Supplementary Appendix

How National Leaders Keep 'us' Safe – A Longitudinal Four-Nation Study Exploring the Role of Identity Leadership as a Predictor of Adherence to COVID-19 Non-Pharmaceutical Interventions

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Items

Identity leadership

1. My country's leader is a model member of our country.
2. My country's leader acts as a champion for our country.
3. My country's leader creates a sense of cohesion within our country.
4. My country's leader creates structures that are useful for our country.

Perceived shared national identification (PSNI)

1. In our country, we identify with each other.
2. We are a part of our country.
3. We feel strong ties within our country.
4. We are glad to be in our country.

Adherence to health-protective NPIs

1. I try to reduce social contacts to the bare minimum.
2. I keep away from public places.
3. I make sure to keep a distance of at least 1.5 meters (5 feet) between myself and other people.
4. I do not meet with friends physically anymore.
5. I try to protect high-risk individuals (e.g., elders, people with chronic diseases) by keeping my distance from them.
6. I support high-risk individuals (e.g., elders, people with chronic diseases), for instance, by offering them help with shopping.
7. I encourage others to follow the recommendations to keep a distance, washing hands etc.
8. I offer emotional support to members of my family (e.g. calling my parents/grandparents more frequently than usual).
9. I wear a mask in public.
10. I use disinfectants regularly.

Handling of missing data

We experienced dropouts from Time 1 to Time 2 in all four countries (see country-specific dropout-rates in Table S1). As imputation methods for missing data would require at least partly available observed variables at Time 2 (as it is the case with item-level and construct-level missings), we decided to use only full cases for our analyses. Therefore, we only included people who participated at Time 1 and Time 2 (i.e., responders). Following guidelines for handling missing data[1], we performed country-specific dropout-analyses, report country-specific response rates, and systematic nonresponse parameters (SNP, i.e. d_{miss}) for the variables, which we assessed at Time 1, namely identity leadership and perceived shared national identification (PSNI).

Dropout-Analyses

The dropout rate (i.e., people who only participated at Time 1 and not at Time 2) was 28.18% in China, 81.04% in Germany, 19.84% in Israel, and 65.61% in the US. By performing country-specific dropout analyses, we statistically compared mean values of responders (i.e., people who participated at Time 2) and non-responders (i.e., people who only participated at Time 1 regardless of whether there were invited to participate in the Time 2 survey or not) on the two predictor variables identity leadership and PSNI at Time 1 as well as descriptive variables (i.e., age, gender, children and job status). The t- and χ^{2}-statistics and respective results are presented in Table S1 and Table S2. The results show that in the US, responders were significantly older than non-responders. In Germany and in the US, responders were also more likely to have children than non-responders. In China, responders were more likely to be employed than non-responders. Finally, responders reported more perceived shared national identification than non-responders in the US. All other test results indicated no differences between responders and non-responders.

Table S1. Mean comparisons between second and first-time only responders at Time 1 on the variables age, identity leadership and perceived shared national identification.

	Age	T	*df*	*p**	Identity leadership	T	*df*	*p**	Perceived shared national identification	T	*df*	*p**
China	*M* (*SD*)				*M* (*SD*)				*M* (*SD*)			
N_r †= 548	30.38 (5.97)	-.99	761	0.324	6.43 (.77)	1.47	761	0.142	4.44 (.52)	1.43	761	0.154
N_{nr}‡ = 215	29.90 (6.37)				6.52 (.79)				4.50 (.50)			
Germany												
N_r = 182	34.94 (13.65)	-1.82	252.89	0.070	5.31 (1.20)	-1.25	958	0.213	3.84 (.62)	-.15	958	0.883
N_{nr} = 778	32.93 (12.20)				5.17 (1.32)				3.83 (.70)			
Israel												
N_r = 198	40.76 (11.41)	.87	245	0.384	3.53 (1.89)	1.29	245	0.20	3.45 (.85)	1.40	245	0.164
N_{nr} = 49	42.33 (10.65)				3.91 (1.71)				3.64 (.81)			
USA												
N_r = 108	44.51 (10.66)	-3.62	312	< .001	2.44 (1.96)	-.522	201.60	0.603	3.88 (.83)	-2.34	312	0.020
N_{nr} = 206	39.92 (10.65)				2.32 (1.80)				3.66 (.81)			

Note. *M* = Mean; *SD* = standard deviation.

