Appendix A: Timeline of main events and containment measures for the outbreak of the pandemic in Israel

Date	Event/ Measure
January	
1.23	Preliminary instructions regarding COVID-19 infections – symptoms, isolation (home confinement), treatment.
1.30	Restrictions on incoming flights from China
February	
2.19	Restrictions on incoming flights from other countries (Hong-Kong, Thailand, Macau, Singapore)
2.27	First verified case of COVID-19 in Israel
March	
3.2	General Elections in Israel
3.4	Home confinement for all incoming passengers from France, Austria, Germany, Switzerland, and Spain – and restrictions on incoming flights from these countries. Limitations on passengers returning from abroad. Restrictions on events of more than 5,000 people
3.9	Home confinement for all returning passengers.
3.10	Restrictions on events of more than 2,000 people.
3.11	Restrictions on events of more than 100 participants. General recommendations to limit social gatherings, remote work, and employing hygiene means.
3.10-11	Purim – Jewish religious holiday usually celebrated with large crowd gatherings in synagogues and street festivals.
3.12	Shutdown of public and private education
3.14	Restrictions on the usage of Mikveh for males.
3.16	Lockdowns in hotspots of infections.
3.17	Arab religious personnel voluntarily close all places of worship.
3.19	General restrictions on movement (permitting only work, food supply, medication and medical aid, religious ceremonies, and sports)
3.25	General restrictions on movement – limited to a radius of 100 meter from households.
3.31	Restrictions on places of religious worship for Jews. Recommendation to use personal masks.
April	
4.8	Passover – Jewish religious holiday usually celebrated in large family gatherings. Due to the high-risk of infections (especially for elderly vulnerable populations) a county-wide curfew was set restricting movement in cities to a 100-meter radius, and highly limited mobility between cities.
4.12	Personal masks compulsory.
4.19	Relief measures – allowing limited commerce (tav sagol), limited participation in worship for Jews, individual physical activity in a radius of 500 meters from the household.
4.26	Relief measures – allowing less limited commerce,
4.30	Relief measures – no limitations on individual physical activity,
May	
Early May	Further relief measures – including public and private education, relief on 100-meter limitations, limited public transportation
5.10	Public events limited to 50 people

Appendix B: Regression models of COVID-19 infection rates and other types of densities

The analyses in the body of the paper are based on *Dwelling Density* which is the most restrictive density measure. As specified in our Data and Methods section, we have also generated and tested 3 other population density measures: *Municipal Density* (Table 2B), *Density for a lax lockdown* (Table 3B), and *Density for stringent lockdown* (Table 4B). Analyses suggest similar conclusions to those elaborated above. In each of these tables, we use multivariate models:

- Model 1 specifies new cases per 100,000 in the last 14 days as the outcome variable for all cases.
- Model 2 specifies new cases per 100,000 in the last 14 days as the outcome variable only for cities with population over 20,000.
- Model 3 specifies new cases per 100,000 in the last 14 days as the outcome variable and compliance at t-21 for all cases.
- Model 4 specifies new cases per 100,000 in the last 14 days as the outcome variable and compliance at t-21 only for cities with population over 20,000.

Lastly, we have also tested correlations between *household density* and rates of COVID-19 infections (Table 5B) following the same models; we did not find any statistically significant effect.[1] Table 1B shows the Pearson correlation between these different density measures.

[1] Data on average people per household at the municipal level is based on the Israeli Central Bureau of Statistics most updated local authority report. See n. 6 above. We supplemented lacking data from the Israeli Central Bureau of Statistics 2008 census. https://www.cbs.gov.il/en/subjects/Pages/The-2008-Census-of-Population.aspx

Table 1B Correlations between density variables

	Density #1 (municipal)	Density #2 (lax lockdown)	Density #3 (stringent lockdown)	Density #4 (dwelling)	Density #5 (people per household)
Density #1 (municipal)	1.00				
Density #2 (lax lockdown)	0.77	1.00			
Density #3 (stringent lockdown)	0.77	0.99	1.00		
Density #4 (dwelling)	0.77	0.99	0.99	1.00	
Density #5 (people per household)	-0.03	0.05	0.08	0.07	1.00

