

Supplementary Text

Overview of supplementary analyses

As supplementary analyses, we examined two additional issues to further explore the social and geographic inequalities in premature mortality; (i) the patterns of geographic inequalities in mortality by occupations, and (ii) the presence of contextual effects of prefecture-level socioeconomic status on mortality risk.

Geographic inequalities in all-cause premature mortality by occupations

Background and aims

Although we examined the patterns of geographic inequalities in premature mortality for all occupations in the main analysis, the patterns may vary (substantially) according to occupations. Therefore, we examined the occupation-specific geographic inequality in premature mortality for the overall study period. This analysis may further facilitate understanding of the possible pathways of emerging geographic inequalities in Japan.

Methods

Following the previous report of the Population Census,¹ we summarized the 11 occupations into six groups to increase the statistical power as follows: I. clerical, technical and managerial occupations (ie, (1) specialist and technical workers, (2) administrative and managerial workers, and (3) clerical workers), II. sales and service occupations (ie, (4) sales workers, (5) service workers, and (6) security workers), III. agriculture, forestry and fishery occupations (ie, (7) agriculture, forestry and fishery workers), IV. production and transport occupations (ie, (8) transport and communication workers and (9) production process and related workers), V. unclassifiable occupations (ie, (10) workers not classifiable by occupation), and VI. non-employed (ie, (11) non-employed) (Supplementary Table 1).

In this supplementary analysis, we specified six prefecture-level error terms (at level 3) corresponding to the six occupational groups, conditional on individual age, 11 occupations, and years as fixed terms. We calculated the variance and covariance of these error terms, and we also derived their correlation coefficients to explore the possible differential geographic patterns of mortality by the six occupational groups. Finally, we created maps showing prefecture-level residuals in the same methods as the main analysis.

Results

We show the results of variance and covariance of prefecture-level residuals among the six occupational groups (Supplementary Table 8). Men and women revealed a similar pattern except for the covariance between sales and service occupations and non-employed (-0.003 and 0.005 in men and women, respectively) and the covariance between agriculture, forestry and fishery occupations and unclassifiable occupations (0.006 and -0.019 in men and women, respectively). In both sexes, the

variances among unclassifiable occupations were much higher than those of other occupational groups (0.317 and 0.331 in men and women, respectively). Further, excluding unclassifiable occupations and non-employed, the signs of correlation coefficients were all positive, indicating that the patterns of geographic inequalities were similar across the remaining four occupational groups. We show these geographic patterns in both sexes (Supplementary Figures 4 and 5).

Contextual effect of prefecture-level socioeconomic status

Background and aims

Previous studies in Japan have examined possible contextual effects of area-level socioeconomic status (eg, income inequality, per-capita income) on self-rated health and health-related behaviours by using multilevel analysis.²⁻⁴ The relationship between area-level socioeconomic status and mortality has been also investigated in ecological studies,⁵⁻¹² most of which indicated higher mortality in areas of lower socioeconomic position. Indeed, recent international comparative studies have confirmed an association between income inequality and health, which included Japan.¹³⁻¹⁵ However, no studies have examined the association between area-level socioeconomic status and premature adult mortality in Japan, by considering both individual- and area-level socioeconomic indicators. Further, we note the possibility that contextual effects by area-level disadvantage may have changed after the collapse of asset bubble in the early 1990s. Therefore, we examined the trends of contextual effects of prefecture-level socioeconomic status on premature adult mortality.

Methods

We derived prefecture-level socioeconomic status variables from the *National Survey of Family Income and Expenditure*,¹⁶ which has been implemented every 5 years since the first survey in 1959. We derived the following three variables for each prefecture and divided them into tertiles; Gini's coefficient of yearly income, average yearly income, and average savings (Supplementary Table 9). These variables were calculated among two-or-more-person households. Gini's coefficient of yearly income was available since 1979, and we imputed the values of 1979 forwardly to 1969 and 1974. Although household income and savings may follow the skewed distributions, median income or savings were not available throughout the study period. Note that a previous review article suggested that the studies in income inequality are more supportive in large areas, eg, states, regions, and metropolitan areas, because in that context income inequality serves as a measure of the scale of social stratification.¹⁷ As Shibuya *et al*² noted, a prefecture is similar to a state in the United States in terms of its population size and variations in income inequality.

We linked the data set of prefecture-level variables to the data set of the Population Census and the Vital Statistics one year out, eg, National Survey of Family Income and Expenditure in 2004 was linked with the Population Census in 2005 and the Vital Statistics in 2005 fiscal year.

In the analysis, we conducted three-level analyses as an overall model, with cells at level 1, years at level 2, and prefectures at level 3. The prefecture-level socioeconomic status variable was entered

into the model as a level-2 variable separately. Furthermore, to examine the joint effects of income inequality and average income/savings, we also entered Gini's coefficient and average yearly income/savings into the model simultaneously. In like manner, to examine the temporal patterns of contextual effects, we also conducted two-level analysis, with cells at level 1 and prefectures at level 2 separately for each year.

Results

Overall, we found little evidence of the association between prefecture-level socioeconomic status and the risk of mortality in both sexes, conditional on individual age and occupation (Supplementary Table 10). Likewise, in year-specific analyses, no clear associations were found although lower average savings were associated with higher risk of mortality in some years. When we examined the joint effects of income inequality and average income/savings, no substantial differences were observed (data not shown).

Conclusions of supplementary analyses

Excluding unclassifiable occupations and non-employed, the patterns of geographic inequalities were similar across occupational groups. We found no clear associations between prefecture-level socioeconomic status and premature mortality risk throughout the period although there is a suggestion of an inverse association between average savings and mortality in some years.

References

1. Ministry of Internal Affairs and Communications. *Population Census: Explanation of Terms*.
<http://www.stat.go.jp/english/data/kokusei/2000/terms.htm#Occupation>
2. Shibuya K, Hashimoto H, Yano E. Individual income, income distribution, and self rated health in Japan: cross sectional analysis of nationally representative sample. *BMJ* 2002;324:16-9.
3. Fukuda Y, Nakamura K, Takano T. Accumulation of health risk behaviours is associated with lower socioeconomic status and women's urban residence: a multilevel analysis in Japan. *BMC Public Health* 2005;5:53.
4. Ichida Y, Kondo K, Hirai H, *et al*. Social capital, income inequality and self-rated health in Chita peninsula, Japan: a multilevel analysis of older people in 25 communities. *Soc Sci Med* 2009;69:489-99.
5. Fukuda Y, Nakao H, Yahata Y, *et al*. Are health inequalities increasing in Japan? The trends of 1955 to 2000. *Biosci Trends* 2007;1:38-42.
6. Fukuda Y, Nakamura K, Takano T. Higher mortality in areas of lower socioeconomic position measured by a single index of deprivation in Japan. *Public Health* 2007;121:163-73.
7. Nakaya T, Dorling D. Geographical inequalities of mortality by income in two developed island countries: a cross-national comparison of Britain and Japan. *Soc Sci Med* 2005;60:2865-75.

8. Fukuda Y, Nakamura K, Takano T. Cause-specific mortality differences across socioeconomic position of municipalities in Japan, 1973-1977 and 1993-1998: increased importance of injury and suicide in inequality for ages under 75. *Int J Epidemiol* 2005;34:100-9.
9. Fukuda Y, Umezaki M, Nakamura K, *et al.* Variations in societal characteristics of spatial disease clusters: examples of colon, lung and breast cancer in Japan. *Int J Health Geogr* 2005;4:16.
10. Fukuda Y, Nakamura K, Takano T. Municipal health expectancy in Japan: decreased healthy longevity of older people in socioeconomically disadvantaged areas. *BMC Public Health* 2005;5:65.
11. Fukuda Y, Nakamura K, Takano T. Municipal socioeconomic status and mortality in Japan: sex and age differences, and trends in 1973-1998. *Soc Sci Med* 2004;59:2435-45.
12. Fukuda Y, Nakamura K, Takano T. Wide range of socioeconomic factors associated with mortality among cities in Japan. *Health Promot Int* 2004;19:177-87.
13. Kim D, Kawachi I, Hoorn SV, *et al.* Is inequality at the heart of it? Cross-country associations of income inequality with cardiovascular diseases and risk factors. *Soc Sci Med* 2008;66:1719-32.
14. Elgar FJ. Income inequality, trust, and population health in 33 countries. *Am J Public Health* 2010;100:2311-5.
15. Karlsson M, Nilsson T, Lyttkens CH, *et al.* Income inequality and health: importance of a cross-country perspective. *Soc Sci Med* 2010;70:875-85.
16. Ministry of Internal Affairs and Communications. *National Survey of Family Income and Expenditure*. <http://www.stat.go.jp/english/data/zensho/index.htm>
17. Wilkinson RG, Pickett KE. Income inequality and population health: a review and explanation of the evidence. *Soc Sci Med* 2006;62:1768-84.

Supplementary Table 1. The history of the Japan Standard Occupational Classification ^a

1st revision, 1970		2nd revision, 1979		3rd revision, 1986		4th revision, 1997	
No.	Occupation (major group)	No.	Occupation (major group)	No.	Occupation (major group)	No.	Occupation (major group) ^b
(1) [1]	Professional and technical workers	(1) [1]	Professional and technical workers	(1) [1]	Professional and technical workers	(1) [1]	Specialist and technical workers
(2) [2]	Managers and officials	(2) [2]	Managers and officials	(2) [2]	Managers and officials	(2) [2]	Administrative and managerial workers
(3) [3]	Clerical and related workers	(3) [3]	Clerical and related workers	(3) [3]	Clerical and related workers	(3) [3]	Clerical workers
(4) [4]	Sales workers	(4) [4]	Sales workers	(4) [4]	Sales workers	(4) [4]	Sales workers
(5) [7]	Farmers, Lumbermen and fishermen	(5) [7]	Agricultural, forestry and fisheries workers	(5) [5]	Service workers	(5) [5]	Service workers
(6) [9]	Workers in mining and quarrying occupations	(6) [9]	Mining workers	(6) [6]	Protective service workers	(6) [6]	Security workers
(7) [8]	Workers in transport and communications occupations	(7) [8]	Workers in transport and communications occupations	(7) [7]	Agricultural, forestry and fisheries workers	(7) [7]	Agriculture, forestry and fishery workers
(8) [9]	Craftsmen, production process workers and labourers	(8) [9]	Craftsmen, production process workers and labours	(8) [8]	Workers in transport and communications occupations	(8) [8]	Transport and communication workers
(9) [6]	Protective service workers	(9) [6]	Protective service workers	(9) [9]	Craftsmen, mining, production process and construction workers and laborers	(9) [9]	Production process and related workers
(10) [5]	Service workers	(10) [5]	Service workers	(10) [10]	Workers not classifiable by occupation	(10) [10]	Workers not classifiable by occupation
(11) [10]	Unclassifiable	(11) [10]	Workers not classifiable by occupation	(11) [11]	Non-employed ^c	(11) [11]	Non-employed ^c
(12) [11]	Non-employed ^c	(11) [11]	Non-employed ^c				

^a We consistently used occupation (major group) of the 4th revision. The number in square brackets is the classification used in this present study.

^b When showing geographic inequality by occupation, we summarized these 11 occupation into six groups as follows:

- I. Clerical, technical and managerial occupations: (1) specialist and technical workers, (2) administrative and managerial workers, and (3) clerical workers
- II. Sales and service occupations: (4) sales workers, (5) service workers, and (6) security workers
- III. Agriculture, forestry and fishery occupations: (7) agriculture, forestry and fishery workers
- IV. Production and transport occupations: (8) transport and communication workers and (9) production process and related workers
- V. Unclassifiable occupations: (10) workers not classifiable by occupation
- VI. Non-employed: (11) non-employed

^c Non-employed refers to the sum of unemployed and non-labour force in line with the *Report of Vital Statistics: Occupational and Industrial Aspects*.

