Preferences for referenda: intrinsic or instrumental? Evidence from a survey experiment

Online Appendixes

Appendix A: Marginal distributions

Table A1: Distribution of responses (in percent of experiment participants)

		Assisted suicide	Immigration	Taxation	Energy Policy
		Currently there are many discussions about the legitimacy of assisted suicide. The following section is about your opinion on assisted suicide. In your opinion, how should this be decided?	Currently, there is a lot of discussion about immigration control. The following section is about your opinion on immigration. How do you think this should be decided?	Currently, there is a lot of discussion about fair taxation and tax policy. The following is about your opinion on taxes. How do you think this should be decided?	Currently, there is a lot of discussion about the implementation of the energy transition. The following questions are about your opinion on the energy transition. How do you think this should be decided?
Preferred procedure	Ambiguous answer	0	1	1	0
	Item nonresponse	4	2	3	2
	Referendum	36	35	23	26
	Parliament	9	16	17	13
	Experts	13	13	24	21
	Stakeholders	39	34	32	38
		Are you for or against the legitimization of assisted suicide?	Are you for or against the admission of immigrants?	Do you approve or oppose implementing a higher income tax for high earners?	Are you for or against the fast expansion of renewable energy (wind turbine, power lines), even if there is opposition?
Own substantial attitude	Ambiguous answer	0	0	0	0
	Item nonresponse	1	1	1	0
	Absolutely in favor	24	9	17	17
	In favor	40	28	34	36
	Neither in favor nor against	27	44	34	38
	Against	6	14	10	7
	Absolutely against	3	5	4	1
		Do you think the majority of Germans agree or disagree with the legitimization of assisted suicide.	Do you think the majority of Germans agree or disagree with the admission of immigrants?	Do you think the majority of Germans would approve or oppose a higher income tax for high earners?	Do you think that the majority of Germans would agree or disagree with the fast expansion of renewable energy (wind turbines, power lines)?
Majority expectation	Item nonresponse	1	1	1	1
	Clear majority in favor	11	2	17	5
	No clear majority	85	83	72	91
	Clear majority against	3	14	10	3
	Number participants	805	829	819	813

To further explore whether the variable *Congruence* has a particularly strong effect on agents'

support for referenda, we used the *multinomial logit estimator*, which allows to model a

respondent's simultaneous choice among different alternatives.[1]

Table A2: Multinomial logit regressions for all respondents: Log-odds (Dependent variable: Choice of a given procedures for a specific policy issue)

VARIABLES	(1) Referendum	(2) Parliament	(3) Experts
Ref_Pref	0.370	-0.302	-0.127
	(10.81)***	(-9.153)***	(-4.255)***
Congruence	0.692	0.0338	0.325
	(4.951)***	(0.194)	(2.066)**
Group assisted suicide	0.363	-0.429	-0.547
	(2.796)***	(-2.306)**	(-3.541)***
Group immigration	0.460	0.367	-0.414
	(3.549)***	(2.228)**	(-2.662)***
Group taxation	-0.00400	0.520	0.303
	(-0.0285)	(3.214)***	(2.169)**
Constant	-2.497	0.333	0.0624
	(-11.32)***	(1.736)*	(0.355)
Observations	2,932	2,932	2,932
Pseudo R2	0.0682	0.0682	0.0682
Percent corr. pred.	44	44	44

The coefficients are based on multinomial logit estimation and show the regressors' effects on the logarithm of the probability that a respondent chooses a given procedure relative to the probability of choosing the omitted procedure (discussion among representatives of all groups involved.) Robust z-statistics are given in parentheses. Asterisks reflect significance levels: *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

The coefficients in Table A1 represent the effect of the regressors on the *log-odds*, i.e. the

logarithm of the probability of picking a given procedure relative to the probability of choosing

a 'discussion among representatives of all affected groups' ('Stakeholders', i.e. the omitted

category). More specifically, a respondent who expects the majority to share her or his opinion

[1] While the binary logit approach presented in the main text estimated under which conditions respondents found referenda preferable to *all* procedures mentioned in the survey, the multinomial logit estimator models the probability that respondents prefer referenda vis-à-vis any individual procedure.

