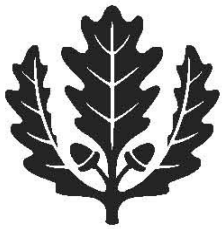

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Marina-Selini Katsaiti
United Arab Emirates University

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341 Mansfield Road, Unit 1063
Storrs, CT 06269–1063
Phone: (860) 486–3022
Fax: (860) 486–4463
http://www.econ.uconn.edu/

Obesity and Happiness

Marina-Selini Katsaiti *

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Abstract

This paper provides insight on the relationship between individual obesity and happiness levels. Using the latest available panel data from Germany (GSOEP), UK (BHPS), and Australia (HILDA), we examine whether there is statistical evidence on the impact of overweight on subjective well being. Instrumental variable analysis is utilized under the presence of endogeneity, stemming from several explanatory variables. Results indicate that in all three countries obesity has a negative effect on the subjective well being of individuals. The results also have important implications for the effect of other socio-demographic, economic and individual characteristics on well being.

JEL codes: D60, I31
Keywords: Happiness, Obesity, Instrumental Variable Analysis, Subjective Well Being

*Faculty of Business and Economics, Department of Economics and Finance, United Arab Emirates University, P.O. BOX 17555, Al Ain, UAE; E-mail: selini.katsaiti@uaeu.ac.ae

1 Introduction

Happiness is one of life's fundamental goals. Whether people pursue better jobs or higher income, try to achieve better health or a stable family life, want to win an Olympic medal or the Nobel prize, the motivation behind their effort is normally happiness. People may engage in risky behavior, such as smoking or racing, because they derive temporary satisfaction from this. Similarly, people derive instant pleasure from food consumption. As with numerous habits and consumption patterns, the effect of food consumption is usually immediate gratification, however in the long run, consumption of food in excess of daily calorific needs leads to excessive weight gain, which in turn can lower subjective well-being.

Happiness can be defined as the degree to which people positively assess their life situation (Veenhoven (1996)) and depends on a variety of individual and social characteristics. These characteristics differ in how important they are to each individual and are measured by ordinal ranking. Happiness is often defined in terms of living a good life, rather than a simple emotion.

Happiness is naturally the subject of psychological and sociological research as well as medicine, and is often associated with good health. Economics research has connected happiness with the concept of utility since the 18th century and the works of Bentham and Jevons. This multidisciplinary research has identified several determinants of happiness. The most important ones include demographics, socioeconomic traits, education, and health related characteristics.

Empirical work in economics has shed light on significant determinants of individual well being. Age, gender, income, employment status, marital status and education are among them. Body Mass Index (BMI) has recently been added to

the list of factors that can explain life satisfaction levels. BMI can influence happiness through deterioration in health, lower self-esteem, or lower social acceptance. In addition, it may affect self confidence, personal and social relationships, and attitude. Though not perfect, BMI is a well established measure of obesity, employed by the Centers for Disease Control (CDC) and by the World Health Organization (WHO). Individuals with BMI i) between 18-25 are indexed as normal weight, ii) between 25 and 30 are categorized as overweight, and iii) over 30 are classified as obese.

Moods often affect consumption patterns and are associated with eating habits and disorders. In addition, it is intuitive that subjective well being itself influences numerous other aspects of life, both in the short and in the long run. Examples of the factors arguably influenced by happiness levels are, among other things, education and income levels, marital status, and employment. Thus, in the empirical estimation several explanatory variables are endogenous and do not obey the standard assumptions, since the causality could be running in both directions. This issue, not adequately addressed in the happiness literature, cannot be neglected as it may affect the robustness of the results, when the estimator is inconsistent. Stutzer (2007) is the only study that addresses this issue, however, acknowledging and treating for reverse causality only between happiness and BMI.

The purpose of this study is to examine the impact of BMI on individual well-being. It contributes to the literature in the following ways. Firstly, it analyzes the most recently available panel data from Germany, Australia and the UK. In addition, it is the first study to examine the Australian case. Last, it identifies the endogeneity issues arising from dual causality in the model and addresses them

appropriately.

The paper is structured as follows. Section 2 reviews the relevant literature. Section 3 describes the estimation methodology and the data, and Section 4 presents and examines the empirical results. Section 5 summarizes the primary findings and offers some final remarks.

2 The Literature

The medical literature provides diverse conclusions about the relationship between obesity and depression. Roberts, Kaplan, Shema, and Strawbridge (2000) use data from Alameda County, California, to investigate whether the obese are at greater risk for depression. They conclude that, among other groups, the obese, females, and those with two or more chronic health conditions are at higher risk for depression. In addition, they find that, when all individuals with depressive symptoms in the previous year are excluded, there is greater relative risk for future depression for the obese than for the non-obese. This result holds in specifications that control for a number of variables affecting the risk of depression. Based on their results and on the results of other studies, they conclude "that the obese may be at increased risk for depression."

Reed (1985) uses data from the First National Health and Nutrition Examination Survey (NHANES I) and identifies young, more educated, obese females as a subgroup of worse mental health condition. Several studies find strong evidence of the relationship between overweight/obese individuals and depression in females (Noppa and Hällström (1981), Palinkas, Wingard, and Barrett-Connor (1996), Reed (1985)). Larsson, Karlsson, and Sullivan (2002) analyze the effect of

overweight and obese on health-related quality-of-life (HRQL) in Sweden. Using data from a cross-sectional survey on 5633 men and women aged 14-64, their regression analysis finds the following: overweight and obesity for young men and women(16-34 years) leads to poor physical health, but not mental health. For middle-aged (35-64 years) individuals, obese men and women report health impairments, however only women report mental health problems.

The same result for females is supported by a study of adolescents aged 11 to 21 years. Needham and Crosnoe (2005) find evidence that relative weight is associated with depressive symptoms for girls but not for boys. Greeno, Jackson, Williams, and Fortmann (1998) also confirm that females with lack of perceived eating control and higher BMI are associated with lower life satisfaction levels. For men only the lack of perceived eating control explains lower happiness levels.

Stutzer (2007) investigates i) the probability of being obese given certain socioeconomic and demographic characteristics, ii) the effect of obesity on happiness taking into account self-reported self-control levels. His intuition stands on the hypothesis that only individuals who feel unable to control their food consumption should have lower happiness levels due to obesity. Using Swiss data, he finds that lower self-control is associated with lower happiness levels given the presence of obesity. Stutzer (2007) checks for reverse causality. He finds no evidence that eating due to stress leads to lower happiness levels of obese individuals with limited self control.

