Marriage, Precarious Work, and Well-being in Japan (Extended Abstract)

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Research Question and Underlying Theory

Many studies found large negative effect of unemployment on mental health (Artazcoz et al. 2004; Dooley, Prause and Ham-Rowbottom 2000; Paul and Moser 2009) and life satisfaction (Clark, Georgellis and Sanfey 2001; Ervasti and Venetoklis 2010; Lucas et al. 2004) as well as happiness (Blanchflower and Oswald 2004; Di Tella, MacCulloch and Oswald 2001; Winkelmann and Winkelmann 1998). However, the impact of non-standard forms of employment, such as part-time employment, fixed-term contract, and temporary agency work, on individual well-being has received relatively little attention. This is an important oversight as various forms of non-standard work have been increasing around the globe, affecting higher proportion of workers (OECD 2015).

Moreover, those existing studies that investigated the impact of non-standard forms of employment --- many of them conducted in European context --- generated mixed findings (De Cuyper et al. 2008). Some studies found no negative relation between non-standard forms of employment and various measures of individual well-being (Bardasi and Francesconi 2004; Kachi, Otsuka and Kawada 2014) but others found significant association (Moscone, Tosetti and Vittadini 2016; Pirani 2017). To understand how the precarious nature of non-standard employment contributes to individual well-being, recent studies point out the importance of macro factors such as the welfare state regime (Kim et al. 2012) and the condition of the labor market (De Cuyper, Notelaers and Witte 2009). However, the literature in this area tends to focus on individual effects and pay only a cursory attention to gender roles and family context.

In fact, sociological literature on marital happiness has long recognized the importance of institutional context and normative environment that mediate the impact of husbands' and wives' employment on marital happiness through gender roles, employment structures, and family structures (Lee and Ono 2008; Schoen, Rogers and Amato 2006). In particular, in the context of traditional gender roles within marriage, the specialization model (Becker 1981) of marital quality predicts that wives' employment would lead to inefficiency in marriage, thereby diminishing marital happiness for both spouses. The revised independence model (Brennan, Barnett and Gareis 2001), on the other hand, predicts that improved income through wives' employment earnings should contribute to marital happiness, to the extent that the combined income of both spouses becomes the standard of family income in the society (Oppenheimer 1997).

In this paper, we use work and life history data in Japan to expand the framework for understanding marital happiness to investigate gender differences in the consequences of various work statuses on mental health and life satisfaction. Japan is characterized by two-tiered labor market, where there is a clear distinction between highly protected standard jobs and highly flexible and precarious jobs. Unlike previous studies in Europe (e.g., De Cuyper, Notelaers and Witte 2009) where some forms of non-standard employment are considered as a transitional "stepping stone" to permanent employment, the clear labor market demarcation in Japan should enables us to better identify the effect of non-standard jobs. Furthermore, in a society like Japan where malebreadwinner/female-homemaker model of division of labor within marriage is prevalent, the meaning of work should clearly differ by gender upon marriage. Under such context, we examine whether holding a non-standard job would have implications on one's mental health and life satisfaction, over and above the effect of low wages and poor working conditions associated with such jobs, and the extent to which the specialization model or the revised independence model is applied to mental health and life satisfaction.

We, therefore, hypothesize that the effects of non-standard work status would differ clearly by gender and marital status. First, given the stigma associated with non-standard employment under the two-tiered labor market structure, we hypothesize that male non-standard workers are more likely to report low mental health and are less satisfied with their lives compared to their counterparts with standard jobs. Second, given the inability to fully play the expected role of a breadwinner, we also hypothesize that married men with non-standard work status would particularly suffer from mental health issues and express low life satisfaction. Third, given the expected role as homemaker for married women, married women in regular employment might be under conflict between family and employment roles (cf. Rindfuss et al. 2004), and we expect them to report lower levels of mental health and life satisfaction compared to their non-working counterparts. Whether or not married women in non-standard employment report higher or lower mental health and life satisfaction compared to those in regular employment is ambiguous from the specialization and revised independence models. However, to the extent that non-standard employment offers flexibility to balance married women's work and family roles, it should contribute to better mental health and life satisfaction. Fourth, without the expectation to fulfill the homemaker role, we expect the effect of non-standard work for unmarried women to be no different from that for unmarried men.

