

Appendix Table 1. Rate ratios (and 95% credible intervals) of suicide among the Japanese population associated with one standard deviation increase in levels of each of the areas' socioeconomic characteristics.

	Unadjusted		Adjusted for all other variables	
Social fragmentation	1.03	(1.02, 1.04)	1.03	(1.02, 1.04)
Socioeconomic deprivation	1.06	(1.05, 1.07)	1.05	(1.04, 1.06)
Urbanicity	0.92	(0.90, 0.93)	0.90	(0.89, 0.91)

Appendix Table 2. Rate ratios (and 95% credible intervals) of suicide in Japanese men and women aged 0-39, 40-59, 60+ years associated with one standard deviation increase in levels of each areas' socioeconomic characteristics after adjustment for all other variables.

	Males aged 0-39		Females aged 0-39	
Social fragmentation	1.06	(1.04, 1.07)	1.12	(1.10, 1.15)
Socioeconomic deprivation	1.01	(1.00, 1.03)	1.00	(0.97, 1.02)
Urbanicity	0.89	(0.87, 0.91)	1.03	(0.99, 1.06)
	Males aged 40-59		Females aged 40-59	
Social fragmentation	1.03	(1.02, 1.04)	1.06	(1.04, 1.08)
Socioeconomic deprivation	1.09	(1.08, 1.11)	1.06	(1.04, 1.08)
Urbanicity	0.86	(0.84, 0.87)	1.01	(0.99, 1.04)
	Males aged 60 +		Females aged 60+	
Social fragmentation	1.00	(0.98, 1.02)	0.98	(0.96, 1.00)
Socioeconomic deprivation	1.11	(1.09, 1.13)	1.01	(0.99, 1.03)
Urbanicity	0.88	(0.86, 0.90)	0.93	(0.91, 0.96)

Appendix Table 3. Results’ summary of the negative binomial regression analysis considering interaction terms between socioeconomic characteristics (fragmentation, deprivation, and urbanicity) and gender or age.

	Model without interaction terms			Model with interaction term between gender and fragmentation			Model with interaction term between age and fragmentation			Model with interaction term between gender and deprivation			Model with interaction term between age and deprivation			Model with interaction term between gender and urbanity			Model with interaction term between age and urbanity		
	IRR	95%CI	p value	IRR	95%CI	p value	IRR	95%CI	p value	IRR	95%CI	p value	IRR	95%CI	p value	IRR	95%CI	p value	IRR	95%CI	p value
Females (ref. males)	0.98	(0.96, 0.99)	<0.001	0.96	(0.95, 0.97)	<0.001	0.98	(0.96, 0.99)	<0.001	0.98	(0.97, 0.99)	0.001	0.98	(0.96, 0.99)	<0.001	0.91	(0.90, 0.93)	<0.001	0.98	(0.96, 0.99)	<0.001
Age (ref. 0-39y)																					
40-59y	1.01	(1.00, 1.03)	0.119	1.01	(1.00, 1.03)	0.119	1.02	(1.00, 1.04)	0.013	1.01	(1.00, 1.03)	0.128	1.01	(0.99, 1.02)	0.268	1.01	(1.00, 1.03)	0.154	1.04	(1.02, 1.06)	<0.001
60+y	1.01	(1.00, 1.03)	0.075	1.01	(1.00, 1.03)	0.054	1.04	(1.02, 1.05)	<0.001	1.01	(1.00, 1.03)	0.087	1.01	(1.00, 1.03)	0.116	1.02	(1.00, 1.03)	0.044	1.06	(1.04, 1.08)	<0.001
Social fragmenation	1.04	(1.03, 1.05)	<0.001	1.02	(1.01, 1.03)	<0.001	1.07	(1.06, 1.09)	<0.001	1.04	(1.03, 1.05)	<0.001	1.04	(1.03, 1.05)	<0.001	1.04	(1.03, 1.05)	<0.001	1.04	(1.03, 1.05)	<0.001
Interaction with gender				1.05	(1.03, 1.06)	<0.001															
Interaction with age																					
40-59y								0.98	(0.97, 1.00)	0.021											
60+y								0.93	(0.92, 0.95)	<0.001											
Socioeconomic deprivation	1.05	(1.04, 1.06)	<0.001	1.05	(1.05, 1.06)	<0.001	1.05	(1.05, 1.06)	<0.001	1.07	(1.06, 1.07)	<0.001	1.03	(1.01, 1.04)	<0.001						
Interaction with gender										0.96	(0.95, 0.98)	<0.001									
Interaction with age																					
40-59y													1.05	(1.03, 1.07)	<0.001						
60+y													1.02	(1.01, 1.04)	0.002						
Urbanicity	0.90	(0.89, 0.91)	<0.001	0.90	(0.89, 0.91)	<0.001	0.90	(0.89, 0.91)	<0.001	0.90	(0.89, 0.91)	<0.001	0.90	(0.89, 0.91)	<0.001	0.86	(0.85, 0.87)	<0.001	0.94	(0.93, 0.96)	<0.001
Interaction with gender																1.12	(1.10, 1.13)	<0.001			
Interaction with age																					
40-59y																			0.96	(0.94, 0.97)	<0.001
60+y																			0.93	(0.91, 0.94)	<0.001

Appendix Table 4. Number and rates of suicide in 2009 and 2017, changes in the number and rates of suicide between 2009 and 2017 among the Japanese population according to gender and age.

	2009		2017		Change			
	Number	Rate ^a	Number	Rate ^a	Number ^b	% ^c	Rate ^{a,b}	% ^c
Men								
All ages	22712	36.6	14525	23.3	-8187	-36.0%	-13.3	-36.3%
< 20 years	356	3.0	395	3.5	39	11.0%	0.5	16.3%
20-29 years	2369	32.1	1580	23.8	-789	-33.3%	-8.3	-26.0%
30-39 years	3377	35.5	1968	24.6	-1409	-41.7%	-10.9	-30.7%
40-49 years	3903	47.5	2637	27.0	-1266	-32.4%	-20.6	-43.3%
50-59 years	4960	57.7	2545	32.8	-2415	-48.7%	-24.8	-43.1%
60-69 years	4169	49.7	2269	25.5	-1900	-45.6%	-24.2	-48.7%
70-79 years	2283	40.8	1815	28.7	-468	-20.5%	-12.1	-29.6%
> 80 years	1295	51.7	1316	36.4	21	1.6%	-15.3	-29.5%
Women								
All ages	9257	14.2	6443	9.8	-2814	-30.4%	-4.4	-30.7%
< 20 years	205	1.8	169	1.6	-36	-17.6%	-0.2	-13.1%
20-29 years	1041	14.7	603	9.6	-438	-42.1%	-5.1	-35.0%
30-39 years	1322	14.5	689	8.9	-633	-47.9%	-5.5	-38.1%
40-49 years	1225	15.3	965	10.2	-260	-21.2%	-5.1	-33.6%
50-59 years	1362	15.8	993	12.9	-369	-27.1%	-2.9	-18.3%
60-69 years	1649	18.4	1012	10.9	-637	-38.6%	-7.6	-41.1%
70-79 years	1353	19.5	1080	14.3	-273	-20.2%	-5.2	-26.5%
> 80 years	1100	21.8	932	14.1	-168	-15.3%	-7.7	-35.5%

^a: Suicides per 100,000 population.^b: Differences between the values of 2017 and 2009.^c: Percentages of the differences between the 2017 and 2009 values in the 2009 values