Can your work make you unhappy?
A look at Work stressor and subjective well-being

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Why does this matter?

- For a full time worker, on average, 1/3 of the day engaging in work. An average of 25% of our lives at work.

- Work means more than an activity generating income to consume goods and services by trading off leisure (conventional consumer utility model)

- In psychology [studying what makes experiences and life pleasant or unpleasant (Hedonic psychology)]

  ⇒ Work is considered as one of main sub-domains in life along with others (ie family, health, finance and social)

  ⇒ Work itself directly adds positive and negative values to a person's happiness and well-being (*Work, Happiness and Unhappiness* by Peter Warr (2007))

Economists join the club

- In the last two decades, there are increasing interests in subjective well-being and its determinants among economic researches. (Dolan et.al. 2008 review paper)

- Also, the direct value (non-pecuniary) of work is getting increasing attention

  $\Rightarrow$ Unemployment and life satisfaction : context free well-being (Kassenboehmer & Haisken-DeNew 2009; Carroll 2007; Clark 2006, 2003 ; Clark etal 2001; Clark & Oswald 1994; Winkelmann & Winkelmman 1998; etc.)

  $\Rightarrow$ Job satisfaction : domain-specific well-being (Long 2005; Sloane & Williams 2000; Clark 2005, 1996, 1997; etc.)

  $\Rightarrow$ Others: job stress and smoking (Ayyagari & Sindelar 2010); Stress related absence from work –costs (Manning, Jackson Fusilier (1996); etc .

Our question is

- How much a person's work related stress affects his/her life satisfaction relative to other stressful life experience.
⇒ Fits into the broader concept of (mental) well-being

How to answer this question

- Psychologists define stress as a process of perception, appraisal, response and adaptation to challenging event (Lazarus and Folkman,1984; Sinha,2001).

- We construct a single work stressor index combining individual's perceptions on job features.

  ⇒ To measure how much an individual worker is exposed to stressful work environment.

  ⇒ does not directly measure response, a state of stress.

- In this approach, we attempt to examine the relative importance of work stressors compared with other life stressors in a single framework of subjective well-being.

Data

- Eight waves of Household Income and Labour Dynamics in Australia (HILDA) survey.

- Sample restriction
  - at the prime working age, 21-59 years old
  - currently in paid work
  - complete questions pertaining to their current job and work place in the Self Completion Questionnaire (SCQ) in HILDA for all eight waves.
  - Not full time student

- Over eight waves, we identify 1131 male and 884 female workers in HILDA.

Job scopes in HILDA

| **Work stressors (ranges from 1 to 7)**	
Unfair payment	a) I get paid fairly for the things I do in my job.[*]
Job insecurity	a) I have a secure future in my job.[*] b) The company I work for will still be in business 5 years from now.[*]
High job demands	a) My job is complex and difficult.
Low skill use	a) My job often requires me to learn new skills.[*] b) I use many of my skills and abilities in my current job.[*]
Lack of Freedom (Control)	a) I have a lot of freedom to decide how I do my own work.[*] b) I have a lot of freedom to decide when I do my work.[*]