Data

Data for this study come from the Japanese Life Course Panel Survey (JLPS) conducted by the Institute of Social Sciences at the University of Tokyo. JLPS is an ongoing panel survey covering topics related to work and lifestyle of working-age individuals. It started in 2007 with about 4,800 individuals aged 20 to 40 across Japan. The survey was conducted by a stratified sampling method. This study uses eight waves of data (2007-2014) that are available to the public. Those cases with missing information on one of the variables are excluded from the sample. The analysis sample consists of 2,099 men and 2,144.

Measures

Dependent variables

Mental health To measure the subject's mental health status, we used the five-item Mental Health Inventories (MHI-5) proposed by Veit and Ware (1983). The MHI-5 has been used to capture depressive symptoms of the general population. The Japanese version of MHI-5 has been validated and found to be reliable for identifying those who suffer from depressive symptoms among general Japanese population (Yamazaki, Fukuhara and Green 2005). The survey asked respondents how frequently they had the following feelings in the past month.

- 1. Feeling quite nervous
- 2. Feeling so down in the dumps that nothing could cheer you up
- 3. Feeling calm and peaceful
- 4. Feeling downhearted and blue
- 5. Feeling happy

The responses are coded in 5-point Likert scale: 1 (Constantly), 2 (Nearly constantly), 3 (Occasionally), 4 (Rarely), and 5 (Not at all). For the third and fifth questions, the order of the scale was reversed so that higher value on the scale indicates better mental health outcome. The sum of all scores, ranges from 5 to 25, are then transformed to a combined mental health index ranging from 0 to 100.

Life Satisfaction The survey asks respondents to rate their general satisfaction with life by asking "how satisfied are you generally?" It is also a 5-point Likert scale measure ranging from 1 (satisfied) to 5 (Unsatisfied). The order of the scale is reversed so that higher score on this variable indicates higher level of life satisfaction.

Independent variables

Work status is measured as a series of dummy variables indicating whether the respondent had a regular (full-time) employment, non-regular employment (including part-time, fixed-term contract, short-term and temporary agency work), self-employed (including entrepreneurs, family worker, piecework and others), being out of work (both unemployed and out of labor market), and student. The regular employment status is used as the reference category.

The respondent's marital status and spouse's marital status are included as dummy variables for whether the respondent or his/her spouse was married at the time of the survey, never married, or previously married (i.e., divorced or widowed). We also conducted separate analyses by the respondent's marital status to contrast those who are currently married with never married or

Control variables include measures of age, age squared, household income, whether the respondent has a child, self-assessed health condition, and education. The age in years is a continuous measure. The age squared is included in the model to capture a non-linear relationship. The household income is measured as a series of dummy variables for whether the household income was one of 5 income ranges, with the case of having 8.5 million JPY or higher household income in 2006 used as the reference category. The existence of a child is a binary dummy variable indicating whether the respondent live with his/her own child in the household. Health condition has been found to significantly affect one's mental health and life satisfaction. It was measured as a series of dummy variables corresponding to the 5-point Likert scale based on the question "How do you generally feel about your health condition?" with the excellent health used as the reference category. Education is included only in our preliminary analysis with pooled OLS and random effects models as it is a time invariant variables. It is a series of dummy variables for whether the last school attended for the respondent was a high school, either vocational school or junior college, or a university.

Analysis

An issue with examining the consequences of work status is the self-selection bias. It is likely that individuals are non-randomly sort into various work status. Therefore, estimates could be biased by some unobserved characteristics of individuals that affect both the propensity to work as a non-standard worker and the level of well-being (mental health or life satisfaction). As well, there may be some other unobserved characteristics of individuals, such as tastes and ability, that are correlated with both working as a non-standard worker and low level of mental health or life satisfaction. To deal with this bias, we used panel data and fixed effect analysis to remove the individual effects that are constant across time.

As a preliminary analysis, we also fit a pooled ordinary least squared (OLS) regression models to examine the relationship between work status and well-being with both time varying and time constant control variables (such as education level). We also estimated random effects model and compared these models by using the Breusch-Pagan Lagrangian Multiplier test and Hausman specification test. The results of all models indicated that the fixed effect model is preferred to the random effect model or the pooled OLS model.