A similar study by Oswald and Powdthavee (2007) examines cross sectional data from the UK and Germany, using regression analysis to identify the relationship between BMI and self-reported life satisfaction. For the British data they also

explore the impact of BMI on psychological distress and on self-reported "perception of own weight". Under all univariate and multivariate specifications in both datasets, BMI has a negative and significant effect on subjective well-being. Moreover, for the British regressions they find that BMI increases psychological distress and is positively associated with perception of own weight. Employment status, age, education, income, marital status, and disability status stand out as significant determinants of individual happiness under most specifications. However, Oswald and Powdthavee (2007) do not correct for endogeneity.

3 Empirical Estimation

3.1 Data

The data for Germany come from the German Socio-Economic Panel (GSOEP), a representative longitudinal study of individuals and households. The aim of the GSOEP survey is to collect data on living conditions, together with demographic, economic, sociological, political, and other individual and household characteristics. The data contains information about German citizens, foreigners, and immigrants to Germany. Weight and height data, are available only for the years 2002, 2004, 2006, and 2008. Most other variables included in our specifications are available for all years, with no breaks.

For UK, the data come from the British Household Panel Survey (BHPS). This survey includes households from England, Scotland, Wales and Northern Ireland. It surveys approximately $22,000$ individuals yearly, and provides information on demographics, economic situation, household characteristics, and individual

health. The main information of interest here, the weight and height data, are available for 2005 and 2007. Once again most other variable information included in the analysis is available for all years.

For Australia the data source is the Household, Income and Labour Dynamics in Australia (HILDA) Survey. BMI information is available for years 2006, 2007 and 2009. HILDA provides similar or equivalent information with that of BHPS and GSOEP. In the Australian data the financial information variables are only available for one year, and this fact makes it not possible to contain this information in the panel regressions.

Descriptive statistics on German, British and Australian data are presented in Tables 1, 3, and 5 respectively. Correlation matrices for the variables of interest are shown in Tables 2, 4, and 6 respectively.

Besides Body Mass Index (BMI) the following variables are included in the multivariate specifications: age, gender, years of education, income, employment status *, marital status, number of children, disability, and household size. When data is available, some additional variables are also included in the analysis: political party membership, house ownership, saving habits, whether one has a second job, smoking habits, labor union membership, religion, region and nationality. BMI is used to control for individual obesity level. Happiness is measured using the self-reported life-satisfaction index. Here we have to acknowledge that individual happiness and self-reported life satisfaction may not be perfect substitutes and in fact, as the literature has concluded, the two are distinct. However, due to the fact that life satisfaction levels are reported, and there is no clear existing

*For BHPS employment status contains information on whether individuals are employed or unemployed. For GSOEP and HILDA data, the information is on whether individuals are employed or not employed. This requires attention in the interpretation of the results, as for Germany and Australia the results do not refer to the impact of unemployment on life satisfaction

alternative variable that could be used as a proxy for happiness, we feel confident that for the purposes of the present study the use of life satisfaction measure can offer a good approximation of individual happiness and well being levels.

In the German and the Australian data happiness indicators are measured using an eleven point index from 0 "completely dissatisfied" to 10 "completely satisfied". The question is: "How satisfied are you with your life, all things considered?". For British data, the satisfaction index is measured on a 0 to 7 scale.

Subjective survey data, like that used in the present study, could be prone to several systematic or non-systematic biases (Kahneman, Diener, and Schwarz (1999)). However as Frey and Stutzer (2005) reports, "the relevance of reporting errors depends on the intended usage of the data". Thus, when the purpose is not to measure or to compare levels in an absolute sense, the bias does not seem to be relevant. So, for the purpose of identifying parameters that influence happiness, these measures are valid.

3.2 Methodology

Although availability of data is often not an issue, existing studies do not exploit all the available information, neglecting the strength of panel analysis. The present study, utilizes panel methodology in order to exhaust the possible sources of information and enhance the explanatory power of the model. Differences across individuals are expected to have some influence on the dependent variable, and thus a Random Effects (RE) model is used. RE here allow to control for time invariant variables, i.e. gender, disability status etc. In order to test whether our model of choice, that is RE versus Fixed Effects (FE), is the appropriate one, we

run a Hausman Test. The results indicate that RE should be used.

The choice of explanatory variables used in the regression analysis follows on i) our intuition regarding the possible determinants of individual happiness given natural limitations in the data, and ii) the literature on this topic (Oswald and Powdthavee (2007), Cornlisse-Vermatt, Antonides, Ophem, and den Brink (2006)).

Surprisingly, existing literature, with the exception of Stutzer (2007), examining the relationship between happiness and obesity does not address the issue of endogeneity that could be resulting from reverse causality running from dependent and independent variables. Endogeneity could stem from multiple sources here since happiness influences and is being influenced by a series of factors. In addition to obesity, several other factors included in happiness regressions, i.e. employment status, marital status, income, and which arguably have an impact on individual well-being, are at the same time influenced by it. As a consequence, dual causality might run in these types of specifications for more than one variable, in fact it could run for most regressors which are not exogenous by nature (such as age and gender).

In the presence of endogeneity we build the following model:

$$y_{it} = \alpha_i + X'_{it}\beta + u_{it} \tag{1}$$

Here X is an $n \times K$ matrix of control variables (Cornlisse-Vermatt et al. (2006), Frey and Stutzer (2000), Blanchflower (2008)), some of which are endogenous and thus $EX'u \neq 0$.

Given the panel structure of our dataset, for all potentially endogenous variables, excluding BMI, we instrument using their first lag. The availability of data

for all years, i.e. income, employment status, marital status, etc., makes the use of lags as instrumental variables the best option. Following the existing theory (Cameron and Trivedi (2009)) lags of endogenous variables can offer consistent estimators of the coefficients of interest when they serve as excluded instruments and are by nature exogenous.

For BMI the instrument of choice is individual height. BMI is correlated with the instrument by definition since height is used in the construction of BMI. Hence the first IV assumption, $cov(Z, y_2) \neq 0$, where Z is the IV and y_2 is BMI, holds. The second critical assumption is that $EZ'u = 0$. In order to provide necessary and appropriate justification that the instrument of choice serves the second assumption too, we test whether it is uncorrelated with the error term u in the main equation. The correlation results show that the second critical assumption for consistent IV, that is $EZ'u = 0$, holds.

