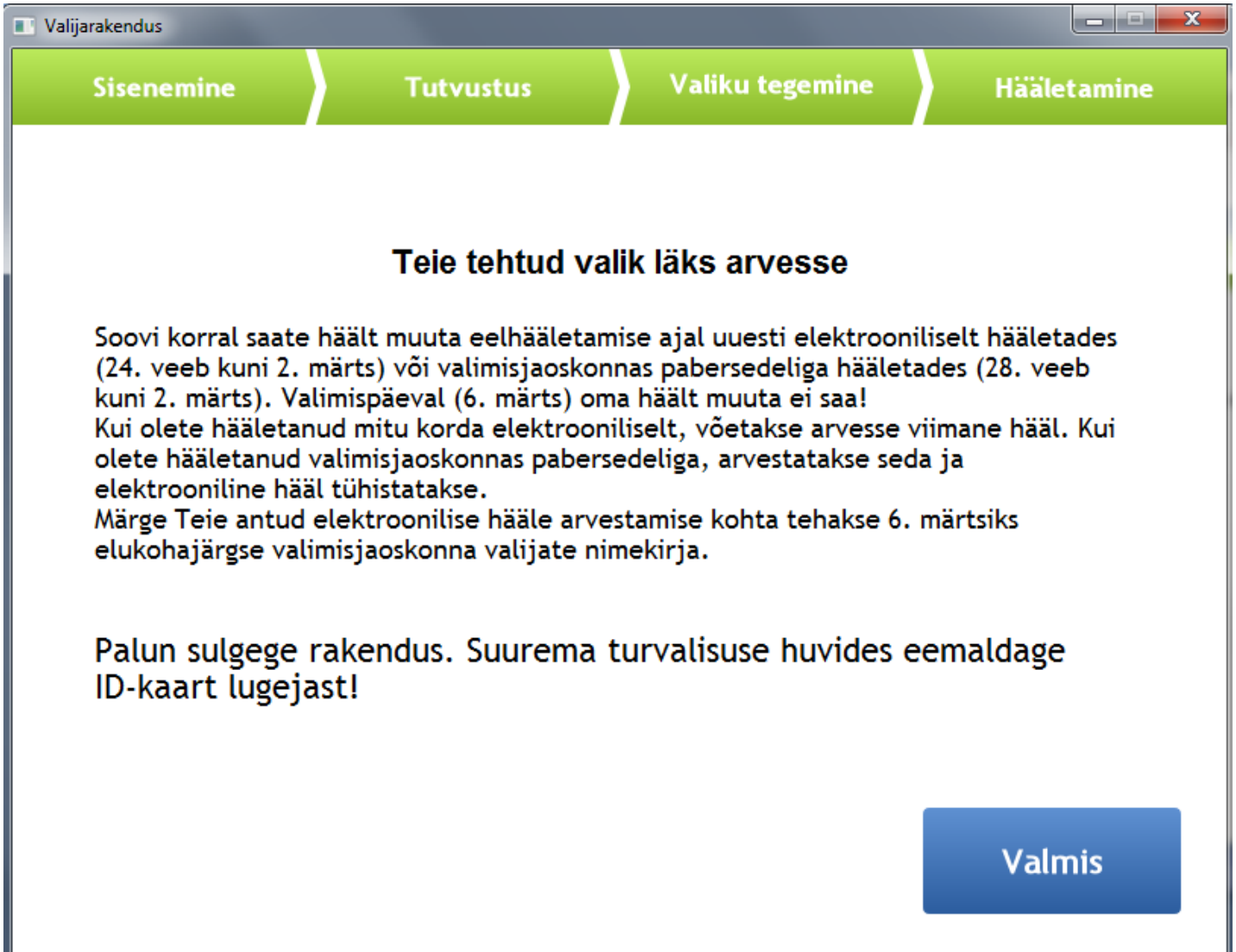


Confirmation (mobile-ID)