Specifically, we first estimate the following model by gender

$$Y_{it} = \sum_{j} \beta_{j} W_{jit} + \sum_{k} \gamma_{k} M_{kit} + \sum_{m} \delta_{m} X_{mit} + \alpha_{i} + \varepsilon_{it}$$

where Y is the outcome (mental health or life satisfaction), W is a set of work status dummy variables, M is a set of marital status dummy variables, X are the intercept and other observed control variables, α is an unobserved individual effect, and ε represents the idiosyncratic error term. By subtracting the average value for each individual over time periods,

$$Y_{it} - \bar{Y}_i = \sum_j \beta_j \left(W_{jit} - \bar{W}_{ji} \right) + \sum_k \gamma_k \left(M_{kit} + -\bar{M}_{ki} \right) + \sum_m \delta_m \left(X_{mit} - \bar{X}_{mi} \right) + (\varepsilon_{it} - \bar{\varepsilon}_i)$$

we can eliminate the unobserved individual fixed effects as well as time-invariant observed correlates.

We then estimate a similar model for each combination of gender and marital status (currently married or otherwise). For married individuals, we replace the marital status variable with spouse's work status,

$$Y_{it} - \bar{Y}_i = \sum_j \beta_j \left(W_{jit} - \bar{W}_{ji} \right) + \sum_k \gamma_k \left(S_{kit} + -\bar{S}_{ki} \right) + \sum_m \delta_m \left(X_{mit} - \bar{X}_{mi} \right) + (\varepsilon_{it} - \bar{\varepsilon}_i)$$

where S is a set of the spouse's work status dummy variables, so that the applicability of specialization model and revised independence model can be tested.

Finally, for the sample of unmarried individuals, we do not include either the marital status dummies or the spouse's work status dummies as they are not applicable.

Results

[TABLE 1 ABOUT HERE]

Table 1 presents the descriptive statistics of the study sample. On average, the mental health score (MHI-5) is slightly higher for male (about 70) than it is for females (about 68) but the difference is not statistically significant. However, the level of life satisfaction is slightly higher for females (about 3.8) than it is for males (about 3.6) but the difference is again not statistically significant. As expected for a country characterized by gender segmented labor market, an overwhelming majority (nearly 80%) of observation for males are regular employees, followed by non-regular employees (about 9%), but female observations are equally divided into regular and non-regular employees (about 34% each), followed by being out of work (about 26%).

[TABLE 2 ABOUT HERE]

Table 2 presents the results of fixed effects models for mental health scores. There is a clear gender difference in the way work status affects one's mental health status. Consistent with previous studies, being out of work has a large negative effect on men's mental health. Our first hypothesis, that non-standard employment is negatively associated with mental health for males, is partially supported as it clearly applies to married men. Having non-standard employment and being out of work is strongly negatively associated with mental health, supporting our second hypothesis. However, for unmarried men, without the need to support his family as a breadwinner, being self-employed is highly associated

with better mental health perhaps through autonomy and independence associated with selfemployment (Lange 2012). Our third hypothesis, that married women with non-standard employment report better mental health than their counterparts with standard employment, is supported by the results. Together with the finding that being self-employed, many of them are family workers or engaged in piecework, along with being out of work, is associated with better mental health, the results suggest that flexibility of non-standard employment contributes to better balance between married women's work and family responsibilities. For unmarried women, however, being out of work is negatively associated with their mental health scores at .01 level. Unlike previous studies on marital happiness and job satisfaction, for married individuals regardless of gender, spouse's employment status has not relationship with their level of mental health.

[TABLE 3 ABOUT HERE]

Table 3 presents the results of fixed effects models for life satisfaction. Although, consistent with previous studies, being out of work is associated with low level of life satisfaction, significant association is found only for unmarried men and women. Our first and second hypothesis, that non-standard employment is negatively associated with life satisfaction for males and that the negative impact is stronger for married men, are generally not supported by the results. Together with the findings that being married is associated with higher life satisfaction, these results suggest that marriage may help lessen the negative impact of being out of work and having non-standard jobs on one's life satisfaction. Among married men and women, however, being self-employed is associated with lower life satisfaction compared to those with regular employment. For unmarried women, the results support our fourth hypothesis that, like their male counterparts, holding a non-standard job as well as being out of work is associated with low level of life satisfaction.