**p*-values were calculated with a t-test for independent samples.

† N_r = responders.

‡ N_{nr} = non-responders.

Table S2. Mean comparisons between second and first-time only responders at Time 1 on the variables gender, job status and parenthood.

	Gender†			*p value**	Job status		*p value**	Parenthood		*p value**
	female	male	diverse		employed	unemployed		yes	no	
China										
Time 1 only responders	157	57	1	.082	156	59	.005	90	125	.693
Time 1 and Time 2 responders	365	181	2		448	100		238	310	
Germany										
Time 1 only responders	604	168	6	.949	531	247	.328	207	571	.031
Time 1 and Time 2 responders	142	40	0		131	51		63	119	
Israel										
Time 1 only responders	18	31	0	.073	43	6	.287	40	9	.055
Time 1 and Time 2 responders	101	97	0		161	37		134	64	
USA										
Time 1 only responders	98	106	2	.083	177	29	.541	73	133	.029
Time 1 and Time 2 responders	63	45	0		90	18		52	56	

**p*-values were calculated with Pearson's chi-square test.

† People who responded 'diverse' were excluded from the Pearson's chi-square analysis.

Response rate and systematic nonresponse parameter

The country-specific response rates and systematic nonresponse parameters (SNP) are presented in Table S3. The response rates provided here are based on participants who were invited at Time 2 and matched successfully with their Time 1 data.

Systematic nonresponse parameters (SNP) are defined as standardized mean differences between responders and non-responders[2] (d_{miss}). Thus, d_{miss} is small (close to zero) when the mean values of responders and non-responders hardly differ and is indicative for missingness being completely at random. In such a scenario, listwise deletion does not result in biased parameter estimation.

The results show that the systematic nonresponse parameters in all countries on identity leadership and PSNI range from d_{miss} = -.27 – .23. These values are similar to previous reported values for SNPs and indicate no extraordinary biases due to person-level missingness.[1]

Table S3. Dropout- and response rates and nonresponse parameters calculated for identity leadership and perceived shared national identification measured at Time 1.

	Participants invited at Time 2	People who participated at Time 2†	Response rate††	Identity Leadership (Time 1)			Perceived shared national identification (Time 1)		
			(%)	R *M* (*SD*)	NR *M*(*SD*)	d_{miss}§	R *M* (*SD*)	NR *M*(*SD*)	d_{miss}
China	548‡	548	100.00	6.43 (0.77)	--	--	4.44 (.52)	--	--
Germany	682	182	26.69	5.31 (1.20)	5.26 (1.23)	-0.04	3.84 (0.62)	3.85 (0.67)	0.02
Israel	247	198	80.16	3.53 (1.98)	3.91 (1.71)	0.20	3.45 (0.85)	3.64 (0.81)	0.23
USA	293	108	36.99	2.44 (1.96)	2.32 (1.79)	-0.06	3.88 (0.83)	3.66 (0.83)	-0.27

Note. *M* = Mean; *SD* = standard deviation. R = responders (people who participated at Time 2); NR = non-responders (people who were invited but did not respond).

‡We invited 550 people at Time 2, but had to exclude two minors from this study.

† Participants who fulfilled all inclusion criteria and could be matched.

†† (Participants invited at Time 2/participants who participated at Time 2)*100.

§ *dmiss* is the standardized respondent/non-respondent mean difference of a variable (*dmiss* is not provided for China as the response rate is 100%).

References

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