

Mixed-Mode Experiments - Evaluation of Effects on Data Quality and Response Rates

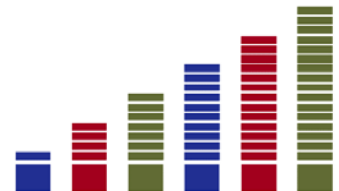
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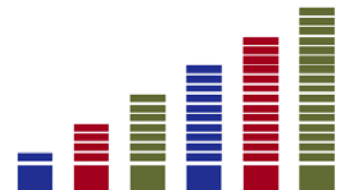
Outline

- Background
- Experimental design
- Results
 - Response rates/R-indicators
 - Data quality/Mode effects
- Conclusions

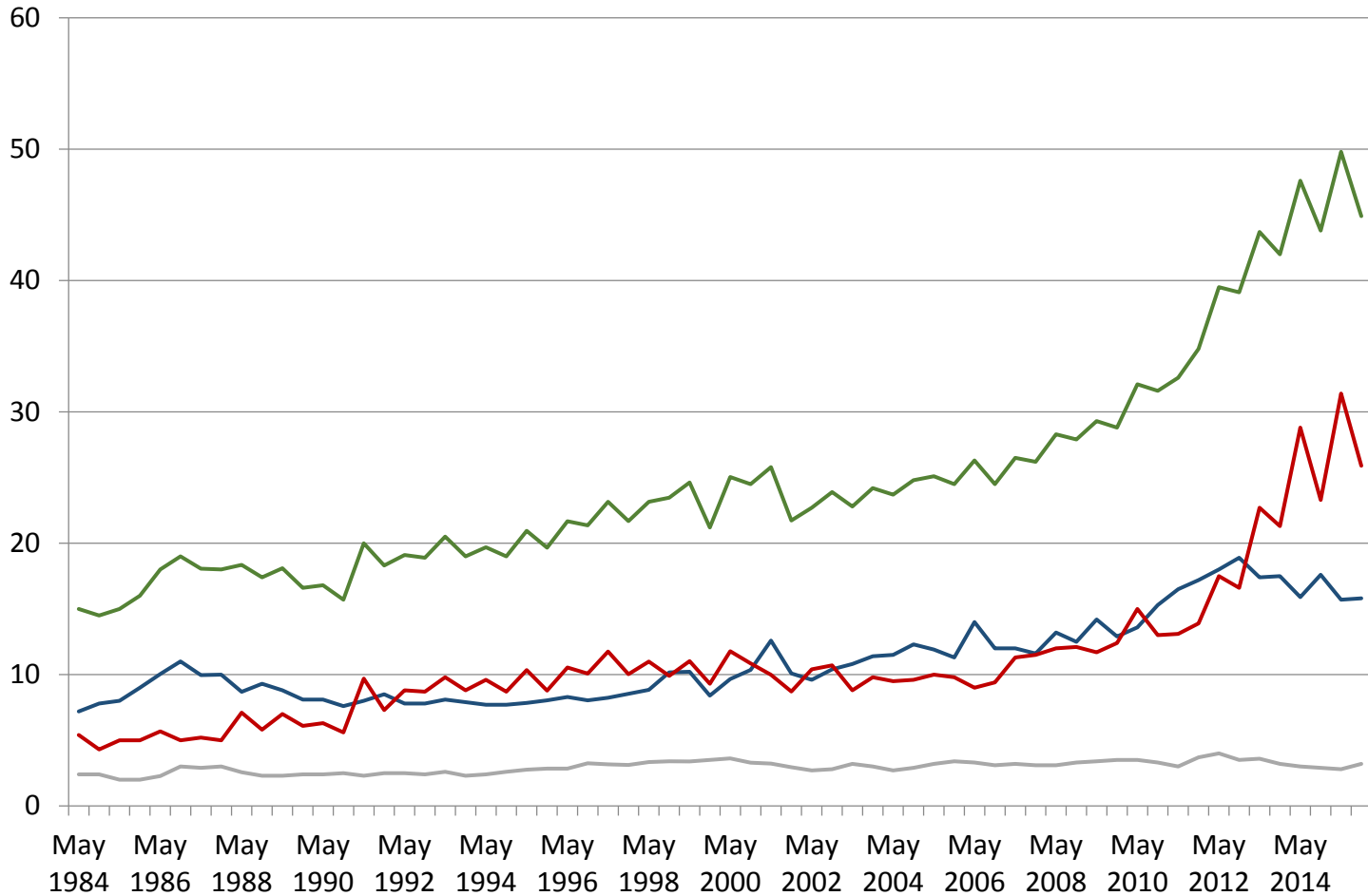


The Party Preference Survey

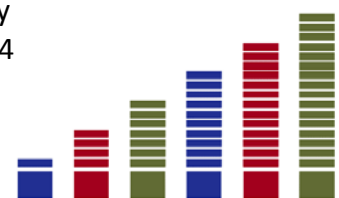
- **Carried** out since 1972 twice a year
- **Population:** Swedish citizens 18 years and above
- **Sampling frame:** from the population register
- **Sample size:** 9 000 persons
- **Rotating panel survey:** participation three survey rounds
- **Sampling design:** systematic sampling from ordered frame
- **Mode:** Telephone survey
- **Interview length:** 5 minutes
- **Variable of interest:** Party preference and voting
- **Response rate:** 50-55 percent



Nonresponse in Party Preference Survey 1984-2015

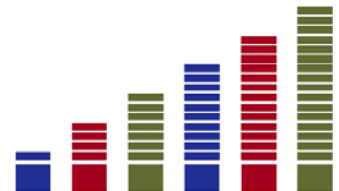


— Unable — Refusals — Noncontacts — Total nonresponse



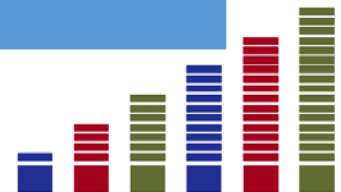
Mixed-mode experiments

- **Three experiments, September 2014, May and November 2015**
 - September 2014: small sample size
 - May and November 2015: larger sample sizes, experiments in ordinary survey rounds
- **Modes**
 - Experimental group: web and telephone
 - Control group: telephone
- **Research questions**
 - Can we manage to increase the response rates?
 - Will there be mode effects in the answers?
 - estimates of variable of interest
 - item nonresponse
 - don't know