Recent literature analyzing the relationship between height and happiness cannot be neglected at this point. The findings of Deaton and Arora (2009) reveal a positive relationship between height and happiness levels. However, after controlling for income this relationship is not statistically different from zero. The effect captured in this case is the one of height on wages, and thus indirectly on happiness, and not a direct effect of height on happiness. For this reason we argue that, both intuitively and statistically, height is exogenous to happiness and thus can be used to instrument for BMI in the main equation.

4 Results

4.1 Results for Germany

All results for Germany are shown in Table 7. Below, we analyze only the instrumental variable results ($IVREG1$ through $IVREG7$). OLS results are presented in columns 1 and 2. The regression results for Germany point to a clear negative and statistically significant relationship between obesity and happiness. Under all specifications, $IVREG1$ through $IVREG6$ in Table 7 the coefficient on BMI is in the range $(-0.0729, -0.0797)$, significant at the 1% level. Given the size of the coefficient and its robustness in the multiple specifications used, one can conclude that higher levels of BMI are associated with lower levels of self reported life-satisfaction.

Regarding the rest of the explanatory variables, females report to be less "satisfied" with life compared to men. All results on gender are statistically significant at the 5% or the 1% levels. As expected, disability reduces life-satisfaction by approximately 0.5 units under all specifications. This result is statistically significant at the 1% level. Income is associated with higher levels of happiness. The coefficient on income suggests that individuals with 20% higher income report life-satisfaction levels one unit higher than others, ceteris paribus. Educational attainment is positively associated with individual well-being. The sign of the coefficient is consistently positive, significant at the 1% level across specifications. The size varies in the range between 0.0238 and 0.0472. With respect to marital status, only being single or being divorced appears to be statistically different from 0. In agreement with intuition, as well as past research, the number of children

increases life-satisfaction. One additional children in the family appears to be associated approximately with a 0.09 unit increase self reported happiness levels. These results are significant at the 1% level across all specifications. Individuals who live in "crowded" homes, seem to suffer a loss in their well being, equivalent to almost 0.1 of a unit, for every additional person added to the household. Agents who report to be members of a political party, report self satisfaction levels approximately 0.3 units higher than those who report the opposite.

4.2 Results for the UK

Regressions output for Britain are shown in Table 8. Columns $IVREG1$ through $IVREG7$ present the instrument variable regression results.

The coefficient on BMI has the expected sign. However, except for $IVREG1$, the results across specifications are not statistically significant. Life satisfaction is decreasing with age, at an increasing rate. The results on age are all significant. Disability status appears to decrease life satisfaction by 1 whole unit, under all specifications, a result that is significant at less than 1% level. Surprisingly, the coefficient on income is negative. However, across specifications $IVREG3$ through $IVREG6$ this result is not statistically significant. The results regarding the relationship between education and happiness are not robust. For the most part, they are not statistically significant, leading to no-single firm conclusion. Being separated, widowed or divorced are all received as negative shocks to individual life satisfaction. Similar to the German results, being divorced or separated appears to have the most severe negative impact on personal well being, among different marital statuses. All marital status results are statistically

significant. Smoking appears to negatively affect well being. In particular, under specifications $IVREG5$, $IVREG6$ and $IVREG7$, the coefficient ranges between -0.22 and -0.28, significant at the 1% level. Regarding financial information, our findings indicate that people who save and people who own their own home are happier, ceteris paribus.

4.3 Results for Australia

The Australian regression results are presented in Table 9. Here, like in the German data, the regression analysis reveals a negative and highly statistically significant relationship between BMI and self reported life-satisfaction. In particular, in the multivariate instrumental variable specifications $IVREG4$ through $IVREG7$ the coefficient on BMI is approximatly -0.04 at the 1% level of significance. Older age decreases well being, at an increasing rate. Disability is found to lower life satisfaction slightly more than half a unit, on the 0-10 scale. These findings are highly statistically significant. As expected, income is associated with higher levels of individual happiness. Individuals with 10% higher income are expected to report higher levels of life satisfaction of approximately 0.3 units. Educational attainment has a negative and statistically significant coefficient. Individuals with more years of education are expected to report a 0.04 lower happiness levels for every extra year of education they have acquired. With respect to marital status, individuals who are single, separated, widowed or divorced are expected to report lower self satisfaction levels than married ones, ceteris paribus. Once again, the most severe effect appears to come from being separated, where the coefficient is close to -0.85 under all specifications. The number of children in the Australian

regressions does not exhibit statistically significant results, unlike the German and the British regressions. On the contrary, the size of the household is negatively related with individual self reported life satisfaction levels. In particular, an one member difference in the size of a household is expected to result in a 0.07 difference in the individual happiness levels. The results are significant at the 1% level.

5 Conclusions

This study investigates the impact of obesity on individual happiness using panel analysis for Germany, the United Kingdom, and Australia. The contribution to the literature is three fold: first, to our knowledge, this is the first study to explore the panel dimension of the existing data in the investigation of the

addressed research question. Secondly, this is the first study that examines the Australian data to identify the possible relationship between obesity and happiness. In addition, this study addresses the potential endogeneity problems that arise from most variables included in the specifications used, as a result of reverse causality. These endogeneity issues are tackled using the panel elements of the data which offer the necessary exogenous instruments. Last, but not least, we identify other significant determinants of life-satisfaction and discuss them.

For Germany and Australia, BMI has a negative and statistically significant relationship with self reported life-satisfaction levels. For Britain, although the coefficient on BMI is negative in all specifications, the results are not statistically different from 0. The findings across specifications for all three countries point to some common conclusions. First, disability severely impacts individual

happiness more than any other individual characteristic. Secondly, being separated or divorced (compared to being married) reduces well being at a statistically significant level. Other results indicate that for Germany and Australia income is positively associated with happiness, as expected. For education, the results are mixed: for Australia the relationship is negative and significant, whereas for Germany the opposite holds. For Britain, house ownership and saving habits appear to be beneficial for individual happiness whereas smoking impairs well being. Household size, measured as number of people living in a household, decreases life satisfaction at a statistically significant level, both in Germany and Britain. In Australia, females appear to be happier whereas in Germany they are found to be less happy compared to males.

