

# Income Equality in Japanese Corporations and Employee Health

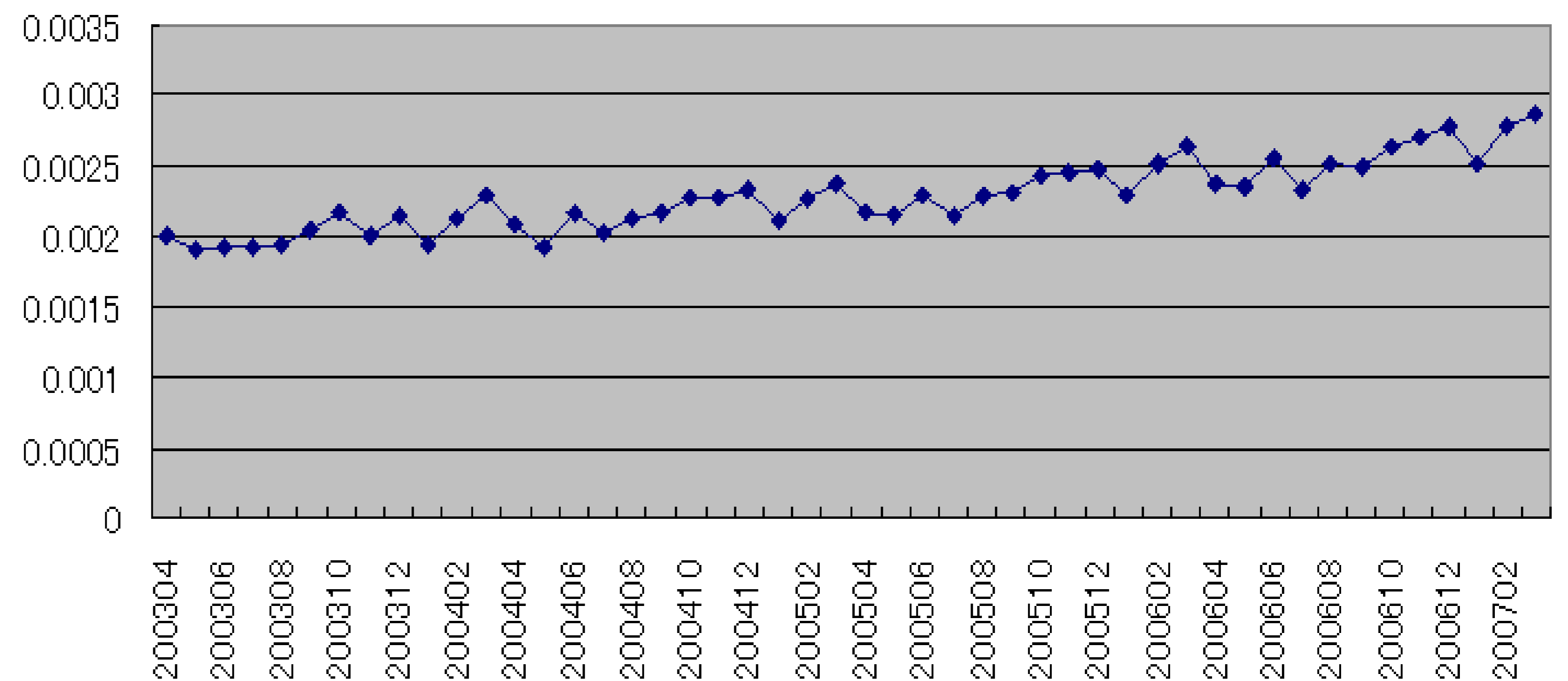
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## • Motivation

- Regional income inequality affects the health of residents (Kawachi et al. (1997) etc.)
- In Japan, many companies have played the role of community.
- We investigate the relationship between workplace income inequality and health in Japan under the hypothesis that inequality of income may harm social inclusion and social capital in a company as it does in a region.