Discussion

This paper highlights the importance of considering not only the welfare state regime and the condition of labor market but also normative environment surrounding the family institution in examining the well-being consequences of non-regular employment. In particular, it demonstrates that marriage is a key institution that can alter how various forms of employment affect individual well-being. As expected by the specialization model, the traditional gender roles within marriage in Japan creates sharply different reaction to various forms of employment by gender. The responsibilities to support the family as a main breadwinner for men and to provide family care for women can create conflicts which sometimes manifest as mental health symptoms.

Further implications of the results will be discussed.

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	Mental Health Model											
	All					Married				Not Married		
	Male		Female		Male		Female		Male		Female	
	Mean	DS	Mean	DS	Mean	DS	Mean	DS	Mean	DS	Mean	DS
Mental Health Index	69.749	17.057	67.751	16.885	71.178	16.258	68.776	16.363	67.528	18.007	65.288	17.843
Life Satisfaction	3.601	0.968	3.799	0.914	3.842	0.850	3.919	0.872	3.221	1.020	3.510	0.949
Employment Status												
Regular employment (ref)	0.779	0.415	0.336	0.472	0.874	0.332	0.241	0.428	0.632	0.482	0.564	0.496
Non-regular employment	0.089	0.285	0.339	0.473	0.043	0.204	0.360	0.480	0.160	0.367	0.288	0.453
Self-employed and others	0.074	0.262	0.052	0.221	0.072	0.258	0.060	0.238	0.078	0.269	0.031	0.174
Out of work	0.030	0.170	0.255	0.436	0.010	0.099	0.336	0.473	0.061	0.238	0.059	0.235
Student	0.028	0.164	0.018	0.134	0.002	0.039	0.002	0.046	0.068	0.253	0.058	0.233
Marital Status												
Currently married (ref)	0.608	0.488	0.706	0.455								
Never married	0.369	0.483	0.252	0.434								
Divorced/Widowed	0.022	0.148	0.042	0.200								
Spouse's Employment Status												
Regular employment (ref)					0.257	0.437	0.860	0.347				
Non-regular employment					0.357	0.479	0.121	0.326				
Self-employed and others					0.380	0.485	0.016	0.125				
Out of work					0.007	0.081	0.003	0.056				
Household Income (in 10,000 JPY)												
income<350 (ref)	0.152	0.359	0.169	0.374	0.094	0.291	0.112	0.316	0.244	0.429	0.304	0.460
350 <income<450< td=""><td>0.134</td><td>0.340</td><td>0.144</td><td>0.351</td><td>0.134</td><td>0.341</td><td>0.150</td><td>0.357</td><td>0.133</td><td>0.340</td><td>0.129</td><td>0.335</td></income<450<>	0.134	0.340	0.144	0.351	0.134	0.341	0.150	0.357	0.133	0.340	0.129	0.335
450 <income<600< td=""><td>0.222</td><td>0.415</td><td>0.218</td><td>0.413</td><td>0.250</td><td>0.433</td><td>0.243</td><td>0.429</td><td>0.177</td><td>0.382</td><td>0.159</td><td>0.365</td></income<600<>	0.222	0.415	0.218	0.413	0.250	0.433	0.243	0.429	0.177	0.382	0.159	0.365
600 <income<850< td=""><td>0.263</td><td>0.440</td><td>0.239</td><td>0.427</td><td>0.303</td><td>0.460</td><td>0.279</td><td>0.448</td><td>0.201</td><td>0.400</td><td>0.145</td><td>0.352</td></income<850<>	0.263	0.440	0.239	0.427	0.303	0.460	0.279	0.448	0.201	0.400	0.145	0.352
850 <income< td=""><td>0.229</td><td>0.420</td><td>0.230</td><td>0.421</td><td>0.219</td><td>0.413</td><td>0.216</td><td>0.412</td><td>0.245</td><td>0.430</td><td>0.264</td><td>0.441</td></income<>	0.229	0.420	0.230	0.421	0.219	0.413	0.216	0.412	0.245	0.430	0.264	0.441
Child in family	0.428	0.495	0.533	0.499	0.695	0.461	0.714	0.452	0.015	0.120	0.099	0.298
Age	34.639	6.072	34.930	6.134	36.653	5.045	36.405	5.210	31.512	6.207	31.386	6.713
Age squared	1236.736	412.504	1257.758	420.784	1368.863	362.675	1352.440	374.408	1031.511	401.192	1030.110	438.631
Self-assessed health	3.375	0.900	3.410	0.889	3.390	0.865	3.432	0.871	3.352	0.952	3.357	0.929
Number of observations	9,664		10,751		5,879		7,593		3,785		3,158	