Supplementary Table 2. Description of data in 47 prefectures, Japan, 1970-2005

	Men				Women			
	No. of deaths	Total population	Mortality rate per 100,000 ^a		No. of deaths	Total population	Mortality rate per 100,000 ^a	
				(SD)				(SD)
Overall	984,022	251,576,351	1,569	(6,718)	532,223	259,688,353	758	(3,914)
Prefectures								
1 Hokkaido	49,247	11,489,095	1,870	(7,692)	26,436	12,394,724	886	(4,366)
2 Aomori	15,202	2,959,355	1,531	(6,760)	7,282	3,248,812	471	(2,143)
3 Iwate	13,258	2,856,175	2,187	(9,429)	6,959	3,067,651	864	(4,827)
4 Miyagi	17,042	4,448,360	1,412	(5,469)	9,137	4,625,004	728	(3,064)
5 Akita	12,371	2,512,525	1,410	(5,569)	6,168	2,740,415	561	(3,178)
6 Yamagata	10,748	2,553,156	1,863	(8,426)	5,824	2,679,130	978	(4,649)
7 Fukushima	18,520	4,200,931	1,368	(4,958)	9,601	4,341,831	454	(1,655)
8 Ibaraki	23,125	5,779,563	1,101	(3,644)	12,135	5,665,132	511	(2,853)
9 Tochigi	16,375	3,976,411	1,643	(6,942)	8,590	3,941,144	876	(3,381)
10 Gunma	15,506	4,036,944	1,704	(6,946)	8,651	4,069,213	532	(2,058)
11 Saitama	43,148	13,129,693	1,436	(5,956)	23,114	12,774,631	519	(1,419)
12 Chiba	39,273	11,279,717	1,247	(4,401)	19,925	11,073,425	652	(3,696)
13 Tokyo	91,194	25,686,395	1,374	(5,119)	49,601	25,677,746	598	(1,754)
14 Kanagawa	54,947	16,940,375	1,330	(5,569)	28,202	16,194,532	1,053	(5,584)
15 Niigata	21,083	5,083,511	1,945	(7,533)	10,861	5,245,859	714	(3,398)
16 Toyama	9,238	2,300,243	1,606	(7,190)	5,250	2,429,822	980	(5,406)
17 Ishikawa	8,670	2,301,490	1,655	(7,956)	5,013	2,447,439	953	(6,194)
18 Fukui	5,611	1,643,881	1,677	(7,209)	3,556	1,721,279	1,391	(7,473)
19 Yamanashi	7,183	1,720,587	1,436	(5,625)	3,727	1,754,097	719	(3,804)
20 Nagano	15,876	4,393,794	2,175	(8,828)	9,505	4,551,945	853	(4,017)
21 Gifu	14,957	4,139,225	1,515	(6,609)	9,222	4,333,798	913	(4,421)
22 Shizuoka	28,057	7,639,953	1,962	(8,756)	14,720	7,674,935	565	(1,736)
23 Aichi	46,925	14,066,571	1,626	(7,368)	26,699	13,817,272	764	(2,784)
24 Mie	14,118	3,624,980	1,408	(5,186)	7,828	3,794,338	583	(2,379)
25 Shiga	8,125	2,428,751	1,453	(5,976)	4,883	2,465,170	782	(3,805)
26 Kyoto	18,723	5,109,042	1,166	(3,889)	11,146	5,465,224	464	(2,094)
27 Osaka	73,055	18,232,091	1,964	(7,462)	38,671	18,808,092	1,109	(4,676)
28 Hyogo	44,110	10,970,009	1,940	(7,967)	23,963	11,550,437	798	(3,145)
29 Nara	9,755	2,621,500	1,730	(7,403)	5,598	2,813,039	971	(4,423)
30 Wakayama	10,006	2,169,994	1,276	(6,597)	5,596	2,358,333	573	(2,872)
31 Tottori	5,687	1,212,157	2,055	(8,746)	2,862	1,295,687	695	(3,717)
32 Shimane	7,103	1,546,077	2,051	(8,981)	3,829	1,651,580	891	(4,704)
33 Okayama	15,296	3,828,579	1,991	(8,329)	8,127	4,043,112	720	(3,298)
34 Hiroshima	23,074	5,750,006	1,708	(6,593)	12,338	6,008,967	852	(3,726)
35 Yamaguchi	14,671	3,127,157	2,051	(8,498)	7,883	3,435,624	582	(2,276)
36 Tokushima	7,871	1,661,674	711	(1,797)	4,406	1,786,025	454	(1,935)
37 Kagawa	8,494	2,052,654	999	(3,529)	4,743	2,182,213	551	(3,159)
38 Ehime	13,813	2,961,350	2,209	(8,794)	7,631	3,279,967	781	(3,189)
39 Kochi	8,686	1,627,246	1,004	(3,355)	4,403	1,792,884	353	(1,777)
40 Fukuoka	41,386	9,316,985	1,349	(5,374)	22,159	10,313,913	790	(3,359)
41 Saga	7,618	1,664,620	1,458	(7,446)	4,307	1,844,827	1,057	(6,718)
42 Nagasaki	14,563	2,995,173	1,398	(5,680)	8,010	3,346,375	813	(4,295)
43 Kumamoto	15,029	3,485,422	780	(2,080)	8,554	3,916,400	623	(2,600)
44 Oita	10,691	2,389,418	1,658	(6,904)	6,345	2,691,272	834	(3,893)
45 Miyazaki	10,422	2,240,503	1,866	(8,416)	5,606	2,496,028	1,239	(7,251)
46 Kagoshima	16,626	3,369,654	1,329	(5,321)	9,565	3,795,497	859	(3,649)
47 Okinawa ^b	7,544	2,053,359	1,046	(5,404)	3,592	2,083,513	722	(4,594)

SD; standard deviation

^a Mortality rate was calculated on the basis of the means of the proportion of deaths for each prefecture across all cell types.^b The data for Okinawa prefecture were not available in 1970.

Supplementary Table 3. The number (percentage) of total population in each occupation, Japan, 1970-2005

	1970		1975		1980		1985		1990		1995		2000		2005	
<i>Men</i>																
Specialist and technical workers	1,835,895	(7.32)	2,080,025	(7.25)	2,306,830	(7.51)	3,143,412	(9.76)	3,637,515	(10.95)	3,991,077	(11.72)	4,221,683	(12.27)	3,950,815	(11.90)
Administrative and managerial workers	1,797,390	(7.17)	1,972,340	(6.88)	2,210,783	(7.19)	1,868,101	(5.80)	1,998,511	(6.01)	2,066,172	(6.07)	1,305,093	(3.79)	1,031,316	(3.11)
Clerical workers	2,914,350	(11.62)	3,674,725	(12.81)	3,637,048	(11.83)	3,857,022	(11.98)	3,895,784	(11.72)	3,906,006	(11.47)	4,077,310	(11.85)	4,093,124	(12.33)
Sales workers	2,681,490	(10.69)	3,508,340	(12.23)	4,132,015	(13.44)	4,509,884	(14.00)	4,794,455	(14.43)	5,044,836	(14.82)	5,159,661	(15.00)	4,716,064	(14.21)
Service workers	738,725	(2.95)	984,940	(3.43)	1,027,910	(3.34)	1,123,385	(3.49)	1,202,319	(3.62)	1,270,668	(3.73)	1,381,504	(4.02)	1,441,522	(4.34)
Security workers	438,955	(1.75)	520,720	(1.82)	567,438	(1.85)	615,053	(1.91)	660,161	(1.99)	706,462	(2.08)	787,325	(2.29)	832,148	(2.51)
Agriculture, forestry and fishery workers	3,531,500	(14.08)	2,849,180	(9.94)	2,379,666	(7.74)	2,112,513	(6.56)	1,615,756	(4.86)	1,199,620	(3.52)	899,881	(2.62)	823,066	(2.48)
Transport and communication workers	1,682,400	(6.71)	1,972,390	(6.88)	2,072,133	(6.74)	1,997,137	(6.2)	1,984,890	(5.97)	2,020,393	(5.93)	1,957,847	(5.69)	1,794,551	(5.41)
Production process and related workers	8,428,675	(33.61)	9,645,620	(33.63)	10,682,007	(34.76)	10,644,436	(33.05)	10,985,461	(33.06)	10,945,330	(32.15)	10,762,241	(31.28)	10,451,026	(31.48)
Workers not classifiable by occupation	6,725	(0.03)	13,870	(0.05)	22,474	(0.07)	50,391	(0.16)	115,015	(0.35)	151,362	(0.44)	294,663	(0.86)	502,667	(1.51)
Non-employed ^a	1,024,357	(4.08)	1,456,032	(5.08)	1,696,114	(5.52)	2,283,403	(7.09)	2,339,703	(7.04)	2,744,327	(8.06)	3,559,611	(10.35)	3,559,611	(10.72)
Total	25,080,462	(100.00)	28,678,182	(100.00)	30,734,418	(100.00)	32,204,737	(100.00)	33,229,570	(100.00)	34,046,253	(100.00)	34,406,819	(100.00)	33,195,910	(100.00)
<i>Women</i>																
Specialist and technical workers	800,245	(3.00)	1,121,045	(3.73)	1,507,610	(4.72)	1,891,400	(5.73)	2,250,231	(6.69)	2,684,971	(7.83)	3,094,599	(8.87)	3,459,894	(9.83)
Administrative and managerial workers	86,615	(0.32)	105,985	(0.35)	155,251	(0.49)	171,782	(0.52)	184,219	(0.55)	199,894	(0.58)	142,983	(0.41)	123,283	(0.35)
Clerical workers	1,694,870	(6.36)	2,753,760	(9.16)	3,369,822	(10.56)	4,248,922	(12.86)	5,155,485	(15.32)	5,748,954	(16.76)	6,289,031	(18.03)	6,422,961	(18.25)
Sales workers	1,885,440	(7.07)	2,152,320	(7.16)	2,586,857	(8.11)	2,447,212	(7.41)	2,534,197	(7.53)	2,702,863	(7.88)	2,618,387	(7.51)	2,561,132	(7.28)
Service workers	1,634,865	(6.13)	1,974,925	(6.57)	2,106,305	(6.60)	2,173,931	(6.58)	2,263,285	(6.73)	2,516,848	(7.34)	2,825,178	(8.10)	3,207,147	(9.11)
Security workers	5,830	(0.02)	8,010	(0.03)	9,876	(0.03)	12,390	(0.04)	16,562	(0.05)	24,289	(0.07)	37,414	(0.11)	43,158	(0.12)
Agriculture, forestry and fishery workers	4,558,975	(17.10)	3,154,040	(10.49)	2,471,427	(7.75)	2,029,368	(6.14)	1,478,304	(4.39)	1,055,672	(3.08)	755,524	(2.17)	600,419	(1.71)
Transport and communication workers	99,570	(0.37)	108,500	(0.36)	108,205	(0.34)	96,205	(0.29)	84,717	(0.25)	93,936	(0.27)	92,226	(0.26)	85,394	(0.24)
Production process and related workers	3,546,495	(13.30)	3,691,205	(12.28)	4,456,927	(13.97)	4,911,261	(14.87)	5,158,278	(15.33)	4,862,147	(14.17)	4,664,292	(13.37)	4,228,532	(12.01)
Workers not classifiable by occupation	5,285	(0.02)	34,995	(0.12)	24,186	(0.08)	66,917	(0.20)	89,544	(0.27)	121,135	(0.35)	223,913	(0.64)	327,266	(0.93)
Non-employed ^a	12,339,091	(46.29)	14,949,973	(49.74)	15,110,843	(47.36)	14,978,370	(45.35)	14,434,745	(42.90)	14,296,062	(41.67)	14,141,088	(40.54)	14,141,088	(40.17)
Total	26,657,281	(100.00)	30,054,758	(100.00)	31,907,309	(100.00)	33,027,758	(100.00)	33,649,567	(100.00)	34,306,771	(100.00)	34,884,635	(100.00)	35,200,274	(100.00)

^a Non-employed is the sum of unemployed and non-labour force.

Supplementary Table 5. Age-adjusted mortality rate per 100,000 in each occupation, Japan, 1970-2005 ^a

	1970	1975	1980	1985	1990	1995	2000	2005
<i>Men</i>								
Specialist and technical workers	340	282	319	257	234	223	312	231
Administrative and managerial workers	233	223	192	215	193	170	248	241
Clerical workers	460	366	298	267	253	207	146	95
Sales workers	547	444	370	322	246	187	146	113
Service workers	515	389	488	426	476	442	401	348
Security workers	295	259	238	226	228	189	161	159
Agriculture, forestry and fishery workers	571	489	442	425	384	365	346	287
Transport and communication workers	449	339	328	276	253	230	200	180
Production process and related workers	415	327	250	216	181	156	105	89
Workers not classifiable by occupation	14,668	15,038	20,796	9,141	5,935	7,231	4,900	768
Non-employed ^b	2,669	2,226	1,891	1,648	1,774	1,533	1,289	1,313
<i>Women</i>								
Specialist and technical workers	246	181	146	126	115	90	97	66
Administrative and managerial workers	548	452	239	268	337	263	345	306
Clerical workers	234	153	105	83	68	54	39	29
Sales workers	197	164	137	135	111	81	68	55
Service workers	160	117	130	111	111	92	78	60
Security workers	1,615	1,027	822	1,335	991	508	398	390
Agriculture, forestry and fishery workers	256	224	172	148	133	114	103	85
Transport and communication workers	899	585	844	712	808	440	324	278
Production process and related workers	145	114	73	67	60	43	32	25
Workers not classifiable by occupation	4,769	1,533	6,995	3,024	2,967	3,382	2,296	325
Non-employed ^b	489	387	324	286	256	254	242	222

^a Age-adjusted mortality rates were calculated by the direct method, using the model population of 1985 in Japan as a reference.

