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# Examining the Changes in Health Investment Behavior After Retirement: A Harmonized Analysis\*

Hiroyuki Motegi <sup>†</sup>    Yoshinori Nishimura<sup>‡</sup>    Masato Oikawa <sup>§</sup>

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## Abstract

This study examines the effects of retirement on health investment behaviors. We conduct a large-scale international comparison of the change in health investment behaviors after retirement among 9 developed countries, using harmonized datasets. We find that the changes in some of health investment behaviors (e.g., Exercise) are improved in most of the countries. With respect to exercise, the change in the opportunity cost to exercise after retirement is a possible reason to explain this improvement.

JEL Classification Numbers: I00, I100, I120

Keywords: retirement, health investment behaviors, global aging data

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\*We are responsible for all errors and interpretations. We certify that we have the right to deposit the contribution with MPRA.

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# 1 Introduction

Retirement-related policies, such as a reform of the pension system, have become important in developed countries to sustain the social security system. When policymakers evaluate the effect of these reforms, health is a key factor. Since an active work life is beneficial for the health of the elderly, it would lead to reduction of medical expenses, and to medical expense increases otherwise. Health status may change unintentionally owing to the introduction of these policies, which should take account of the changes in medical cost required.

Along with the growing interest in examining the effect of the policies that delay the retirement of the elderly, a number of studies have investigated the relationship between retirement and health over the last two decades, since Kerkhofs and Lindeboom (1997).<sup>1</sup> There are, however, no unified views on the impact of retirement on various health indexes. In the light of this statement, we need to discuss why these studies report different estimated results and understand the relationship between retirement and health.

Attempts to analyze the mechanism behind the effect of retirement on health have begun recently. Eibich (2015) is the first study to clearly point out and investigate the mechanism by using Germany data. Eibich (2015) considered the heterogeneity of the effect of retirement on health investment behaviors with respect to the age, education, gender, and so on. However, Eibich (2015) solely focused on the case of Germany, and thus, the findings cannot be generalized. This study extends Eibich (2015) and attempts to explain the heterogeneity in the results of retirement effect on health in the related literatures. We analyze and compare the mechanism behind the effect of retirement on health by examining the change in health investment behaviors after retirement in 9 developed countries, including Germany. Analyzing external validity is a key to discuss why the effects of retirement on health differ across countries. This is because the heterogeneity of health investment behaviors behind the relationship between retirement and health may explain the difference of the effect of

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<sup>1</sup> Johnston and Lee (2009) and Rohwedder and Willis (2010) are representative papers.

retirement on health in the related literature.

We analyze and compare the latest longitudinal data set from the United States, England, other European countries, Japan, and Korea. Our results suggest that the changes in some of health investment behaviors (e.g., Exercise) after retirement are improved in most of the countries.

## 2 Data

This study uses the Health and Retirement Study (HRS) and other sister datasets,<sup>2</sup> which constitute panel surveys of elderly people in developed countries. We consider three definitions of retirement: “not working for pay,” “self-reported retired,” and “completely retired.” “Not working for pay” implies that a respondent is not working for pay in the survey year. “Self-reported retired” implies that a respondent reports his employment status as not employed/active in the labor market, for example, “retired, disabled, or homemaker.” We define a respondent who is “not working for pay” and reports his employment status “self-reported retired” as “completely retired.” This definition enables us to exclude a job seeker from the retired population. This definition is close to that of Eibich (2015).

In this study, we analyze some health investment behaviors such as alcohol consumption, smoking, physical activities, food habits, social participation, and doctor visit. The scales of each measure for health investment behaviors are adjusted for international comparison because each dataset applies different measures. The measures used for each behavior are represented in Table 2.

We include all the observations in the age group 50-85 for the main analysis and exclude those who have not worked in survey period. It is true that Eibich (2015) restricted the sample to those aged 55-70. However, the age range considered in our study is more suitable for international comparison. Eibich (2015) showed that the probability of retirement in-

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<sup>2</sup> We explain this point in detail in the supplementary material.

creases sharply at 60 and 65 years in Germany. Other countries, however, do not exhibit the same phenomenon depending on the pensionable ages. In the supplementary material, we explain the details of the dataset, the definition of retirement, the scales of health investment behavior, and the sample restriction method. We analyze only countries whose pensionable age information is available. Table 1 shows the countries whose pensionable age information is available. Furthermore, we analyze only countries which have been surveyed more than four times at 2013 because we utilize enough dynamic variation of retirement. Table 1 shows the analyzed countries in this paper.

Table 1: The Countries Whose Pensionable Age Information is Available

	Datasets	Surveyed Years	The Country Analyzed in This Paper
The U.S.	The HRS	1992-2011	○
England	The ELSA	2002-2014	○
Germany	The SHARE	2004, 2006, 2010, 2012	○
France	The SHARE	2004, 2006, 2010, 2012	○
Denmark	The SHARE	2004, 2006, 2010, 2012	○
Switzerland	The SHARE	2004, 2006, 2010, 2012	○
Czech	The SHARE	2006, 2010, 2012	
Estonia	The SHARE	2010, 2012	
Japan	The JSTAR	2007-2013	○
South Korea	The KLoSA	2006-2012	○
China	The CHARLS	2011, 2013	
Sweden	The SHARE	2004, 2006, 2010, 2012	*1
Spain	The SHARE	2004, 2006, 2010, 2012	○
Poland	The SHARE	2006, 2010	
Slovenia	The SHARE	2010, 2012	

\*1: We do not report the results of Sweden because there is no significant result in the first stage estimation.

### 3 Estimation Method

We follow the same estimation procedures by Motegi et al. (2016). We estimate the equation as follows: <sup>3</sup> <sup>4</sup>:

<sup>3</sup>Motegi et al. (2016) explain why this equation is estimated.

<sup>4</sup>For Korea and Japan, we use  $EP_{it} \cdot age_{it}$  instead of  $NP_{it} \cdot age_{it}$  in the equation (2).

$$y_{it} = \beta_0 + \beta_1 NW_{it} + X'_{1it} \delta_1 + \theta_i + \eta_t + \epsilon_{1it} \quad (1)$$

$$NW_{it} = \alpha_0 + \alpha_1 NP_{it} + \alpha_2 NP_{it} \cdot age_{it} + \alpha_3 EP_{it} + X'_{1it} \delta_2 + \xi_i + p_t + \epsilon_{2it} \quad (2)$$

where  $i$  represents an index of an individual and  $t$  denotes an index of time.  $X_{1it}$  represents a set of exogenous control variables that include age, age squared, marital status, the number of children, income, wealth, house ownership, job stress, physical stress, residence variables and wave variables. Controlling job stress is important and Eibich (2015) does not include any controls. The dependent variable  $y_{it}$  represents health investment behaviors. The binary variable  $NW_{it}$  equals one if the elderly is retired, according to the detailed definitions provided in Section 2.  $\epsilon_{1it}$  in equation (1) is an unobserved error term.  $\theta_i$ ,  $\xi_i$  represent unobserved individual fixed effects, and  $\eta_t$ ,  $p_t$  denote unobserved time effects. The coefficients that we are interested in is  $\beta_1$ . Standard OLS estimates cannot generate consistent results due to the endogeneity problem about  $NW_{it}$ .

$NP_{it}$  and  $EP_{it}$  are two types of instrumental variables: normal pension eligibility age and early pension eligibility age.  $NP_{it}$  ( $EP_{it}$ ) is a dummy variable that equals one when individual  $i$  has already attained his or her normal (early) pension eligibility age at period  $t$ .<sup>2</sup> Since, there is no early pension eligibility age in some countries, we use  $NP_{it}$  and  $NP_{it} \cdot age_{it}$  as IVs. Both of the pension eligibility ages are determined by individual characteristics such as birth year and not by individual decisions. In addition, the pension eligibility age has recently changed due to the reform of the pension system in many countries. We implement Durbin-Wu-Hausman (DWH) test after IV estimation and check the endogeneity of  $NW_{it}$  excluding  $\theta_i$  and  $\eta_t$ . Either fixed effects with time effects instrumental variable or fixed effects with time effects is applied depending on the results of the DWH test.

Table 2: Variable definition of each health investment behavior

	Y/N	whether consuming alcohol or not
Alcohol consumption	Freq.	frequency of alcohol consumption in a week
	Amount	the amount of alcohol consumption per day
Smoking	Smoking	whether smoking or not
Physical activity	Vigorous	whether engaged in vigorous activities at least once in a week
	Moderate	whether engaged in moderate activities at least once in a week
Social participation	Social	whether participating in social events
Doctor visit	Doctor	frequency of doctor visit
Food habits	Food	expenditure on food consumption
	Eat out	expenditure on eating out consumption

## 4 Results

We focus only on the coefficients of retirement variable for each country.<sup>5</sup> In addition, we cannot discuss it when the coefficients of pensionable age dummy variables for the first stage are not significant. The results are demonstrated in Table 3.<sup>2</sup> We show the results that are not discussed in the paper (e.g., the amount of smoking, sleep, and frequency of contact with children) in the supplementary material.

- Alcohol Consumption and Smoking: In the U.S. and Germany, the amount of alcohol consumption per day decreases after retirement (Amount). In the U.S. and Japan, the frequency of alcohol consumption decreases after retirement (Freq.). In Germany, South Korea and Japan, the probability of alcohol consumption decreases after retirement (Y/N). With respect to smoking, the probability of smoking decreases after retirement in the U.S., France, South Korea, and Spain.
- Physical Activity, Social Participation, and Doctor Visit: The frequency of physical activity (Vigorous or Moderate) increases after retirement among the 6 countries. With respect to Vigorous activity, only in England, South Korea, Spain and Japan, people increase the frequency after retirement. Furthermore, only in England and Germany, people increase social participation after retirement. With respect to doctor visit, in the U.S. and Spain, people sharply decrease the number of doctor visits after retirement.

<sup>5</sup>The full results, including control variables, are available on request.

- Food Habits: In some countries (France, Switzerland), the expenditure on eating out decreases after retirement. However, in many countries, the expenditure on eating out does not decrease. Furthermore, the food expenditure does not decrease after retirement in many countries.