	Life Satisfaction Model											
	All Ma				Mar	rried Not Married						
	Ma	le	Fem	ale	Male		Female		Male		Female	
	Mean	DS	Mean	DS	Mean	DS	Mean	DS	Mean	DS	Mean	DS
Mental Health Index	69.775	17.042	67.763	16.865	71.178	16.252	68.794	16.320	67.570	17.998	65.269	17.874
Life Satisfaction	3.601	0.968	3.799	0.914	3.842	0.850	3.919	0.872	3.221	1.020	3.510	0.949
Employment Status												
Regular employment (ref)	0.781	0.414	0.336	0.472	0.874	0.332	0.241	0.427	0.636	0.481	0.566	0.496
Non-regular employment	0.089	0.285	0.339	0.473	0.044	0.204	0.360	0.480	0.161	0.367	0.288	0.453
Self-employed and others	0.074	0.262	0.052	0.222	0.071	0.258	0.060	0.238	0.078	0.268	0.032	0.175
Out of work	0.029	0.167	0.255	0.436	0.010	0.099	0.337	0.473	0.058	0.234	0.056	0.231
Student	0.027	0.163	0.018	0.135	0.002	0.039	0.002	0.046	0.068	0.251	0.058	0.234
Marital Status												
Currently married (ref)	0.611	0.488	0.707	0.455								
Never married	0.366	0.482	0.251	0.433								
Divorced/Widowed	0.023	0.148	0.042	0.200								
Spouse's Employment Status												
Regular employment (ref)					0.257	0.437	0.860	0.347				
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Child in family	0.430	0.495	0.536	0.499	0.695	0.461	0.716	0.451	0.015	0.121	0.100	0.300
Age	34.648	6.067	34.929	6.131	36.656	5.042	36.405	5.209	31.496	6.198	31.360	6.697
Age squared	1237.295	412.205	1257.651	420.540	1369.052	362.566	1352.477	374.414	1030.380	400.333	1028.297	437.310
Self-assessed health	3.377	0.900	3.411	0.889	3.390	0.865	3.433	0.870	3.357	0.951	3.359	0.931
Number of observations	9,580		10,680		5,853		7,556		3,727		3,124	