^b Non-employed is the sum of unemployed and non-labour force.

Supplementary Table 6. Adjusted prefecture-level residuals for all-cause premature mortality among men, Japan, 1970-2005

Prefectures	Overall			1970			1975			1980			1985			1990			1995			2000			2005		
	OR	(95% CI)	Rank	OR	(95% CI)	Rank	OR	(95% CI)	Rank	OR	(95% CI)	Rank	OR	(95% CI)	Rank	OR	(95% CI)	Rank	OR	(95% CI)	Rank	OR	(95% CI)	Rank	OR	(95% CI)	Rank
1 Hokkaido	1.02	(0.98 to 1.06)	31	1.02	(0.99 to 1.05)	28	1.05	(1.02 to 1.08)	37	1.05	(1.02 to 1.09)	40	1.01	(0.98 to 1.04)	26	0.97	(0.94 to 0.99)	10	1.01	(0.98 to 1.04)	26	1.05	(1.01 to 1.08)	33	1.06	(1.02 to 1.11)	36
2 Aomori	1.13	(1.09 to 1.18)	47	1.07	(1.03 to 1.12)	42	1.06	(1.01 to 1.10)	44	1.10	(1.05 to 1.15)	45	1.09	(1.05 to 1.14)	45	1.09	(1.04 to 1.14)	44	1.17	(1.11 to 1.23)	46	1.25	(1.19 to 1.31)	47	1.27	(1.20 to 1.34)	47
3 Iwate	1.07	(1.03 to 1.11)	45	1.09	(1.04 to 1.13)	44	1.04	(0.99 to 1.08)	35	1.04	(0.99 to 1.09)	37	1.02	(0.98 to 1.07)	36	1.06	(1.01 to 1.11)	43	1.05	(0.99 to 1.10)	34	1.08	(1.03 to 1.15)	40	1.22	(1.15 to 1.29)	46
4 Miyagi	0.97	(0.93 to 1.01)	14	0.94	(0.90 to 0.98)	4	0.97	(0.93 to 1.01)	11	0.96	(0.92 to 1.00)	8	0.94	(0.91 to 0.98)	4	0.98	(0.94 to 1.02)	14	0.97	(0.92 to 1.01)	14	0.99	(0.94 to 1.04)	20	1.04	(0.99 to 1.10)	31
5 Akita	1.07	(1.02 to 1.11)	44	1.12	(1.07 to 1.17)	46	1.06	(1.01 to 1.10)	43	1.04	(0.99 to 1.09)	36	1.01	(0.97 to 1.06)	29	1.01	(0.96 to 1.06)	28	1.10	(1.04 to 1.16)	44	1.09	(1.03 to 1.15)	43	1.17	(1.10 to 1.24)	45
6 Yamagata	0.99	(0.95 to 1.03)	20	1.02	(0.97 to 1.07)	27	1.00	(0.95 to 1.05)	22	1.00	(0.95 to 1.05)	20	0.94	(0.90 to 0.99)	3	0.97	(0.92 to 1.02)	13	0.97	(0.92 to 1.03)	17	1.00	(0.94 to 1.07)	23	1.06	(0.99 to 1.13)	34
7 Fukushima	1.04	(1.00 to 1.08)	37	1.02	(0.98 to 1.07)	29	1.02	(0.98 to 1.06)	31	1.00	(0.96 to 1.05)	25	1.01	(0.97 to 1.05)	31	1.01	(0.97 to 1.06)	29	1.06	(1.01 to 1.11)	37	1.09	(1.03 to 1.14)	41	1.14	(1.08 to 1.20)	44
8 Ibaraki	1.02	(0.98 to 1.07)	34	1.03	(0.99 to 1.07)	32	1.01	(0.98 to 1.05)	27	1.01	(0.97 to 1.05)	30	1.02	(0.98 to 1.06)	34	1.03	(0.99 to 1.07)	36	1.07	(1.03 to 1.12)	40	1.03	(0.99 to 1.07)	30	1.03	(0.98 to 1.08)	24
9 Tochigi	1.07	(1.03 to 1.11)	43	1.09	(1.04 to 1.14)	45	1.05	(1.01 to 1.10)	41	1.06	(1.02 to 1.11)	42	1.09	(1.05 to 1.14)	46	1.11	(1.07 to 1.16)	47	1.09	(1.04 to 1.14)	43	1.06	(1.01 to 1.11)	35	1.04	(0.98 to 1.09)	28
10 Gunma	1.01	(0.97 to 1.06)	28	1.02	(0.97 to 1.06)	26	0.97	(0.93 to 1.02)	12	0.97	(0.93 to 1.02)	11	1.04	(0.99 to 1.08)	39	1.00	(0.96 to 1.05)	24	1.06	(1.01 to 1.11)	38	1.02	(0.97 to 1.07)	26	1.04	(0.99 to 1.10)	29
11 Saitama	0.96	(0.92 to 1.00)	9	1.00	(0.97 to 1.04)	22	0.98	(0.94 to 1.01)	14	0.98	(0.94 to 1.01)	15	0.99	(0.96 to 1.02)	19	1.00	(0.97 to 1.03)	26	0.93	(0.90 to 0.97)	10	0.91	(0.88 to 0.94)	8	0.86	(0.83 to 0.90)	6
12 Chiba	0.96	(0.92 to 1.00)	8	0.98	(0.95 to 1.01)	18	0.94	(0.91 to 0.97)	5	0.95	(0.92 to 0.99)	6	0.99	(0.95 to 1.02)	17	0.99	(0.96 to 1.02)	19	0.93	(0.90 to 0.96)	7	0.91	(0.88 to 0.94)	7	0.93	(0.89 to 0.97)	12
13 Tokyo	0.99	(0.95 to 1.03)	19	0.96	(0.93 to 0.98)	16	0.97	(0.95 to 1.00)	13	1.00	(0.97 to 1.02)	21	1.01	(0.99 to 1.03)	28	1.06	(1.03 to 1.08)	41	0.93	(0.90 to 0.96)	8	0.91	(0.88 to 0.94)	6	0.97	(0.94 to 1.01)	16
14 Kanagawa	0.94	(0.90 to 0.98)	5	0.95	(0.92 to 0.98)	11	0.89	(0.86 to 0.92)	2	0.89	(0.86 to 0.91)	2	0.99	(0.96 to 1.02)	18	1.02	(0.99 to 1.05)	31	0.93	(0.90 to 0.96)	6	0.89	(0.86 to 0.92)	5	0.83	(0.80 to 0.87)	2
15 Niigata	1.02	(0.98 to 1.07)	33	1.00	(0.96 to 1.04)	21	1.01	(0.98 to 1.05)	28	1.00	(0.96 to 1.04)	22	1.02	(0.98 to 1.06)	33	0.98	(0.95 to 1.02)	16	1.07	(1.02 to 1.12)	39	1.10	(1.05 to 1.15)	45	1.06	(1.01 to 1.11)	35
16 Toyama	1.05	(1.00 to 1.09)	40	1.03	(0.98 to 1.08)	31	1.04	(0.99 to 1.09)	36	1.04	(0.98 to 1.09)	35	1.09	(1.04 to 1.15)	47	1.05	(1.00 to 1.11)	39	0.94	(0.88 to 1.02)	11	1.10	(1.03 to 1.17)	44	1.13	(1.06 to 1.21)	42
17 Ishikawa	1.00	(0.96 to 1.04)	23	0.99	(0.94 to 1.04)	19	1.01	(0.96 to 1.07)	26	1.03	(0.97 to 1.09)	34	0.97	(0.92 to 1.02)	9	0.97	(0.91 to 1.02)	11	0.94	(0.88 to 1.00)	12	1.03	(0.97 to 1.10)	31	1.10	(1.03 to 1.18)	41
18 Fukui	0.93	(0.89 to 0.98)	4	0.91	(0.86 to 0.97)	2	0.96	(0.91 to 1.02)	9	0.89	(0.84 to 0.95)	3	0.97	(0.92 to 1.03)	11	0.93	(0.87 to 0.99)	4	0.87	(0.81 to 0.94)	2	0.99	(0.92 to 1.07)	21	1.03	(0.95 to 1.12)	25
19 Yamanashi	1.07	(1.02 to 1.11)	42	1.04	(0.98 to 1.10)	34	1.00	(0.95 to 1.06)	23	1.07	(1.01 to 1.14)	43	1.06	(1.00 to 1.12)	43	1.09	(1.03 to 1.16)	45	1.11	(1.04 to 1.18)	45	1.06	(0.99 to 1.13)	36	1.09	(1.02 to 1.18)	40
20 Nagano	0.97	(0.93 to 1.01)	11	0.93	(0.90 to 0.97)	4	0.98	(0.94 to 1.02)	15	0.95	(0.90 to 0.99)	6	0.98	(0.94 to 1.02)	13	0.94	(0.89 to 0.98)	6	0.98	(0.93 to 1.03)	18	1.00	(0.95 to 1.05)	22	1.03	(0.98 to 1.09)	26
21 Gifu	1.01	(0.97 to 1.05)	26	0.89	(0.85 to 0.93)	1	1.01	(0.97 to 1.06)	25	0.97	(0.93 to 1.02)	13	1.05	(1.01 to 1.10)	42	1.02	(0.98 to 1.07)	33	1.01	(0.96 to 1.06)	27	1.07	(1.02 to 1.12)	37	1.07	(1.02 to 1.13)	37
22 Shizuoka	1.01	(0.97 to 1.05)	27	0.97	(0.94 to 1.01)	17	0.99	(0.95 to 1.02)	19	1.03	(0.99 to 1.07)	33	1.04	(1.00 to 1.08)	40	1.04	(1.00 to 1.07)	37	1.05	(1.01 to 1.09)	32	1.01	(0.97 to 1.05)	24	0.99	(0.94 to 1.03)	18
23 Aichi	0.99	(0.95 to 1.03)	18	0.95	(0.92 to 0.98)	13	0.94	(0.91 to 0.97)	4	0.95	(0.92 to 0.98)	7	0.98	(0.95 to 1.01)	15	1.00	(0.97 to 1.03)	21	1.03	(1.00 to 1.07)	31	1.02	(0.99 to 1.06)	27	1.04	(1.00 to 1.08)	30
24 Mie	0.97	(0.93 to 1.01)	15	0.94	(0.90 to 0.98)	6	0.96	(0.92 to 1.01)	7	0.96	(0.92 to 1.01)	9	0.98	(0.93 to 1.02)	12	1.00	(0.96 to 1.05)	25	1.02	(0.97 to 1.07)	29	0.99	(0.94 to 1.04)	19	0.99	(0.94 to 1.05)	19
25 Shiga	0.93	(0.89 to 0.97)	3	0.95	(0.90 to 1.01)	12	0.96	(0.91 to 1.02)	10	1.00	(0.94 to 1.06)	19	0.96	(0.91 to 1.01)	7	0.97	(0.92 to 1.02)	12	0.94	(0.88 to 1.00)	13	0.84	(0.79 to 0.90)	1	0.88	(0.82 to 0.94)	8
26 Kyoto	0.95	(0.91 to 0.99)	7	0.94	(0.91 to 0.98)	8	0.96	(0.93 to 1.00)	8	0.97	(0.93 to 1.01)	12	0.95	(0.92 to 0.99)	5	0.93	(0.90 to 0.97)	5	0.87	(0.84 to 0.91)	3	0.94	(0.90 to 0.98)	12	0.94	(0.89 to 0.99)	15
27 Osaka	1.02	(0.98 to 1.06)	32	1.04	(1.01 to 1.07)	36	1.02	(0.99 to 1.05)	30	1.05	(1.02 to 1.08)	39	1.07	(1.04 to 1.09)	44	1.09	(1.07 to 1.12)	46	1.02	(0.99 to 1.05)	28	0.97	(0.94 to 1.00)	14	0.84	(0.81 to 0.88)	4
28 Hyogo	1.00	(0.96 to 1.04)	22	1.01	(0.98 to 1.04)	24	1.02	(0.99 to 1.05)	32	1.02	(0.99 to 1.06)	32	1.01	(0.98 to 1.04)	30	1.03	(1.00 to 1.06)	35	0.99	(0.96 to 1.02)	20	0.92	(0.89 to 0.95)	11	0.90	(0.86 to 0.93)	10
29 Nara	0.94	(0.90 to 0.98)	6	0.93	(0.88 to 0.98)	3	0.98	(0.93 to 1.03)	16	0.96	(0.91 to 1.02)	10	1.00	(0.95 to 1.05)	21	1.01	(0.96 to 1.06)	27	0.91	(0.86 to 0.96)	5	0.85	(0.80 to 0.89)	2	0.81	(0.76 to 0.86)	1
30 Wakayama	0.99	(0.95 to 1.04)	21	0.95	(0.91 to 1.00)	14	0.96	(0.92 to 1.01)	6	1.01	(0.95 to 1.06)	27	0.98	(0.93 to 1.03)	14	1.00	(0.95 to 1.05)	22	0.98	(0.93 to 1.04)	19	1.01	(0.96 to 1.08)	25	1.02	(0.96 to 1.09)	22
31 Tottori	1.08	(1.03 to 1.12)	46	1.06	(0.99 to 1.12)	39	1.00	(0.94 to 1.06)	20	1.09	(1.02 to 1.16)	44	1.00	(0.95 to 1.07)	25	1.05	(0.99 to 1.12)	38	1.22	(1.13 to 1.30)	47	1.08	(1.00 to 1.16)	38	1.14	(1.05 to 1.23)	43
32 Shimane	1.05	(1.00 to 1.09)	39	1.01	(0.96 to 1.07)	23	1.05	(1.00 to 1.11)	39	1.10	(1.04 to 1.17)	46	1.00	(0.94 to 1.05)	20	1.00	(0.94 to 1.06)	23	1.08	(1.01 to 1.15)	41	1.13	(1.06 to 1.21)	46	1.03	(0.95 to 1.11)	23
33 Okayama	0.97	(0.93 to 1.01)	10	0.94	(0.90 to 0.98)	7	1.00	(0.96 to 1.04)	21	0.99	(0.94 to 1.03)	16	1.00	(0.96 to 1.04)	24	1.02	(0.98 to 1.06)	32	1.00	(0.95 to 1.04)	23	0.98	(0.93 to 1.03)	16	0.84	(0.79 to 0.89)	3
34 Hiroshima	1.00	(0.96 to 1.05)	25	1.04	(1.00 to 1.08)	35	1.05	(1.01 to 1.09)	38	1.00	(0.96 to 1.04)	24	1.05	(1.01 to 1.09)	41	1.02	(0.98 to 1.05)	30	1.05	(1.01 to 1.10)	36	0.97	(0.93 to 1.02)	15	0.87	(0.82 to 0.91)	7
35 Yamaguchi	1.06	(1.02 to 1.10)	41	1.06	(1.02 to 1.11)	40	1.05	(1.01 to 1.10)	40	1.11	(1.06 to 1.16)	47	1.03	(0.99 to 1.07)	37	1.06	(1.01 to 1.10)	40	1.09	(1.03 to 1.14)	42	1.04	(0.99 to 1.10)	32	1.05	(0.99 to 1.12)	33
36 Tokushima	0.97	(0.93 to 1.01)	12	1.03	(0.98 to 1.09)	33	1.01	(0.96 to 1.06)	24	1.01	(0.96 to 1.07)	31	0.97	(0.92 to 1.02)	10	0.92	(0.87 to 0.97)	3	0.93	(0.87 to 0.99)	9	0.89	(0.83 to 0.95)	4	0.99	(0.92 to 1.07)	20
37 Kagawa	0.98	(0.94 to 1.03)	17	1.01	(0.96 to 1.07)	25	0.98	(0.93 to 1.04)	18	0.98	(0.92 to 1.03)	14	0.96	(0.91 to 1.01)	6	0.99	(0.94 to 1.05)	20	1.00	(0.94 to 1.06)	24	0.98	(0.92 to 1.04)	17	0.99	(0.93 to 1.06)	21
38 Ehime	1.02	(0.97 to 1.06)	30	1.03	(0.98 to 1.07)	30	1.03	(0.99 to 1.08)	34	1.01	(0.96 to 1.05)	28	1.00	(0.96 to 1.04)	22	0.99	(0.94 to 1.03)	18	1.05	(0.99 to 1.10)	33	1.08	(1.03 to 1.14)	39	0.97	(0.92 to 1.03)	17
39 Kochi	1.03	(0.98 to 1.07)	35	1.07	(1.02 to 1.13)	41	1.06	(1.00 to 1.11)	46	1.05	(1.00 to 1.11)	41	0.98	(0.93 to 1.04)	16	0.94	(0.89 to 0.99)	8	0.99	(0.93 to 1.06)	22	1.03	(0.96 to 1.09)	28	1.08	(1.00 to 1.15)	39
40 Fukuoka	0.98	(0.94 to 1.02)	16	0.95	(0.92 to 0.97)	9	0.98	(0.95 to 1.01)	17	0.99	(0.96 to 1.02)	17	1.00	(0.97 to 1.03)	23	1.02	(0.99 to 1.06)	34	0.99	(0.96 to 1.03)	21	0.96	(0.92 to 0.99)	13	0.94	(0.90 to 0.98)	13
41 Saga	1.04	(1.00 to 1.09)	38	0.96	(0.90 to 1.01)	15	1.09	(1.03 to 1.15)	47	1.00	(0.95 to 1.06)	26	1.02	(0.96 to 1.08)	32	1.06	(1.00 to 1.12)	42	1.05	(0.98 to 1.12)	35	1.09	(1.02 to 1.16)	42	1		