According to our results, the changes in some of health investment behaviors (Smoking, Exercise) after retirement are improved in most of countries. The change in the opportunity cost to exercise after retirement is a possible reason to explain this improvement. Grossman (1972) suggests this point.

Table 3: Main results

	Alcohol consumption			Smoking	Physical activity		Social	Doctor	Food habits	
	Y/N	Freq.	Amount		Vigorous	Moderate			Food	Eat out
U.S.	0.333***	-0.041***	-0.055***	-0.037***	0.011	0.218**	-0.002	-7.970***	-0.002**	-0.001
England	-0.009	0.036	2.689**	-0.042	0.038***	0.201***	0.027**		-0.000	-0.000
Germany	-0.304**	0.126	-3.343**	0.138*	-0.047	-0.012	0.060*	0.759	0.001	0.002*
France	0.017	0.593**	0.554	-0.399*	-0.053	-0.003	0.019	0.113	0.002	-0.003*
Denmark	0.006	0.092	-0.046		0.044	0.203**	0.004	-0.637	0.004	-0.002
Switzerland	0.015	0.015	-0.225		-0.047	-0.012	0.009	0.083	-0.002	-0.017*
Japan	-0.089**	-0.269**	-0.166	-0.007	0.051**		-0.020			
South Korea	-0.038**	2.490**	-0.157	-0.643**	0.082***		-0.002	0.951*		
Spain	-0.067	-0.169		-0.189***	0.307*	0.418***	0.021	-7.389**	0.001	-0.001

\*  $p < .1$ , \*\*  $p < .05$ , \*\*\*  $p < .01$

The red (blue) character indicates the positive (negative) impact.

## 5 Conclusion

This study examined the effects of retirement on health investment behaviors and compared the result across countries. Analyzing the change in health investment behaviors after retirement in 9 developed countries, including Germany, the goal of this study was to extend Eibich (2015). We find that the changes in some of health investment behaviors are improved after retirement in most of countries. For example, the changes in smoking and physical activity are improved after retirement.



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# Supplementary Material for Examining the Changes in Health Investment Behavior After Retirement: A Harmonized Analysis

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## Abstract

This is the supplementary material for “Examining the Changes in Health Investment Behavior After Retirement: A Harmonized Analysis.” We explain the details of pension eligibility age, dataset, and the results in this material. First, we show the pension eligibility ages as used in the original paper, and how to construct it. Second, we explain the dataset, the definition of retirement, the variables of health investment behavior, and the sample restriction method. Finally, we show the detailed results in our original paper.

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# 1 Pension Eligibility Age

In this section, we will explain how to calculate the pensionable age. We use the information from the Bureau of Labor Statistics in each country. However, information about the pension eligibility age for some countries are unavailable. In such cases, we contact with the Bureau of Labor Statistics or Bureau of Statistics directly, and attempt to retrieve the information if possible. If we cannot find any information in the previous step, we use the OECD pension at a glance, social security programs throughout the world (Europe, Asia and the Pacific, and The Americas), and The EUs Mutual Information System in Social Protection (MISSOC) as data sources. We cannot get the detailed pension eligibility age for many countries. Finally, we get the details of the correct pension eligibility ages for the following countries: the U.S., England, Germany, France, Denmark, Switzerland, Czech, Estonia, Japan, China <sup>1</sup>, and Korea. With respect to these countries, we can directly obtain the correspondence table between birth cohort and pensionable age. With respect to the information about Sweden, Spain, Poland, and Slovenia, we construct the correspondence table between birth cohort and pensionable age based on the OECD pension at a glance, social security programs throughout the world (Europe, Asia and the Pacific, and The Americas), The EUs Mutual Information System in Social Protection (MISSOC), and information from governmental institutions. <sup>2</sup> We do not analyze the countries where the detail information about the pension eligibility age cannot be available. We show all pensionable ages in all countries which we analyze in the following tables.

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<sup>1</sup> Pension eligibility age depends on hukou status and the type of employer according to the China Labour Bulletin. When generating IVs for China, we use the hukou status variable “r@hukou” in the harmonized CHARLS, and the type of employer (current job: “fd002”, last job: “fl014”) and civil servant status (current job: “fd006”, last job: “fl015”) in the original CHARLS.

<sup>2</sup> We are unable to get the direct information about the correspondence between pensionable age and birth cohort for these countries. Thus we construct the correspondence from the OECD pension at a glance, social security programs throughout the world (Europe, Asia and the Pacific, and The Americas), and The EUs Mutual Information System in Social Protection (MISSOC).

Table 1: Pension eligibility age (the U.S., the U.K., Germany, France)

Birth cohort	PEA
<b>Early PEA</b>	62y0m
<b>Normal PEA</b>	
~ 1937.12	65y0m
1938.1 ~ 1938.12	65y2m
1939.1 ~ 1939.12	65y4m
1940.1 ~ 1940.12	65y6m
1941.1 ~ 1941.12	65y8m
1942.1 ~ 1942.12	65y10m
1943.1 ~ 1943.12	66y0m
1944.1 ~ 1944.12	66y0m
1945.1 ~ 1945.12	66y0m
1946.1 ~ 1946.12	66y0m
1947.1 ~ 1947.12	66y0m
1948.1 ~ 1948.12	66y0m
1949.1 ~ 1949.12	66y0m
1950.1 ~ 1950.12	66y0m
1951.1 ~ 1951.12	66y0m
1952.1 ~ 1952.12	66y0m
1953.1 ~ 1953.12	66y0m
1954.1 ~ 1954.12	66y0m
1955.1 ~ 1955.12	66y2m
1956.1 ~ 1956.12	66y4m
1957.1 ~ 1957.12	66y6m
1958.1 ~ 1958.12	66y8m
1959.1 ~ 1959.12	66y10m
1960.1 ~ 1960.12	67y0m

Birth cohort	PEA
<b>Normal PEA: Male</b>	
~ 1953.12	65y0m
1954.1 ~ 1954.12	66y0m
1955.1 ~ 1959.12	66y0m
1960.1 ~ 1960.12	67y0m
1961.1 ~	67y0m
<b>Normal PEA: Female</b>	
~ 1949.12	60y0m
1950.1 ~ 1950.12	61y0m
1951.1 ~ 1951.12	62y0m
1952.1 ~ 1952.12	63y0m
1953.1 ~	65y0m

Birth cohort	PEA
<b>Early PEA: Male</b>	
~ 1952.12	63y0m
1953.1 ~ 1953.12	63y2m
1954.1 ~ 1954.12	63y4m
1955.1 ~ 1955.12	63y6m
1956.1 ~ 1956.12	63y8m
1957.1 ~ 1957.12	63y10m
1958.1 ~ 1958.12	64y0m
1959.1 ~ 1959.12	64y2m
1960.1 ~ 1960.12	64y4m
1961.1 ~ 1961.12	64y6m
1962.1 ~ 1962.12	64y8m
1963.1 ~ 1963.12	64y10m
1964.1 ~ 1964.12	65y0m
<b>Early PEA: Female</b>	
~ 1951.12	60y0m
<b>Normal PEA</b>	
~ 1946.12	65y0m
1947.1 ~ 1947.12	65y1m
1948.1 ~ 1948.12	65y2m
1949.1 ~ 1949.12	65y3m
1950.1 ~ 1950.12	65y4m
1951.1 ~ 1951.12	65y5m
1952.1 ~ 1952.12	65y6m
1953.1 ~ 1953.12	65y7m
1954.1 ~ 1954.12	65y8m
1955.1 ~ 1955.12	65y9m
1956.1 ~ 1956.12	65y10m
1957.1 ~ 1957.12	65y11m
1958.1 ~ 1958.12	66y0m
1959.1 ~ 1959.12	66y2m
1960.1 ~ 1960.12	66y4m
1961.1 ~ 1961.12	66y6m
1962.1 ~ 1962.12	66y8m
1963.1 ~ 1963.12	66y10m
1964.1 ~ 1964.12	67y0m

Birth cohort	PEA
<b>Early PEA</b>	
~ 1951.6	60y0m
1951.7 ~ 1951.12	60y4m
1952.1 ~ 1952.12	60y9m
1953.1 ~ 1953.12	61y2m
1954.1 ~ 1954.12	61y7m
1955.1 ~ 1955.12	62y0m
1956.1 ~	62y0m
<b>Normal PEA</b>	
~ 1951.6	65y0m
1951.7 ~ 1951.12	65y4m
1952.1 ~ 1952.12	65y9m
1953.1 ~ 1953.12	66y2m
1954.1 ~ 1954.12	66y7m
1955.1 ~ 1955.12	67y0m
1956.1 ~	67y0m

Table 6: Pension eligibility age (Denmark, Switzerland, Estonia, Japan)