– i.e. for whom *Congruence* = 1 – is almost four times as likely to choose a referendum (relative to choosing a stakeholder discussion) than an individual who expects to be in conflict with the majority opinion (*Congruence* = -1).[2] Interestingly, *Congruence* also has a significantly positive effect on the relative probability of choosing a decision by expert commissions. However, the effect is much weaker than the effect on the support for referenda.

Table A3: Multinomial logit regressions for all respondents: Log-odds (Dependent variable: Choice of a given procedure for a specific policy issue)

VARIABLES	(1) Referendum	(2) Parliament	(3) Experts
Ref_Pref	0.361	-0.302	-0.128
	(10.60)***	(-9.132)***	(-4.271)***
Positions aligned	0.554	-0.0149	0.549
	(2.050)**	(-0.0398)	(1.581)
Positions contrasting	-0.137	-0.284	-0.103
	(-0.379)	(-0.545)	(-0.215)
Majority expected	0.406	-0.0440	-0.190
	(1.731)*	(-0.146)	(-0.629)
Group assisted suicide	0.345	-0.427	-0.549
	(2.647)***	(-2.298)**	(-3.556)***
Group immigration	0.431	0.370	-0.410
	(3.297)***	(2.246)**	(-2.633)***
Group taxation	-0.100	0.539	0.304
	(-0.696)	(3.321)***	(2.139)**
Constant	-2.481	0.343	0.0683
	(-11.33)***	(1.775)*	(0.387)
Observations	2,932	2,932	2,932
Pseudo R2	0.0708	0.0708	0.0708
Percent correctly pred.	44	44	44

The coefficients are based on multinomial logit estimation and show the regressors' effects on the logarithm of the probability that a respondent chooses a given procedure relative to the probability of choosing the omitted procedure (discussion among representatives of all groups involved.) Robust z-statistics are given in parentheses. Asterisks reflect significance levels: *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table A2 presents the results of a multinomial logit estimation using the binary regressors *Positions aligned*, *Positions contrasting*, and *Majority expected* (with 'Stakeholders' as the

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[2] To arrive at this result, we use the coefficient of *Congruence* in Table A1 and compute exp(2·0.69) = 3.99.

omitted category). The results provide further support to the findings presented in the main text. Not that the effect of *Positions_aligned* on the log-odds of choosing *Experts* in column (3) is close to the coefficient in column (1), but not significantly different from zero.

VARIABLES	Definition	Source
High income	Dummy variable: 1: respondent reports to have an average personal net income of 4000 or more Euros per month 0: otherwise	GESIS panel, wave df, Variable dfzh055b
Female	Dummy variable: 1: female / 0: male	GESIS panel, wave df, Variable dfzh037a
Birth year	Answer to question: Please provide the year of your birth. 1943 for all respondents born in or before 1943; 1944, …, 1994; 1995 for all respondents born in or after 1995	GESIS panel, wave df, Variable dfzh038c
Old	Dummy variable: 1: born in or before 1943 / 0: otherwise	GESIS panel, wave df, Variable dfzh038c
Young	Dummy variable: 1: born in or after 1995 / 0: otherwise	GESIS panel, wave df, Variable dfzh038c
German citizen	Dummy variable: 1: German citizen / 0: otherwise	GESIS panel, wave df, Variable dfzh039a
Univ. entr. degree	Dummy variable: 1: respondent reports to have advanced technical college certificate („Fachhochschulreife") or general qualification for university entrance („Abitur, allgemeine oder fachgebundene Hochschulreife") / 0: otherwise	GESIS panel, wave df, Variable dfzh044a
University degree	Dummy variable: 1: respondent reports to have technical college degree („Abschluss einer Fachhochschule") or university degree („Abschluss einer Universität") / 0: otherwise	GESIS panel, wave df, Variable dfzh047a
Ref_Pref	Answer to question: To what extent do you agree with the following statements? There should be more referendums	GESIS panel, wave ce, Variable ceaz116a