Supplementary Table 7. Adjusted prefecture-level residuals for all-cause premature mortality among women, Japan, 1970-2005

Prefectures	Overall			1970			1975			1980			1985			1990			1995			2000			2005		
	OR	(95% CI)	Rank	OR	(95% CI)	Rank	OR	(95% CI)	Rank	OR	(95% CI)	Rank	OR	(95% CI)	Rank	OR	(95% CI)	Rank	OR	(95% CI)	Rank	OR	(95% CI)	Rank	OR	(95% CI)	Rank
1 Hokkaido	0.97	(0.93 to 1.00)	14	0.95	(0.92 to 0.99)	10	0.96	(0.92 to 1.00)	17	0.97	(0.94 to 1.01)	13	0.99	(0.95 to 1.02)	18	0.97	(0.93 to 1.01)	14	0.97	(0.93 to 1.02)	14	0.97	(0.93 to 1.01)	16	1.01	(0.96 to 1.06)	20
2 Aomori	1.04	(1.00 to 1.08)	31	0.98	(0.93 to 1.04)	15	0.99	(0.93 to 1.05)	20	1.00	(0.95 to 1.07)	23	1.05	(0.99 to 1.11)	40	1.01	(0.95 to 1.08)	23	1.07	(1.00 to 1.15)	38	1.11	(1.03 to 1.19)	42	1.13	(1.05 to 1.22)	43
3 Iwate	1.07	(1.02 to 1.11)	40	1.05	(0.99 to 1.12)	35	1.04	(0.98 to 1.10)	34	1.03	(0.97 to 1.09)	33	1.02	(0.96 to 1.09)	25	1.03	(0.97 to 1.10)	31	1.09	(1.02 to 1.17)	43	1.13	(1.05 to 1.22)	46	1.17	(1.08 to 1.27)	45
4 Miyagi	0.91	(0.88 to 0.95)	6	0.89	(0.85 to 0.94)	4	0.87	(0.82 to 0.92)	3	0.88	(0.83 to 0.93)	3	0.93	(0.88 to 0.98)	6	0.96	(0.91 to 1.02)	13	0.95	(0.90 to 1.02)	13	0.92	(0.86 to 0.98)	10	0.96	(0.90 to 1.03)	15
5 Akita	0.96	(0.92 to 1.00)	12	0.99	(0.94 to 1.05)	20	0.94	(0.89 to 1.00)	9	0.91	(0.86 to 0.97)	5	0.93	(0.88 to 1.00)	8	0.93	(0.87 to 1.00)	6	1.00	(0.93 to 1.07)	21	1.04	(0.96 to 1.13)	26	1.05	(0.96 to 1.14)	29
6 Yamagata	0.96	(0.92 to 1.00)	11	0.99	(0.93 to 1.05)	18	0.95	(0.89 to 1.01)	11	0.95	(0.89 to 1.01)	9	0.95	(0.89 to 1.01)	11	0.94	(0.88 to 1.00)	8	1.00	(0.92 to 1.08)	19	0.97	(0.89 to 1.05)	15	1.05	(0.96 to 1.14)	30
7 Fukushima	1.04	(1.00 to 1.08)	30	1.04	(0.98 to 1.09)	30	1.07	(1.01 to 1.13)	40	0.99	(0.94 to 1.05)	18	1.03	(0.98 to 1.09)	32	1.01	(0.95 to 1.06)	21	1.02	(0.95 to 1.08)	26	1.07	(1.00 to 1.14)	32	1.10	(1.02 to 1.18)	40
8 Ibaraki	1.04	(1.00 to 1.08)	33	1.08	(1.03 to 1.14)	42	1.02	(0.96 to 1.07)	28	1.01	(0.96 to 1.06)	27	1.04	(0.99 to 1.10)	36	1.06	(1.01 to 1.12)	43	1.07	(1.01 to 1.13)	37	0.99	(0.94 to 1.05)	19	1.05	(0.98 to 1.11)	31
9 Tochigi	1.09	(1.05 to 1.13)	44	1.09	(1.03 to 1.15)	43	1.05	(0.99 to 1.11)	38	1.06	(1.00 to 1.13)	40	1.13	(1.07 to 1.20)	47	1.09	(1.03 to 1.16)	46	1.04	(0.98 to 1.11)	29	1.11	(1.04 to 1.19)	43	1.09	(1.01 to 1.17)	38
10 Gunma	1.05	(1.01 to 1.09)	34	1.08	(1.02 to 1.14)	40	1.01	(0.95 to 1.07)	22	1.02	(0.96 to 1.08)	31	1.05	(0.99 to 1.11)	39	1.02	(0.97 to 1.09)	27	1.01	(0.94 to 1.08)	23	1.09	(1.02 to 1.17)	40	1.10	(1.03 to 1.18)	41
11 Saitama	0.92	(0.88 to 0.95)	7	0.94	(0.90 to 0.98)	9	0.92	(0.88 to 0.96)	6	0.91	(0.88 to 0.95)	6	0.95	(0.91 to 0.99)	10	0.96	(0.92 to 1.00)	12	0.92	(0.88 to 0.96)	9	0.89	(0.85 to 0.93)	7	0.84	(0.80 to 0.88)	4
12 Chiba	0.88	(0.85 to 0.91)	3	0.90	(0.86 to 0.95)	5	0.89	(0.85 to 0.93)	4	0.88	(0.84 to 0.92)	4	0.90	(0.86 to 0.94)	3	0.88	(0.85 to 0.92)	1	0.87	(0.83 to 0.91)	4	0.84	(0.80 to 0.88)	3	0.89	(0.85 to 0.94)	8
13 Tokyo	0.89	(0.86 to 0.92)	4	0.79	(0.76 to 0.81)	1	0.86	(0.83 to 0.89)	2	0.92	(0.89 to 0.95)	7	0.93	(0.90 to 0.96)	7	0.93	(0.90 to 0.96)	5	0.88	(0.85 to 0.91)	6	0.89	(0.86 to 0.93)	6	0.93	(0.89 to 0.97)	11
14 Kanagawa	0.84	(0.81 to 0.87)	1	0.79	(0.76 to 0.82)	2	0.82	(0.78 to 0.85)	1	0.85	(0.82 to 0.88)	1	0.87	(0.84 to 0.91)	2	0.89	(0.86 to 0.92)	3	0.86	(0.82 to 0.89)	3	0.83	(0.79 to 0.86)	2	0.80	(0.76 to 0.84)	2
15 Niigata	0.96	(0.93 to 1.00)	13	1.00	(0.96 to 1.05)	23	0.95	(0.90 to 0.99)	10	0.95	(0.90 to 1.00)	10	0.92	(0.87 to 0.97)	5	0.97	(0.92 to 1.03)	15	1.00	(0.94 to 1.06)	20	1.01	(0.95 to 1.08)	22	0.97	(0.90 to 1.04)	16
16 Toyama	1.06	(1.01 to 1.10)	38	1.08	(1.02 to 1.15)	41	1.04	(0.97 to 1.11)	35	1.02	(0.95 to 1.09)	29	1.03	(0.96 to 1.10)	29	1.01	(0.94 to 1.08)	22	1.01	(0.93 to 1.09)	24	1.15	(1.06 to 1.25)	47	1.13	(1.04 to 1.24)	44
17 Ishikawa	1.03	(0.99 to 1.07)	25	1.04	(0.97 to 1.11)	31	1.02	(0.96 to 1.10)	30	1.00	(0.93 to 1.07)	21	0.98	(0.91 to 1.05)	16	1.03	(0.96 to 1.11)	32	1.02	(0.94 to 1.11)	27	1.06	(0.98 to 1.15)	30	1.10	(1.00 to 1.20)	39
18 Fukui	1.05	(1.00 to 1.10)	35	1.07	(1.00 to 1.15)	38	1.01	(0.94 to 1.09)	25	1.06	(0.98 to 1.15)	41	1.02	(0.95 to 1.11)	27	1.04	(0.96 to 1.12)	35	0.91	(0.83 to 1.00)	8	1.07	(0.97 to 1.18)	33	1.18	(1.06 to 1.30)	46
19 Yamanashi	1.01	(0.97 to 1.06)	23	1.00	(0.93 to 1.07)	22	1.00	(0.93 to 1.08)	21	0.99	(0.92 to 1.07)	19	1.03	(0.96 to 1.12)	33	0.99	(0.91 to 1.07)	19	1.05	(0.96 to 1.15)	32	1.03	(0.94 to 1.13)	25	1.02	(0.92 to 1.13)	23
20 Nagano	1.04	(1.00 to 1.08)	32	1.05	(1.00 to 1.11)	36	1.01	(0.96 to 1.06)	24	1.05	(1.00 to 1.11)	38	1.05	(0.99 to 1.11)	41	1.06	(1.00 to 1.12)	40	1.07	(1.01 to 1.14)	39	1.01	(0.94 to 1.08)	20	1.04	(0.97 to 1.12)	28
21 Gifu	1.11	(1.07 to 1.16)	46	1.02	(0.97 to 1.08)	26	1.10	(1.04 to 1.17)	43	1.15	(1.09 to 1.22)	47	1.11	(1.05 to 1.17)	45	1.08	(1.02 to 1.15)	45	1.14	(1.08 to 1.22)	46	1.11	(1.04 to 1.18)	41	1.12	(1.04 to 1.20)	42
22 Shizuoka	1.01	(0.97 to 1.05)	22	0.94	(0.89 to 0.98)	7	0.96	(0.91 to 1.00)	15	1.00	(0.96 to 1.05)	22	1.00	(0.95 to 1.05)	21	1.06	(1.01 to 1.11)	39	1.06	(1.01 to 1.12)	35	1.05	(1.00 to 1.11)	29	1.05	(0.99 to 1.12)	33
23 Aichi	1.03	(0.99 to 1.07)	24	0.98	(0.94 to 1.02)	13	1.01	(0.97 to 1.05)	23	1.04	(1.00 to 1.08)	34	1.07	(1.03 to 1.11)	43	1.04	(1.00 to 1.08)	38	1.06	(1.02 to 1.11)	34	1.02	(0.98 to 1.07)	24	1.04	(0.99 to 1.09)	27
24 Mie	0.98	(0.94 to 1.02)	19	0.99	(0.93 to 1.04)	16	0.93	(0.88 to 0.99)	8	0.97	(0.92 to 1.03)	14	0.99	(0.93 to 1.05)	19	0.94	(0.89 to 1.00)	10	1.01	(0.95 to 1.08)	25	1.06	(0.99 to 1.14)	31	0.99	(0.92 to 1.06)	18
25 Shiga	0.98	(0.94 to 1.02)	18	1.07	(1.00 to 1.14)	37	1.02	(0.95 to 1.09)	27	1.01	(0.94 to 1.08)	28	0.94	(0.87 to 1.01)	9	0.98	(0.91 to 1.05)	17	1.01	(0.93 to 1.09)	22	0.90	(0.83 to 0.98)	8	0.90	(0.83 to 0.99)	10