Table 7: PEA: Denmark		Table 8: PEA: Switzerland		Table 9: PEA: Estonia		Table 10: PEA: Japan	
Birth cohort	PEA	Birth cohort	PEA	Birth cohort	PEA	Birth cohort	PEA
<b>Early PEA</b>		<b>Early PEA: Male</b>		<b>Early PEA: Male</b>		<b>Normal PEA: Male</b>	
~ 1953.12	60y0m	~ 1924.12	63y0m	~ 1943.12	57y0m	~ 1941.4.1	60y0m
1954.1 ~ 1954.6	60y6m	1925.1 ~ 1950.12	63y0m	1944.1 ~ 1944.12	57y6m	1941.4.2 ~ 1943.4.1	61y0m
1954.7 ~ 1954.12	61y0m	<b>Early PEA: Female</b>		1945.1 ~ 1945.12	57y6m	1943.4.2 ~ 1945.4.1	62y0m
1955.1 ~ 1955.6	61y6m	~ 1937.12	60y0m	1946.1 ~ 1946.12	57y6m	1945.4.2 ~ 1947.4.1	63y0m
1955.7 ~ 1955.12	62y0m	1938.1 ~ 1940.12	61y0m	1947.1 ~ 1947.12	57y6m	1947.4.2 ~ 1949.4.1	64y0m
1956.1 ~ 1956.6	62y6m	1941.1 ~	62y0m	1948.1 ~ 1948.12	57y6m	1949.4.2 ~ 1953.4.1	65y0m
1956.7 ~ 1958.12	63y0m	<b>Normal PEA: Male</b>		1949.1 ~ 1949.12	58y0m	1953.4.2 ~ 1955.4.1	65y0m
1959.1 ~ 1959.6	63y6m	~ 1924.12	65y0m	1950.1 ~ 1950.12	58y6m	1955.4.2 ~ 1957.4.1	65y0m
1959.7 ~ 1964.6	64y0m	1925.1 ~ 1950.12	65y0m	1951.1 ~ 1951.12	59y0m	1957.4.2 ~ 1959.4.1	65y0m
1964.7 ~	64y0m	<b>Normal PEA: Female</b>		1952.1 ~ 1952.12	59y6m	1959.4.2 ~ 1961.4.1	65y0m
<b>Normal PEA</b>		~ 1937.12	62y0m	1953.1 ~ 1953.12	60y0m	1961.4.2 ~	65y0m
~ 1953.12	65y0m	1938.1 ~ 1940.12	63y0m	<b>Normal PEA: Male</b>		<b>Normal PEA: Female</b>	
1954.1 ~ 1954.6	65y6m	1941.1 ~	64y0m	~ 1953.12	63y0m	~ 1932.4.1	55y0m
1954.7 ~ 1954.12	66y0m			1954.1 ~ 1954.12	63y3m	1932.4.2 ~ 1934.4.1	56y0m
1955.1 ~ 1955.6	66y6m			1955.1 ~ 1955.12	63y6m	1934.4.2 ~ 1936.4.1	57y0m
1955.7 ~ 1955.12	67y0m			1956.1 ~ 1956.12	63y9m	1936.4.2 ~ 1937.4.1	58y0m
1956.1 ~ 1956.6	67y0m			1957.1 ~ 1957.12	64y0m	1937.4.2 ~ 1938.4.1	58y0m
1956.7 ~ 1958.12	67y0m			1958.1 ~ 1958.12	64y3m	1938.4.2 ~ 1940.4.1	59y0m
1959.1 ~ 1959.6	67y0m			1959.1 ~ 1959.12	64y6m	1940.4.2 ~ 1946.4.1	60y0m
1959.7 ~ 1964.6	67y0m			1960.1 ~ 1960.12	64y9m	1946.4.2 ~ 1948.4.1	61y0m
1964.7 ~	67y0m			1961.1 ~ 1961.12	65y0m	1948.4.2 ~ 1950.4.1	62y0m
				<b>Normal PEA: Female</b>		1950.4.2 ~ 1952.4.1	63y0m
				~ 1947.12	60y0m	1952.4.2 ~ 1954.4.1	64y0m
				1948.1 ~ 1948.12	60y6m	1954.4.2 ~ 1958.4.1	65y0m
				1949.1 ~ 1949.12	61y0m	1958.4.2 ~ 1960.4.1	65y0m
				1950.1 ~ 1950.12	61y6m	1960.4.2 ~ 1962.4.1	65y0m
				1951.1 ~ 1951.12	62y0m	1962.4.2 ~ 1964.4.1	65y0m
				1952.1 ~ 1952.12	62y6m	1964.4.2 ~ 1965.4.1	65y0m
				1953.1 ~ 1953.12	63y0m	1965.4.2 ~	65y0m
				1954.1 ~ 1954.12	63y3m		
				1955.1 ~ 1955.12	63y6m		
				1956.1 ~ 1956.12	63y9m		
				1957.1 ~ 1957.12	64y0m		
				1958.1 ~ 1958.12	64y3m		
				1959.1 ~ 1959.12	64y6m		
				1960.1 ~ 1960.12	64y9m		
				1961.1 ~ 1961.12	65y0m		

Table 11: Pension eligibility age (South Korea)

Table 12: PEA: Korea	
Birth cohort	PEA
<b>Early PEA</b>	
~ 1952.12	55y0m
1953.1 ~ 1956.12	56y0m
1957.1 ~ 1960.12	57y0m
1961.1 ~ 1964.12	58y0m
1965.1 ~ 1968.12	59y0m
1969.1 ~	60y0m
<b>Normal PEA</b>	
~ 1952.12	60y0m
1953.1 ~ 1956.12	61y0m
1957.1 ~ 1960.12	62y0m
1961.1 ~ 1964.12	63y0m
1965.1 ~ 1968.12	64y0m
1969.1 ~	65y0m

Table 13: Pension eligibility age (Czech)

Birth cohort	Male	Female* <sup>1</sup>				
		0	1	2	3-4	5-
1936.1~1936.12	60y2m	57y0m	56y0m	55y0m	54y0m	53y0m
1937.1~1937.12	60y4m	57y0m	56y0m	55y0m	54y0m	53y0m
1938.1~1938.12	60y6m	57y0m	56y0m	55y0m	54y0m	53y0m
1939.1~1939.12	60y8m	57y4m	56y0m	55y0m	54y0m	53y0m
1940.1~1940.12	60y10m	57y8m	56y4m	55y0m	54y0m	53y0m
1941.1~1941.12	61y0m	58y0m	56y8m	55y4m	54y0m	53y0m
1942.1~1942.12	61y2m	58y4m	57y0m	55y8m	54y4m	53y0m
1943.1~1943.12	61y4m	58y8m	57y4m	56y0m	54y8m	53y4m
1944.1~1944.12	61y6m	59y0m	57y8m	56y4m	55y0m	53y8m
1945.1~1945.12	61y8m	59y4m	58y0m	56y8m	55y4m	54y0m
1946.1~1946.12	61y10m	59y8m	58y4m	57y0m	55y8m	54y4m
1947.1~1947.12	62y0m	60y0m	58y8m	57y4m	56y0m	54y8m
1948.1~1948.12	62y2m	60y4m	59y0m	57y8m	56y4m	55y0m
1949.1~1949.12	62y4m	60y8m	59y4m	58y0m	56y8m	55y4m
1950.1~1950.12	62y6m	61y0m	59y8m	58y4m	57y0m	55y8m
1951.1~1951.12	62y8m	61y4m	60y0m	58y8m	57y4m	56y0m
1952.1~1952.12	62y10m	61y8m	60y4m	59y0m	57y8m	56y4m
1953.1~1953.12	63y0m	62y0m	60y8m	59y4m	58y0m	56y8m
1954.1~1954.12	63y2m	62y4m	61y0m	59y8m	58y4m	57y0m
1955.1~1955.12	63y4m	62y8m	61y4m	60y0m	58y8m	57y4m
1956.1~1956.12	63y6m	63y0m	61y8m	60y4m	59y0m	57y8m
1957.1~1957.12	63y8m	63y4m	62y2m	60y8m	59y4m	58y0m
1958.1~1958.12	63y10m	63y8m	62y8m	61y2m	59y8m	58y4m
1959.1~1959.12	64y0m	64y0m	63y2m	61y8m	60y2m	58y8m
1960.1~1960.12	64y2m	64y2m	63y8m	62y2m	60y8m	59y2m
1961.1~1961.12	64y4m	64y4m	64y2m	62y8m	61y2m	59y8m
1962.1~1962.12	64y6m	64y6m	64y6m	63y2m	61y8m	60y2m
1963.1~1963.12	64y8m	64y8m	64y8m	63y8m	62y2m	60y8m
1964.1~1964.12	64y10m	64y10m	64y10m	64y2m	62y8m	61y2m
1965.1~1965.12	65y0m	65y0m	65y0m	64y8m	63y2m	61y8m
1966.1~1966.12	65y2m	65y2m	65y2m	65y2m	63y8m	62y2m
1967.1~1967.12	65y4m	65y4m	65y4m	65y4m	64y2m	62y8m
1968.1~1968.12	65y6m	65y6m	65y6m	65y6m	64y8m	63y2m
1969.1~1969.12	65y8m	65y8m	65y8m	65y8m	65y2m	63y8m
1970.1~1970.12	65y10m	65y10m	65y10m	65y10m	65y8m	64y2m
1971.1~1971.12	66y0m	66y0m	66y0m	66y0m	66y0m	64y8m
1972.1~1972.12	66y2m	66y2m	66y2m	66y2m	66y2m	65y2m
1973.1~1973.12	66y4m	66y4m	66y4m	66y4m	66y4m	65y8m
1974.1~1974.12	66y6m	66y6m	66y6m	66y6m	66y6m	66y2m
1975.1~1975.12	66y8m	66y8m	66y8m	66y8m	66y8m	66y8m
1976.1~1976.12	66y10m	66y10m	66y10m	66y10m	66y10m	66y10m
1977.1~1977.12	67y0m	67y0m	67y0m	67y0m	67y0m	67y0m
1978.1~1978.12	67y2m	67y2m	67y2m	67y2m	67y2m	67y2m
1979.1~1979.12	67y4m	67y4m	67y4m	67y4m	67y4m	67y4m
1980.1~1980.12	67y6m	67y6m	67y6m	67y6m	67y6m	67y6m
1981.1~1981.12	67y8m	67y8m	67y8m	67y8m	67y8m	67y8m
1982.1~1982.12	67y10m	67y10m	67y10m	67y10m	67y10m	67y10m
1983.1~1983.12	68y0m	68y0m	68y0m	68y0m	68y0m	68y0m

\*<sup>1</sup>: Pensionable ages for female are different by the number of children.

Table 14: Pension eligibility age (Sweden, Spain, Poland, Slovenia)

	Early		Normal	
	Male	Female	Male	Female
Sweden	61y0m	61y0m	65y0m	65y0m
Spain	61y0m	61y0m	65y0m	65y0m
Poland	60y0m	55y0m	65y0m	60y0m
Slovenia	58y0m	58y0m	63y0m	61y0m

Table 15: Pension eligibility age (China)

Gender	Hukou type	Occupation	Normal PEA
Male			60y0m
	Agricultural Hukou		60y0m
Female	Non-agricultural Hukou	Civil servants	55y0m
		Enterprises	50y0m

## 2 Data and Institutional Setting

### 2.1 Global Aging Data

This study uses the Health and Retirement Study (HRS)<sup>3</sup> and other sister datasets such as the China Health and Retirement Longitudinal Study (CHARLS), the English Longitudinal Study on Aging (ELSA), the Korean Longitudinal Study of Ageing (KLoSA), the Survey on Health, Aging, and Retirement in Europe (SHARE), and the Japanese Study of Aging and Retirement (JSTAR). These datasets constitute panel surveys of elderly people. Furthermore, these family datasets are constructed so that the questions of the HRS are reproduced in those of other studies as much as possible. They include a rich variety of variables to capture living aspects in terms of economic status, health status, family background, as well as social and work status. We primarily use the harmonized datasets.<sup>4</sup> However, when variables are not available in the harmonized datasets, we use the variables of the original datasets.