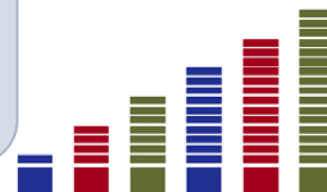
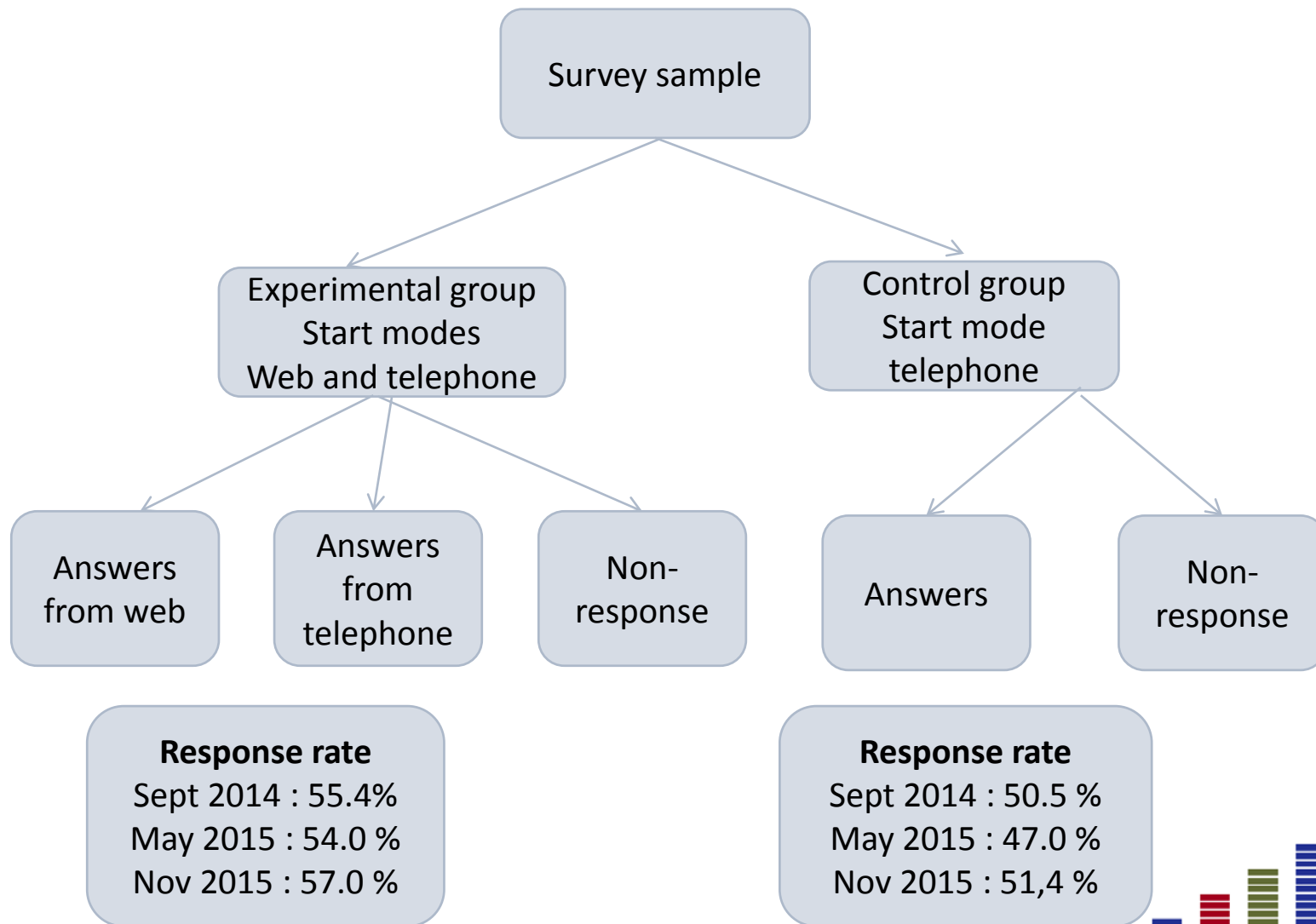


Party Preference Survey - panel and mixed-mode design

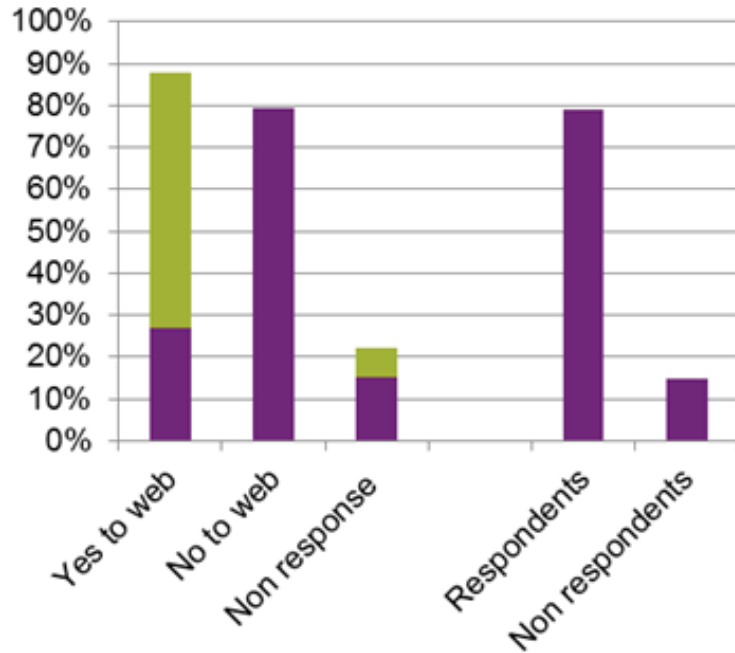
	Occasion 1	Occasion 2	Occasion 3	Occasion 4	Occasion 5
Panel A	Postal mail with info on login	E-mails and postal mails	E-mails and postal mails		
Panel B		Postal mail with info on login	E-mails and postal mails	E-mails and postal mails	
Panel C			Postal mail with info on login	E-mails and postal mails	E-mails and postal mails