26 Kyoto	0.93	(0.89 to 0.97)	9	0.89	(0.84 to 0.93)	3	0.96	(0.91 to 1.01)	16	0.99	(0.94 to 1.04)	17	0.97	(0.92 to 1.03)	15	0.94	(0.89 to 0.99)	9	0.85	(0.80 to 0.90)	2	0.88	(0.83 to 0.94)	5	0.95	(0.89 to 1.01)	13
27 Osaka	0.95	(0.91 to 0.98)	10	0.92	(0.89 to 0.95)	6	0.96	(0.92 to 0.99)	14	0.98	(0.95 to 1.02)	16	1.00	(0.97 to 1.04)	22	0.98	(0.95 to 1.02)	18	0.94	(0.91 to 0.98)	10	0.91	(0.87 to 0.95)	9	0.85	(0.81 to 0.89)	5
28 Hyogo	0.92	(0.89 to 0.96)	8	0.94	(0.90 to 0.97)	8	0.96	(0.92 to 1.00)	13	0.98	(0.94 to 1.02)	15	0.97	(0.93 to 1.01)	14	0.93	(0.89 to 0.96)	4	0.89	(0.85 to 0.93)	7	0.84	(0.80 to 0.88)	4	0.86	(0.81 to 0.90)	6
29 Nara	0.87	(0.83 to 0.90)	2	0.97	(0.91 to 1.04)	12	0.95	(0.89 to 1.02)	12	0.95	(0.88 to 1.01)	8	0.91	(0.85 to 0.97)	4	0.89	(0.83 to 0.95)	2	0.80	(0.75 to 0.86)	1	0.76	(0.71 to 0.82)	1	0.75	(0.69 to 0.82)	1
30 Wakayama	1.01	(0.96 to 1.05)	21	1.03	(0.97 to 1.09)	27	1.02	(0.95 to 1.08)	29	1.00	(0.94 to 1.07)	24	1.04	(0.98 to 1.12)	37	0.98	(0.91 to 1.05)	16	0.95	(0.87 to 1.02)	11	0.93	(0.86 to 1.02)	12	1.08	(0.99 to 1.18)	37
31 Tottori	1.07	(1.02 to 1.12)	41	1.07	(0.99 to 1.16)	39	1.04	(0.96 to 1.13)	37	1.05	(0.97 to 1.14)	37	1.04	(0.96 to 1.13)	35	1.03	(0.95 to 1.12)	33	1.08	(0.98 to 1.19)	41	1.11	(1.00 to 1.23)	44	1.01	(0.90 to 1.14)	21
32 Shimane	1.05	(1.01 to 1.10)	36	1.05	(0.98 to 1.13)	33	1.09	(1.01 to 1.17)	42	1.06	(0.98 to 1.14)	39	0.98	(0.91 to 1.06)	17	1.03	(0.95 to 1.11)	30	1.13	(1.03 to 1.23)	44	1.05	(0.95 to 1.15)	27	0.96	(0.86 to 1.07)	14
33 Okayama	0.97	(0.93 to 1.01)	16	0.98	(0.93 to 1.04)	14	0.98	(0.93 to 1.04)	18	0.97	(0.91 to 1.03)	12	1.04	(0.99 to 1.11)	38	1.03	(0.97 to 1.09)	29	0.98	(0.92 to 1.05)	17	0.92	(0.86 to 0.99)	11	0.84	(0.78 to 0.91)	3
34 Hiroshima	0.99	(0.96 to 1.03)	20	0.99	(0.94 to 1.04)	17	1.03	(0.98 to 1.08)	31	1.03	(0.98 to 1.08)	32	1.01	(0.96 to 1.06)	23	1.04	(0.99 to 1.10)	37	0.98	(0.93 to 1.04)	16	0.94	(0.88 to 0.99)	13	0.90	(0.85 to 0.96)	9
35 Yamaguchi	1.03	(0.99 to 1.07)	27	0.99	(0.94 to 1.05)	19	1.04	(0.98 to 1.10)	36	1.01	(0.95 to 1.07)	25	1.03	(0.97 to 1.09)	30	1.01	(0.96 to 1.08)	24	1.04	(0.98 to 1.12)	30	1.07	(1.00 to 1.15)	36	1.05	(0.97 to 1.13)	32
36 Tokushima	1.08	(1.04 to 1.13)	43	1.11	(1.03 to 1.18)	45	1.19	(1.11 to 1.27)	47	1.10	(1.03 to 1.18)	45	0.97	(0.90 to 1.04)	13	1.06	(0.98 to 1.14)	42	1.08	(1.00 to 1.18)	42	1.01	(0.93 to 1.11)	23	1.02	(0.92 to 1.12)	22
37 Kagawa	1.03	(0.99 to 1.08)	28	1.03	(0.96 to 1.10)	29	1.01	(0.95 to 1.09)	26	1.00	(0.93 to 1.07)	20	1.03	(0.96 to 1.11)	31	1.02	(0.95 to 1.09)	26	1.07	(0.98 to 1.16)	36	1.05	(0.96 to 1.15)	28	1.02	(0.93 to 1.12)	24
38 Ehime	1.06	(1.02 to 1.10)	37	1.02	(0.96 to 1.08)	24	1.13	(1.07 to 1.19)	44	1.02	(0.96 to 1.08)	30	1.03	(0.97 to 1.09)	28	1.08	(1.02 to 1.15)	44	1.03	(0.96 to 1.11)	28	1.07	(0.99 to 1.15)	34	1.07	(0.99 to 1.16)	35
39 Kochi	1.11	(1.06 to 1.16)	45	1.05	(0.98 to 1.13)	34	1.19	(1.11 to 1.27)	46	1.05	(0.98 to 1.13)	36	1.06	(0.99 to 1.15)	42	1.06	(0.98 to 1.14)	41	1.07	(0.99 to 1.17)	40	1.08	(0.98 to 1.18)	37	1.18	(1.07 to 1.30)	47
40 Fukuoka	0.97	(0.94 to 1.01)	17	0.96	(0.92 to 1.00)	11	0.93	(0.89 to 0.97)	7	0.97	(0.93 to 1.01)	11	1.04	(1.00 to 1.08)	34	0.99	(0.95 to 1.03)	20	0.98	(0.93 to 1.02)	15	0.97	(0.92 to 1.02)	17	0.94	(0.89 to 0.99)	12
41 Saga	1.08	(1.04 to 1.13)	42	1.03	(0.96 to 1.10)	28	1.09	(1.01 to 1.17)	41	1.09	(1.01 to 1.17)	43	0.99	(0.92 to 1.07)	20	1.10	(1.03 to 1.19)	47	1.13	(1.04 to 1.23)	45	1.11	(1.02 to 1.22)	45	1.		

Supplementary Table 8. Variance and covariance matrices of prefecture-level variances of each occupation group, Japan, 1970-2005 ^a

	Men						Women					
	Clerical, technical and managerial occupations	Sales and service occupations	Agriculture, forestry and fishery occupations	Production and transport occupations	Unclassifiable occupations	Non-employed ^b	Clerical, technical and managerial occupations	Sales and service occupations	Agriculture, forestry and fishery occupations	Production and transport occupations	Unclassifiable occupations	Non-employed ^b
Clerical, technical and managerial occupations	0.005 (0.001) <i>1.000</i>						0.008 (0.002) <i>1.000</i>					
Sales and service occupations	0.006 (0.002) <i>0.716</i>	0.014 (0.003) <i>1.000</i>					0.003 (0.002) <i>0.345</i>	0.010 (0.002) <i>1.000</i>				
Agriculture, forestry and fishery occupations	0.002 (0.001) <i>0.303</i>	0.005 (0.002) <i>0.506</i>	0.006 (0.001) <i>1.000</i>				0.002 (0.002) <i>0.176</i>	0.004 (0.002) <i>0.393</i>	0.013 (0.003) <i>1.000</i>			
Production and transport occupations	0.006 (0.002) <i>0.731</i>	0.012 (0.003) <i>0.920</i>	0.004 (0.002) <i>0.484</i>	0.013 (0.003) <i>1.000</i>			0.004 (0.002) <i>0.472</i>	0.006 (0.002) <i>0.544</i>	0.004 (0.002) <i>0.308</i>	0.011 (0.003) <i>1.000</i>		
Unclassifiable occupations	-0.007 (0.007) <i>-0.168</i>	-0.003 (0.010) <i>-0.051</i>	0.006 (0.007) <i>0.139</i>	-0.005 (0.010) <i>-0.078</i>	0.317 (0.066) <i>1.000</i>		-0.022 (0.009) <i>-0.440</i>	-0.014 (0.009) <i>-0.247</i>	-0.019 (0.011) <i>-0.297</i>	-0.014 (0.010) <i>-0.244</i>	0.331 (0.070) <i>1.000</i>	
Non-employed ^b	-0.001 (0.001) <i>-0.226</i>	-0.003 (0.001) <i>-0.387</i>	-0.0002 (0.001) <i>-0.030</i>	-0.003 (0.001) <i>-0.358</i>	0.006 (0.007) <i>0.144</i>	0.006 (0.001) <i>1.000</i>	-0.002 (0.001) <i>-0.198</i>	0.005 (0.002) <i>0.508</i>	-0.002 (0.002) <i>-0.203</i>	-0.001 (0.002) <i>-0.112</i>	0.014 (0.008) <i>0.262</i>	0.008 (0.002) <i>1.000</i>

^a The number in parentheses is a standard error of the corresponding variances and covariances. The italicized numbers are correlation coefficients.