### 2.2 Definition of Retirement

In this study, we use three retirement definitions: “not working for pay,” “self-reported retired,” and “completely retired.” “Not working for pay” implies that a respondent is not working for wages or other type of payment. “Self-reported retired” implies that a respondent self-reports his employment status as retired: for this definition, we use the “r@lbrf” variable in each harmonized data (e.g., Harmonized SHARE, Harmonized ELSA), which are constructed based on the RAND HRS data. In the HRS, “r@lbrf” takes seven values, and we define a respondent as “self-reported retired” if “r@lbrf” indicates “partly

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<sup>3</sup> See the website (<http://hrsonline.isr.umich.edu>) for detailed information of the HRS.

<sup>4</sup> The Gateway to Global Aging Data (<http://gateway.usc.edu>) provides harmonized versions of data from the international ageing and retirement studies (e.g. HRS, ELSA, SHARE, KLoSA, CHARLS). All variables of each dataset aimed to have the same items and follow the same naming conventions. The harmonized datasets enable researchers to conduct cross-national comparative studies. The program code to generate the harmonized datasets from the original datasets is provided by the Center for Global Ageing Research, USC Davis School of Gerontology, and the Center for Economic and Social Research (CESR). Some variables, such as measures of assets and income, are imputed by this code.



retired,” “retired,” “disabled,” or “not in labor force.” In other words, the difference between “not working for pay” and “self-reported retired” is whether unemployed respondents are included or excluded.<sup>5</sup> Numerous related studies (e.g. Coe and Zamarro (2011), Bonsang et al. (2012)) use the two similar definitions of retirement.

We also define “completely retired” when a respondent is both “not working for pay” and “self-reported retired.” This definition enable us to exclude a job seeker from the retired population and is close to that of Eibich (2015). In this study, we mainly use the “completely retired” definition and the results with other retirement definitions are discussed in Section 3 of this material.

## 2.3 The Variables of Health Investment Behaviors

In this study, we analyze health investment behaviors such as alcohol consumption, smoking, physical activities, sleeping time, eating habits, social participation, contact with children, and doctor visit. In this subsection, we explain the variables of the behaviors and show the summary statistics.<sup>6</sup>

- Alcohol consumption: Table 16 shows the summary statistics of alcohol consumption measures around 2010. “Alcohol consumption: yes/no” indicates whether respondents consume alcohol or not in the survey year, and takes 1 if respondents drink. “Alcohol consumption: Freq.” is a categorical variable and measures the alcohol consumption frequency in a week. The value ranges from zero to four.<sup>7</sup> “Alcohol consumption: Amount” measures the number of drinks per day in HRS, SHARE, JSTAR, KLoSA,

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<sup>5</sup> See the codebook of the Rand HRS data fore details about the variable “r@lbrf” which we use. <http://hrsonline.isr.umich.edu/modules/meta/rand/randhrsm/randhrsM.pdf>. They explain how they construct the variable “r@lbrf” in p.1033. We use the variable “r@lbrf” in all harmonized data sets.

<sup>6</sup>We calculate the results using 2010 data for HRS, ELSA, SHARE and KLoSA, 2009 data for JSTAR, and 2011 data for CHARLS.

<sup>7</sup> It takes “0” if not drinking in a week; “1” if drinking once or twice a week; “2” if three or four times; “3” if five or six times; and “4” if every day.

and CHARLS<sup>8</sup> and per week in ELSA. Table 16 shows that the ratio of Western people who drink alcohol is larger than that of Asian people.

- Smoking: Table 17 shows the summary of smoking measures. “Smoking: yes/no” takes one if a respondent smokes at the interview. “Smoking: Amount” measures the number of cigarettes consumed per day in HRS, JSTAR, KLoSA, and CHARLS, and those of grams of cigarettes on a weekday and holiday in ELSA. In SHARE wave 1 and wave 2, we can use three types of smoking amount variables, number of cigarettes, number of pipe, and number of cigars or cigarillos, and define the smoking amount variable as the number of cigarettes.
- Physical activities: Table 18 shows the summary of physical activities measures. “Vigorous Physical Activity: Freq.,” “Moderate Physical Activity: Freq.,” and “Light Physical Activity: Freq.” measure the frequency of physical activities. These measures are the categorical variables in HRS, ELSA, SHARE, and JSTAR. The scales of the measures are different among datasets.<sup>9</sup> In KLoSA and CHARLS, these indicate the frequency per week. We construct the dummy variable which takes one when doing activities at least once in a week. We can also use the measure of walking in HRS, JSTAR, and CHARLS and the that of exercising time in the JSTAR.<sup>10</sup>
- Sleeping: “Sleeping: Hours” in Table 19 measures the sleeping duration. The JSTAR database contains the information about the sleeping duration for weekdays and holidays separately. The SHARE and The KLoSA datasets do not contain the information

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<sup>8</sup> We can use three types of drinking amount variables such as beer, wine, and liquor. In CHARLS, we define the number of drinks as the sum of these three variables.

<sup>9</sup> In HRS and JSTAR, the variables are in a range from one to five: “1”: hardly ever or never; “2”: from once to three times a month; “3”: once a week; “4”: more than once a week; and “5”: every day. In ELSA and SHARE, the variables are in a range from one to four: “1”: hardly ever or never; “2”: from once to three times a month; “3”: once a week; and “4”: more than once a week.

<sup>10</sup> In JSTAR, the measure is a categorical variable in a range from one to five: “1”: hardly ever or never; “2”: less than 30 minutes; “3”: 30 to 60 minutes; “4”: 60 to 90 minutes; and “5”: more than 90 minutes. In CHARLS, the measure is a categorical variable in a range from one to five: “1”: less than 10 minutes; “2”: from 10 to 30 minutes; “3”: from 30 to 120 minutes; “4”: from 120 to 240 minutes; and “5”: more than 240 minutes.

about sleeping time. There is little difference in sleeping duration between each country.

- Food habits: Table 20 shows the summary of eating habit measures. “Food Expenditure” measure the monthly expenditure on food in HRS, ELSA, SHARE, JSTAR, and KLoSA and weekly expenditure in CHARLS. Similarly, “Eat out Expenditure” is the measure of eat out expenditure. These variables are adjusted in ten 10,000 nominal US dollar.
- Other behaviors: Finally, Table 21 shows the summary statistics of other behaviors. “Social Participation: yes/no” indicates whether a respondent attends the social activities or not. “Contact with Children: Freq.” is a categorical variables and measures the frequency of contact with children living apart from respondents. The scales of the measure are different among datasets.<sup>11</sup> “Doctor Visit: Freq.” measures the frequency of doctor visit per two years in HRS and KLoSA, per twelve months in SHARE, and per month in the JSTAR and the CHARLS. The number of visiting doctors is used as a health investment behavior variable in our study; however, is used for measuring the health status in some studies, such as Eibich (2015).

## 2.4 Sample Restrictions

We use waves from 3 to 11 for the HRS. This is because the waves 1 and 2 of the HRS are the same as the Study of Assets and Health Dynamics (AHEAD). We cannot connect these datasets due to a difference in the content of the questions. The ELSA does not contain

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<sup>11</sup> In HRS and ELSA, the measure ranges from one to six: “1”: once a year; “2”: once or twice a year; “3”: Every few month; “4”: once or twice a month; “5”: once or twice a week; and “6”: more than twice a week.

In SHARE, the measure ranges from one to seven: “1”: Never; “2”: less than once a month; “3”: about once a month; “4”: about every two weeks; “5”: about once a week; “6”: several times a week; and “7”: daily.

In KLoSA, the measure ranges from one to ten: “1”: never; “2”: almost never a year; “3”: once or twice a year; “4”: three or four times a year; “5”: five or six times a year; “6”: once a month; “7”: twice a month; “8”: once a week; “9”: twice or three times a week; and “10”: almost every day.

In CHARLS, the measure ranges from one to nine: “1”: almost never; “2”: once a year; “3”: once every 6 months; “4”: once every 3 months; “5”: once a month; “6”: every 2 weeks; “7”: once a week; “8”: 2-3 times a week; and “9”: almost every day.

information about job stress and physical stress in waves 1 and 3, and thus, we use waves 2, 4, 5, and 6 for the ELSA.

We include all observations for the age group 50-85 for the main analysis. We omit the samples who have not worked. Restricting this range is desirable for analyzing the retirement effects. While Eibich (2015) restricted the sample to the age group 55-70, the age range used in our study is ideal for international comparison. Eibich (2015) showed that retirement increases sharply between 60 and 65 years in Germany. However, we observe that the retirement age varies across countries. The analyzed samples include individuals with disability, civil servants, and self-employed individuals. The pension system for them is slightly different, but we set an equal pensionable age for simplicity. The sample also includes individuals who were not employed prior to retirement. We include “age variables” and “squared age/100” to control age effects.

Table 16: Summary Statistics of Alcohol Consumption Habits (Around 2010)

	Obs.	Mean	S.D.	Min	Max
<b>HRS</b>					
Alcohol consumption: yes/no	21037	0.55	0.50	0	1
Alcohol consumption: Freq.	20994	0.69	1.14	0	4
Alcohol consumption Amount	20991	0.82	1.59	0	40
<b>ELSA</b>					
Alcohol consumption: yes/no	8724	0.88	0.33	0	1
Alcohol consumption: Freq.	8627	1.39	1.37	0	4
Alcohol consumption Amount	8670	5.62	8.90	0	294
<b>SHARE*1*2</b>					
Alcohol consumption: yes/no	34968	0.75	0.43	0	1
Alcohol consumption: Freq.	34955	1.44	1.50	0	4
Alcohol consumption Amount	30860	1.94	4.70	0	70
<b>JSTAR</b>					
Alcohol consumption: yes/no	1296	0.38	0.49	0	1
Alcohol consumption: Freq.	1296	1.06	1.53	0	4
Alcohol consumption Amount	1249	0.76	1.36	0	15
<b>KLoSA</b>					
Alcohol consumption: yes/no	7649	0.35	0.48	0	1
Alcohol consumption: Freq.	7649	0.56	0.96	0	4
Alcohol consumption Amount	7382	1.75	3.17	0	50
<b>CHARLS</b>					
Alcohol consumption: yes/no	13537	0.40	0.49	0	1
Alcohol consumption: Freq.	12615	0.59	1.32	0	4
Alcohol consumption Amount	17105	0.55	6.29	0	602

\*1: We calculate results using person-level analysis weight.