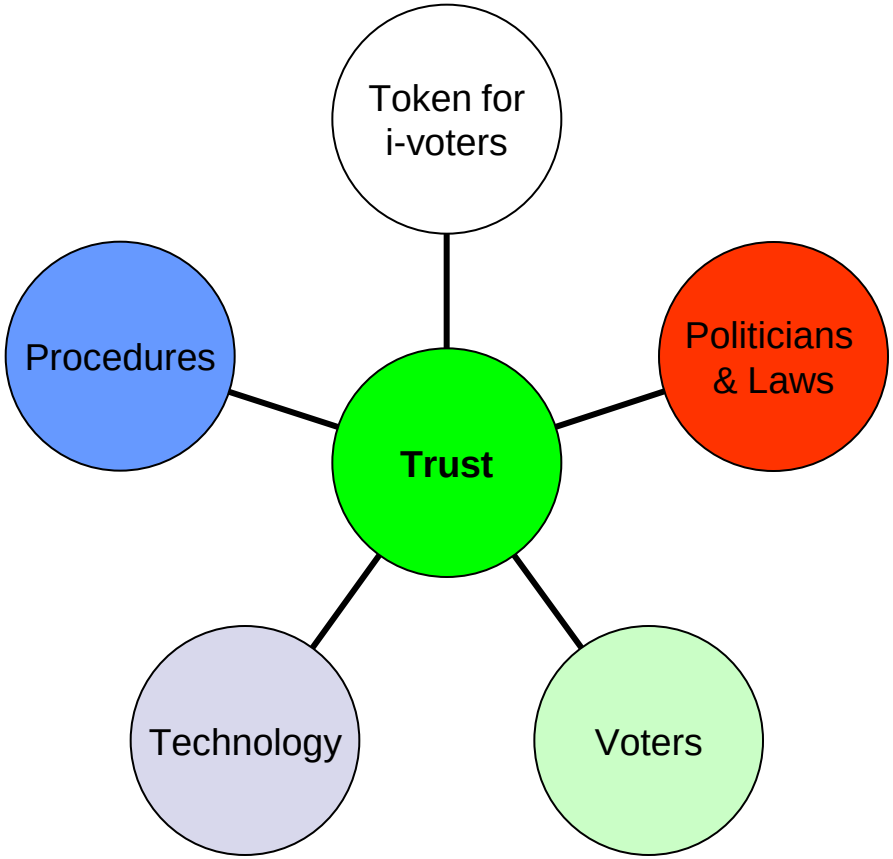
- **Confirm your choice by signing digitally**
- **Verify verification code**
- **Insert PIN 2**



Vote received



What it takes ?



Principle of Transparency

- All system components shall be transparent for auditing purposes
- No “black boxes” are allowed
  - No use of 3rd party-controlled authentication mechanisms or services
  - No components without source code

Technology Selection

- Keep it as simple as possible
- Build it on secure & stable platforms (Debian)
- Use widely known programming languages
- No fancy user interfaces for server operations