^b Non-employed is the sum of unemployed and non-labour force.

Supplementary Table 9. Gini's coefficient of yearly income, average yearly income, and average savings in 47 prefectures, Japan, 1969-2004^a

Prefectures	1969 ^{b,c}			1974 ^c			1979			1984			1989			1994			1999			2004		
	Gini	Income	Savings	Gini	Income	Savings	Gini	Income	Savings	Gini	Income	Savings	Gini	Income	Savings	Gini	Income	Savings	Gini	Income	Savings	Gini	Income	Savings
1 Hokkaido	NA	1,154	966	NA	2,366	1,686	0.268	3,969	3,998	0.265	4,851	5,097	0.267	5,407	7,276	0.273	6,506	10,241	0.292	6,588	11,616	0.294	5,928	12,062
2 Aomori	NA	1,157	1,014	NA	2,056	1,626	0.253	3,951	3,570	0.266	4,738	4,573	0.289	5,405	6,440	0.298	5,974	7,707	0.294	6,239	9,270	0.291	5,896	11,267
3 Iwate	NA	1,012	786	NA	2,426	1,954	0.263	3,502	3,023	0.294	4,448	4,629	0.283	5,307	6,901	0.272	6,674	10,540	0.283	7,351	12,767	0.298	6,455	12,363
4 Miyagi	NA	1,105	1,021	NA	2,788	2,301	0.251	4,223	4,470	0.260	5,158	4,947	0.271	6,307	8,006	0.279	7,486	10,666	0.275	7,167	12,261	0.307	6,764	11,894
5 Akita	NA	1,336	864	NA	2,616	1,810	0.268	4,129	3,814	0.262	4,821	4,266	0.274	5,872	7,364	0.274	7,284	9,642	0.279	7,254	9,966	0.300	6,235	11,512
6 Yamagata	NA	1,053	877	NA	2,341	1,803	0.256	4,151	3,761	0.266	5,088	4,688	0.272	6,748	7,695	0.273	8,045	10,705	0.277	7,926	13,045	0.306	7,070	12,675
7 Fukushima	NA	1,027	864	NA	2,407	1,963	0.279	3,893	3,798	0.278	5,182	5,290	0.273	6,127	7,660	0.299	7,294	11,202	0.301	7,578	12,405	0.312	6,536	13,216
8 Ibaraki	NA	1,130	1,266	NA	2,573	2,376	0.264	4,369	4,751	0.278	5,437	6,813	0.272	7,140	10,569	0.276	8,516	14,506	0.295	8,261	15,136	0.295	7,339	16,224
9 Tochigi	NA	1,291	1,306	NA	2,617	2,577	0.276	4,461	4,981	0.262	5,819	6,365	0.262	6,884	11,496	0.296	8,146	16,105	0.290	7,630	15,077	0.310	7,527	15,793
10 Gunma	NA	1,203	1,135	NA	2,586	2,361	0.251	4,216	4,627	0.267	5,475	6,571	0.289	6,312	9,731	0.287	8,001	15,031	0.302	7,415	16,836	0.293	6,704	15,878
11 Saitama	NA	1,347	1,322	NA	2,758	2,462	0.244	4,473	4,314	0.253	5,803	6,431	0.268	7,322	11,731	0.274	8,565	13,811	0.281	7,994	14,871	0.295	7,165	14,919
12 Chiba	NA	1,355	1,319	NA	2,765	2,511	0.254	4,593	5,108	0.266	5,898	7,036	0.272	7,439	11,391	0.283	8,683	13,165	0.294	8,330	16,243	0.302	7,230	16,646
13 Tokyo	NA	1,572	1,700	NA	3,067	3,137	0.287	4,843	6,287	0.282	6,165	8,236	0.315	7,691	14,720	0.301	8,494	16,210	0.314	8,082	18,408	0.314	7,799	19,961
14 Kanagawa	NA	1,443	1,481	NA	2,885	2,788	0.260	4,500	4,970	0.272	6,281	7,832	0.280	7,785	13,434	0.291	8,948	16,366	0.285	8,340	17,587	0.299	7,566	17,916
15 Niigata	NA	1,227	1,259	NA	2,432	1,963	0.263	4,177	4,116	0.259	5,631	6,296	0.271	6,515	9,215	0.279	8,086	12,637	0.292	7,904	14,513	0.312	7,406	16,220
16 Toyama	NA	1,178	1,150	NA	2,815	2,506	0.268	4,460	5,176	0.259	5,959	7,286	0.259	7,481	10,780	0.294	8,947	15,490	0.276	8,915	15,676	0.303	8,001	16,814
17 Ishikawa	NA	1,235	1,384	NA	2,773	2,857	0.247	4,486	5,005	0.261	5,875	7,285	0.272	7,144	14,108	0.281	9,152	16,794	0.285	8,728	17,861	0.286	7,409	16,219
18 Fukui	NA	1,213	1,541	NA	2,735	3,181	0.286	5,025	5,759	0.269	6,089	7,819	0.316	7,823	13,122	0.273	8,639	16,529	0.291	8,841	19,639	0.304	8,297	19,330
19 Yamanashi	NA	1,114	927	NA	2,580	2,368	0.267	4,178	4,796	0.257	5,550	6,703	0.258	6,370	9,703	0.278	7,967	12,968	0.287	7,591	13,453	0.280	6,380	13,253
20 Nagano	NA	1,165	1,203	NA	2,463	2,314	0.254	4,347	4,939	0.260	5,525	6,656	0.270	6,547	10,632	0.280	8,041	13,811	0.284	7,970	15,089	0.275	6,807	15,597
21 Gifu	NA	1,160	1,272	NA	2,813	3,074	0.237	4,602	5,033	0.265	5,840	7,173	0.271	6,895	10,957	0.273	8,300	15,472	0.302	8,593	18,079	0.293	7,345	17,212
22 Shizuoka	NA	1,315	1,321	NA	2,615	2,420	0.276	4,380	5,196	0.267	5,666	7,009	0.282	7,156	10,970	0.288	8,183	13,564	0.287	8,057	16,410	0.298	7,361	17,622
23 Aichi	NA	1,279	1,540	NA	2,836	2,892	0.277	4,456	5,716	0.271	6,098	8,468	0.280	7,223	12,592	0.296	8,574	15,924	0.301	8,081	16,767	0.306	7,636	19,433
24 Mie	NA	1,269	1,597	NA	2,736	3,058	0.247	4,137	5,033	0.251	5,541	6,694	0.283	7,161	11,692	0.289	8,224	15,492	0.286	8,159	15,888	0.287	7,346	19,677
25 Shiga	NA	1,286	1,497	NA	2,930	3,361	0.232	4,753	5,470	0.262	6,027	7,817	0.266	7,407	12,852	0.266	8,745	15,929	0.286	7,994	16,220	0.280	7,231	17,098
26 Kyoto	NA	1,593	1,646	NA	3,004	3,105	0.260	4,439	5,632	0.270	5,485	8,077	0.272	6,678	11,127	0.294	7,458	13,633	0.303	7,434	16,289	0.295	6,565	16,383
27 Osaka	NA	1,481	1,736	NA	2,844	2,975	0.276	4,275	5,378	0.271	5,304	7,208	0.291	6,725	12,716	0.308	7,742	14,578	0.296	7,223	15,175	0.323	6,443	15,079
28 Hyogo	NA	1,367	1,779	NA	2,746	2,827	0.272	4,384	5,839	0.281	5,771	7,835	0.293	6,709	13,310	0.287	7,955	15,221	0.296	7,552	15,221	0.314	6,887	16,826
29 Nara	NA	1,220	1,733	NA	2,639	2,927	0.248	4,659	6,405	0.255	5,664	7,923	0.252	6,882	12,601	0.292	8,066	15,819	0.292	8,019	16,010	0.290	7,019	19,270
30 Wakayama	NA	1,180	1,693	NA	2,574	3,311	0.255	4,038	5,210	0.303	5,511	8,111	0.303	5,916	10,795	0.309	7,009	12,886	0.295	6,959	14,747	0.304	6,209	16,929
31 Tottori	NA	1,112	1,134	NA	2,574	2,223	0.259	4,100	4,752	0.278	5,208	6,922	0.276	6,599	9,898	0.289	7,698	13,798	0.296	7,400	14,908	0.297	6,875	16,442
32 Shimane	NA	999	777	NA	2,343	1,890	0.269	4,021	4,191	0.284	5,444	5,958	0.271	6,032	9,969	0.292	7,395	12,366	0.322	7,707	13,343	0.298	6,789	15,128
33 Okayama	NA	1,164	1,330	NA	2,594	2,696	0.267	4,478	5,659	0.280	5,329	7,799	0.292	6,162	11,342	0.282	7,206	14,636	0.291	7,756	16,356	0.303	6,493	17,909
34 Hiroshima	NA	1,187	1,326	NA	2,641	2,444	0.264	4,136	4,935	0.276	5,351	6,620	0.275	6,225	10,185	0.286	7,659	13,471	0.311	7,240	15,763	0.301	6,778	15,478
35 Yamaguchi	NA	1,069	1,168	NA	2,639	2,391	0.252	4,122	5,025	0.267	4,990	6,585	0.283	6,135	10,064	0.282	7,410	13,813	0.294	6,530	13,216	0.293	6,388	14,772
36 Tokushima	NA	1,101	1,292	NA	2,330	2,156	0.298	4,128	5,444	0.287	5,384	6,979	0.284	6,065	9,934	0.294	7,235	13,253	0.321	7,361	15,291	0.345	6,607	16,186
37 Kagawa	NA	1,165	1,259	NA	2,762	2,886	0.266	4,429	5,768	0.288	5,257	7,573	0.266	6,347	13,286	0.294	7,438	15,379	0.285	7,530	17,431	0.292	6,805	18,858
38 Ehime	NA	1,144	1,084	NA	2,272	2,126	0.265	3,876	4,516	0.291	4,834	6,734	0.299	5,627	10,117	0.300	6,833	12,740	0.288	6,355	12,883	0.295	6,157	15,770
39 Kochi	NA	1,074	1,058	NA	2,496	2,325	0.271	3,749	4,267	0.310	4,613	5,482	0.299	5,613	9,695	0.330	6,612	12,490	0.326	6,726	13,279	0.313	6,331	16,847
40 Fukuoka	NA	1,175	1,079	NA	2,404	1,788	0.267	4,008	4,112	0.296	5,024	5,324	0.290	5,579	8,374	0.311	7,159	11,540	0.317	6,797	11,946	0.302	6,464	13,414
41 Saga	NA	1,073	1,064	NA	2,293	2,065	0.261	3,799	3,610	0.286	4,923	5,248	0.301	6,147	8,612	0.296	7,159	11,607	0.284	7,440	12,538	0.296	6,832	13,363
42 Nagasaki	NA	1,113	942	NA	2,184	1,473	0.249	3,659	3,511	0.287	4,273	5,116	0.259	5,249	6,941	0.289	6,129	8,777	0.301	6,646	10,999	0.309	5,855	11,355
43 Kumamoto	NA	1,116	804	NA	2,233	1,750	0.276	3,713	3,716	0.286	4,791	5,155	0.308	5,721	7,603	0.313	6,874	10,354	0.310	6,640	10,824	0.316	6,388	11,657
44 Oita	NA	1,178	1,072	NA	2,281	1,969	0.275	3,666	3,944	0.274	4,470	4,539	0.299	5,560	7,827	0.291	6,406	10,268	0.283	6,764	12,249	0.299	5,811	12,271
45 Miyazaki	NA	1,037	906	NA	2,408	1,677	0.301	3,520	3,125	0.319	4,104	3,876	0.298	4,781	6,044	0.294	5,797	8,779	0.312	6,216	10,263	0.311	5,934	10,030
46 Kagoshima	NA	887	644	NA	2,037	1,423	0.272	3,236	2,854	0.291	3,730	4,031	0.310	4,583	6,318	0.302	5,831	8,461	0.282	5,885	10,217	0.293	5,827	10,410
47 Okinawa	NA	NA	NA	NA	2,128	990	0.299	3,261	2,345	0.337	3,648	2,656	0.332	4,505	4,728	0.380	5,491	5,238	0.353	5,298	5,918	0.344	4,516	5,484
Mean	NA	1,197	1,220	NA	2,562	2,357	0.265	4,170	4,637	0.276	5,278	6,355	0.282	6,368	10,054	0.291	7,575	12,971	0.296	7,457	14,261	0.302	6,753	15,120
Standard deviation																								