\*2: We calculate results with SHARE countries used in this paper.

Table 17: Summary Statistics of Smoking Habits (Around 2010)

	Obs.	Mean	S.D.	Min	Max
<b>HRS</b>					
Smoking: yes/no	20949	0.15	0.36	0	1
Smoking: Amount	20941	1.95	6.06	0	140
<b>ELSA</b>					
Smoking: yes/no	9808	0.13	0.34	0	1
Smoking(WD): Amount	8880	0.63	8.83	0	709
Smoking(HD): Amount	8877	0.42	3.25	0	150
<b>SHARE<sup>*1*2</sup></b>					
Smoking: yes/no	34973	0.20	0.40	0	1
Smoking; Amount(N of cigarettes) <sup>*3</sup>	11477	2.92	7.34	0	80
<b>JSTAR</b>					
Smoking: yes/no	4096	0.20	0.40	0	1
Smoking: Amount	4069	3.77	8.74	0	100
<b>KLoSA</b>					
Smoking: yes/no	7649	0.17	0.38	0	1
Smoking: Amount	7649	2.60	6.33	0	50
<b>CHARLS</b>					
Smoking: yes/no	13068	0.30	0.46	0	1
Smoking: Amount	11944	4.15	9.24	0	80

\*1: We calculate results using person-level analysis weight.

\*2: We calculate results with SHARE countries used in this paper.

\*3: Using 2006 data.

Table 18: Summary Statistics of Physical Activities (Around 2010)

	Obs.	Mean	S.D.	Min	Max
<b>HRS</b>					
Vigorous Physical Activity: Freq.	20991	2.03	1.32	1	5
Moderate Physical Activity: Freq.	21007	2.93	1.33	1	5
Light Physical Activity: Freq.	21015	3.25	1.16	1	5
Walking: Hours	6113	0.95	1.64	0	24
<b>ELSA</b>					
Vigorous Physical Activity: Freq.	10085	1.86	1.20	1	4
Moderate Physical Activity: Freq.	10087	3.12	1.19	1	4
Light Physical Activity: Freq.	10087	3.52	0.98	1	4
<b>SHARE<sup>*1*2</sup></b>					
Vigorous Physical Activity: Freq.	34955	2.32	1.34	1	4
Moderate Physical Activity: Freq.	34964	3.35	1.07	1	4
<b>JSTAR</b>					
Vigorous Physical Activity: Freq.	2796	1.29	0.83	1	5
Light Physical Activity: Freq.	2805	2.46	1.61	1	5
Exercise(WD): Hours.	1605	0.81	0.76	0	3
Exercise(HD): Hours.	2347	1.24	1.04	0	4
Walking: Freq.	4133	3.33	1.21	1	5
<b>KLoSA</b>					
Vigorous Physical Activity: Freq.	7649	1.53	2.46	0	25
<b>CHARLS</b>					
Vigorous Physical Activity: Freq.	5344	1.85	2.90	0	7
Moderate Physical Activity: Freq.	5336	3.34	3.30	0	7
Light Physical Activity: Freq.	5313	5.24	2.88	0	7
Walking: Freq.	5318	2.87	1.27	1	5

\*1: We calculate results using person-level analysis weight.

\*2: We calculate results with SHARE countries used in this paper.

Table 19: Summary Statistics of Sleeping Habits (Around 2010)

	Obs.	Mean	S.D.	Min	Max
<b>HRS</b>					
Sleeping: Hours	6139	6.64	2.75	0	24
<b>JSTAR</b>					
Sleeping(WD): Hours	2705	6.92	1.28	0	15
Sleeping(HD): Hours	3326	7.36	1.42	0	18
<b>CHARLS</b>					
Sleeping: Hours	12467	6.28	1.94	0	15

Table 20: Summary Statistics of Food Habits (Around 2010)

	<b>Obs.</b>	<b>Mean</b>	<b>S.D.</b>	<b>Min</b>	<b>Max</b>
<b>HRS</b> <sup>*3</sup>					
Food Expenditure	4034	330.58	400.25	0	16500
Eat out Expenditure	4056	121.45	200.43	0	4800
<b>ELSA</b> <sup>*3</sup>					
Food Expenditure	9952	117.96	84.07	0	1314
Eat out Expenditure	10026	18.85	26.04	0	357
<b>SHARE</b> <sup>*1*2*3</sup>					
Food Expenditure	20923	517.70	336.14	0	3179
Eat out Expenditure	22853	72.65	126.45	0	1073
<b>JSTAR</b> <sup>*3</sup>					
Food Expenditure	3100	443.80	430.90	0	2672
Eat out Expenditure	2067	117.44	178.25	0	1710
<b>KLoSA</b> <sup>*3</sup>					
Food Expenditure	4523	318.62	206.78	9	1731
Eat out Expenditure	4543	62.92	75.73	0	865
<b>CHARLS</b> <sup>*3</sup>					
Food Expenditure	12847	101.98	119.78	0	3095
Eat out Expenditure	13397	5.73	63.88	0	4334

<sup>\*1</sup>: We calculate results using person-level analysis weight.

<sup>\*2</sup>: We calculate results with SHARE countries used in this paper.

<sup>\*3</sup>: Nominal 10000 US \$



Table 21: Summary Statistics of Other Habits (Around 2010)

	Obs.	Mean	S.D.	Min	Max
<b>HRS</b>					
Social Participation: yes/no	7953	0.75	0.43	0	1
Contact with Children: Freq.	6969	5.19	1.09	1	6
Doctor Visit: Freq.	19867	11.15	24.93	0	900
<b>ELSA</b>					
Social Participation: yes/no	7946	0.33	0.47	0	1
Contact with Children: Freq.	7303	5.29	0.90	1	6
<b>SHARE*1*2</b>					
Social Participation: yes/no	34940	0.84	0.36	0	1
Contact with Children: Freq.	21240	6.12	1.25	1	7
Doctor Visit: Freq.	34865	7.30	9.46	0	98
<b>JSTAR</b>					
Social Participation: yes/no	3977	0.41	0.49	0	1
Doctor Visit: Freq.	4147	1.03	2.34	0	30
<b>KLoSA</b>					
Social Participation: yes/no	7649	0.73	0.45	0	1
Contact with Children: Freq.	6494	6.64	1.97	1	10
Doctor Visit: Freq.	7631	13.38	28.69	0	700
<b>CHARLS</b>					
Social Participation: yes/no	12575	0.49	0.50	0	1
Contact with Children: Freq.	11285	7.59	1.66	1	9
Doctor Visit: Freq.	13382	0.45	1.47	0	30

\*1: We calculate results using person-level analysis weight.

\*2: We calculate results with SHARE countries used in this paper.

### 3 Result

Tables 22, 23, 24, 25, and 26 shows the detailed estimated results that we discuss in our paper.<sup>12</sup> We implement the Durbin-Wu-Hausman test after IV estimation, and thereafter, apply either fixed effects with time effects instrumental variable (FE-TE-IV) or fixed effects with time effects (FE-TE) depending on the results of the test. Therefore, the tables show the applied method (FE or FE-IV) in the “Method” column.<sup>13</sup> The results in “completely retired” columns are discussed in the paper and those of other retirement definitions are also shown in the tables. We do not discuss any insignificant first stage results. In addition, the tables show other results (e.g., smoking amount, sleep, and frequency of contact with children) that are not discussed in the paper. Since, in China, we cannot obtain the significant first stage results for all estimations, we do not discuss the results of China in the original paper

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<sup>12</sup> All models are estimated via the STATA module xtivreg2 (see Schaffer (2010))

<sup>13</sup> Full estimation results including the results of control variables are available on request.