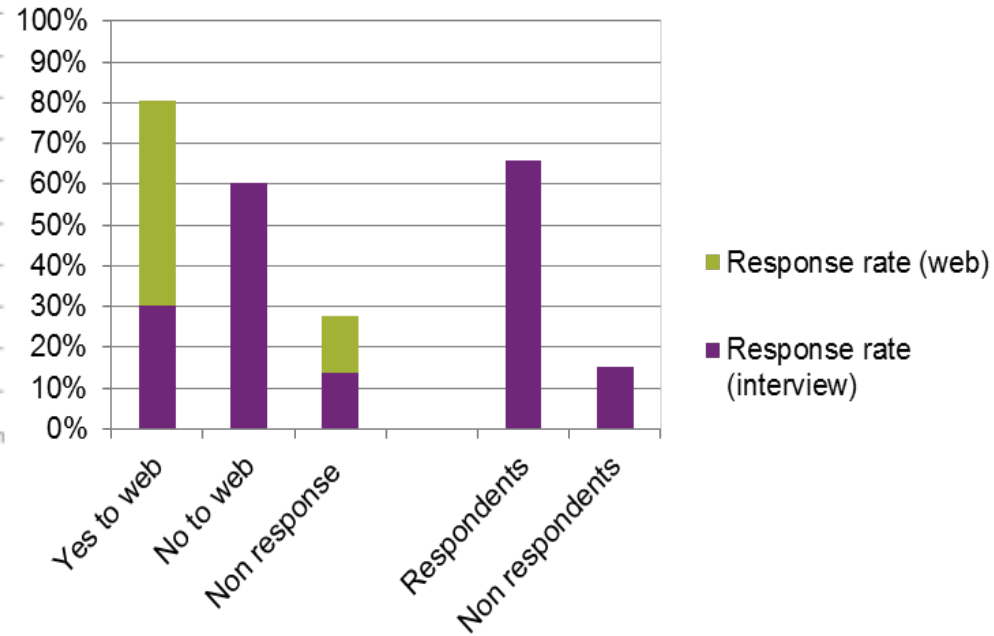
Experimental design



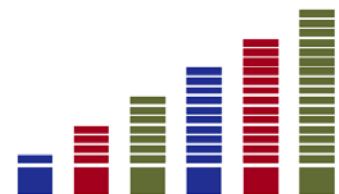
Response rates by responding or not in the previous survey round