Supplementary Table 10. Odds ratios for all-cause premature mortality of prefecture-level socioeconomic status variables, Japan, 1970-2005 ^a

	Overall		1970 ^b		1975 ^b		1980		1985		1990		1995		2000		2005	
	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)	OR	(95% CI)
<i>Men</i>																		
Gini's coefficient of yearly income ^c																		
Low	1.00	Reference	1.00	Reference	1.00	Reference	1.00	Reference	1.00	Reference	1.00	Reference	1.00	Reference	1.00	Reference	1.00	Reference
Middle	1.01	(0.99 to 1.03)	1.03	(0.98 to 1.07)	1.03	(0.99 to 1.07)	1.01	(0.97 to 1.06)	1.00	(0.97 to 1.04)	1.03	(0.99 to 1.07)	0.99	(0.93 to 1.04)	1.02	(0.96 to 1.08)	0.99	(0.92 to 1.07)
High	1.01	(0.98 to 1.03)	1.03	(0.99 to 1.07)	1.01	(0.97 to 1.05)	0.99	(0.95 to 1.04)	0.98	(0.94 to 1.01)	0.99	(0.95 to 1.03)	1.00	(0.94 to 1.06)	0.98	(0.93 to 1.05)	0.98	(0.91 to 1.06)
Average yearly income ^c																		
High	1.00	Reference	1.00	Reference	1.00	Reference	1.00	Reference	1.00	Reference	1.00	Reference	1.00	Reference	1.00	Reference	1.00	Reference
Middle	0.99	(0.97 to 1.02)	0.99	(0.95 to 1.03)	1.04	(1.00 to 1.08)	1.05	(1.00 to 1.09)	0.99	(0.95 to 1.03)	1.00	(0.96 to 1.04)	1.05	(0.99 to 1.11)	1.07	(1.01 to 1.13)	0.99	(0.91 to 1.07)
Low	0.99	(0.96 to 1.02)	1.04	(1.00 to 1.08)	1.05	(1.01 to 1.08)	1.04	(0.99 to 1.09)	0.98	(0.94 to 1.02)	0.96	(0.92 to 1.00)	1.01	(0.96 to 1.07)	1.04	(0.98 to 1.10)	1.03	(0.96 to 1.11)
Average savings ^c																		
High	1.00	Reference	1.00	Reference	1.00	Reference	1.00	Reference	1.00	Reference	1.00	Reference	1.00	Reference	1.00	Reference	1.00	Reference
Middle	1.00	(0.97 to 1.02)	1.04	(1.00 to 1.08)	1.04	(1.00 to 1.08)	1.02	(0.97 to 1.07)	1.02	(0.98 to 1.06)	0.99	(0.95 to 1.03)	1.05	(0.99 to 1.11)	1.07	(1.01 to 1.13)	1.03	(0.95 to 1.11)
Low	1.01	(0.98 to 1.05)	1.07	(1.03 to 1.12)	1.05	(1.01 to 1.09)	1.02	(0.98 to 1.07)	0.99	(0.95 to 1.03)	0.97	(0.93 to 1.01)	1.04	(0.98 to 1.10)	1.07	(1.01 to 1.14)	1.08	(1.00 to 1.16)
<i>Women</i>																		
Gini's coefficient of yearly income ^c																		
Low	1.00	Reference	1.00	Reference	1.00	Reference	1.00	Reference	1.00	Reference	1.00	Reference	1.00	Reference	1.00	Reference	1.00	Reference
Middle	1.00	(0.97 to 1.02)	0.98	(0.93 to 1.05)	1.01	(0.95 to 1.08)	1.00	(0.95 to 1.05)	1.04	(0.99 to 1.09)	1.02	(0.97 to 1.07)	0.97	(0.90 to 1.03)	0.96	(0.89 to 1.03)	0.99	(0.91 to 1.07)
High	1.01	(0.98 to 1.04)	1.01	(0.95 to 1.07)	1.04	(0.98 to 1.11)	1.04	(0.98 to 1.10)	1.05	(1.00 to 1.10)	1.02	(0.97 to 1.07)	0.99	(0.93 to 1.06)	0.99	(0.92 to 1.07)	1.00	(0.93 to 1.09)
Average yearly income ^c																		
High	1.00	Reference	1.00	Reference	1.00	Reference	1.00	Reference	1.00	Reference	1.00	Reference	1.00	Reference	1.00	Reference	1.00	Reference
Middle	1.01	(0.98 to 1.04)	1.09	(1.03 to 1.15)	1.07	(1.01 to 1.13)	1.01	(0.96 to 1.06)	1.04	(0.99 to 1.10)	1.01	(0.97 to 1.07)	1.00	(0.94 to 1.07)	1.06	(0.99 to 1.14)	0.96	(0.89 to 1.04)
Low	1.02	(0.99 to 1.06)	1.10	(1.05 to 1.16)	1.09	(1.04 to 1.16)	1.05	(0.99 to 1.11)	1.04	(0.98 to 1.09)	1.02	(0.97 to 1.08)	1.04	(0.98 to 1.12)	1.04	(0.97 to 1.12)	1.04	(0.96 to 1.13)
Average savings ^c																		
High	1.00	Reference	1.00	Reference	1.00	Reference	1.00	Reference	1.00	Reference	1.00	Reference	1.00	Reference	1.00	Reference	1.00	Reference
Middle	1.00	(0.97 to 1.03)	1.09	(1.03 to 1.15)	1.05	(0.99 to 1.12)	1.01	(0.96 to 1.07)	1.02	(0.96 to 1.07)	1.08	(1.03 to 1.13)	1.03	(0.96 to 1.10)	1.05	(0.98 to 1.13)	1.01	(0.93 to 1.09)
Low	1.02	(0.98 to 1.06)	1.08	(1.02 to 1.14)	1.04	(0.98 to 1.11)	1.02	(0.96 to 1.07)	1.01	(0.96 to 1.07)	1.03	(0.98 to 1.07)	1.06	(0.99 to 1.13)	1.08	(1.00 to 1.16)	1.05	(0.97 to 1.14)

CI; confidence interval, OR; odds ratio

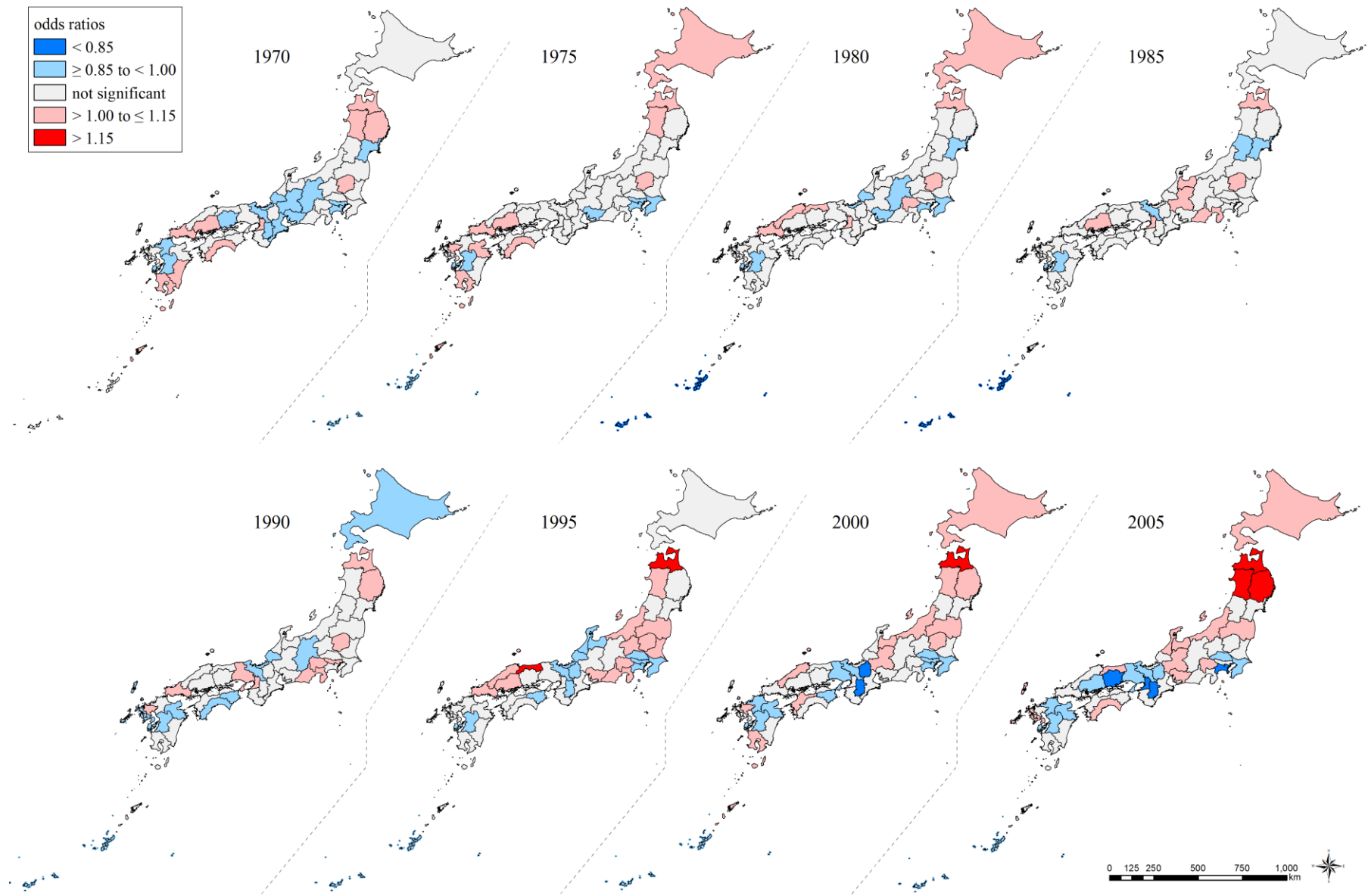
^a These odds ratios were adjusted for age (5 year categories) and occupations. We further adjusted for time-trends in the overall model. Prefecture-level variables were adjusted for separately.

^b Gini's coefficients of yearly income were not available in these models, and we imputed the values of the 1980 model to them.