Table 22: Alcohol consumption behaviors

Drinking:Y/N	Not Working for Pay			Self-Reported Retire			Completely Retire		
	Coeff.(S.E.)	Method	Obs.	Coeff.(S.E.)	Method	Obs.	Coeff.(S.E.)	Method	Obs.
US	<b>0.356***</b> (0.088)	FE-IV	65368	<b>0.203***</b> (0.042)	FE-IV	59178	<b>0.333***</b> (0.076)	FE-IV	66665
England	-0.006(0.006)	FE	13970	-0.002(0.005)	FE	13241	-0.009(0.006)	FE	14217
Germany	<b>-0.526**</b> (0.217)	FE-IV	1839	<b>-0.318***</b> (0.110)	FE-IV	1687	<b>-0.304**</b> (0.123)	FE-IV	1970
France	0.013(0.020)	FE	2316	0.015(0.023)	FE	2350	0.017(0.020)	FE	2532
Denmark	0.021(0.014)	FE	2407	-0.010(0.015)	FE	2191	0.006(0.014)	FE	2433
Switzerland	0.007(0.027)	FE	1427	<b>0.058**</b> (0.029)	FE	1126	0.015(0.028)	FE	1423
Czech	<b>-0.125***</b> (0.041)	FE	1343	-0.075(0.047)	FE <sup>*1</sup>	1045	<b>-0.117***</b> (0.038)	FE	1416
Estonia	-0.085(0.072)	FE <sup>*1</sup>	614	<b>-0.106**</b> (0.053)	FE	734	<b>-0.086*</b> (0.052)	FE	784
Japan	-0.072*(0.041)	FE <sup>*1</sup>	1545	<b>-0.089**</b> (0.043)	FE	1523	<b>-0.089**</b> (0.043)	FE	1523
South Korea	-0.032(0.022)	FE <sup>*1</sup>	3983	<b>-0.038**</b> (0.019)	FE	4224	<b>-0.038**</b> (0.019)	FE	4235
China	-0.049(0.036)	FE <sup>*1</sup>	2990	-0.048(0.037)	FE <sup>*1</sup>	2996	-0.048(0.037)	FE <sup>*1</sup>	2996
Sweden	-0.010(0.018)	FE <sup>*1</sup>	2822	-0.007(0.019)	FE <sup>*1</sup>	2397	-0.014(0.018)	FE <sup>*1</sup>	2837
Spain	<b>-0.092**</b> (0.046)	FE	1229	-0.035(0.042)	FE <sup>*1</sup>	1347	-0.067(0.042)	FE	1446
Poland	0.080(0.066)	FE <sup>*1</sup>	560	-0.026(0.071)	FE <sup>*1</sup>	514	0.036(0.062)	FE <sup>*1</sup>	610
Slovenia	0.297(0.262)	FE <sup>*1</sup>	82	-0.084(0.125)	FE <sup>*1</sup>	146	-0.089(0.119)	FE <sup>*1</sup>	162
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Drinking:Freq.	Coeff.(S.E.)	Method	Obs.	Coeff.(S.E.)	Method	Obs.	Coeff.(S.E.)	Method	Obs.
US	<b>-0.033**</b> (0.013)	FE	65187	-0.015(0.012)	FE	59007	<b>-0.041***</b> (0.013)	FE	66475
England	0.029(0.027)	FE	13826	0.025(0.025)	FE	13108	0.036(0.026)	FE	14070
Germany	0.107(0.088)	FE	1839	0.025(0.090)	FE	1687	0.126(0.084)	FE	1970
France	<b>0.753**</b> (0.292)	FE-IV	2316	0.064(0.090)	FE	2350	<b>0.593**</b> (0.236)	FE-IV	2532
Denmark	<b>0.134*</b> (0.074)	FE	2407	0.000(0.082)	FE	2191	0.092(0.077)	FE	2433
Switzerland	0.030(0.085)	FE	1427	-0.104(0.101)	FE	1126	0.015(0.083)	FE	1423
Czech	<b>-0.198*</b> (0.114)	FE	1343	0.092(0.129)	FE <sup>*1</sup>	1045	<b>-0.186*</b> (0.104)	FE	1416
Estonia	0.051(0.152)	FE <sup>*1</sup>	614	-0.056(0.117)	FE	734	-0.029(0.112)	FE	784
Japan	-0.221*(0.115)	FE <sup>*1</sup>	1545	<b>-0.269**</b> (0.117)	FE	1523	<b>-0.269**</b> (0.117)	FE	1523
South Korea	-0.097*(0.058)	FE <sup>*1</sup>	3983	<b>2.426**</b> (1.029)	FE-IV	4224	<b>2.490**</b> (1.024)	FE-IV	4235
China	-0.214***(0.098)	FE <sup>*1</sup>	2610	-0.217***(0.098)	FE <sup>*1</sup>	2616	-0.217***(0.098)	FE <sup>*1</sup>	2616
Sweden	0.030(0.053)	FE <sup>*1</sup>	2822	0.018(0.066)	FE <sup>*1</sup>	2397	0.028(0.053)	FE <sup>*1</sup>	2837
Spain	-0.093(0.153)	FE	1229	-0.037(0.110)	FE <sup>*1</sup>	1347	-0.169(0.117)	FE	1446
Poland	0.086(0.134)	FE <sup>*1</sup>	560	-0.071(0.133)	FE <sup>*1</sup>	514	-0.025(0.118)	FE <sup>*1</sup>	610
Slovenia	0.100(0.534)	FE <sup>*1</sup>	82	-0.428(0.301)	FE <sup>*1</sup>	146	-0.395(0.289)	FE <sup>*1</sup>	162
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Drinking:Amount	Coeff.(S.E.)	Method	Obs.	Coeff.(S.E.)	Method	Obs.	Coeff.(S.E.)	Method	Obs.
US	<b>-0.047***</b> (0.016)	FE	65147	-0.005(0.016)	FE	58961	<b>-0.055***</b> (0.016)	FE	66433
England	<b>3.561**</b> (1.532)	FE-IV	11221	<b>2.298**</b> (1.073)	FE-IV	10665	<b>2.689**</b> (1.275)	FE-IV	11407
Germany	0.133(0.559)	FE <sup>*1</sup>	1062	<b>-2.997**</b> (1.538)	FE-IV	952	<b>-3.343**</b> (1.645)	FE-IV	1122
France	0.636(0.495)	FE	1504	<b>0.646**</b> (0.310)	FE	1516	0.554(0.392)	FE	1646
Denmark	-0.066(0.152)	FE	1747	0.024(0.165)	FE	1581	-0.046(0.145)	FE	1755
Switzerland	0.024(0.526)	FE	1027	1.284*(0.751)	FE <sup>*1</sup>	793	-0.225(0.551)	FE	1028
Czech	<b>-1.639**</b> (0.638)	FE	1185	0.490(0.842)	FE <sup>*1</sup>	931	<b>-2.042***</b> (0.697)	FE	1247
Estonia	1.108(0.879)	FE <sup>*1</sup>	500	-0.094(0.462)	FE	598	0.125(0.506)	FE	642
Japan	-0.281*(0.144)	FE <sup>*1</sup>	1276	-0.166(0.141)	FE	1269	-0.166(0.141)	FE	1269
South Korea	-0.255(0.288)	FE <sup>*1</sup>	3630	-0.151(0.236)	FE	3853	-0.157(0.236)	FE	3863
China	0.089(0.412)	FE <sup>*1</sup>	2990	0.063(0.416)	FE <sup>*1</sup>	2996	0.063(0.416)	FE <sup>*1</sup>	2996
Sweden	-1.150(0.895)	FE	1508	-0.612(0.863)	FE <sup>*1</sup>	1243	-1.256(0.932)	FE <sup>*1</sup>	1507
Spain	1.103(1.619)	FE <sup>*1</sup>	796	-0.718(0.996)	FE <sup>*1</sup>	886	0.391(1.138)	FE <sup>*1</sup>	951
Poland	0.977(1.049)	FE	442	1.127(0.871)	FE <sup>*1</sup>	394	-7.963(4.998)	FE-IV	468
Slovenia	0.366(0.594)	FE <sup>*1</sup>	68	0.512(0.607)	FE <sup>*1</sup>	122	0.443(0.572)	FE	136

Standard errors in parentheses

\*  $p < .1$ , \*\*  $p < .05$ , \*\*\*  $p < .01$ 

\*1: IVs are insignificant in 1st stage estimation.

Table 23: Smoking behaviors

Smoking:Y/N	Not Working for Pay			Self-Reported Retire			Completely Retire		
	Coeff.(S.E.)	Method	Obs.	Coeff.(S.E.)	Method	Obs.	Coeff.(S.E.)	Method	Obs.
US	-0.031***(0.011)	FE	19697	-0.028***(0.010)	FE	18718	-0.037***(0.010)	FE	20339
England	-0.057*(0.031)	FE	2888	-0.043(0.027)	FE	2859	-0.042(0.028)	FE	2998
Germany	0.131(0.083)	FE <sup>*1</sup>	606	0.071(0.081)	FE	597	0.138*(0.078)	FE	671
France	-0.454*(0.237)	FE-IV	574	0.009(0.066)	FE	611	-0.399*(0.232)	FE-IV	658
Denmark	0.019(0.061)	FE <sup>*1</sup>	744	0.048(0.065)	FE	708	0.025(0.066)	FE <sup>*1</sup>	767
Switzerland	-0.026(0.084)	FE <sup>*1</sup>	505	0.305(0.197)	FE-IV	398	-0.022(0.083)	FE <sup>*1</sup>	514
Czech	0.008(0.082)	FE <sup>*1</sup>	504	-0.002(0.087)	FE	438	0.005(0.065)	FE	554
Estonia	-0.159(0.176)	FE	186	-0.046(0.078)	FE	280	0.017(0.075)	FE	292
Japan	0.001(0.044)	FE	1144	-0.007(0.051)	FE	1144	-0.007(0.051)	FE	1144
South Korea	-0.033(0.034)	FE	2225	-0.654***(0.318)	FE-IV	2350	-0.643***(0.319)	FE-IV	2356
China	-0.056(0.047)	FE <sup>*1</sup>	818	-0.059(0.049)	FE <sup>*1</sup>	818	-0.059(0.049)	FE <sup>*1</sup>	818
Sweden	0.049(0.071)	FE <sup>*1</sup>	683	-0.034(0.086)	FE <sup>*1</sup>	629	0.051(0.066)	FE <sup>*1</sup>	693
Spain	-0.087(0.097)	FE	471	-0.215****(0.066)	FE	545	-0.189****(0.067)	FE	572
Poland	-0.053(0.098)	FE <sup>*1</sup>	246	-0.045(0.084)	FE <sup>*1</sup>	242	-0.143(0.095)	FE <sup>*1</sup>	268
Slovenia	0.502***(0.179)	FE	24	0.161(0.147)	FE <sup>*1</sup>	64	0.230*(0.128)	FE <sup>*1</sup>	68

  

Smoking:Amount	Coeff.(S.E.)	Method	Obs.	Coeff.(S.E.)	Method	Obs.	Coeff.(S.E.)	Method	Obs.
US	-0.448*(0.259)	FE	19585	-0.261(0.226)	FE	18619	-0.643****(0.240)	FE	20223
England(WD)	0.364(1.563)	FE	1307	-0.577(1.558)	FE	1288	-0.435(1.566)	FE	1353
England(HD)	0.290(0.967)	FE	1305	0.523(1.260)	FE	1286	0.779(1.235)	FE	1351
Germany	4.307***(2.155)	FE <sup>*1</sup>	378	0.643(1.390)	FE	377	3.219*(1.850)	FE	419
France	-0.309(1.469)	FE <sup>*1</sup>	265	-1.280(1.275)	FE	272	-0.419(1.288)	FE <sup>*1</sup>	288
Denmark	1.508(1.768)	FE	361	-0.837(1.782)	FE <sup>*1</sup>	348	0.943(2.198)	FE <sup>*1</sup>	371
Switzerland	-0.986(2.221)	FE	220	-2.157(1.823)	FE <sup>*1</sup>	175	-1.308(2.291)	FE	219
Czech	-1.330(2.329)	FE <sup>*1</sup>	104	-5.293*(2.698)	FE	79	-1.685(2.405)	FE <sup>*1</sup>	104
Japan	-1.990*(1.163)	FE	1003	-2.154*(1.188)	FE	1000	-2.154*(1.188)	FE	1000
South Korea	-1.473***(0.688)	FE	2225	-11.427*(6.162)	FE-IV	2350	-1.119*(0.626)	FE	2356
China	-1.016(1.199)	FE <sup>*1</sup>	538	-1.066(1.248)	FE <sup>*1</sup>	538	-1.066(1.248)	FE <sup>*1</sup>	538
Sweden	1.155(0.967)	FE <sup>*1</sup>	487	0.883(1.122)	FE <sup>*1</sup>	458	0.599(0.854)	FE <sup>*1</sup>	497
Spain	-2.844(1.963)	FE <sup>*1</sup>	286	-3.800***(1.645)	FE <sup>*1</sup>	301	-3.313*(1.785)	FE <sup>*1</sup>	317
Poland	9.536****(2.404)	FE <sup>*1</sup>	32	-8.720***(3.508)	FE	26	6.069***(2.709)	FE <sup>*1</sup>	36

Standard errors in parentheses

\*  $p < .1$ , \*\*  $p < .05$ , \*\*\*  $p < .01$

\*1: IVs are insignificant in 1st stage estimation.