Table 2B:
Municipality Density

Variables	Model 2B.1	Model 2B.2	Model 2B.3	Model 2B.4
Compliance at t-21	-	-	-144.94 **	-153.75 **
			(48.35)	(49.04)
Municipal Density	.0005	.0008	.0007	.0006
	(.0006)	(.0006)	(.0009)	.009
Arab	-14.08 **	-21.42 **	-25.16	-28.09
	(5.00)	(6.85)	(9.82)	(9.98)
Mixed	-1.58	-1.85	-6.33	-8.26
	(8.79)	(6.99)	(9.43)	(9.53)
Bedouin	-3.09	8.84	-28.76	-32.93
	(11.08)	(12.59)	(26.61)	(26.83)
Ultra-Orthodox	16.71	-8.53	3.25	-.06
	(14.79)	(18.15)	(24.87)	(25.05)
Ultra-Orthodox	.005 ***	0.006 ***	.009 ***	.01 ***
*Density	(.001)	(0.001)	(.001)	(.001)
Socioeconomic	-4.85	-7.46	5.94	5.71
scale	(2.53)	(3.35)	(7.1)	(17.08)
Constant	18.29 ***	17.58 ***	187.54	199.1
	(3.84)	(4.16)	(51.12)	(51.92)
	N = 1,351	N = 623	N = 304	N = 296
	F (10, 1340) = 20.50	F (10, 612) = 29.26	F (11, 292) = 32.60	F (11, 284) = 32.39
	Prob > F = .0	Prob > F = .0	Prob > F = .0	Prob > F = .0
	R^2 = .13	R^2 = .32	R^2 = .55	R^2 = .56

* < .05; ** < .01; *** < .001 (one tailed tests)
- Time fixed effects are not reported
- Standard error in parentheses

Table 3B:
Density for Lax Lockdown

Variables	Model 3B.1	Model 3B.2	Model 3B.3	Model 3B.4
Compliance at t-21	-	-	-156.25 **	-164.67 ***
			(49.39)	(50.14)
Density	.0002	.0005	.0007	.0004
	(.0003)	(.0005)	(.0007)	(.0007)
Arab	-13.23	-19.26	-21.77	-25.38
	(5.28)	(7.22)	(10.36)	(10.6)
Mixed	-1.18	-1.24	-6.1	-7.82
	(8.8)	(7.04)	(9.63)	(9.73)
Bedouin	-.95	13.11	-24.34	-28.84
	(11.52)	(13.01)	(27.13)	(27.39)
Ultra-Orthodox	7.44	-106.5 **	-156.72 **	-162.23 **
	(19.96)	(37.24)	(51.03)	51.42
Ultra-Orthodox	.002 ***	0.006 ***	.009 ***	.009 ***
*Density	(.0007)	(.001)	(.002)	(.002)
Socioeconomic	-4.08	-6.07	8.8	8.53
scale	(2.62)	(3.33)	(7.1)	(7.17)
Constant	17.1 ***	14.67 ***	193.32 ***	206.94 ***
	(5.2)	(7.15)	(52.83)	(53.86)
	N = 1,351	N = 623	N = 304	N = 296
	F (10, 1340) = 19.01	F (10, 612) = 27.45	F (11, 292) = 30.04	F (11, 284) = 29.76
	Prob > F = .0	Prob > F = .0	Prob > F = .0	Prob > F = .0
	R^2 = .12	R^2 = .30	R^2 = .53	R^2 = .52

* < .05; ** < .01; *** < .001 (one tailed tests)
- Time fixed effects are not reported
- Standard error in parentheses

Table 4B:
Density for Stringent Lockdown

Variables	Model 4B.1	Model 4B.2	Model 4B.3	Model 4B.4
Compliance at t-21	-	-	-157.89 **	-166.38
			(49.21)	(49.95)
Density	.0002	.0004	.0006	.0003
	(.0003)	(.0005)	(.0007)	(.0007)
Arab	-12.96	-18.92	-21.34	-25.2
	(5.37)	(7.33)	(10.49)	(10.75)
Mixed	-1.22	-1.26	-6.12	-7.82
	(8.8)	(7.04)	(9.59)	(9.69)
Bedouin	-.60	13.49	-23.63	-28.42
	(11.59)	(13.09)	(27.06)	(27.34)
Ultra-Orthodox	8.41	-106.8 **	-154.34 **	-160.18 ***
	(19.58)	(36.21)	(49.53)	(49.92)
Ultra-Orthodox	.002 ***	.004 ***	.006 ***	.007 ***
*Density	(.0006)	(.0009)	(.001)	(.001)
Socioeconomic	-4.02	-6.01	9.06	8.78
scale	(2.63)	(3.32)	(7.08)	(7.15)
Constant	16.9 ***	14.6	195.26 ***	209.2 ***
	(5.26)	(7.32)	(52.72)	(53.76)
	N = 1,351	N = 623	N = 304	N = 296
	F (10, 1340) = 19.10	F (10, 612) = 27.77	F (11, 292) = 30.45	F (11, 284) = 30.18
	Prob > F = .0	Prob > F = .0	Prob > F = .0	Prob > F = .0
	R^2 = .12	R^2 = .31	R^2 = .53	R^2 = .54

* < .05; ** < .01; *** < .001 (one tailed tests)
- Time dummies are not reported
- Standard error in parentheses