## • The rate of sickness and injury leaves



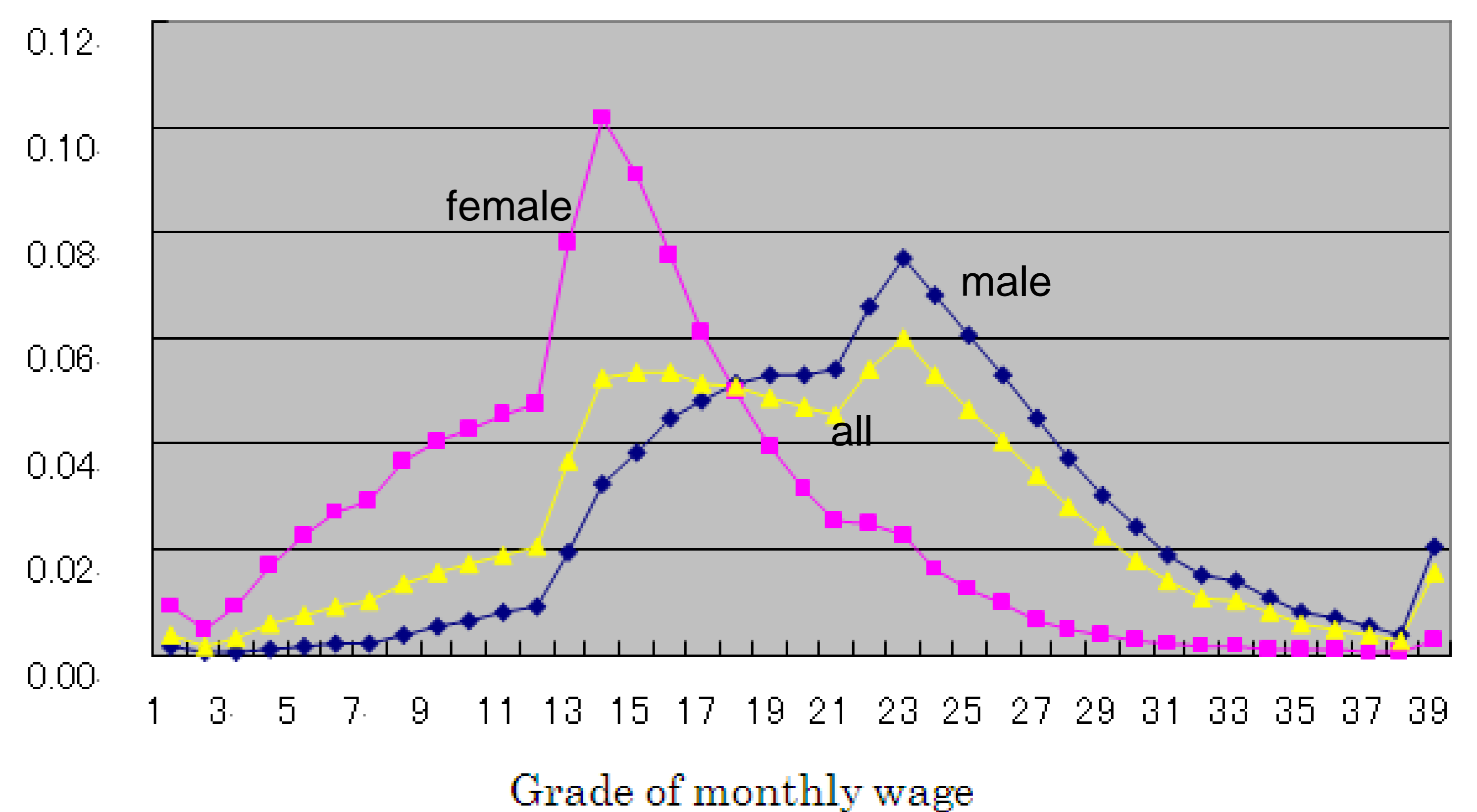
## • What is Health Insurance Associations?

- We utilize the data from the monthly reports of Health Insurance Associations from April, 2003 to March, 2007.
- The monthly reports include medical care expenses, the number of people who took sickness and injury leave, the number of births, and the number of fatalities.

• Health Insurance Associations are public medical care insurers for employees and their dependents (excluding seamen, public servants, teachers, and employees of private schools).

• Almost all leading Japanese companies organize their own Health Insurance Societies. Therefore, we can calculate wage income distribution, rate of sickness and injury leave, and mortality rate on a company-by-company basis.