Table 24: Physical activities

Vigorous:Freq.	Not Working for Pay			Self-Reported Retire			Completely Retire		
	Coeff.(S.E.)	Method	Obs.	Coeff.(S.E.)	Method	Obs.	Coeff.(S.E.)	Method	Obs.
US	0.018** (0.008)	FE	53849	0.029*** (0.007)	FE	49926	0.011(0.007)	FE	55130
England	0.041*** (0.014)	FE	15124	0.038*** (0.013)	FE	14376	0.038*** (0.013)	FE	15475
Germany	-0.044(0.039)	FE	1890	-0.020(0.039)	FE	1731	-0.047(0.036)	FE	2027
France	-0.056(0.039)	FE	2408	-0.064* (0.037)	FE	2461	-0.053(0.036)	FE	2649
Denmark	0.052(0.043)	FE	2418	0.044(0.044)	FE	2209	0.044(0.042)	FE	2451
Switzerland	-0.047(0.045)	FE	1466	-0.001(0.046)	FE	1162	-0.047(0.044)	FE	1463
Czech	-0.096* (0.050)	FE	1390	0.054(0.051)	FE <sup>*1</sup>	1086	-0.041(0.047)	FE	1475
Estonia	-0.175** (0.074)	FE <sup>*1</sup>	646	-0.080(0.065)	FE	762	-0.100(0.066)	FE	814
Japan	0.676* (0.353)	FE-IV	1499	0.051** (0.024)	FE	1489	0.051** (0.024)	FE	1489
South Korea	0.136*** (0.021)	FE <sup>*1</sup>	7157	0.082*** (0.018)	FE	7589	0.082*** (0.018)	FE	7648
China	-0.169*** (0.036)	FE <sup>*1</sup>	1980	-0.170*** (0.035)	FE <sup>*1</sup>	1982	-0.170*** (0.035)	FE <sup>*1</sup>	1982
Sweden	-0.025(0.036)	FE <sup>*1</sup>	2897	0.095** (0.041)	FE <sup>*1</sup>	2456	-0.019(0.036)	FE <sup>*1</sup>	2911
Spain	0.348(0.252)	FE-IV	1313	-0.023(0.047)	FE <sup>*1</sup>	1467	0.307* (0.184)	FE-IV	1575
Poland	0.013(0.087)	FE <sup>*1</sup>	582	-0.024(0.084)	FE <sup>*1</sup>	538	-0.014(0.073)	FE <sup>*1</sup>	638
Slovenia	0.134(0.170)	FE <sup>*1</sup>	90	-0.305*** (0.092)	FE <sup>*1</sup>	170	0.225(0.276)	FE-IV	186
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Moderate:Freq.	Coeff.(S.E.)	Method	Obs.	Coeff.(S.E.)	Method	Obs.	Coeff.(S.E.)	Method	Obs.
US	0.207* (0.124)	FE-IV	53882	0.133** (0.063)	FE-IV	49962	0.218** (0.109)	FE-IV	55170
England	0.246*** (0.075)	FE-IV	15125	0.187*** (0.057)	FE-IV	14377	0.201*** (0.061)	FE-IV	15476
Germany	-0.008(0.024)	FE	1890	0.006(0.025)	FE	1731	-0.012(0.024)	FE	2027
France	-0.008(0.024)	FE	2410	0.020(0.026)	FE	2461	-0.003(0.024)	FE	2649
Denmark	0.248** (0.109)	FE-IV	2417	0.004(0.020)	FE	2208	0.203** (0.083)	FE-IV	2450
Switzerland	-0.009(0.028)	FE	1466	-0.035(0.037)	FE	1162	-0.012(0.028)	FE	1463
Czech	-0.056(0.038)	FE	1390	0.048(0.042)	FE <sup>*1</sup>	1086	-0.039(0.036)	FE	1475
Estonia	-0.114** (0.050)	FE <sup>*1</sup>	646	-0.072* (0.040)	FE	762	-0.073* (0.041)	FE	814
China	-0.214*** (0.045)	FE <sup>*1</sup>	1972	-0.229*** (0.045)	FE <sup>*1</sup>	1974	-0.229*** (0.045)	FE <sup>*1</sup>	1974
Sweden	-0.009(0.016)	FE <sup>*1</sup>	2898	-0.000(0.021)	FE <sup>*1</sup>	2457	-0.011(0.016)	FE <sup>*1</sup>	2912
Spain	0.534*** (0.192)	FE-IV	1313	0.005(0.033)	FE <sup>*1</sup>	1467	0.418*** (0.135)	FE-IV	1575
Poland	-0.023(0.062)	FE <sup>*1</sup>	584	-0.162** (0.065)	FE <sup>*1</sup>	540	-0.073(0.058)	FE <sup>*1</sup>	640
Slovenia	-0.051(0.063)	FE <sup>*1</sup>	90	-0.107(0.073)	FE <sup>*1</sup>	170	-0.522*** (0.184)	FE-IV	186
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Light:Freq.	Coeff.(S.E.)	Method	Obs.	Coeff.(S.E.)	Method	Obs.	Coeff.(S.E.)	Method	Obs.
US	-0.004(0.006)	FE	53889	0.093* (0.049)	FE-IV	49967	0.154* (0.084)	FE-IV	55177
England	0.125** (0.057)	FE-IV	15125	0.102** (0.043)	FE-IV	14377	0.085* (0.046)	FE-IV	15476
Japan	-0.011(0.047)	FE <sup>*1</sup>	1504	-0.006(0.046)	FE	1492	-0.006(0.046)	FE	1492
China	-0.087** (0.037)	FE <sup>*1</sup>	1964	-0.088** (0.037)	FE <sup>*1</sup>	1966	-0.088** (0.037)	FE <sup>*1</sup>	1966
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Walking	Coeff.(S.E.)	Method	Obs.	Coeff.(S.E.)	Method	Obs.	Coeff.(S.E.)	Method	Obs.
US	-0.039(0.038)	FE	19607	-0.035(0.040)	FE	17731	-0.033(0.037)	FE	20016
Japan	-0.172*** (0.065)	FE	4135	-0.186*** (0.063)	FE	4162	-0.186*** (0.063)	FE	4162
China	-0.245** (0.109)	FE <sup>*1</sup>	1962	-0.252** (0.109)	FE <sup>*1</sup>	1964	-0.252** (0.109)	FE <sup>*1</sup>	1964

Standard errors in parentheses

\*  $p < .1$ , \*\*  $p < .05$ , \*\*\*  $p < .01$ 

\*1: IVs are insignificant in 1st stage estimation.