Table 5B:
Average Household Density

Variables	Model 5B.1	Model 5B.2	Model 5B.3	Model 5B.4
Compliance at t-21	-	-	-128.4 *	-139.68 **
			(53.11)	(53.95)
Density	3.93	1.11	-.26	.27
	(2.68)	(3.39)	(6.1)	(6.14)
Arab	-16.79 ***	.23.61 ***	-31.29 **	-35.42 **
	(4.79)	(7.09)	(11.13)	(11.37)
Mixed	1.11	-1.54	-7.65	-10.3
	(7.46)	(6.74)	(10.08)	(10.21)
Bedouin	-24.37 *	-23.51	-37.25	-44.89
	(11.88)	(16.36)	(34.16)	(34.53)
Ultra-Orthodox	162.36 ***	422.46 ***	630.79 ***	629..85 ***
	(33.81)	(57.14)	(86.15)	(86.56)
Ultra-Orthodox	-17.18 *	-63.39 ***	-90.4 ***	-91.25 ***
*Density	(7.03)	(10.91)	(16.63)	(16.72)
Socioeconomic	-3.65	-8.43	.64	.07 **
scale	(2.44)	(3.39)	(7.89)	(7.96)
Constant	7.47	17.69	175.6 **	188.13 ***
	(9.57)	(11.42)	(57.05)	(57.89)
	N = 1,155	N = 581	N = 292	N = 284
	F (10 ,1144) = 26.88	F (10, 570) = 30.40	F (11, 280) = 26.90	F (11, 272) = 26.80
	Prob > F = .0	Prob > F = .0	Prob > F = .0	Prob > F = .0
	R^2 = .19	R^2 = .34	R^2 = .51	R^2 = .52

* < .05; ** < .01; *** < .001 (one tailed tests)
- Time fixed effects are not reported
- Standard error in parentheses

Appendix C: all interactions included (only Ultra-Orthodox interaction is statistically significant)

- Model 1C.1 specifies new cases per 100,000 in the last 14 days as the outcome variable and compliance at t-21 in for all cases.
- Model 1C.2 specifies new cases per 100,000 in the last 14 days as the outcome variable and compliance at t-21 only for cities with population over 20,000.

Table 1C:
All Contingent Effects

Variables	Model 1C.1	Model 1C.2
Compliance at t-21	-154.09**	-163.44***
	(48.5)	(49.23)
Density	-0.00008	-0.0003
	(0.0007)	(0.0007)
Arab	-48.06	-54.23
	(38.59)	(38.93)
Mixed	-26.37	-32.3
	(40.23)	(40.57)
Bedouin	Omitted	Omitted
	(collinearity)	(collinearity)
Ultra-Orthodox	-166.23***	-172.19***
	(26.59)	(46.94)
Arab *Density	0.002	0.002
	(0.003)	(0.003)
Mixed *Density	0.0004	0.0008
	(0.003)	(0.003)
Bedouin *Density	-0.003	-0.003
	(0.002)	(0.002)
Ultra-Orthodox	0.007***	0.007***
*Density	(0.001)	(0.001)
Socioeconomic	9.82	9.61
scale	(7.19)	(7.27)
Population	0.00006*	0.00006*
	(0.00003)	(0.00003)
% over 60	-0.85	-0.84
	(0.79)	(0.79)
Constant	212.46***	227.39***
	(53.77)	(54.84)
	N = 304	N = 296
	F (15, 288) = 24.05	F (15 , 280) = 23.87
	Prob > F = .0	Prob > F = .0
	R^2 = .56	R^2 = .56

* < .05; ** < .01; *** < .001 (one tailed tests)
- Time fixed effects are not reported
- Standard error in parentheses

Appendix D: Regression models of COVID-19 infection rates and Compliance at t-28

Table 1D:
Political Urban Attributes and Compliance at t-28

Variables	Model 1D.1	Model 1D.2
Compliance at t-28	-150.06 **	-157.32**
	(52.03)	(53.07)
Density	.0003	.0002
	(.0006)	(.0006)
Arab	-10.93	-13.67
	(10.37)	(10.67)
Mixed	-3.07	-4.24
	(9.51)	(9.63)
Bedouin	-12.57	-16.07
	(26.67)	(27.02)
Ultra-Orthodox	-90.92 *	-94.68*
	(45.64)	(46.09)
Ultra-Orthodox * Density	.005 ***	.005***
	(.001)	(.001)
Socioeconomic scale	12.31	12.36
	(7.93)	(8.03)
Constant	198.84 **	211.86**
	(73.36)	(75.17)
	N = 304	N = 296
	F (11, 292) = 27.43	F (11, 284) = 27.11
	Prob > F = .0	Prob > F = .0
	R^2 = .51	R^2 = .51

* < .05; ** < .01; *** < .001 (one tailed tests)
- Time fixed effects are not reported
- Standard error in parentheses