

## **Supplemental Data List**

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**Supplementary Table S1:**

Feature of regional governmental expenditures

<b>Division/Subdivision</b>	<b>Subject/Content</b>
<b>public health</b>	public health expenditure of prefecture/municipality comprises support for or the improvement of medical care, mental health and collecting/disposing of general waste, to maintain and improve public health and the regional environment.
<b>public works</b>	public works expenditure of prefecture/municipality comprises constructing new public facilities and the improvement of existing ones, including roads, bridges, parks and sewers.
<b>police</b>	police expenditure comprises salaries of police officers, police construction, projects and traffic signals, to carry out police administration to prevent crime, ensure traffic safety, maintain the safety and order of regional communities, and protect the lives and property of individuals.
<b>Ambulance/fire</b>	Ambulance/fire services expenditure of municipality comprises salaries of fire-station officers, station construction and fire trucks and ambulances, to protect individuals from disasters for emergency cases and the sudden deterioration of health.
<b>Education</b>	Education expenditure of prefecture/municipality comprises salaries of educational officers, constructing new educational facilities and improving existing educational facilities.
<b>Social</b>	facilities including public halls, libraries and museums
Elementary school	6~12 years old
Junior high school	12~15 years old
Senior high school	15~18 years old
Special school	for the education of special needs individuals: prefecture: 3~18 years old
Kindergarten school	3~6 years old
<b>Welfare</b>	Welfare expenditure of prefecture/municipality comprises mainly social assistance expenditure.
Social	Various support for individuals with disabilities and welfare assistance for unclassifiable subjects.
Elderly	Financial support contributions for health insurance of elderly and long-term care insurance (for individuals 65 years old and over)
Children	Support for caregiver (excluding livelihood welfare recipients) raising child (up to 15 years old): allowance, school lunches and medical expenses subsidy (for individuals younger than 17 years old)
Livelihood	Support for livelihood-protection individuals

**Supplementary Table S2:**

Impacts of financial expenditure ratio (Model-1) and per Capita (Model-2,3,4) of divisions and subdivisions of prefectures and municipalities on suicide mortality of male plus female caused by major six motives.