Table 25: Sleeping & Food habits

Sleeping	Not Working for Pay			Self-Reported Retire			Completely Retire		
	Coeff.(S.E.)	Method	Obs.	Coeff.(S.E.)	Method	Obs.	Coeff.(S.E.)	Method	Obs.
US	1.874**(0.835)	FE-IV	19734	0.057(0.058)	FE	17846	1.613**(0.770)	FE-IV	20143
Japan(WD)	0.133(0.202)	FE*1	1648	0.062(0.144)	FE*1	1641	0.062(0.144)	FE*1	1641
Japan(HD)	-0.191*(0.113)	FE*1	1752	-0.205*(0.111)	FE*1	1767	-0.205*(0.111)	FE*1	1767
China	0.092(0.097)	FE*1	4898	0.088(0.097)	FE*1	4904	0.088(0.097)	FE*1	4904
<b>Logged Food Expenditure</b>	<b>Coeff.(S.E.)</b>	<b>Method</b>	<b>Obs.</b>	<b>Coeff.(S.E.)</b>	<b>Method</b>	<b>Obs.</b>	<b>Coeff.(S.E.)</b>	<b>Method</b>	<b>Obs.</b>
US	-0.002*(0.001)	FE	13693	-0.003*** (0.001)	FE	12352	-0.002** (0.001)	FE	13989
England	-0.000(0.000)	FE	15059	-0.000(0.000)	FE	14309	-0.000(0.000)	FE	15405
Germany	-0.000(0.003)	FE	935	0.006** (0.003)	FE	871	0.001(0.003)	FE	1007
France	0.000(0.003)	FE	1057	-0.001(0.003)	FE	1062	0.002(0.003)	FE	1168
Denmark	0.005** (0.002)	FE*1	1234	0.003(0.003)	FE	1128	0.004(0.002)	FE	1256
Switzerland	0.000(0.004)	FE	791	0.004(0.005)	FE	620	-0.002(0.004)	FE	788
Czech	-0.003(0.006)	FE*1	650	-0.007(0.007)	FE*1	486	-0.002(0.005)	FE*1	691
Estonia	-0.008** (0.004)	FE*1	276	0.011(0.009)	FE*1	338	0.009(0.008)	FE	364
Japan	-0.002(0.003)	FE	2850	-0.000(0.003)	FE*1	2896	-0.000(0.003)	FE*1	2896
South Korea	0.002** (0.001)	FE	2672	0.001(0.001)	FE*1	2880	0.001(0.001)	FE*1	2900
China	0.000(0.000)	FE*1	4916	0.000(0.000)	FE*1	4922	0.000(0.000)	FE*1	4922
Sweden	0.001(0.002)	FE*1	1624	-0.004(0.003)	FE-IV	1372	0.001(0.002)	FE*1	1629
Spain	0.004(0.004)	FE	613	0.004(0.003)	FE*1	685	0.001(0.003)	FE	724
Poland	-0.006*(0.003)	FE*1	264	-0.000(0.003)	FE*1	240	-0.003(0.003)	FE*1	288
Slovenia	0.002(0.007)	FE	44	0.000(0.007)	FE*1	78	-0.001(0.006)	FE	86
<b>Logged Eat Out Expenditure</b>	<b>Coeff.(S.E.)</b>	<b>Method</b>	<b>Obs.</b>	<b>Coeff.(S.E.)</b>	<b>Method</b>	<b>Obs.</b>	<b>Coeff.(S.E.)</b>	<b>Method</b>	<b>Obs.</b>
US	-0.001(0.001)	FE	13747	0.000(0.001)	FE	12388	-0.001(0.001)	FE	14046
England	-0.000*(0.000)	FE	15080	-0.000(0.000)	FE	14331	-0.000(0.000)	FE	15428
Germany	0.000(0.001)	FE	1006	0.001(0.001)	FE	936	0.002*(0.001)	FE	1083
France	-0.004** (0.002)	FE	1068	-0.004** (0.002)	FE	1082	-0.003*(0.002)	FE	1188
Denmark	-0.001(0.001)	FE	1382	-0.002** (0.001)	FE	1268	-0.002(0.001)	FE	1407
Switzerland	-0.017*(0.009)	FE-IV	855	-0.005** (0.002)	FE	675	-0.017*(0.009)	FE-IV	855
Czech	-0.001(0.001)	FE*1	712	-0.002(0.001)	FE*1	529	-0.002(0.001)	FE	757
Estonia	-0.002(0.001)	FE*1	352	-0.000(0.001)	FE	434	-0.000(0.001)	FE	460
Japan	0.018(0.019)	FE*1	2225	0.020(0.021)	FE*1	2240	0.020(0.021)	FE*1	2240
South Korea	-0.000(0.000)	FE	2675	-0.000(0.000)	FE*1	2883	-0.000(0.000)	FE*1	2903
China	-0.000(0.000)	FE*1	5176	-0.000(0.000)	FE*1	5182	-0.000(0.000)	FE*1	5182
Sweden	-0.001(0.001)	FE*1	1712	-0.000(0.001)	FE*1	1439	-0.000(0.001)	FE*1	1714
Spain	0.001(0.002)	FE	723	-0.001(0.002)	FE*1	787	-0.001(0.002)	FE	842
Poland	-0.002*(0.001)	FE*1	292	-0.001(0.001)	FE*1	270	-0.001(0.001)	FE	322
Slovenia	0.024** (0.010)	FE-IV	52	-0.003(0.005)	FE	104	-0.001(0.005)	FE	112

Standard errors in parentheses

\*  $p < .1$ , \*\*  $p < .05$ , \*\*\*  $p < .01$

\*1: IVs are insignificant in 1st stage estimation.

Table 26: Ohter behaviors

Social Participation	Not Working for Pay			Self-Reported Retire			Completely Retire		
	Coeff.(S.E.)	Method	Obs.	Coeff.(S.E.)	Method	Obs.	Coeff.(S.E.)	Method	Obs.
US	0.008(0.016)	FE	14332	0.034** (0.016)	FE	13015	-0.002(0.016)	FE	14533
England	0.019(0.013)	FE	13039	0.023* (0.013)	FE	12382	0.027** (0.013)	FE	13276
Germany	0.063* (0.036)	FE	1881	0.042(0.038)	FE	1724	0.060* (0.034)	FE	2018
France	0.033(0.033)	FE	2378	0.018(0.032)	FE	2426	0.019(0.031)	FE	2612
Denmark	0.005(0.030)	FE	2414	-0.004(0.034)	FE	2207	0.004(0.032)	FE	2446
Switzerland	-0.003(0.035)	FE	1466	0.029(0.042)	FE	1162	0.009(0.035)	FE	1463
Czech	-0.021(0.039)	FE	1387	0.015(0.041)	FE <sup>*1</sup>	1084	-0.019(0.035)	FE	1472
Estonia	-0.036(0.030)	FE <sup>*1</sup>	640	-0.035(0.036)	FE	752	-0.035(0.035)	FE	804
Japan	0.024(0.029)	FE	4001	-0.020(0.029)	FE	4022	-0.020(0.029)	FE	4022
South Korea	0.013(0.017)	FE <sup>*1</sup>	7157	-0.002(0.015)	FE	7589	-0.002(0.015)	FE	7648
China	-0.020(0.026)	FE <sup>*1</sup>	4970	-0.022(0.026)	FE <sup>*1</sup>	4976	-0.022(0.026)	FE <sup>*1</sup>	4976
Sweden	0.016(0.028)	FE <sup>*1</sup>	2895	0.034(0.033)	FE <sup>*1</sup>	2454	0.034(0.029)	FE <sup>*1</sup>	2909
Spain	0.015(0.045)	FE	1305	0.049(0.041)	FE <sup>*1</sup>	1459	0.021(0.040)	FE	1567
Poland	0.008(0.072)	FE <sup>*1</sup>	584	-0.018(0.063)	FE <sup>*1</sup>	540	0.053(0.062)	FE <sup>*1</sup>	640
Slovenia	0.068(0.064)	FE <sup>*1</sup>	90	-0.160(0.113)	FE <sup>*1</sup>	170	-0.122(0.111)	FE	186
<b>Contact with Children</b>									
US	-0.005(0.029)	FE	12755	0.037(0.031)	FE	11540	-0.009(0.030)	FE	12928
England	0.038(0.024)	FE	11665	0.047** (0.023)	FE	10919	0.031(0.024)	FE	11824
Germany	0.154(0.135)	FE <sup>*1</sup>	732	-1.671*** (0.587)	FE-IV	659	-1.413** (0.548)	FE-IV	789
France	0.063(0.125)	FE	1041	0.097(0.124)	FE	1038	0.005(0.121)	FE	1153
Denmark	0.096(0.100)	FE	1157	0.099(0.105)	FE	1046	0.111(0.099)	FE	1172
Switzerland	-0.009(0.112)	FE	697	-0.091(0.135)	FE	532	0.040(0.111)	FE	693
Czech	0.037(0.177)	FE <sup>*1</sup>	635	-0.002(0.243)	FE <sup>*1</sup>	451	0.085(0.178)	FE <sup>*1</sup>	680
Estonia	-0.147(0.149)	FE <sup>*1</sup>	328	-0.134(0.161)	FE <sup>*1</sup>	384	1.764* (0.932)	FE-IV	408
South Korea	-0.164* (0.092)	FE <sup>*1</sup>	5280	0.019(0.084)	FE	5584	0.021(0.084)	FE	5642
China	0.007(0.101)	FE	2498	0.013(0.097)	FE	2500	0.013(0.097)	FE	2500
Sweden	0.076(0.081)	FE <sup>*1</sup>	1563	0.074(0.086)	FE <sup>*1</sup>	1308	0.051(0.080)	FE <sup>*1</sup>	1567
Spain	1.256* (0.650)	FE-IV	470	-0.008(0.121)	FE	517	0.739* (0.447)	FE-IV	567
Poland	0.303(0.269)	FE <sup>*1</sup>	226	0.377(0.264)	FE <sup>*1</sup>	188	0.474** (0.232)	FE <sup>*1</sup>	242
Slovenia	0.283(0.297)	FE	56	1.084** (0.508)	FE-IV	102	0.165(0.152)	FE	110
<b>Doctor Visit</b>									
US	-8.016** (3.447)	FE-IV	85408	-4.311*** (1.512)	FE-IV	77176	-7.970*** (2.998)	FE-IV	87245
Germany	1.236* (0.670)	FE	1886	0.624(0.611)	FE	1728	0.759(0.652)	FE	2024
France	-0.477(0.448)	FE	2406	1.049* (0.598)	FE	2457	0.113(0.506)	FE	2645
Denmark	0.494(0.518)	FE	2414	-0.833(0.623)	FE	2204	-0.637(0.536)	FE	2446
Switzerland	0.467(0.607)	FE	1465	-5.180* (2.697)	FE-IV	1161	0.083(0.717)	FE	1462
Czech	0.386(0.707)	FE	1385	0.888(0.833)	FE <sup>*1</sup>	1082	-0.158(0.691)	FE	1470
Estonia	1.720(1.560)	FE <sup>*1</sup>	638	-0.041(0.628)	FE	754	1.270(1.366)	FE	806
Japan	0.317(0.277)	FE <sup>*1</sup>	1890	0.394(0.328)	FE <sup>*1</sup>	1862	0.394(0.328)	FE <sup>*1</sup>	1862
South Korea	1.016** (0.508)	FE <sup>*1</sup>	5450	0.945* (0.508)	FE	5768	0.951* (0.508)	FE	5812
China	0.272** (0.110)	FE <sup>*1</sup>	5128	0.280** (0.110)	FE <sup>*1</sup>	5134	0.280** (0.110)	FE <sup>*1</sup>	5134
Sweden	1.037*** (0.365)	FE <sup>*1</sup>	2892	1.479*** (0.506)	FE <sup>*1</sup>	2453	1.308*** (0.408)	FE <sup>*1</sup>	2906
Spain	0.824(1.003)	FE <sup>*1</sup>	1301	1.243(0.927)	FE <sup>*1</sup>	1459	-7.389** (3.616)	FE-IV	1565
Poland	0.620(1.062)	FE <sup>*1</sup>	584	1.042(1.046)	FE <sup>*1</sup>	540	0.203(0.953)	FE <sup>*1</sup>	640
Slovenia	-4.127* (2.125)	FE <sup>*1</sup>	90	-1.121(1.847)	FE <sup>*1</sup>	170	-1.538(1.850)	FE	186

Standard errors in parentheses

\*  $p < .1$ , \*\*  $p < .05$ , \*\*\*  $p < .01$

\*1: IVs are insignificant in 1st stage estimation.

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