Table 2: Fixed Effects Estimates of		th index on En	ipioyment Star	ried	Not Married		
	Male	Eemale	Male	Eemale	Male	Eemale	
Employment Status	IVIAIE	Female	IVIAIE	Feiliale	IVIAIE	Female	
Regular employment (ref)							
Non-regular employment	-0 033	1 002 **	**	2 626 ***	1 037	-0.434	
Non-regular employment	-0.932	1.995	-5.422	5.050 (0.912)	(1.03)	-0.434	
Solf amployed and others	0.701)	(0.363)	(1.201)	(0.012)	(1.020)	(1.038)	
Sen-employed and others	(1.024)	1.107	-1.55/	2.052	4.200	-0.789	
Outofwork	(1.024)	(0.908)	(1.2/4)	(1.107)	(1.017)	(2.440)	
	-4.200	1.710	-7.4/1	5.400	-1.604	-2.040	
Ctudent	(1.079)	(0.042)	(1.941)	(0.641)	(1.594)	(1.552)	
Student	0.645	1.388	-3.076	5.531	2.071	-0.498	
Marital Status	(1.186)	(1.234)	(5.482)	(3.479)	(1.375)	(1.523)	
Marital Status							
Currently married (ref)							
Never married	-1.111	0.120					
	(0.833)	(0.775)					
Divorced/Widowed	-1.462	1.765					
	(1.417)	(1.295)					
Spouse's Employment Status							
Regular employment (ref)							
Non-regular employment			-0.739	0.371			
			(0.817)	(0.795)			
Self-employed and others			0.115	-1.503			
			(0.858)	(1.401)			
Out of work			2.010	0.147			
			(2.211)	(2.693)			
Household Income (in 10,000 JP)	()						
income<350 (ref)							
350 <income<450< td=""><td>1.136 ^</td><td>0.166</td><td>0.874</td><td>0.540</td><td>0.869</td><td>0.380</td></income<450<>	1.136 ^	0.166	0.874	0.540	0.869	0.380	
	(0.599)	(0.522)	(0.858)	(0.668)	(0.913)	(0.949)	
450 <income<600< td=""><td>1.163 ^</td><td>0.451</td><td>1.386</td><td>1.019</td><td>0.233</td><td>0.139</td></income<600<>	1.163 ^	0.451	1.386	1.019	0.233	0.139	
	(0.621)	(0.554)	(0.937)	(0.720)	(0.936)	(1.063)	
600 <income<850< td=""><td>1.047</td><td>0.628</td><td>0.196</td><td>1.402 ^</td><td>1.807 ^</td><td>-0.209</td></income<850<>	1.047	0.628	0.196	1.402 ^	1.807 ^	-0.209	
	(0.660)	(0.610)	(1.029)	(0.810)	(0.996)	(1.152)	
850 <income< td=""><td>1.709 *</td><td>0.040</td><td>0.069</td><td>0.762</td><td>3.055 **</td><td>-1.167</td></income<>	1.709 *	0.040	0.069	0.762	3.055 **	-1.167	
	(0.732)	(0.686)	(1.186)	(0.938)	(1.085)	(1.271)	
Child in family			-0.147	-0.009			
			(0.445)	(0.382)			
Age	0.360	-0.055	-0.256	-0.331	0.202	0.109	
	(0.395)	(0.356)	(0.615)	(0.499)	(0.627)	(0.619)	
Age squared	-0.006	0.004	0.001	0.007	0.000	0.001	
	(0.005)	(0.005)	(0.008)	(0.007)	(0.009)	(0.009)	
Mental Health Index							
Self-assessed health	4.169 ***	4.493 ***	4.351 ***	3.988 ***	3.532 ***	5.499 ***	
	(0.210)	(0.197)	(0.271)	(0.231)	(0.350)	(0.404)	
Constant	50.116 ***	47.810 ***	64.162 ***	53.549 ***	47.886 ***	43.213 ***	
	(7.267)	(6.613)	(11.529)	(9.281)	(10.552)	(10.496)	
sigma_u	13.304	12.681	12.392	12.266	14.820	14.049	
sigma_e	11.394	11.356	11.133	11.010	11.655	11.845	
rho	0.577	0.555	0.553	0.554	0.618	0.585	
Prov > F	0.000	0.000	0.000	0.000	0.000	0.000	
R-squared	0.055	0.060	0.062	0.052	0.047	0.081	
Number of observations	9,664	10,751	5,879	7,593	3,785	3,158	
Number of groups	2,099	2,144	1,223	1,497	1,109	960	

Table 2. Fixed Effects Estimates of M	Vental Health Index on Emplo	vment Status by Marit	al Status and Gend
Table 2. Tikeu Litecus Lsuinales of f		vincin Juanus by waith	ai Status anu Uenu