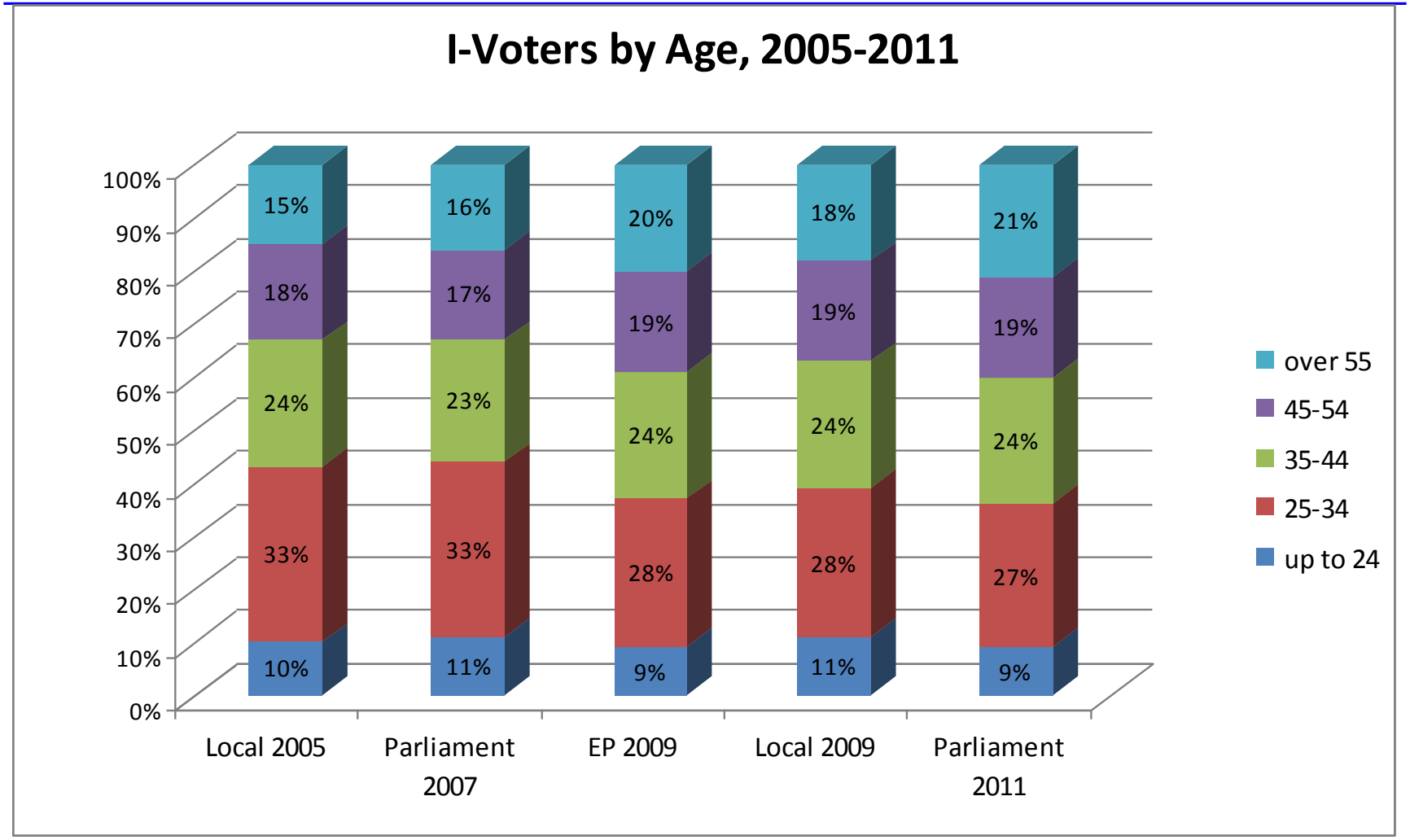
Managing Procedures

- All fully documented
- Crash course for observers-politicians & auditors
- All security-critical procedures:
  - Logged
  - Audited & observed
  - Videotaped