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Table 1: Descriptive Statistics for German Data

German Data - GSOEP - Years: 2002, 2004, 2006, 2008						
Variable		Mean	Std. Dev.	Min	Max	Observations
Age	overall	46.053	18.242	15	100	N = 180714
	between		18.923	15	99	n = 33272
	within		2.016	41.553	50.553	T-bar = 5.43141
Household size	overall	3.023	1.370	1	13	N = 215766
	between		1.306	1	13	n = 39311
	within		0.448	-6.23	9.82	T-bar = 5.48869
No children	overall	0.820	1.088	0	9	N = 215766
	between		1.042	0	7.875	n = 39311
	within		0.357	-4.805	4.820	T-bar = 5.48869
Education	overall	12.068	2.676	7	18	N = 157209
	between		2.654	7	18	n = 28833
	within		0.331	6.924766	17.21048	T-bar = 5.4524
Life Satisfaction	overall	6.964	1.785	0	10	N = 165630
	between		1.491	0	10	n = 30615
	within		1.101	-1.61	14.11	T-bar = 5.41009
Height	overall	1.713	0.093	0.82	2.1	N = 83227
	between		0.092	1.31	2.09	n = 28545
	within		0.016	0.96	2.11	T-bar = 2.91564
Weight	overall	75.433	15.514	32	230	N = 82681
	between		15.039	35	200	n = 28452
	within		3.962	7.43	156.18	T-bar = 2.90598
BMI	overall	25.619	4.589	11.63	197.23	N = 82644
	between		4.338	12.86	73.46	n = 28449
	within		1.556	-20.66	152.64	T-bar = 2.90499
ln Income	overall	10.384	0.641	0	15.62	N = 215763
	between		0.591	0	13.83	n = 39310
	within		0.304	0.80	15.82	T-bar = 5.48876
Female	overall	0.510	0.500	0	1	N = 215766
	between		0.500	0	1	n = 39311
	within		0.000	0.510	0.510	T-bar = 5.48869
Widowed	overall	0.050	0.219	0	1	N = 215766
	between		0.209	0	1	n = 39311
	within		0.063	-0.825	0.925	T-bar = 5.48869
Divorced	overall	0.054	0.226	0	1	N = 215766
	between		0.206	0	1	n = 39311
	within		0.087	-0.821	0.929	T-bar = 5.48869
Separated	overall	0.013	0.115	0	1	N = 215766
	between		0.088	0	1	n = 39311
	within		0.080	-0.862	0.888	T-bar = 5.48869
Unemployed	overall	0.367	0.482	0	1	N = 215766
	between		0.426	0	1	n = 39311
	within		0.247	-0.508	1.242	T-bar = 5.48869
Disabled	overall	0.088	0.283	0	1	N = 208742
	between		0.249	0	1	n = 39030
	within		0.120	-0.787	0.963	T-bar = 5.34824
Political party member	overall	0.448	0.497	0	1	N = 166048
	between		0.413	0	1	n = 30638
	within		0.297	-0.427	1.323	T-bar = 5.41967
Has a second job	overall	0.027	0.162	0	1	N = 166048
	between		0.118	0.000	1	n = 30638
	within		0.120	-0.848	0.902	T-bar = 5.41967
German	overall	0.926	0.261	0	1	N = 166048
	between		0.263	0.000	1	n = 30638
	within		0.045	0.0513	1.8013	T-bar = 5.41967

Table 2: Correlation Matrix for GSOEP variables

	Age	Household Size	No children	Education	Life Satisfaction	Height	Weight
Age	1						
Household size	-0.4380*	1					
No children	-0.3878*	0.7934*	1				
Education	-0.0892*	0.0089*	0.0355*	1			
Life Satisfaction	-0.0631*	0.0670*	0.0460*	0.1370*	1		
Height	-0.2298*	0.0991*	0.0675*	0.1900*	0.0665*	1	
Weight	0.1055*	-0.0102*	-0.0170*	-0.0005	-0.0348*	0.5266*	1
BMI	0.2647*	-0.0748*	-0.0655*	-0.1230*	-0.0835*	-0.0181*	0.8298*
ln Income	-0.1515*	0.4198*	0.1791*	0.3403*	0.2179*	0.1650*	0.0253*
Female	0.0281*	-0.0387*	-0.0055*	-0.0805*	-0.0005	-0.6696*	-0.4832*
Widowed	0.3583*	-0.2648*	-0.1574*	-0.1325*	-0.0471*	-0.1921*	-0.0493*
Divorced	0.0672*	-0.1780*	-0.0936*	-0.0164*	-0.0812*	-0.0260*	-0.0108*
Separated	0.0084*	-0.0850*	-0.0322*	0.0119*	-0.0544*	0.0007	-0.0015
Not Employed	0.2638*	-0.1934*	-0.2561*	-0.2486*	-0.0665*	-0.2079*	-0.0893*
Disabled	0.2815*	-0.1875*	-0.1849*	-0.1025*	-0.1618*	-0.0564*	0.0708*
Political party member	0.1741*	-0.0756*	-0.0641*	0.1989*	0.1021*	0.0663*	0.0634*
Has a second job	-0.0567*	0.0150*	0.0112*	0.0455*	0.0145*	0.0300*	0.0037
German	0.0698*	-0.1210*	-0.1009*	0.1703*	0.0272*	0.0814*	0.0284*

	BMI	ln Income	Female	Widowed	Divorced	Separated	Not Employed
BMI	1						
ln Income	-0.0784*	1					
Female	-0.1447*	-0.0605*	1				
Widowed	0.0656*	-0.2051*	0.1264*	1			
Divorced	0.002	-0.1438*	0.0372*	-0.0551*	1		
Separated	-0.0031	-0.0732*	0.0045*	-0.0268*	-0.0279*	1	
Not Employed	0.0332*	-0.2330*	0.0907*	0.2285*	-0.0284*	-0.0259*	1
Disabled	0.1182*	-0.1104*	-0.0277*	0.1092*	0.0371*	0.0093*	0.2117*
Political party member	0.0287*	0.1386*	-0.0789*	0.0228*	-0.0188*	-0.0038	-0.0082*
Has a second job	-0.0144*	0.0288*	-0.0061*	-0.0280*	0.0144*	0.0118*	-0.0799*
German	-0.0209*	0.0495*	0.0076*	0.0438*	0.0176*	-0.0039	-0.0077*

	Disabled	Political party member	Has second job	German
Disabled	1			
Political party member	0.0432*	1		
Has a second job	-0.0269*	0.0177*	1	
German	0.0234*	0.1299*	0.0048	1