Factors	Family				Health				Economy				Employment				Romance				School				
	$\beta$	SE	T	p	$\beta$	SE	T	p	$\beta$	SE	T	p	$\beta$	SE	T	p	$\beta$	SE	T	p	$\beta$	SE	T	p	
<b>Model-1</b>																									
public health	-0.47	0.10	-3.70	0.001 **	-0.48	0.29	-4.26	0.000 **	-0.44	0.16	-4.12	0.000 **	-0.35	0.07	-2.68	0.011 *	-0.23	0.03	-2.09	0.043 *	-0.12	0.02	-1.06	0.293	
public works	0.45	0.04	3.02	0.004 **	0.47	0.13	3.10	0.003 **	0.67	0.08	4.18	0.000 **	0.30	0.03	1.86	0.070	0.43	0.02	2.11	0.041 *	0.03	0.01	0.20	0.846	
police	0.03	0.01	0.27	0.792	-0.28	0.02	-3.45	0.001 **	-0.34	0.02	-3.36	0.002 *	-0.07	0.01	-0.63	0.529	-0.28	0.00	-2.72	0.010 **	-0.04	0.00	-0.45	0.658	
Ambulance/fire	-0.40	0.01	-1.18	0.245	-0.04	0.02	-0.10	0.919	0.44	0.02	1.00	0.322	-0.01	0.00	-0.03	0.977	-0.03	0.00	-0.07	0.942	0.32	0.00	0.76	0.452	
Welfare	-0.11	0.01	-2.10	0.042 *	0.01	0.06	0.17	0.863	-0.19	0.06	-1.56	0.127	0.01	0.02	0.11	0.913	0.02	0.01	0.31	0.755	0.13	0.00	1.73	0.091	
Education	0.05	0.05	1.00	0.325	0.01	0.14	0.29	0.773	0.00	0.08	-0.10	0.922	0.05	0.03	0.93	0.356	0.01	0.01	0.22	0.828	0.05	0.01	1.44	0.156	
(VC=0.254, $X^2$ =295.08, p<0.01)				(VC=3.939, $X^2$ =717.00, p<0.01)				(VC=0.465, $X^2$ =249.47, p<0.01)				(VC=0.086, $X^2$ =247.75, p<0.01)				(VC=0.013, $X^2$ =145.99, p<0.01)				(VC=0.004, $X^2$ =134.89, p<0.01)					
<b>Model-2</b>																									
public health	0.10	0.02	3.03	0.004 **	0.00	0.06	-0.05	0.963	-0.09	0.04	-2.70	0.010 *	0.02	0.01	0.51	0.616	-0.03	0.01	-0.63	0.531	0.00	0.00	-0.11	0.912	
public works	0.14	0.02	1.72	0.093	0.05	0.12	0.34	0.732	-0.04	0.12	-0.20	0.843	0.02	0.03	0.10	0.920	-0.09	0.01	-1.07	0.289	-0.13	0.00	-1.60	0.116	
police	-0.43	0.53	-1.83	0.074	-0.22	1.40	-1.10	0.280	0.50	0.89	2.36	0.023 *	-0.56	0.25	-3.11	0.003 **	-0.29	0.16	-1.21	0.235	-0.63	0.10	-2.58	0.014 *	
Ambulance/fire	-0.54	0.16	-5.46	0.000 **	-0.53	0.51	-5.22	0.000 **	-0.82	0.35	-7.01	0.000 **	-0.27	0.12	-2.24	0.030 *	-0.39	0.06	-3.12	0.003 **	0.00	0.03	0.03	0.979	
Welfare	-0.10	0.01	-1.46	0.151	-0.15	0.08	-1.03	0.311	-0.44	0.07	-2.17	0.036 *	-0.10	0.01	-1.48	0.146	-0.14	0.01	-1.29	0.203	0.02	0.00	0.19	0.848	