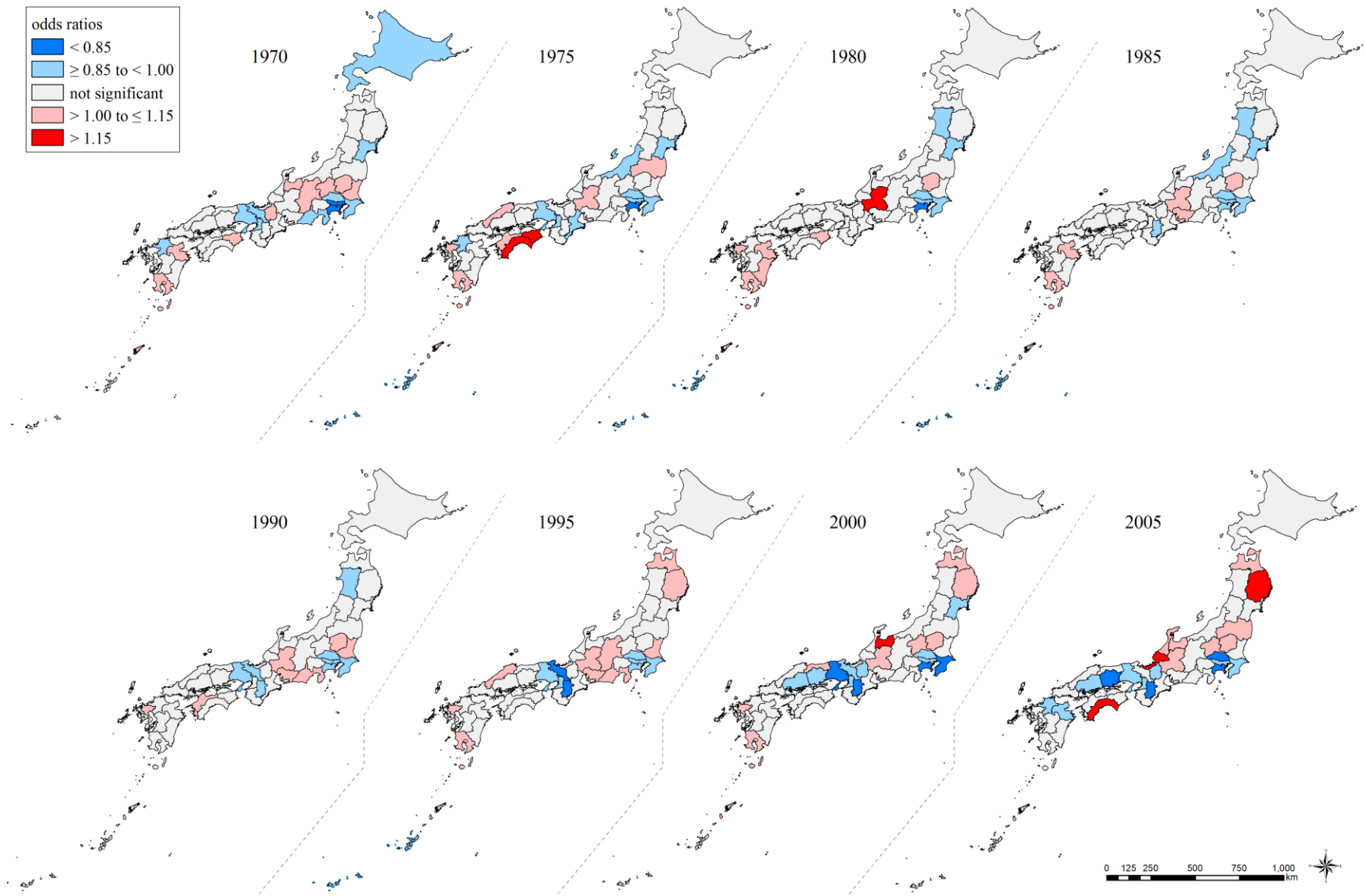
^c These variables were calculated among two-or-more-person households.



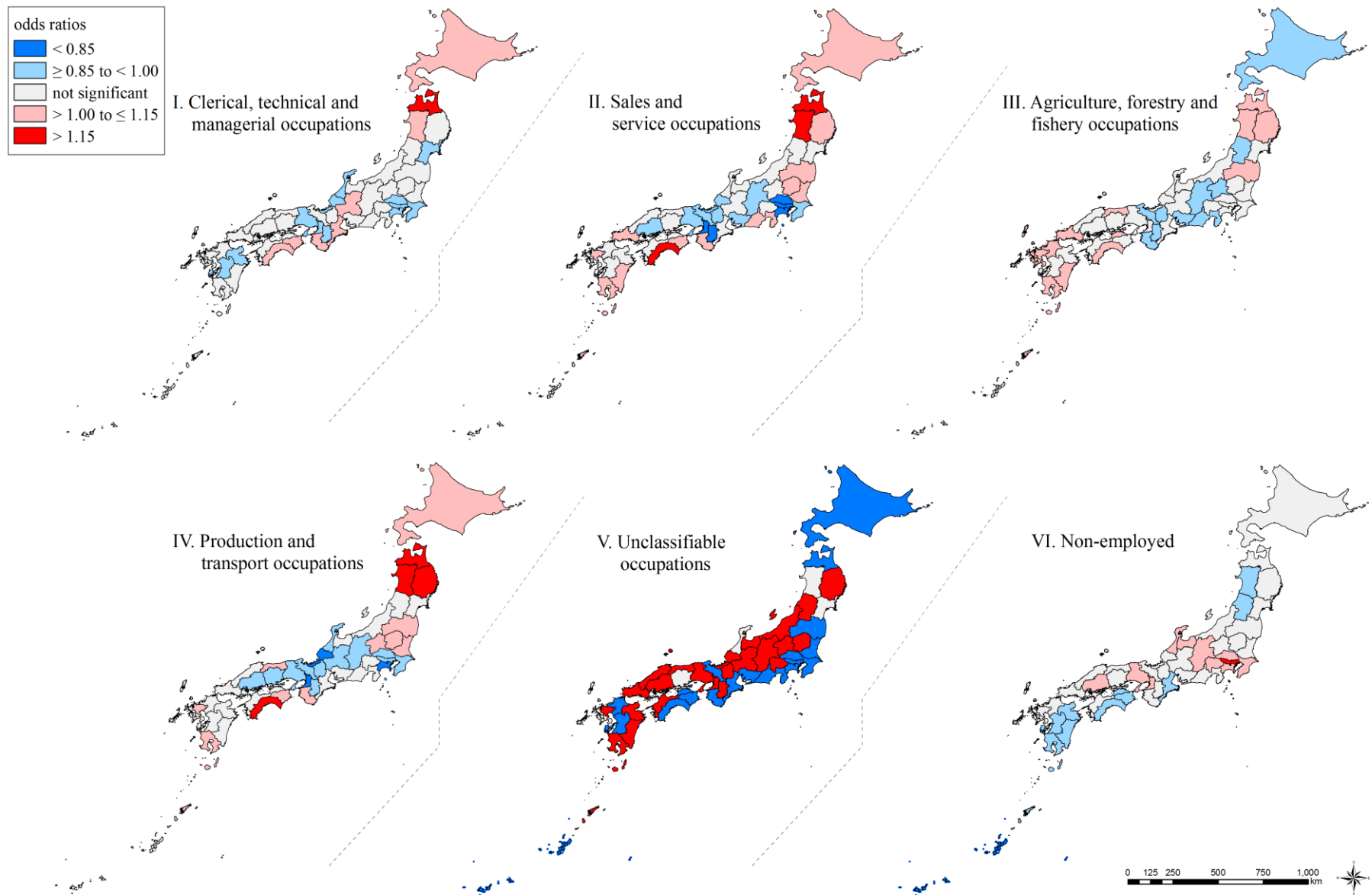
Supplementary Figure 1. A blank map of Japan.



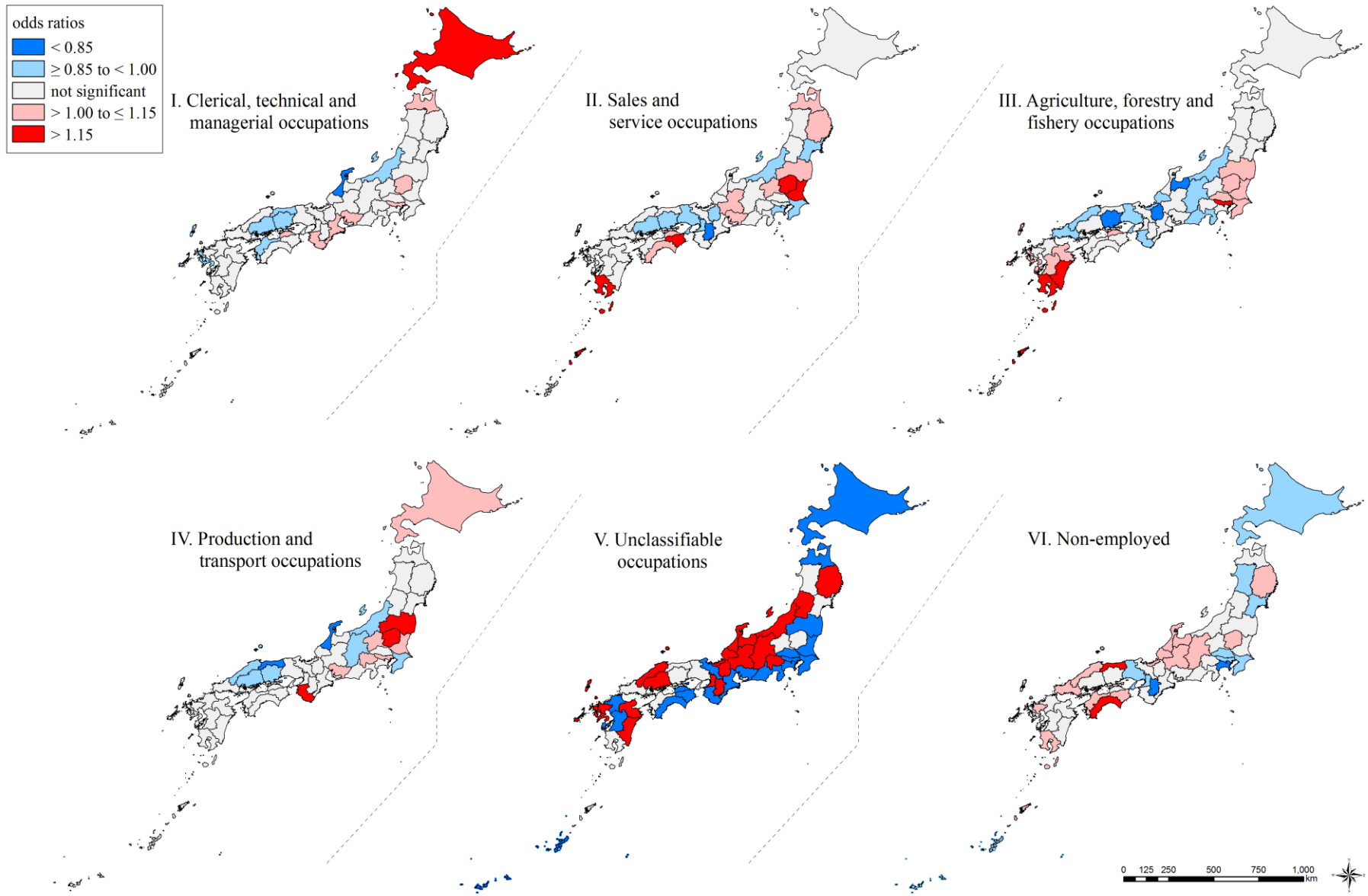
Supplementary Figure 2. Geographic and temporal variation in all-cause premature mortality among men, Japan.



Supplementary Figure 3. Geographic and temporal variation in all-cause premature mortality among women, Japan.



Supplementary Figure 4. Geographic inequality of all-cause premature mortality by occupational groups among men, Japan, 1970-2005.



Supplementary Figure 5. Geographic inequality of all-cause premature mortality by occupational groups among women, Japan, 1970-2005.

Legends of Supplementary Figures

Supplementary Figure 1. A blank map of Japan.

We show the locations of 47 prefectures in Japan.

Supplementary Figure 2. Geographic and temporal variation in all-cause premature mortality among men, Japan.

We show year-specific geographic inequality of all-cause mortality across 47 prefectures, conditional on individual age and occupation. (The data for Okinawa prefecture were not available in 1970.) Prefecture-level residuals are described in odds ratios with the reference being the grand mean of all the prefectures. Prefectures with a lower and a higher estimate of odds for mortality are filled with blue and red, respectively. Regarding areas filled with grey, prefecture-level residuals were not statistically significant.

Supplementary Figure 3. Geographic and temporal variation in all-cause premature mortality among women, Japan.

We show year-specific geographic inequality of all-cause mortality across 47 prefectures, conditional on individual age and occupation. (The data for Okinawa prefecture were not available in 1970.) Prefecture-level residuals are described in odds ratios with the reference being the grand mean of all the prefectures. Prefectures with a lower and a higher estimate of odds for mortality are filled with blue and red, respectively. Regarding areas filled with grey, prefecture-level residuals were not statistically significant.

Supplementary Figure 4. Geographic inequality of all-cause premature mortality by occupational groups among men, Japan, 1970-2005.

We show the geographic inequality of all-cause mortality across 47 prefectures for the six collapsed occupational groups, conditional on individual age, occupation, and year. Prefecture-level residuals are described in odds ratios with the reference being the grand mean of all the prefectures. Prefectures with a lower and a higher estimate of odds for mortality are filled with blue and red, respectively. Regarding areas filled with grey, prefecture-level residuals were not statistically significant.

Supplementary Figure 5. Geographic inequality of all-cause premature mortality by occupational groups among women, Japan, 1970-2005.

We show the geographic inequality of all-cause mortality across 47 prefectures for the six collapsed occupational groups, conditional on individual age, occupation, and year. Prefecture-level residuals are described in odds ratios with the reference being the grand mean of all the prefectures. Prefectures with a lower and a higher estimate of odds for mortality are filled with blue and red, respectively. Regarding areas filled with grey, prefecture-level residuals were not statistically significant.