*significant at 5%

Table 3: Descriptive Statistics for British Data

British Data - BHPS - Years: 2005 and 2007						
Variable		Mean	Std. Dev.	Min	Max	Observations
Age	overall	45.958	18.649	15	99	N = 63036
	between		19.267	15	99	n = 18961
	within		1.073	41.46	50.46	T-bar = 3.32451
Household size	overall	2.870	1.405	1	14	N = 63038
	between		1.382	1	13.5	n = 18961
	within		0.402	-3.880	8.870	T-bar = 3.32461
No children	overall	0.499	0.914	0	7	N = 46800
	between		0.884	0	7	n = 17675
	within		0.182	-1.834	3.166	T-bar = 2.64781
Education	overall	11.329	5.052	2	20	N = 28575
	between		4.999	2	20	n = 15968
	within		0.568	2.329	20.329	T-bar = 1.78952
Height	overall	1.646	0.112	0.55	2.275	N = 28522
	between		0.103	0.85	2.125	n = 16088
	within		0.046	1.05	2.25	T-bar = 1.77287
Weight	overall	76.051	15.802	12.7	184.15	N = 23499
	between		15.969	12.7	184.15	n = 14768
	within		2.576	37.05	115.05	T-bar = 1.59121
BMI	overall	27.925	5.913	5.161	227.769	N = 23249
	between		5.526	6.040	125.133	n = 14652
	within		2.316	-74.710	130.560	T-bar = 1.58675
Life Satisfaction	overall	5.228	1.280	1	7	N = 58402
	between		1.104	1	7	n = 18066
	within		0.709	0.727852	9.727852	T-bar = 3.2327
Female	overall	0.535	0.499	0	1	N = 63038
	between		0.495	0	1	n = 18961
	within		0.066	-0.215	1.035	T-bar = 3.32461
Widowed	overall	0.076	0.265	0	1	N = 63038
	between		0.254	0	1	n = 18961
	within		0.061	-0.674	0.826	T-bar = 3.32461
Divorced	overall	0.080	0.271	0	1	N = 63038
	between		0.254	0	1	n = 18961
	within		0.083	-0.670	0.830	T-bar = 3.32461
Separated	overall	0.021	0.142	0	1	N = 63038
	between		0.121	0	1	n = 18961
	within		0.076	-0.729	0.771	T-bar = 3.32461
Unemployed	overall	0.032	0.176	0	1	N = 63038
	between		0.150	0	1	n = 18961
	within		0.120	-0.718	0.782	T-bar = 3.32461
Disabled	overall	0.078	0.269	0	1	N = 63038
	between		0.217	0	1	n = 18961
	within		0.169	-0.672	0.828	T-bar = 3.32461
ln Income	overall	8.883	2.031	0	13.99	N = 59036
	between		2.070	0	12.23	n = 17902
	within		1.009	1.212	15.728	T-bar = 3.29773
Has a second job	overall	0.058	0.234	0	1	N = 63038
	between		0.188	0	1	n = 18961
	within		0.147	-0.692	0.808	T-bar = 3.32461
Political party member	overall	0.264	0.441	0	1	N = 63038
	between		0.315	0	1	n = 18961
	within		0.309	-0.486	1.014	T-bar = 3.32461
Smoker	overall	0.240	0.427	0	1	N = 63038
	between		0.405	0	1	n = 18961
	within		0.148	-0.510	0.990	T-bar = 3.32461
Labor Union member	overall	0.151	0.358	0	1	N = 63038
	between		0.320	0	1	n = 18961
	within		0.142	-0.599	0.901	T-bar = 3.32461
Saves	overall	0.392	0.488	0	1	N = 63038
	between		0.390	0	1	n = 18961
	within		0.304	-0.358	1.142	T-bar = 3.32461
House Owner	overall	0.743	0.437	0	1	N = 63038
	between		0.425	0	1	n = 18961
	within		0.157	-0.007	1.493	T-bar = 3.32461

Table 4: Correlation Matrix for BHPS variables

	Age	Household size	No children	Education	Height	Weight	BMI
Age	1						
Household size	-0.4448	1					
No children	-0.248	0.5744*	1				
Education	0.3231*	-0.0854*	-0.1227*	1			
Height	-0.1569	0.0528*	0.014*	-0.1488*	1		
Weight	0.0183*	0.0129*	0.0327*	-0.0479*	0.4023*	1	
BMI	0.1256*	-0.0265*	0.0134*	0.0554*	-0.2978*	0.7281*	1
Life Satisfaction	0.0709*	-0.0278*	-0.0447*	-0.0086	0.0108	-0.0394*	-0.0446*
Female	0.0233*	-0.0176*	0.0317*	0.0556*	-0.5426*	-0.4119*	-0.0701*
Widowed	0.4268*	-0.2946*	-0.1449*	0.2199*	-0.1382*	-0.0998*	-0.0086
Divorced	0.0678*	-0.1277*	-0.0178*	0.0167*	-0.0419*	0.0014	0.0307*
Separated	-0.0125*	-0.0453*	0.0397*	0.007	-0.0159*	0.0004	0.0082
Unemployed	-0.1169*	0.0454*	0.0018	0.0452*	0.0195*	-0.0057	-0.0167*
Disabled	0.1771*	-0.1089*	-0.0605*	0.1368*	-0.0253*	0.0464*	0.0675*
ln Income	0.1984*	-0.1433*	0.1413*	-0.1935*	0.0614*	0.1622*	0.1161*
Has a second job	-0.0976*	0.0561*	0.0105*	-0.1025*	0.0381*	0.0101	-0.0207*
Political party member	0.2346*	-0.1067*	-0.0833*	0.0618*	-0.0107	0.0396*	0.0456*
Smoker	-0.1386*	0.0362*	0.0523*	0.1264*	0.0087	-0.0706*	-0.0731*
Labor Union Member	-0.0919*	0.0354*	0.0746*	-0.2149*	0.0163*	0.0453*	0.0274*
Saves	-0.0187	-0.0451*	-0.0438*	-0.1716*	0.0215*	0.0038	-0.0117
House Owner	0.0912*	0.0685*	-0.0017	-0.1913*	0.0507*	0.0353*	-0.0043

