Supplementary material
Model specification

Let Y_{ij} denote the binary indicator which is one when participant *i* in wave *j* is willing to accept the vaccine and zero otherwise.

The multivariate analysis models estimates the probability to accept the vaccine with a generalized additive model (GAM), which is specified as

$$logit\left(P(Y_{ij} = 1)\right) = \alpha_j + \boldsymbol{\beta_j} \cdot \boldsymbol{x_{ij}} + f_j(lon_{ij}, lat_{ij}),$$

where $\boldsymbol{\alpha}$ is a vector of wave specific parameters, $\boldsymbol{x_{ij}}$ is the observed covariate vector for participant *i* in wave *j* with associated parameter vector $\boldsymbol{\beta_j}$ and f_j is a smooth two-dimensional function capturing the effect of longitude and latitude in wave *j*.

In this model every parameter interacts with time via the wave indicator j. Starting from the full model, covariates and parameter interactions were selected via backward selection via the Bayesian information criterion (BIC) to arrive at the final model.

For the multivariate analyses in Table 2, we model the vaccine acceptance probability with a generalized linear model (GLM) against a single behaviour related covariate and the basic confounders (time, age, gender and education), i.e.

$$logit\left(P(Y_{ij} = 1)\right) = \boldsymbol{\gamma} \cdot \mathbf{b_{ij}} + \boldsymbol{\beta} \cdot \boldsymbol{z_{ij}},$$

where $\mathbf{b_{ij}}$ is an indicator vector containing the observed response of participant *i* in wave *j* on the behaviour related question, $\boldsymbol{\gamma}$ is the associated parameter vector and $\boldsymbol{\beta} \cdot \boldsymbol{z_{ij}}$ is the estimated effect for the confounding variables.

Full model specification behaviour related outcomes

Table S.1: Association installation Coronalert app and vaccine willingness.

	participants (%)	vaccine willingness % unweighted/weighted	vaccine willingness OR (95% CI)
Participation date			
November 03	22,953 (33.9)	81.8/83.1	REF
November 17	23,902 (35.3)	82.1/83.1	1.00 (0.95-1.05)
December 01	20,813 (30.8)	81.0/81.7	0.88 (0.84-0.93)
Age			
18-30	6,455 (9.5)	77.4/79.2	REF
31-50	21,574 (31.9)	75.8/77.2	0.92 (0.87-0.97)
51-70	34,248 (50.6)	84.6/85.7	2.00 (1.88-2.13)
71+	5,391 (8.0)	91.3/90.9	3.85 (3.55-4.17)
Gender			
Female	46,057 (68.1)	78.8/79.3	REF
Male	21,611 (31.9)	87.8/86.1	1.69 (1.62-1.76)
Educational attainment			
Primary education	815 (1.2)	76.4/76.2	0.45 (0.38-0.53)
Secondary education	18,238 (27.0)	78.1/78.8	0.61 (0.58-0.64)
Higher education	46,453 (68.6)	82.7/83.6	REF
PhD	2,162 (3.2)	90.5/90.9	1.96 (1.71-2.24)
Installation Coronalert app			
Installed	41,057 (60.7)	87.7/88.6	REF
Not installed	26,611 (39.3)	72.4/73.2	0.33 (0.32-0.35)

Table S.2: Association physical contact outside household and vaccine willingness.

	participants (%)	vaccine willingness % unweighted/weighted	vaccine willingness OR (95% CI)
Participation date			
July 14	24,756 (10.7)	89.2/89.9	REF
July 28	32,219 (13.9)	89.3/90.0	1.00 (0.94-1.06)
August 25	22,788 (9.9)	80.7/82.6	0.50 (0.48-0.53)
September 08	20,490 (8.9)	78.1/80.7	0.43 (0.41-0.46)
September 22	17,722 (7.7)	77.7/80.2	0.43 (0.41-0.45)
November 03	22,953 (9.9)	81.8/83.1	0.50 (0.47-0.53)
November 17	23,902 (10.3)	82.1/83.1	0.51 (0.48-0.53)
December 01	20,813 (9.0)	81.0/81.7	0.46 (0.44-0.49)
December 15	19,953 (8.6)	83.1/83.9	0.54 (0.51-0.57)
December 29	25,383 (11.0)	85.1/85.9	0.64 (0.61-0.68)
Age			
18-30	21,762 (9.4)	81.7/82.4	REF
31-50	77,798 (33.7)	78.4/79.0	0.79 (0.77-0.82)
51-70	113,766 (49.3)	85.7/86.5	1.52 (1.47-1.58)
71+	17,653 (7.6)	91.8/91.2	2.52 (2.41-2.64)
Gender			
Female	159,449 (69.0)	80.9/81.0	REF
Male	71,530 (31.0)	88.8/87.3	1.70 (1.66-1.74)
Educational attainment			
Primary education	2,870 (1.2)	79.8/80.7	0.46 (0.42-0.51)
Secondary education	62,423 (27.0)	80.2/80.8	0.59 (0.58-0.61)
Higher education	158,370 (68.6)	84.3/85.0	REF
PhD	7,316 (3.2)	90.7/91.3	1.82 (1.69-1.96)
Physical contact outside household last week			
Yes	50,888 (22.0)	78.7/79.1	0.66 (0.64-0.68)
No	180,091 (78.0)	84.6/85.6	REF

Table S.3: Association government trust and vaccine willingness.