	in Germany.	
	1: fully disagree/ … / 7: fully agree	
Referendum	Dummy variable:	GESIS panel, wave dd
	1: respondent chooses referendum as procedure to decide on given policy issue	Assisted suicide: Variable ddaz143a
	0: otherwise	Immigration: Variable ddaz147a
		Taxation: Variable ddaz150a
		Energy policy: Variable ddaz152a
Procedure	Dummy variable:	GESIS panel, wave dd
	1: respondent chooses referendum / discussion within parties / independent committee of experts / discussion among representatives of all affected groups as procedure to decide on given policy issue	Assisted suicide: Variable ddaz143a
		Immigration: Variable ddaz147a
	0: otherwise	Taxation: Variable ddaz150a
		Energy policy: Variable ddaz152a
	Policy issues:	
	Variable ddaz144a: "Are you for or against the legitimization of assisted suicide?" 1: absolutely for, …, 5 absolutely against	
	Variable ddaz147a: "Are you rather in favor of or against the admission of refugees?" 1: absolutely for, …, 5 absolutely against	
	Variable 150a: "Do you approve or oppose implementing a higher income tax for high income earners?"	
	1: absolutely for, …, 5: absolutely against	
	Variable 153a: "Are you for or against the fast expansion of renewable energy (wind turbines, power lines), even if there is opposition?"	
	1: absolutely for, …, absolutely against	

Congruence	1: respondent is for or strongly for the proposed position and expects clear majority for proposed position 1: respondent is against or strongly against the proposed position and expects clear majority against proposed position -1: respondent is for or strongly for the proposed position and expects clear majority against proposed position -1: respondent is against or strongly against the proposed position and expects clear majority for proposed position 0: otherwise	GESIS panel, wave dd Assisted suicide: Variables ddaz144a, ddaz145a Immigration: Variables ddaz147a, ddaz148a Taxation: Variables ddaz150a, ddaz151a Energy policy: Variables ddaz153a, ddaz154a
Positions aligned	Dummy variable: 1: Congruence = 1 0: otherwise	
Positions contrasting	Dummy variable: 1: Congruence = -1 0: otherwise	
Majority expected	Dummy variable: 1: respondent expects clear majority for or against proposed policy position 0: otherwise	GESIS panel, wave dd Assisted suicide: Variable ddaz145a Immigration: Variable ddaz148a Taxation: Variable ddaz151a Energy policy: Variable ddaz154a

Note: Negative entries (e.g. -99 for item nonresponse) are treated as non-observables.

Appendix D: Descriptive statistics

VARIABLES	All	Suicide	Immigration	Taxation	(5) Energy
High income	0.0723	0.0657	0.0548	0.0908	0.0786
	(0.259)	(0.248)	(0.228)	(0.288)	(0.269)
Female	0.495	0.502	0.508	0.475	0.493
	(0.500)	(0.500)	(0.500)	(0.500)	(0.500)
Birth year	1965	1966	1965	1966	1965
	(13.75)	(13.37)	(13.79)	(14.16)	(13.62)
Old	0.0175	0.0236	0.0167	0.0130	0.0169
	(0.131)	(0.152)	(0.128)	(0.113)	(0.129)
Young	0.0107	0.0101	0.00609	0.0178	0.00924
	(0.103)	(0.100)	(0.0778)	(0.132)	(0.0958)
German citizen	0.975	0.990	0.974	0.963	0.974
	(0.156)	(0.100)	(0.159)	(0.190)	(0.160)
Univ. entr. degree	0.484	0.480	0.449	0.517	0.492
	(0.500)	(0.500)	(0.498)	(0.500)	(0.500)
University degree	0.299	0.293	0.279	0.321	0.304
	(0.458)	(0.455)	(0.449)	(0.467)	(0.460)
Ref_Pref	5.162	5.192	5.169	5.146	5.143
	(1.727)	(1.729)	(1.700)	(1.719)	(1.765)
Positions alligned	0.101	0.104	0.0898	0.159	0.0555
	(0.302)	(0.306)	(0.286)	(0.366)	(0.229)
Positions contrasting	0.0234	0.0135	0.0167	0.0551	0.00924
	(0.151)	(0.115)	(0.128)	(0.228)	(0.0958)
Majority expected	0.164	0.138	0.160	0.272	0.0894
	(0.370)	(0.345)	(0.367)	(0.445)	(0.285)
Observations	2,517	594	657	617	649

Note: The numbers give the means for the samples underlying the regression results reported in Table 5. Numbers in parentheses give the standard deviations. The last three rows give shares of responses for which the respective dummy variable equals one.