	Life Satisfaction	Female	Widowed	Divorced	Separated	Unemployed	Disabled
Life Satisfaction	1						
Female	-0.0093	1					
Widowed	0.0166*	0.1236*	1				
Divorced	-0.0928	0.0563*	-0.0842*	1			
Separated	-0.0649	0.022*	-0.0416*	-0.0428*	1		
Unemployed	-0.0841	-0.0443*	-0.0449*	0.0115*	0.0236*	1	
Disabled	-0.1683*	0.0072	0.1001*	0.0615*	0.0094*	-0.0295*	1
ln Income	-0.0124	-0.1207*	0.0325*	0.0686*	0.0412*	-0.1133*	0.0004
Has a second job	0.0031	0.0011	-0.0551*	0.0074	-0.0056	-0.0066	-0.0599*
Political party member	0.0267*	-0.0259*	0.0843*	-0.0090*	-0.0180*	-0.0407*	0.0048
Smoker	-0.1337*	-0.0039	-0.0524*	0.0929*	0.0666*	0.1158*	0.0613*
Labor Union Member	0.0094*	0.0224*	-0.0964*	0.0225*	0.0113*	-0.0738*	-0.0993*
Saves	0.0945*	0.002	-0.0240*	-0.0233*	-0.0254*	-0.0984*	-0.0706*
House Owner	0.1262*	-0.0308*	-0.0389*	-0.0895*	-0.0641*	-0.1232*	-0.1269*

	ln Income	Has second Job	Political party member	Smoker	Labor Union member	Saves	House Owner
ln Income	1						
Has a second job	-0.0424	1					
Political party member	0.0764*	-0.0135*	1				
Smoker	-0.0032	-0.0031	-0.0529*	1			
Labor Union Member	0.2040*	0.0339*	0.0152*	-0.0361*	1		
Saves	0.1505*	0.0405*	0.0402*	-0.1051*	0.1622*	1	
House Owner	0.0952*	0.0391*	0.0788*	-0.1835*	0.1378*	0.1670*	1

*significant at 5%

Table 5: Descriptive Statistics for Australian Data

Australian Data - HILDA - Years: 2006, 2007 and 2009						
Variable		Mean	Std. Dev.	Min	Max	Observations
Age	overall	43.85421	18.59439	15	93	N = 67729
	between		19.05329	15	93	n = 17315
	within		1.320974	38.35421	49.35421	T-bar = 3.91158
Household size	overall	3.207649	1.462235	1	14	N = 82649
	between		1.363177	1	13.5	n = 21265
	within		0.657998	-4.99235	10.20765	T-bar = 3.88662
No children	overall	1.241713	1.394873	0	14	N = 81787
	between		1.23369	0	9.6	n = 20736
	within		0.747201	-5.95829	12.44171	T-bar = 3.9442
Education	overall	11.58874	2.391224	0	18.5	N = 63909
	between		2.023765	0	18.5	n = 16348
	within		1.260333	3.088743	19.58874	T-bar = 3.90929
Height	overall	1.704411	0.104764	0.82	2.29	N = 28695
	between		0.10352	1.27	2.29	n = 13759
	within		0.022699	1.204411	2.204411	T-bar = 2.08554
Weight	overall	76.87511	17.98581	28	260	N = 32870
	between		17.51675	28	236.6667	n = 14216
	within		4.691137	7.541781	160.5418	T-bar = 2.31218
BMI	overall	26.32283	5.573583	12.12121	163.5931	N = 28248
	between		5.379719	13.06122	98.85366	n = 13650
	within		1.74933	-38.4166	91.06226	T-bar = 2.06945
Income	overall	65529.32	51454.74	1	611361	N = 81902
	between		42482.27	1	562353	n = 21209
	within		30003.61	-354404	474042.1	T-bar = 3.86166
ln Income	overall	10.30597	2.517529	0	13.32344	N = 81902
	between		1.48586	0	13.23989	n = 21209
	within		2.129551	0.327107	16.8477	T-bar = 3.86166
Female	overall	0.514283	0.499799	0	1	N = 86816
	between		0.499899	0	1	n = 20710
	within		0	0.514283	0.514283	T-bar = 4.19198
Married	overall	0.456497	0.498107	0	1	N = 82649
	between		0.463687	0	1	n = 21265
	within		0.174039	-0.3435	1.256497	T-bar = 3.88662
Single	overall	0.191339	0.393358	0	1	N = 82649
	between		0.362321	0	1	n = 21265
	within		0.161919	-0.60866	0.991339	T-bar = 3.88662
Widowed	overall	0.041936	0.200445	0	1	N = 82649
	between		0.186951	0	1	n = 21265
	within		0.055324	-0.75806	0.841936	T-bar = 3.88662
Divorced	overall	0.052064	0.222157	0	1	N = 82649
	between		0.195576	0	1	n = 21265
	within		0.091528	-0.74794	0.852064	T-bar = 3.88662
Separated	overall	0.022335	0.147773	0	1	N = 82649
	between		0.122422	0	1	n = 21265
	within		0.083549	-0.77766	0.822335	T-bar = 3.88662
Not employed	overall	0.469455	0.499069	0	1	N = 82649
	between		0.427514	0	1	n = 21265
	within		0.283706	-0.33054	1.269455	T-bar = 3.88662
Disabled	overall	0.152379	0.35939	0	1	N = 82649
	between		0.293779	0	1	n = 21265
	within		0.204189	-0.64762	0.952379	T-bar = 3.88662

Table 6: Correlation Matrix for Australian variables

	Age	Household Size	No children	Education	Life Satisfaction	Height	Weight
Age	1						
Household size	-0.3244*	1					
No children	-0.1221*	0.7610*	1				
Education	-0.1421*	0.0273*	-0.0693*	1			
Life Satisfaction	0.0623*	0.0237*	-0.0104*	-0.0453*	1		
Height	-0.1473*	0.0442*	0.0103	0.0827*	-0.01	1	
Weight	0.0698*	0.0039	0.0380*	-0.0063	-0.0350*	0.4728*	1
BMI	0.1675*	-0.0216*	0.0279*	-0.0483*	-0.0335*	-0.0731*	0.8314*
ln Income	-0.2022*	0.1604*	-0.0986*	0.2714*	0.0498*	0.0643*	0.0230*
Female	0.0284*	-0.0212*	0.0100*	-0.0281*	0.0250*	-0.6629*	-0.3986*
Single	-0.5084*	-0.0787*	-0.1751*	-0.0429*	-0.0353*	0.0890*	-0.1085*
Widowed	0.3776*	-0.2125*	-0.0878*	-0.1555*	0.0405*	-0.1449*	-0.0676*
Divorced	0.1353*	-0.1736*	-0.0575*	-0.0258*	-0.0804*	-0.0558*	0.003
Separated	0.0419*	-0.0967*	-0.0164*	-0.0048	-0.0935*	-0.0093	0.0126*
Not Employed	0.3009*	0.1431*	0.1070*	-0.1721*	0.0407*	-0.1327*	-0.0640*
Disabled	0.3188*	-0.1988*	-0.1197*	-0.1732*	-0.1582*	-0.0751*	0.0586*