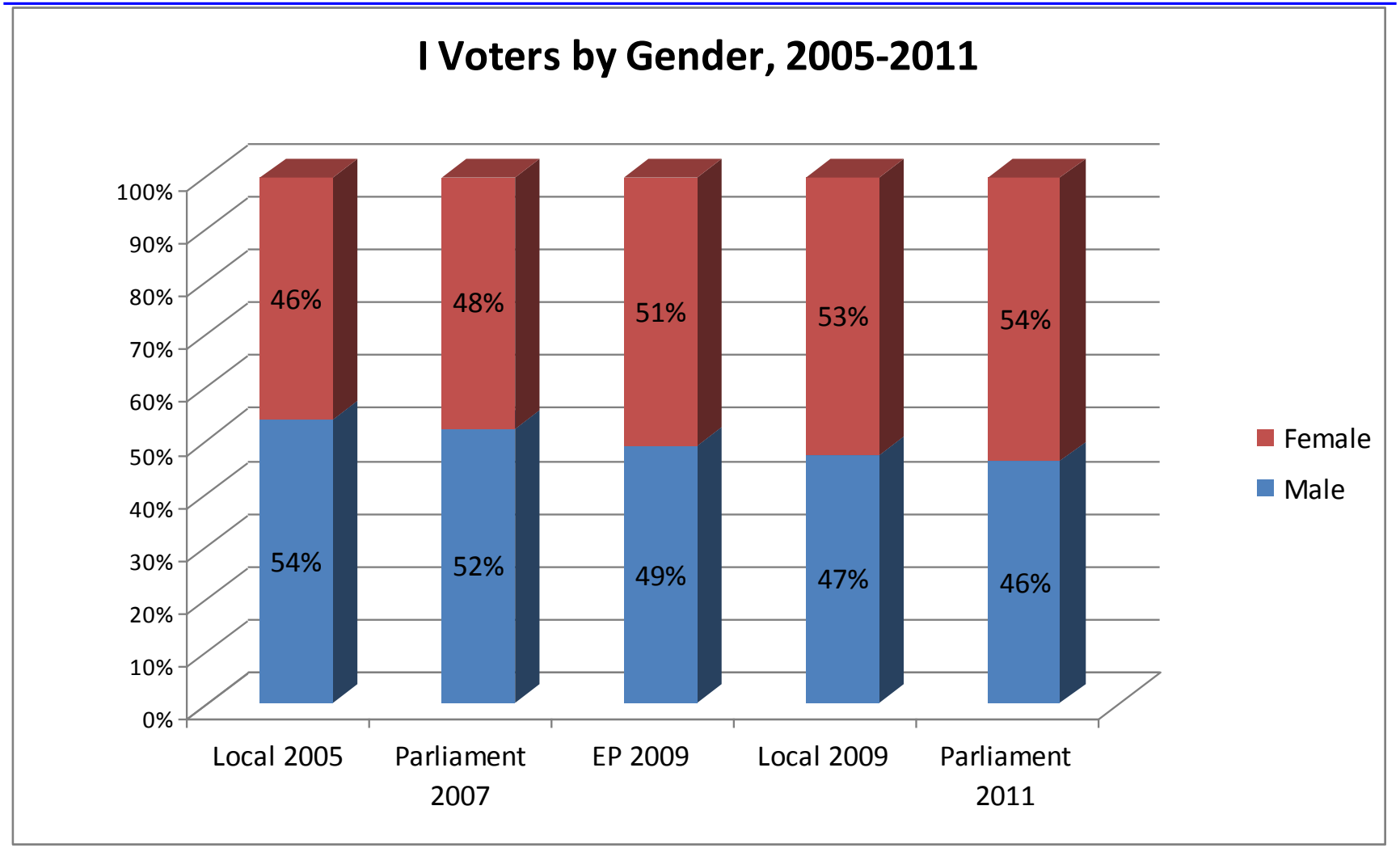
Hosting and Monitoring

- Governmental security hosting
- Strict requirements for entering the server premises
  - Auditor(s), cam-man, operator(s), police officer
- Sealing of hardware and data carriers
- Large number of network security specialists involved in network-monitoring 24/7 for dDOS or trojans in voluntary basis