	participants (%)	vaccine willingness % unweighted/weighted	vaccine willingness OR (95% CI)
Participation date			
August 25	22,750 (53.3)	80.7/82.7	REF
December 15	19,934 (46.7)	83.1/83.9	0.80 (0.76-0.85)
Age			
18-30	3,495 (8.2)	80.4/82.1	REF
31-50	14,145 (33.1)	75.8/77.7	0.81 (0.75-0.87)
51-70	21,647 (50.7)	84.5/85.9	1.43 (1.32-1.54)
71+	3,397 (8.0)	91.0/90.2	1.97 (1.79-2.18)
Gender			
Female	29,378 (68.8)	79.0/79.7	REF
Male	13,306 (31.2)	88.2/87.0	2.15 (2.04-2.27)
Educational attainment			
Primary education	535 (1.3)	77.0/81.1	0.49 (0.39-0.61)
Secondary education	11,730 (27.5)	78.5/79.8	0.67 (0.63-0.71)
Higher education	29,040 (68.0)	82.9/84.1	REF
PhD	1,379 (3.2)	90.1/91.4	1.97 (1.67-2.33)
Government trust			
7 Trust completely	2,529 (5.9)	93.8/94.5	REF
6	8,038 (18.8)	90.8/91.5	0.67 (0.56-0.80)
5	8,972 (21.0)	87.6/88.8	0.51 (0.43-0.61)
4	7,574 (17.7)	82.3/84.4	0.36 (0.30-0.43)
3	5,457 (12.8)	77.9/79.8	0.25 (0.21-0.30)
2	4,776 (11.2)	73.3/74.5	0.17 (0.15-0.21)
1 Do not trust at all	4,617 (10.8)	62.1/64.5	0.10 (0.08-0.12)
No opinion	721 (1.7)	75.3/78.4	0.28 (0.22-0.35)

Table S.4: Association mental well-being and vaccine willingness

	participants (%)	vaccine willingness % unweighted/weighted	vaccine willingness OR (95% CI)
Participation date			
July 14	24,756 (10.7)	89.2/89.9	REF
July 28	32,219 (13.9)	89.3/90.0	1.05 (0.99-1.12)
August 25	22,788 (9.9)	80.7/82.6	0.53 (0.50-0.56)
September 08	20,490 (8.9)	78.1/80.7	0.46 (0.43-0.48)
September 22	17,722 (7.7)	77.7/80.2	0.45 (0.43-0.47)
November 03	22,953 (9.9)	81.8/83.1	0.56 (0.53-0.60)
November 17	23,902 (10.3)	82.1/83.1	0.57 (0.54-0.60)
December 01	20,813 (9.0)	81.0/81.7	0.51 (0.48-0.54)
December 15	19,953 (8.6)	83.1/83.9	0.60 (0.57-0.64)
December 29	25,383 (11.0)	85.1/85.9	0.69 (0.65-0.73)
Age			
18-30	21,762 (9.4)	81.7/82.4	REF
31-50	77,798 (33.7)	78.4/79.0	0.83 (0.81-0.86)
51-70	113,766 (49.3)	85.7/86.5	1.58 (1.52-1.63)
71+	17,653 (7.6)	91.8/91.2	2.66 (2.55-2.79)
Gender			
Female	159,449 (69.0)	80.9/81.0	REF
Male	71,530 (31.0)	88.8/87.3	1.70 (1.66-1.74)
Educational attainment			
Primary education	2,870 (1.2)	79.8/80.7	0.47 (0.43-0.52)
Secondary education	62,423 (27.0)	80.2/80.8	0.59 (0.58-0.61)
Higher education	158,370 (68.6)	84.3/85.0	REF
PhD	7,316 (3.2)	90.7/91.3	1.85 (1.71-1.99)
GHQ-12: Mental well-being score			
0	112,953 (48.9)	85.0/85.7	REF
1-4	59,501 (25.8)	83.9/84.6	0.97 (0.94-1.00)
5-8	28,609 (12.4)	81.6/82.6	0.88 (0.85-0.91)
9-12	29,916 (13.0)	77.5/78.8	0.70 (0.68-0.73)

Table S.5: Association vaccinate willingness child and vaccination willingness

	participants (%)	vaccine willingness % unweighted/weighted	vaccine willingness OR (95% CI)
Participation date			
July 14	5,795 (14.7)	86.7/87.4	REF
July 28	8,089 (20.5)	87.7/87.3	0.97 (0.81-1.16)
November 03	5,145 (13.0)	76.8/77.9	0.66 (0.56-0.78)
November 17	5,391 (13.7)	76.7/77.5	0.64 (0.54-0.76)
December 01	4,483 (11.4)	74.8/75.9	0.63 (0.53-0.74)
December 15	4,344 (11.0)	77.7/78.9	0.91 (0.77-1.08)
December 29	6,227 (15.8)	80.5/81.2	0.72 (0.61-0.86)
Age			
18-30	1,353 (3.4)	76.7/77.1	REF
31-50	33,293 (84.3)	80.7/80.8	0.92 (0.78-1.09)
51-70	4,744 (12.0)	83.5/83.5	0.86 (0.68-1.07)
71+	84 (0.2)	91.7/92.6	0.83 (0.37-1.86)
Gender			
Female	30,522 (77.3)	79.6/78.0	REF
Male	8,952 (22.7)	85.7/84.4	1.25 (1.15-1.37)
Educational attainment			
Primary education	189 (0.5)	68.3/65.6	0.24 (0.13-0.43)
Secondary education	6,927 (17.5)	73.2/73.5	0.54 (0.48-0.60)
Higher education	30,706 (77.8)	82.3/82.3	REF
PhD	1,652 (4.2)	89.2/89.0	1.34 (1.06-1.71)
Vaccine willingness child			
Willing	30,607 (77.5)	97.4/97.5	REF
Not willing	8,867 (22.5)	24.1/23.9	0.01 (0.01-0.01)