	BMI	ln Income	Female	Single	Widowed	Divorced	Separated
BMI	1						
ln Income	0.0012	1					
Female	-0.0570*	-0.0489*	1				
Single	-0.1721*	-0.0488*	-0.0398*	1			
Widowed	0.0132*	-0.1686*	0.1284*	-0.1018*	1		
Divorced	0.0352*	-0.0761*	0.0507*	-0.1140*	-0.0490*	1	
Separated	0.0160*	-0.0333*	0.0126*	-0.0735*	-0.0316*	-0.0354*	1
Not Employed	0.0157*	0.1530*	0.0305*	-0.1963*	0.1011*	-0.0672*	-0.0464*
Disabled	0.1097*	-0.2413*	0.0304*	-0.0346*	0.1901*	0.1083*	0.0393*

	Not Employed	Disabled
Not Employed	1	
Disabled	0.0719*	1

*significant at 5%

Table 7: Regression Results for Germany

Independent Variable	OLS1	OLS2	IVREG1	IVREG2	IVREG3	IVREG4	IVREG5	IVREG6	IVREG7
Age	-0.0164	-0.0149	0.0068	0.0071	-0.0034	-0.0086	-0.0111	-0.0102	-0.0114
	(-7.11)	(-5.62)	(1.22)	(1.41)	(-0.45)	(-1.15)	(-1.20)	(-1.30)	(-1.30)
Age^2	0.000	0.0001	-0.0001	-0.0001	0.00	0.0001	0.0001	0.0001	0.0001
	(2.03)	(2.85)	(-2.46)	(-2.01)	(0.59)	(1.22)	(1.07)	(1.11)	(1.09)
Female	0.0077	-0.0335	-0.1132	-0.1309	-0.0874	-0.0915	-0.0678	-0.0688	-0.0726
	(0.46)	(-1.83)	(-3.39)	(-5.21)	(-3.16)	(-2.93)	(-1.95)	(-2.35)	(-2.75)
BMI		-0.0141	-0.0776	-0.0797	-0.0739	-0.0733	-0.0728	-0.074	-0.0619
		(-6.58)	(-4.44)	(-5.29)	(-4.98)	(-4.07)	(-3.81)	(-4.38)	(-4.12)
Disabled				-0.5352	-0.5667	-0.5889	-0.6031	-0.599	-0.5985
				(-13.2)	(-13.32)	(-15.9)	(-14.31)	(-15.39)	(-15.55)
ln Income					0.3232	0.4557	0.4166	0.4127	0.4208
					(7.69)	(8.29)	(7.13)	(7.63)	(7.89)
Education					0.0472	0.0353	0.0238	0.0249	0.0316
					(9.58)	(5.41)	(4.28)	(4.94)	(6.36)
Separated					-0.1277	-0.1886	-0.2155	-0.2127	-0.2263
					(-1.60)	(-1.94)	(-1.85)	(-1.66)	(-1.66)
Widowed					0.0965	0.02	0.017	0.0227	0.0582
					(1.74)	(0.36)	(0.27)	(0.36)	(0.90)
Single					-0.1182	-0.1423	-0.1543	-0.1503	-0.1443
					(-3.26)	(-3.94)	(-3.94)	(-4.07)	(-4.04)
Divorced					-0.2438	-0.294	-0.2993	-0.2954	-0.2603
					(-5.16)	(-5.99)	(-6.04)	(-5.09)	(-4.57)
Not employed					0.0199	0.0534	0.0435	0.0441	0.0418
					(0.57)	(1.66)	(1.05)	(1.19)	(0.97)
No children						0.0935	0.0852	0.084	0.0873
						(5.30)	(5.07)	(4.33)	(4.25)
Household size						-0.1188	-0.1052	-0.1041	-0.1067
						(-4.91)	(-4.60)	(-4.69)	(-4.79)
Second job							0.2368	0.2379	0.226
							(1.51)	(1.79)	(1.52)
Politics							0.3678	0.3707	0.2973
							(8.75)	(8.89)	(5.20)
German								-0.0641	-0.1006
								(-1.43)	(-1.97)
Constant	7.63	7.63	7.83	8.96	8.99	5.06	4.25	4.66	4.76	4.49
	(151.65)	(151.65)	(112.36)	(27.43)	(32.58)	(9.06)	(6.99)	(6.22)	(6.93)	(7.43)
Religion Dummies	No	No	No	No	No	No	No	No	No	Yes
N	165630	165630	82466	82466	82423	70287	70287	70247	70247	65338
R-squared										
Within	0.0103	0.0103	0.0007	0.000	0.0001	0.0005	0.0008	0.0014	0.0013	0.0017
Between	0.0089	0.0089	0.121	0.0121	0.0285	0.0778	0.0868	0.094	0.0929	0.121
Overall	0.0044	0.0044	0.0075	0.0078	0.0194	0.0555	0.0624	0.0668	0.066	0.081
Wald χ^2	692.63	692.63	377.55	349.34	614.08	1339.96	1549.52	1866.61	2366.19	2455.42
P-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Robust t-stats in parentheses