September 2014

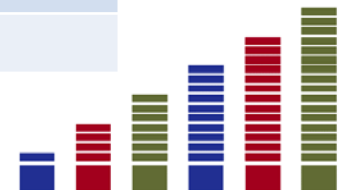


May 2015

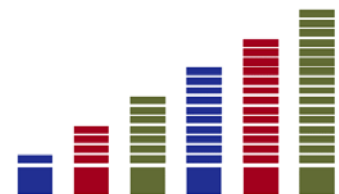
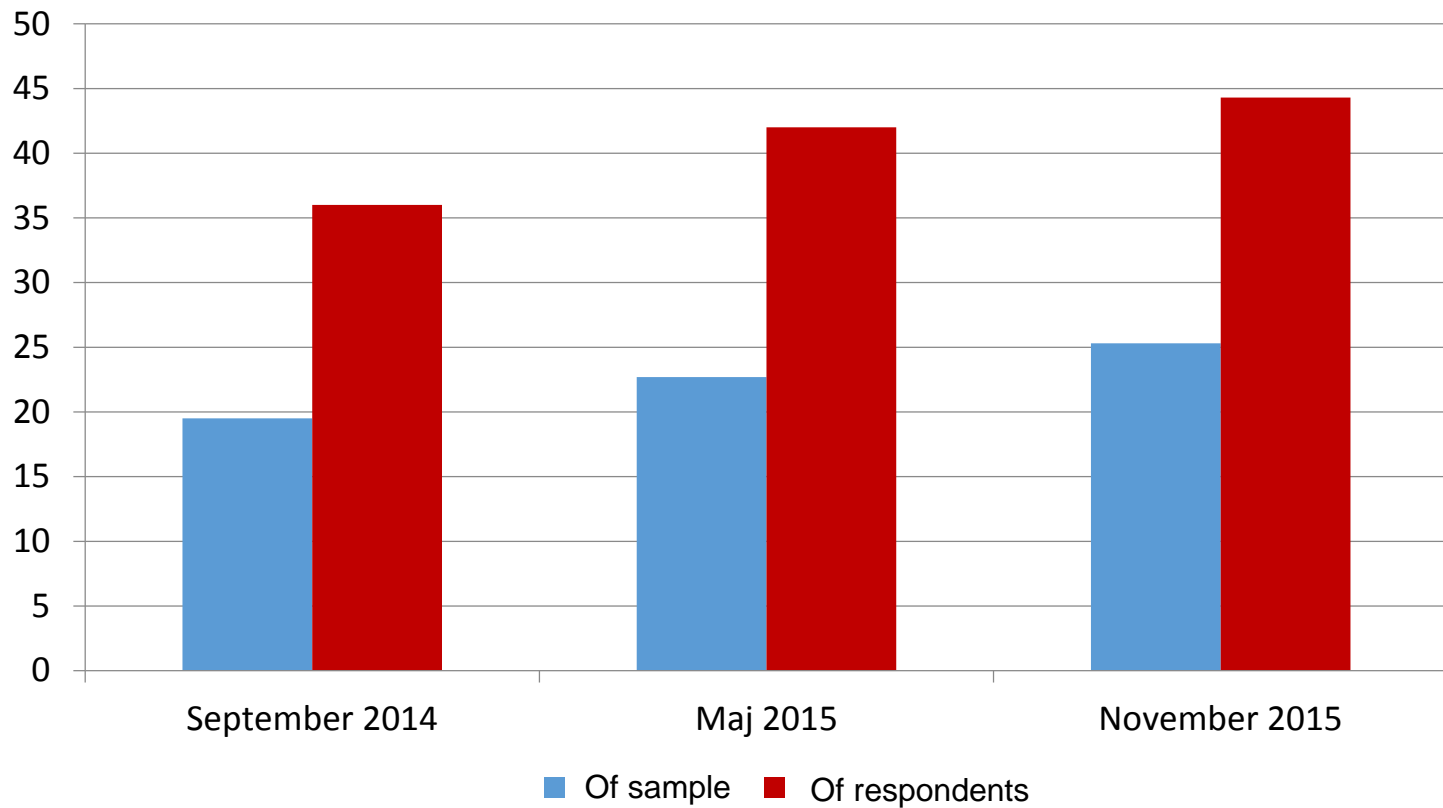