## • Income Distribution



## • OLS Model (and Panel random Effect)

$$y_{it} = \beta_1 Age_{it} + \beta_2 VOLCON_{it} + \beta_3 WOMEN_{it} + \beta_4 AVGWAGE_{it} + \beta_5 MaleWageGini_{it} + \beta_6 FemaleWageGini_{it} + \beta_7 Turnover_{it} + \beta_8 Spreadinghealth_{it} + \beta_9 Diseaseprevention_{it} + \beta_{10} Encourageexercise_{it} + \beta_{11} + \varepsilon_{it}$$

$y_{it}$  : The rate of sickness and injury leaves or mortality

## • Descriptive Statistics

	Average	S.D.	Minimum	Maximum
Average Age	41.02374	3.203173	26.19042	52.87546
Rate of Voluntarily and Continuously Insured Persons	0.029383	0.019637	0	0.356941
Rate of women	0.250091	0.159231	0.012785	0.96607
Average monthly wage	375673.1	75531.63	193020.5	892255.3
Gini Index (male monthly wage)	0.192454	0.031533	0.07382	0.455411
Gini Index (female monthly wage)	0.172948	0.041523	0	0.352835
Turnover Rate	0.013132	0.010172	0	0.184499
Spreading health awareness cost per capita	1877.701	1876.847	0	27893.14
Disease prevention cost per capita	13980.76	9170.274	0	175307
Encouraging exercise cost per capita	846.3296	2131.593	0	52478.47

## • Result

	The rate of sickness and injury leaves					
	pooled OLS			panel (random effect)		
	Coeffient	t-value	P-value	Coeffient	Z-value	P-value
Average Age	6.70E-06	9.12	0	7.68E-06	5.77	0
Rate of Voluntarily and Continuously Insured Persons	-0.00726	-5.92	0	-0.00467	-3.57	0
Rate of women	-0.00164	-11.58	0	-0.00161	-7.04	0
Average monthly wage	-4.03E-09	-12.07	0	-4.46E-09	-8.32	0
Gini Index (male monthly wage)	-1.3E-05	-0.02	0.987	0.001416	0.98	0.328
Gini Index (female monthly wage)	0.001156	1.9	0.057	0.002255	2.25	0.025
Turnover Rate	0.011775	4.5	0	0.00174	0.92	0.358
Spreading health awareness cost per capita	1.03E-05	0.91	0.36	1.04E-05	0.84	0.401
Disease prevention cost per capita	-1.7E-05	-6.37	0	-2.73E-06	-0.76	0.447
Encouraging exercise cost per capita	1.53E-05	1.56	0.12	5.06E-06	0.37	0.709
Const.	0.000668	1.84	0.066	-0.00026	-0.36	0.717
Number of Samples	6096			6096		
Number of Associations	1524			1524		
R-squared	0.1165			0.1032		

## • Conclusion

- Employees of an association with high mean monthly salary are healthier than employees of an association with low one.
- Employees of an association with low gini index for monthly salary are healthier than employees of an association with high gini index for monthly salary.
- Employees of an association with low turnover are healthier than employees of an association with high turnover.

→ These suggest that inhibiting the building of social capital in a firm may harm the health of the employees.

	mortality					
	pooled OLS			panel (random effect)		
	Coeffient	t-value	P-value	Coeffient	Z-value	P-value
Average Age	5.86E-07	13.05	0	5.68E-07	10.96	0
Rate of Voluntarily and Continuously Insured Persons	-3.7E-05	-0.42	0.677	3.64E-05	0.38	0.703
Rate of women	-9.8E-05	-13.8	0	-9.8E-05	-12.05	0
Average monthly wage	-5.55E-11	-2.82	0.005	-5.79E-11	-2.54	0.011
Gini Index (male monthly wage)	0.000149	3.29	0.001	0.000144	2.8	0.005
Gini Index (female monthly wage)	0.000127	3.57	0	0.000119	2.87	0.004
Turnover Rate	0.000336	2.45	0.015	0.000332	2.39	0.017
Spreading health awareness cost per capita	2.37E-06	3.12	0.002	2.24E-06	2.68	0.007
Disease prevention cost per capita	-1.03E-06	-7.53	0	-1.05E-06	-6.81	0
Encouraging exercise cost per capita	1.04E-06	1.15	0.251	1.22E-06	1.18	0.237
Const.	-0.00018	-8.62	0	-0.00017	-7.16	0
Number of Samples	6096			6096		
Number of Associations	1524			1524		
R-squared	0.1374			0.1371		