Education	-0.74	0.11	-3.27	0.002 **	-0.87	0.29	-4.51	0.000 **	-0.75	0.16	-4.30	0.000 **	-0.44	0.06	-2.06	0.046 *	-0.53	0.03	-2.92	0.006 **	-0.10	0.02	-0.47	0.640	
(VC=0.280, $X^2$ =311.69, p<0.01)				(VC=3.872, $X^2$ =527.56, p<0.01)				(VC=0.412, $X^2$ =164.48, p<0.01)				(VC=0.113, $X^2$ =296.60, p<0.01)				(VC=0.012, $X^2$ =134.14, p<0.01)				(VC=0.006, $X^2$ =159.61, p<0.01)					
<b>Model-3</b>																									
public health	0.10	0.02	2.85	0.007 **	0.00	0.06	-0.11	0.910	-0.09	0.04	-2.25	0.031 *	0.02	0.02	0.53	0.601	-0.03	0.01	-0.72	0.475	-0.02	0.01	-0.28	0.778	
public works	0.11	0.02	1.69	0.100	0.00	0.10	0.02	0.986	-0.11	0.10	-0.57	0.574	-0.03	0.02	-0.20	0.843	-0.12	0.01	-1.56	0.126	-0.14	0.00	-1.57	0.125	
police	-0.38	0.53	-1.61	0.116	-0.23	1.34	-1.23	0.228	0.46	0.82	2.35	0.024 *	-0.55	0.25	-3.01	0.005 **	-0.26	0.17	-1.01	0.318	0.09	0.03	1.06	0.296	
Ambulance/fire	-0.54	0.16	-5.62	0.000 *	-0.52	0.46	-5.69	0.000 **	-0.79	0.29	-8.10	0.000 **	-0.23	0.14	-1.65	0.108	-0.33	0.06	-2.71	0.010 *	0.04	0.03	0.37	0.714	
Welfare	-0.08	0.01	-1.38	0.176	-0.11	0.06	-0.95	0.350	-0.37	0.06	-2.19	0.035 *	-0.06	0.01	-1.18	0.244	-0.11	0.00	-1.33	0.190	0.01	0.00	0.11	0.910	
(Education)																									
Social	-0.05	0.20	-0.64	0.526	-0.16	0.49	-2.60	0.013 *	-0.15	0.37	-1.98	0.055	-0.10	0.09	-1.88	0.069	-0.18	0.07	-2.16	0.037 *	-0.13	0.04	-1.37	0.180	
Elementary	-0.19	0.01	-1.30	0.201	-0.28	0.02	-2.46	0.019 *	-0.24	0.02	-1.99	0.055	-0.01	0.01	-0.08	0.936	-0.17	0.00	-1.50	0.143	0.06	0.00	0.50	0.618	
Junior	0.01	0.01	0.07	0.946	0.01	0.04	0.08	0.936	-0.07	0.02	-0.56	0.579	-0.05	0.01	-0.35	0.730	0.08	0.00	0.49	0.625	-0.01	0.00	-0.05	0.960	
High	-0.08	0.01	-0.83	0.409	-0.01	0.02	-0.07	0.943	0.07	0.01	0.85	0.402	0.00	0.00	0.00	0.997	-0.05	0.00	-0.46	0.645	-0.02	0.00	-0.23	0.821	
Special	0.03	0.00	0.27	0.789	0.16	0.00	1.86	0.072	0.26	0.00	2.84	0.007 **	0.17	0.00	1.49	0.146	0.12	0.00	1.11	0.273	-0.09	0.00	-1.03	0.309	
Kindergarten	-0.39</																								