Response rates by response category in previous survey round. Percent

	Response rate May 2015	
November 2014	Experimental	Control
Interview	75.5	65.8
Decline to participate	23.0	14.5
Noncontacts	32.1	14.2
May 2015	Response rate November 2015	
	Experimental	Control
Interview	85.6	86.1
Decline to participate	21.5	17.3
Noncontacts	33.9	28.9



Share of respondents via web in experimental group. Percent



Response rates in subgroups

	May 2015			November 2015		
	%	%	Diff in % points	%	%	Diff in % points
	Exp	Contr	Exp - Contr	Exp	Contr	Exp - Contr
Total	54.0	47.0	7.0	57.0	51.4	6.0
Men	54.3	49.7	4.6	60.3	54.9	5.5
Women	53.6	44.3	9.3	53.7	48.0	5.7
18-29 years	45.4	39.1	6.3	46.0	43.0	3.0
30-49 years	52.3	43.7	8.6	55.7	51.3	4.4
50-64 years	54.8	46.7	8.1	58.5	51.6	6.9
65+ years	61.2	55.9	5.3	64.7	57.0	7.6
Big city	53.4	44.3	9,1	56.6	49.6	7.0
Other	54.1	47.5	6,6	57.1	51.8	5.3
Compulsory edu.	44.9	43.1	1.8	49.6	42.8	6.8
Upper secondary edu.	49.1	43.2	5.9	52.3	48.2	4.1
Post-secondary edu.	66.9	54.9	12.0	68.2	61.8	6.4
Born outside of Sweden	41.6	39.1	2.5	47.4	43.8	3.6
Born in Sweden	55.6	48.1	7.5	58.3	52.4	5.9
Number	5 561	6 530		6 022	2 999	



R-indicator

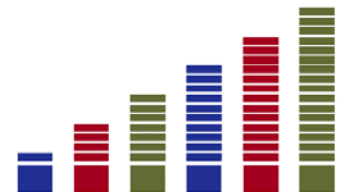
The R -indicator is defined as: $R(\rho) = 1 - 2 \cdot S(\rho)$

where
$$S(\rho) = \sqrt{\frac{1}{N-1} \sum_{i=1}^N (\rho_i - \bar{\rho})^2}$$

where ρ_i is the response propensity for unit i .

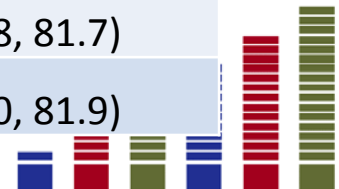
If $R(\rho) = 1$ then strong representativeness

See e.g. Shlomo, N., Skinner, C. and Schouten, B. (2012). Estimation of an indicator of the representativeness of survey response. *Journal of Statistical Planning and Inference*



R-indicator analysis

	Sample size	Response rate	R-indicator	CI
May 2015				
Total	12 091	50.2 %	78.5 %	(76.8, 80.2)
Experimental group	5 561	54.0 %	75.8 %	(73.4, 78.3)
Control group	6 530	47.0 %	80.5 %	(78.1, 82.8)
November 2015				
Total	9 021	55.1 %	76.9 %	(75.0, 78.8)
Experimental group	6 022	57.0 %	76.1 %	(73.7, 78.4)
Control group	2 999	51.4 %	79.0 %	(75.6, 82.5)
May 2014	9 087	52.3 %	79.8 %	(77.8, 81.7)
November 2014	9 033	56.1 %	80.0 %	(78.0, 81.9)

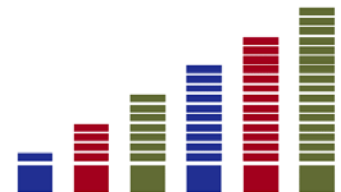


Do-not-know and item nonresponse in question about party vote

Vilket parti skulle du rösta på?

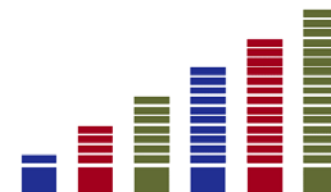
Vilket parti skulle du rösta på?