*** p<0.001, ** p<0.01, * p<0.05, ^ p<0.1. Standard errors in parentheses

Table 3: Fixed Effects Estimates	of Life Satisfac	tion on Employ	ployment Status by Marital Status and Gender				
	A	All	Mar	ried	Not N	larried	
	Male	Female	Male	Female	Male	Female	
Employment Status							
Regular employment (ref)							
Non-regular employment	-0.068	-0.102 **	-0.077	-0.062	-0.097 ^	-0.173 **	
	(0.042)	(0.031)	(0.068)	(0.042)	(0.059)	(0.054)	
Self-employed and others	-0.097 ^	-0.158 **	-0.250 ***	-0.129 *	0.161	-0.170	
	(0.057)	(0.051)	(0.068)	(0.060)	(0.106)	(0.128)	
Out of work	-0.250 ***	-0.082 *	-0.141	-0.030	-0.294 ***	-0.394 ***	
	(0.060)	(0.034)	(0.104)	(0.044)	(0.081)	(0.081)	
Student	0.120 ^	0.003	-0.307	-0.147	0.077	-0.056	
	(0.066)	(0.064)	(0.292)	(0.180)	(0.079)	(0.079)	
Marital Status							
Currently married (ref)							
Never married	-0.448 ***	-0.403 ***					
	(0.046)	(0.041)					
Divorced/Widowed	-0.299 ***	-0.095					
	(0.078)	(0.068)					
Spouse's Employment Status							
Regular employment (ref)							
Non-regular employment			0.040	-0.066			
			(0.044)	(0.041)			
Self-employed and others			0.106 *	-0.144 *			
			(0.046)	(0.073)			
Out of work			0.034	-0.093			
			(0.118)	(0.139)			
Household Income (in 10,000 JP)	()						
income<350 (ref)							
350 <income<450< td=""><td>0.044</td><td>0.049 ^</td><td>0.057</td><td>0.093 **</td><td>0.036</td><td>-0.058</td></income<450<>	0.044	0.049 ^	0.057	0.093 **	0.036	-0.058	
	(0.033)	(0.027)	(0.046)	(0.035)	(0.052)	(0.050)	
450 <income<600< td=""><td>0.101 **</td><td>0.114 ***</td><td>0.125 *</td><td>0.151 ***</td><td>0.090 ^</td><td>0.039</td></income<600<>	0.101 **	0.114 ***	0.125 *	0.151 ***	0.090 ^	0.039	
	(0.034)	(0.029)	(0.050)	(0.037)	(0.054)	(0.056)	
600 <income<850< td=""><td>0.122 **</td><td>0.142 ***</td><td>0.126 *</td><td>0.193 ***</td><td>0.085</td><td>0.069</td></income<850<>	0.122 **	0.142 ***	0.126 *	0.193 ***	0.085	0.069	
	(0.037)	(0.032)	(0.055)	(0.042)	(0.057)	(0.060)	
850 <income< td=""><td>0.127 **</td><td>0.180 ***</td><td>0.123 ^</td><td>0.243 ***</td><td>0.129 *</td><td>0.099</td></income<>	0.127 **	0.180 ***	0.123 ^	0.243 ***	0.129 *	0.099	
	(0.041)	(0.036)	(0.063)	(0.049)	(0.063)	(0.067)	
Child in family			0.018	-0.016			
			(0.024)	(0.020)			
Age	-0.015	-0.006	0.036	-0.002	-0.044	-0.036	
	(0.022)	(0.019)	(0.033)	(0.026)	(0.036)	(0.033)	
Age squared	0.000	0.000	0.000	0.000	0.001	0.001	
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	
Mental Health Index	0.010 ***	0.012 ***	0.009 ***	0.010 ***	0.011 ***	0.013 ***	
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	
Self-assessed health	0.100 ***	0.103 ***	0.080 ***	0.083 ***	0.132 ***	0.137 ***	
	(0.012)	(0.011)	(0.015)	(0.012)	(0.021)	(0.022)	
Constant	2.853 ***	2.673 ***	2.071 **	2.765 ***	2.600 ***	2.625 ***	
	(0.403)	(0.347)	(0.618)	(0.481)	(0.610)	(0.554)	
sigma_u	0.712	0.682	0.648	0.651	0.802	0.757	
sigma_e	0.626	0.591	0.594	0.568	0.664	0.617	
rho	0.564	0.571	0.543	0.568	0.593	0.601	
Prov > F	0.000	0.000	0.000	0.000	0.000	0.000	
R-squared	0.070	0.091	0.047	0.062	0.072	0.112	
Number of observations	9,580	10,680	5,853	7,556	3,729	3,124	
Number of groups	2,094	2,144	1,221	1,497	1,105	960	

Table 3: Fixed Effects Estimates of Life Sat	isfaction on Employ	vment Status by Marit	al Status and Gend

*** p<0.001, ** p<0.01, * p<0.05, ^ p<0.1. Standard errors in parentheses