**Supplementary Table S3:**

Impacts of financial expenditure ratio (Model-1) and per Capita (Model-2,3,4) of divisions and subdivisions of prefectures and municipalities on suicide mortality of male caused by major six motives.

Factors	Family				Health				Economy				Employment				Romance				School				
	$\beta$	SE	T	p	$\beta$	SE	T	p	$\beta$	SE	T	p	$\beta$	SE	T	p	$\beta$	SE	T	p	$\beta$	SE	T	p	
<b>Model-1</b>																									
public health	-0.37	0.14	-3.25	0.002 **	-0.38	0.43	-2.97	0.005 **	-0.42	0.31	-3.85	0.000 **	-0.29	0.12	-2.37	0.022 *	-0.04	0.04	-0.29	0.770	-0.26	0.02	-3.04	0.004 *	
public works	0.49	0.06	3.46	0.001 **	0.38	0.20	2.20	0.034 *	0.70	0.16	4.26	0.000 **	0.21	0.05	1.27	0.212	0.64	0.02	3.53	0.001 **	0.08	0.01	0.51	0.615	
police	0.00	0.02	0.04	0.968	-0.31	0.04	-3.53	0.001 **	-0.34	0.04	-3.22	0.002 **	-0.11	0.01	-1.02	0.312	-0.27	0.00	-2.38	0.022 *	0.07	0.00	0.78	0.439	
Ambulance/fire	-0.41	0.01	-1.32	0.194	0.11	0.04	0.23	0.817	0.39	0.03	0.88	0.386	-0.24	0.01	-0.74	0.463	-0.67	0.00	-1.98	0.054	0.01	0.00	0.03	0.978	
Welfare	-0.14	0.02	-2.36	0.023 *	0.00	0.08	-0.04	0.965	-0.22	0.11	-1.71	0.094	-0.14	0.04	-1.10	0.277	0.01	0.02	0.08	0.937	0.03	0.01	0.26	0.795	
Education	0.00	0.05	-0.09	0.930	-0.01	0.18	-0.30	0.768	-0.02	0.16	-0.41	0.685	-0.03	0.05	-0.60	0.550	0.01	0.02	0.18	0.858	0.08	0.02	1.04	0.303	
	(VC=0.472, $X^2$ =241.21, p<0.01)				(VC=6.944, $X^2$ =654.93, p<0.01)				(VC=1.605, $X^2$ =240.02, p<0.01)				(VC=0.309, $X^2$ =236.39, p<0.01)				(VC=0.023, $X^2$ =115.92, p<0.01)				(VC=0.012, $X^2$ =125.75, p<0.01)				
<b>Model-2</b>																									
public health	0.03	0.02	1.05	0.298	-0.03	0.09	-0.67	0.509	-0.11	0.07	-3.02	0.004 **	-0.01	0.02	-0.18	0.859	-0.02	0.02	-0.28	0.782	0.04	0.01	0.60	0.549	
public works	0.10	0.03	1.19	0.243	0.04	0.15	0.32	0.751	-0.05	0.22	-0.23	0.823	0.09	0.06	0.52	0.606	-0.12	0.01	-1.10	0.276	0.03	0.01	0.27	0.787	
police	-0.25	0.84	-1.02	0.312	-0.07	1.84	-0.35	0.726	0.50	1.60	2.50	0.017 *	-0.16	0.60	-0.72	0.478	-0.07	0.27	-0.27	0.792	-0.03	0.17	-0.11	0.910	