	September 2014		May 2015		November 2015	
	Exp.	Contr.	Exp.	Contr.	Exp.	Contr.
Don't know	18.0	18.5	10.8	13.7	12.7	17.1
Item nonresponse	1.9	1.8	1.2	1.6	0.9	1.4



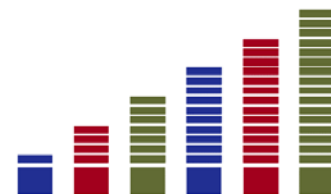
Consistency in answers Party in previous election

	Same answer in two consecutive survey rounds		
	Experimental	Control	Total
September 2014	90.7	85.4	89.0
May 2015	90.4	90.5	90.4
November 2015	91.3	92.5	91.6



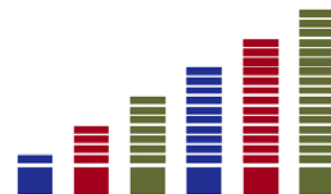
Estimates of party votes if election today in May 2015. Percent

Party	Total	Experimental group	Control group	Difference (experimental - control)	CI for difference
Centre Party	6.5 %	6.1 %	6.8 %	-0.7 %	(-2.0, 0.6)
Liberal Party	4.6 %	4.6 %	4.6 %	-0.1 %	(-1.2, 1.0)
Moderate Party	25.7 %	25.1 %	26.3 %	-1.2 %	(-3.6, 1.2)
Christian Democrats	3.9 %	4.1 %	3.6 %	0.5 %	(-0.6, 1.5)
Social Democrats	29.4 %	29.4 %	29.4 %	0.0 %	(-2.6, 2.5)
Left Party	6.3 %	6.6 %	6.0 %	0.6 %	(-0.7, 1.9)
Green Party	6.5 %	6.0 %	7.0 %	-1.0 %	(-2.3, 0.4)
Sweden Democrats	14.7 %	15.1 %	14.4 %	0.7 %	(-1.5, 2.9)
Other	2.4 %	3.0 %	1.9 %	1.1 %	(0.2, 1.9)



Estimates of party votes if election today in November 2015. Percent

Party	Total	Experimental group	Control group	Difference (experimental - control)	CI for difference
Centre Party	6.8 %	6.9 %	6.6 %	0.3 %	(-1.3, 1.8)
Liberal Party	5.5 %	5.0 %	6.8 %	-1.8 %	(-3.5, -0.2)
Moderate Party	22.7 %	22.1 %	24.1 %	-2.0 %	(-4.9, 0.9)
Christian Democrats	3.7 %	3.6 %	4.1 %	-0.5 %	(-1.8, 0.8)
Social Democrats	27.4 %	27.4 %	27.5 %	-0.2 %	(-3.2, 2.8)
Left Party	5.8 %	5.6 %	6.3 %	-0.7 %	(-2.3, 0.9)
Green Party	5.8 %	5.9 %	5.5 %	0.5 %	(-1.0, 1.9)
Sweden Democrats	19.9 %	20.9 %	17.7 %	3.3 %	(0.4, 6.1)
Other	2.3 %	2.7 %	1.5 %	1.2 %	(0.3, 2.1)



Conclusions

- **Response rates**

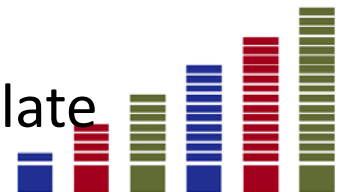
- + Higher response rate in experimental group (both e-mail and postal)
- + Higher response rate especially among noncontacts in previous survey rounds
 - Slightly less balanced response group?

- **Estimates**

- No difference in data quality (item nonresponse/don't know)
- Similar party distributions estimates

- **Costs**

- 42 percent in May and 44 percent in November of answers by self administered mode
- Web reaches those hard to contact (noncontacts/late interviews)



Thank you!

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