Table 8: Regression Results for Britain

Independent Variable	OLS1	OLS2	IVREG1	IVREG2	IVREG3	IVREG4	IVREG5	IVREG6	IVREG7
Age	-0.0225	-0.0174	-0.0182	-0.0107	-0.0078	-0.0067	-0.0063	-0.0111	-0.0111
	(-10.11)	(6.32)	(-6.64)	(-4.00)	(-1.88)	(-1.54)	(-1.74)	(-2.92)	(-3.06)
Age^2	0.0002	0.0002	0.0002	0.0002	0.0001	0.0001	0.0001	0.0002	0.0002
	(11.97)	(8.45)	(8.20)	(5.85)	(3.53)	(2.84)	(2.83)	(4.08)	(4.10)
Female	-0.032	-0.041	-0.0391	-0.0384	-0.0202	-0.0162	-0.0266	-0.0201	-0.0262
	(-1.98)	(-2.09)	(-1.65)	(-1.75)	(-1.01)	(-0.76)	(-1.49)	(-0.78)	(-1.06)
BMI		-0.007	-0.0055	-0.004	-0.0038	-0.0036	-0.0042	-0.0026	-0.0028
		(-5.30)	(-1.96)	(-1.36)	(-1.29)	(-1.41)	(-1.75)	(-0.82)	(-0.82)
Disabled				-1.055	-1.0458	-1.0533	-1.0352	-0.9978	-1.0018
				(-18.09)	(-16.26)	(-18.46)	(-16.84)	(-16.32)	(-12.85)
ln Income					-0.0116	-0.0083	-0.0105	-0.0179	-0.0194
					(-1.04)	(-0.72)	(-0.87)	(-1.43)	(-1.81)
Education					-0.0024	-0.002	0.0032	0.0078	0.0072
					(-1.00)	(-0.90)	(1.16)	(2.47)	(2.97)
Separated					-0.3256	-0.3261	-0.2626	-0.2998	-0.3094
					(-2.94)	(-2.82)	(-1.95)	(-2.47)	(-2.79)
Widowed					-0.2042	-0.2025	-0.1838	-0.1944	-0.1971
					(-4.60)	(-3.20)	(-3.32)	(-3.89)	(-3.93)
Divorced					-0.37	-0.377	-0.33	-0.282	-0.264
					(-7.75)	(-8.21)	(-6.48)	(-6.43)	(-5.92)
Unemployed					-0.833	-0.842	-1.109	-0.469	-0.459
					(-3.76)	(-3.44)	(-4.28)	(-2.20)	(-1.96)
No children						-0.032	-0.0348	-0.0171	-0.0203
						(-2.29)	(-2.65)	(-1.56)	(-1.85)
Household size						-0.003			
						(-0.31)			
Smoker							-0.28	-0.232	-0.218
							(-9.03)	(-7.73)	(-6.55)
Union								-0.049	-0.053
								(-1.59)	(-1.42)
Second job								-0.002	-0.018
								(-0.04)	(-0.22)
Politics								0.004	0.001
								(0.05)	(0.01)
Saves								0.322	0.315
								(7.87)	(7.16)
Home Owner								0.181	0.191
								(6.13)	(6.15)
Constant	5.59	5.69	5.64	5.48	5.59	5.57	5.65	5.40	5.49
	(110.90)	(83.28)	(69.46)	(60.14)	(43.94)	(43.54)	(45.04)	(33.79)	(44.87)
Religion Dummies	No	No	No	No	No	No	No	No	Yes
N	43504	22390	22390	22390	20550	20550	20550	20550	20154
R-squared									
Within	0.000	0.0001	0.0001	0.0032	0.0047	0.0046	0.0042	0.0041	0.0041
Between	0.0119	0.0134	0.0131	0.0586	0.0785	0.0792	0.0843	0.0958	0.098
Overall	0.0105	0.0141	0.0139	0.0532	0.0703	0.0708	0.0741	0.0842	0.0863
Wald χ^2	209.80	205.07	126.39	491.24	470.69	616.49	1131.16	1320.17	1420.62
P-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Robust t-stats in parentheses

Table 9: Regression Results for Australia

Independent Variable	OLS1	OLS2	IVREG1	IVREG2	IVREG3	IVREG4	IVREG5	IVREG6	IVREG7
Age	-0.042	-0.044	-0.033	-0.034	-0.034	-0.037	-0.036	-0.036	-0.039
	(-13.26)	(-17.78)	(-7.82)	(-8.10)	(-5.85)	(-3.94)	(-4.31)	(-4.23)	(-5.52)
Age^2	0.0005	0.0005	0.0004	0.0005	0.0005	0.0005	0.005	0.0005	0.0005
	(15.54)	(19.5)	(11.01)	(11.55)	(8.41)	(5.37)	(6.11)	(5.99)	(6.98)
Female	0.044	0.058	0.036	0.036	0.063	0.062	0.061	0.060	0.069
	(1.87)	(2.91)	(1.64)	(1.59)	(2.49)	(2.45)	(1.89	(2.64)	(2.55)
BMI		-0.005	-0.03	-0.0306	-0.0439	-0.0409	-0.0412	-0.0412	-0.037
		(-2.27)	(-2.74)	(-2.66)	(-3.04)	(-2.16)	(-2.53)	(-2.10)	(-2.21)
Disabled				-0.570	-0.524	-0.533	-0.531	-0.531	-0.534
				(-15.8)	(-12.46)	(-8.41)	(-11.19)	(-9.65)	(-8.59)
ln Income					0.232	0.326	0.311	0.311	0.349
					(3.52)	(2.13)	(2.76)	(3.28)	(2.53)
Education					-0.036	-0.041	-0.041	-0.040	-0.034
					(-6.73)	(-4.76)	(-5.57)	(-6.33)	(-4.03)
Single					-0.241	-0.271	-0.283	-0.282	-0.260
					(-4.55)	(-5.13)	(-5.30)	(-5.54)	(-5.35)
Separated					-0.826	-0.875	-0.853	-0.853	-0.850
					(-4.99)	(-6.28)	(-5.47)	(-5.47)	(-5.03)
Widowed					-0.198	-0.241	-0.214	-0.214	-0.189
					(-2.46)	(-2.56)	(-2.38)	(-2.57)	(-2.14)
Divorced					-0.326	-0.372	-0.358	-0.358	-0.327
					(-3.95)	(-5.64)	(-4.78)	(-5.42)	(-4.26)
Not Employed					0.132	0.2135	0.221	0.221	0.217
					(1.60)	(1.78)	(2.31)	(2.34)	(1.69)
No children						0.053			
						(0.97)			
Household size						-0.104	-0.068	-0.068	-0.074
						(-1.47)	(-2.35)	(-2.78)	(-2.16)
Constant	8.68	8.63	9.21	9.20	7.47	6.77	6.86	6.86	6.29
	(112.19)	(161.2)	(38.84)	(37.64)	(8.44)	(4.14)	(5.46)	(5.67)	(4.02)
Regional Dummies	No	No	No	No	No	No	No	No	Yes
N	51209	21887	21887	21887	19739	19739	19739	19739	19739
R-squared									
Within	0.000	0.003	0.0013	0.0013	0.0045	0.0047	0.0048	0.0048	0.0047
Between	0.0283	0.0267	0.0583	0.0583	0.0708	0.0697	0.0695	0.0696	0.0777
Overall	0.0212	0.0253	0.0495	0.0495	0.0619	0.0614	0.0614	0.0614	0.0677
F		105.23		29.7873					
Wald χ^2	427.15	352.09	714.41	1053.32	882.29	839.96	1089.32	1104.06	1574.61
P-Value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Robust t-stats in parentheses

Disclaimer

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