Ambulance/fire	-0.50	0.22	-5.70	0.000 **	-0.43	0.54	-5.30	0.000 **	-0.83	0.68	-7.03	0.000 **	-0.15	0.15	-1.92	0.061	-0.20	0.06	-2.50	0.016 *	0.02	0.04	0.26	0.794	
Welfare	-0.11	0.02	-1.77	0.083	-0.14	0.09	-1.12	0.271	-0.45	0.13	-2.19	0.034 *	-0.12	0.02	-1.60	0.117	-0.12	0.01	-1.43	0.161	-0.08	0.00	-1.13	0.265	
Education	-0.78	0.18	-3.12	0.003 **	-0.88	0.44	-3.91	0.000 **	-0.77	0.31	-4.24	0.000 **	-0.68	0.18	-2.15	0.038 *	-0.50	0.04	-2.47	0.018 *	-0.12	0.03	-0.58	0.564	
	(VC=0.504, $X^2$ =250.65, p<0.01)				(VC=6.469, $X^2$ =494.38, p<0.01)				(VC=1.404, $X^2$ =159.93, p<0.01)				(VC=0.418, $X^2$ =285.93, p<0.01)				(VC=0.019, $X^2$ =100.72, p<0.01)				(VC=0.014, $X^2$ =138.53, p<0.01)				
<b>Model-3</b>																									
public health	0.02	0.02	0.77	0.448	-0.03	0.09	-0.75	0.458	-0.10	0.08	-2.58	0.014 *	-0.01	0.02	-0.14	0.888	-0.02	0.02	-0.39	0.696	0.03	0.01	0.53	0.598	
public works	0.07	0.03	1.01	0.319	-0.01	0.12	-0.08	0.940	-0.11	0.18	-0.60	0.553	0.04	0.05	0.28	0.778	-0.14	0.01	-1.23	0.225	0.05	0.01	0.32	0.749	
police	-0.23	0.81	-0.96	0.342	-0.11	1.82	-0.57	0.573	0.46	1.50	2.45	0.019 *	-0.18	0.57	-0.85	0.403	-0.03	0.30	-0.12	0.909	0.12	0.17	0.49	0.627	
Ambulance/fire	-0.53	0.24	-5.45	0.000 **	-0.42	0.56	-4.98	0.000 **	-0.80	0.57	-8.09	0.000 **	-0.13	0.19	-1.27	0.213	-0.14	0.09	-1.16	0.255	0.02	0.05	0.23	0.822	
Welfare	-0.09	0.02	-1.64	0.111	-0.11	0.08	-1.02	0.315	-0.38	0.11	-2.21	0.034 *	-0.08	0.01	-1.34	0.190	-0.11	0.01	-1.32	0.197	-0.12	0.00	-2.04	0.049 *	
(Education)																									
Social	-0.01	0.25	-0.23	0.817	-0.15	0.71	-2.29	0.028 *	-0.14	0.67	-1.99	0.054	-0.04	0.33	-0.43	0.672	-0.22	0.15	-1.73	0.092	-0.17	0.05	-2.52	0.016 *	
Elementary	-0.15	0.02	-0.91	0.370	-0.27	0.03	-2.31	0.027 *	-0.26	0.03	-2.14	0.040 *	-0.11	0.01	-0.66	0.514	-0.02	0.01	-0.14	0.893	0.16	0.00	1.01	0.318	
Junior	-0.12	0.02	-0.69	0.494	-0.03	0.05	-0.24	0.814	-0.06	0.04	-0.40	0.691	-0.06	0.02	-0.44	0.660	-0.05	0.01	-0.27	0.787	0.08	0.01	0.40	0.688	
High	-0.04	0.01	-0.39	0.698	-0.02	0.02	-0.25	0.802	0.06	0.02	0.66	0.511	-0.07	0.01	-0.82	0.417	-0.08	0.00	-0.64	0.524	0.04	0.00	0.32	0.754	
Special	0.02	0.00	0.20	0.843	0.17	0.00	1.97	0.056	0.25	0.00	2.27	0.009 **</td													