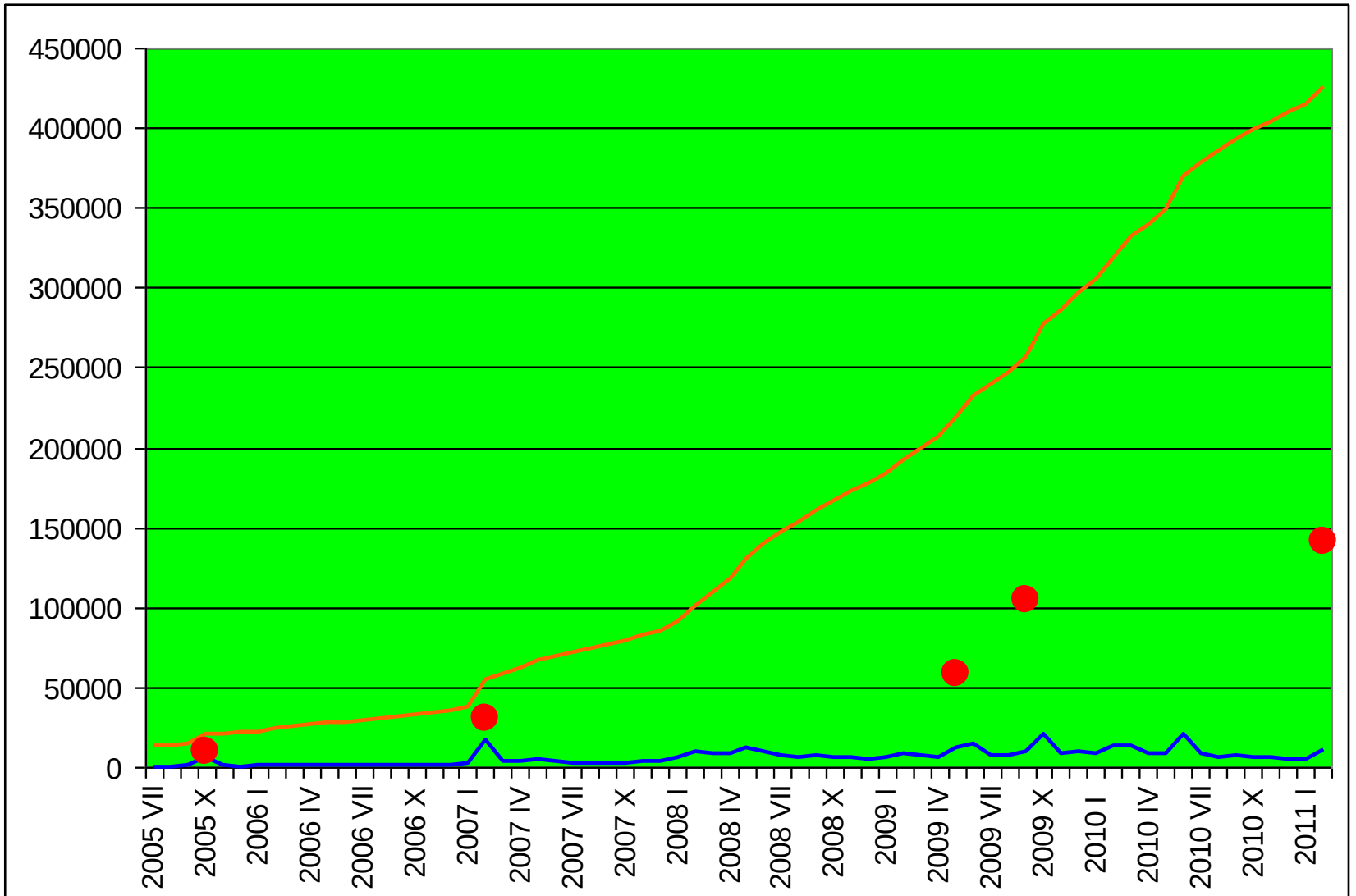
Is it for young people?



Is it for brave men?



ID-card usage vs. I-voting



Lessons learned

- I-voting is not a killer-application.
  It is just another way for people to vote
- People's attitude and behavior change in decades and generations, not in seconds
- I-voting is as natural as Internet-banking but even more secure

- Internet voting is here to stay

More information

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