**Supplementary Table S4:**

Impacts of financial expenditure ratio (Model-1) and per Capita (Model-2,3,4) of divisions and subdivisions of prefectures and municipalities on suicide mortality of female caused by major six motives.

Factors	Family				Health				Economy				Employment				Romance				School							
	$\beta$	SE	T	p	$\beta$	SE	T	p	$\beta$	SE	T	p	$\beta$	SE	T	p	$\beta$	SE	T	p	$\beta$	SE	T	p				
<b>Model-1</b>																												
public health	-0.47	0.09	-3.61	0.001 **	-0.57	0.18	-6.45	0.000 **	-0.48	0.04	-4.29	0.000 **	-0.06	0.03	-0.48	0.634	-0.25	0.02	-2.51	0.016 *	-0.13	0.01	-1.29	0.205				
public works	0.24	0.04	1.47	0.150	0.55	0.10	3.99	0.000 **	0.36	0.02	2.21	0.033 *	0.22	0.01	1.17	0.248	0.42	0.01	2.85	0.007 **	0.10	0.01	0.57	0.574				
police	0.06	0.01	0.57	0.572	-0.18	0.02	-2.57	0.014 *	-0.15	0.01	-1.33	0.190	0.10	0.00	0.79	0.434	-0.18	0.00	-1.59	0.119	0.08	0.00	0.90	0.373				
Ambulance/fire	-0.27	0.01	-0.72	0.477	-0.27	0.01	-0.91	0.370	0.38	0.00	1.06	0.296	-0.24	0.00	-0.57	0.571	-0.03	0.00	-0.10	0.918	0.17	0.00	0.35	0.725				
Welfare	-0.03	0.01	-0.37	0.717	0.04	0.04	0.54	0.592	0.05	0.01	0.46	0.644	-0.10	0.01	-0.79	0.436	0.08	0.01	0.97	0.340	0.03	0.00	0.31	0.759				
Education	0.13	0.06	1.60	0.118	0.05	0.12	1.07	0.291	0.10	0.03	1.76	0.085	0.13	0.02	1.86	0.070	0.08	0.02	1.45	0.156	0.01	0.01	0.23	0.816				
(VC=0.120, $X^2=179.14$ , p<0.01)				(VC=2.126, $X^2=483.39$ , p<0.01)				(VC=0.016, $X^2=101.78$ , p<0.01)				(VC=0.002, $X^2=66.38$ , p<0.05)				(VC=0.008, $X^2=95.73$ , p<0.01)				(VC=0.000, $X^2=45.02$ , p>0.05)								
<b>Model-2</b>																												
public health	0.20	0.03	3.40	0.001 **	0.04	0.05	1.17	0.250	0.03	0.01	1.01	0.320	0.12	0.00	4.38	0.000 **	0.01	0.01	0.16	0.876	-0.01	0.00	-0.31	0.758				
public works	0.16	0.02	2.35	0.024 *	0.06	0.11	0.36	0.718	0.00	0.02	0.03	0.980	-0.12	0.00	-1.95	0.058	-0.01	0.01	-0.10	0.924	-0.10	0.00	-0.92	0.363				
police	-0.58	0.39	-2.72	0.010 *	-0.41	1.17	-2.03	0.049 *	0.36	0.31	1.17	0.248	-0.35	0.16	-1.22	0.231	-0.24	0.19	-0.85	0.402	-0.01	0.10	-0.04	0.968				
Ambulance/fire	-0.44	0.17	-3.33	0.002 **	-0.60	0.56	-4.44	0.000 **	-0.52	0.09	-4.37	0.000 **	-0.12	0.05	-0.93	0.356	-0.26	0.06	-2.21	0.033 *	-0.06	0.03	-0.49	0.625				
Welfare	-0.05	0.01	-0.70	0.489	-0.13	0.07	-0.88	0.383	-0.23	0.01	-1.75	0.088	-0.12	0.00	-2.31	0.026 *	-0.13	0.00	-1.48	0.145	-0.02	0.00	-0.50	0.617				
Education	-0.44	0.07	-2.37	0.023 *	-0.74	0.19	-4.70	0.000 *	-0.38	0.04	-2.06	0.046 *	0.11	0.03	0.46	0.648	-0.51	0.02	-3.26	0.002 **	-0.17	0.01	-0.91	0.367				
(VC=0.137, $X^2=195.92$ , p<0.01)				(VC=2.200, $X^2=392.98$ , p<0.01)				(VC=0.017, $X^2=95.68$ , p<0.01)				(VC=0.003, $X^2=73.24$ , p<0.01)				(VC=0.006, $X^2=81.21$ , p<0.01)				(VC=0.000, $X^2=43.19$ , p>0.05)								
<b>Model-3</b>																												
public health	0.20	0.03	3.33	0.002 **	0.04	0.05	1.14	0.260	0.03	0.01	0.90	0.372	0.12	0.01	1.64	0.109	0.00	0.01	-0.03	0.974	-0.01	0.00	-0.26	0.798				
public works	0.15	0.02	1.91	0.064	0.02	0.09	0.13	0.896	-0.05	0.02	-0.30	0.764	-0.12	0.01	-1.26	0.216	-0.04	0.01	-0.36	0.721	-0.12	0.01	-1.11	0.272				
police	-0.50	0.43	-2.12	0.041 *	-0.39	1.08	-2.06	0.047 *	0.33	0.29	1.18	0.245	-0.29	0.16	-1.04	0.305	-0.29	0.19	-1.05	0.300	-0.11	0.12	-0.33	0.741				
Ambulance/fire	-0.40	0.15	-3.53	0.001 **	-0.59	0.45	-5.40	0.000 **	-0.45	0.09	-3.66	0.001 **	-0.08	0.05	-0.60	0.555	-0.25	0.06	-2.09	0.044 *	-0.06	0.03	-0.51	0.614				
Welfare	-0.04	0.01	-0.59	0.558	-0.09	0.05	-0.81	0.422	-0.16	0.01	-1.64	0.109	-0.10	0.00	-1.24	0.222	-0.13	0.00	-1.71	0.095	-0.03	0.00	-0.80	0.430				
(Education)					Social				-0.09				-1.04				-0.15				0.61				-1.63			
Elementary					-0.25				0.02				-2.29				0.028 *				-0.08				0.00			
Junior					0.07				0.03				0.54				0.596				-0.16				0.00			
High					0.02				0.01				0.22				0.830				0.12				0.00			
Special																												