Features of work : Male

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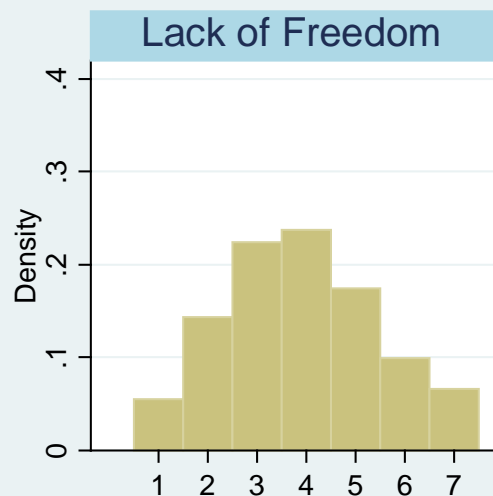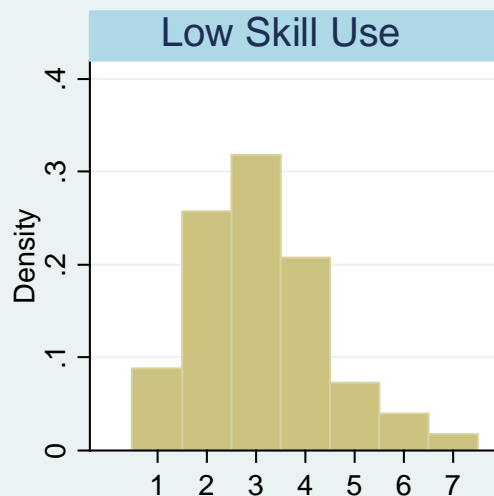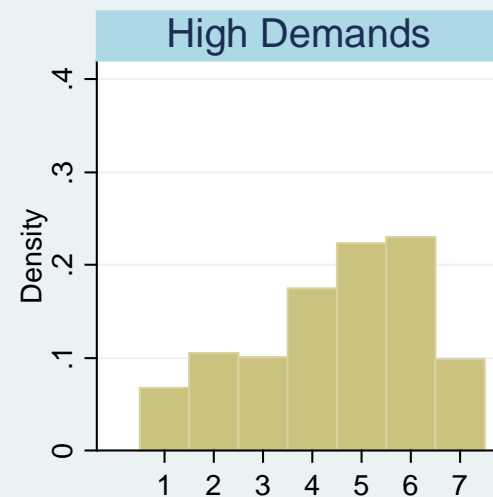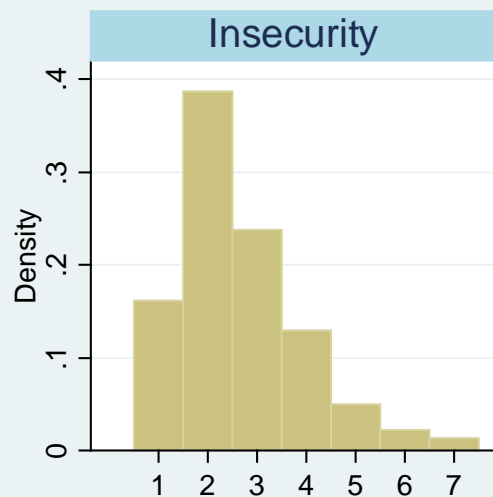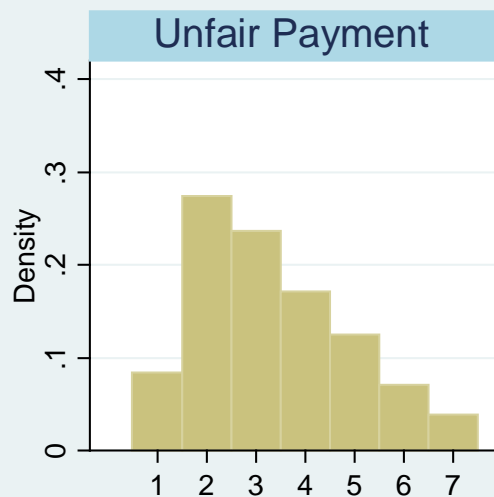
Features of work : Female
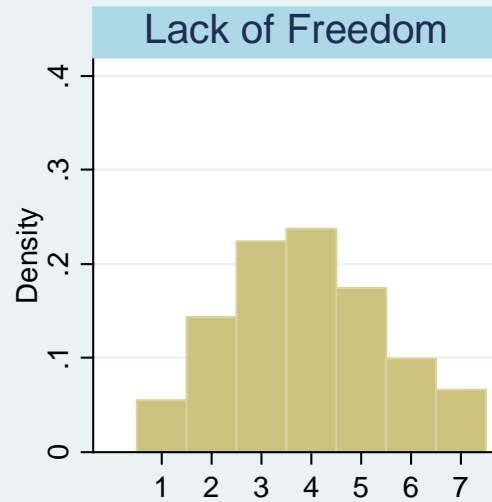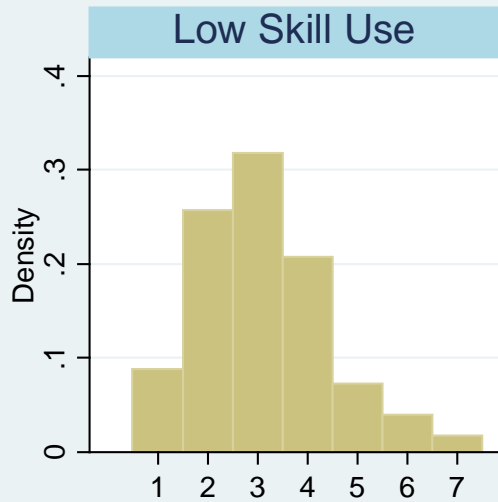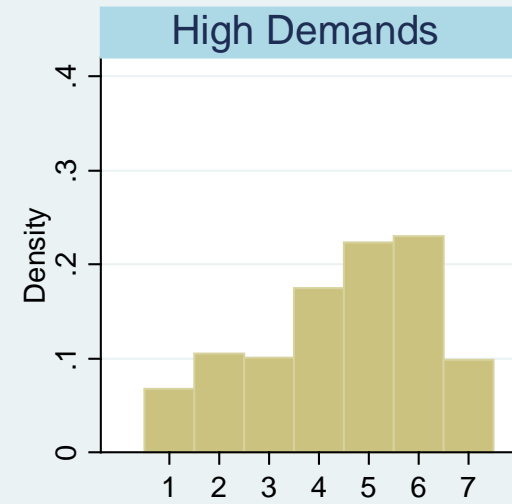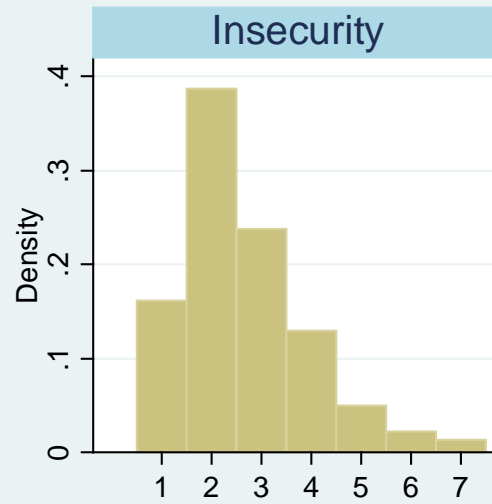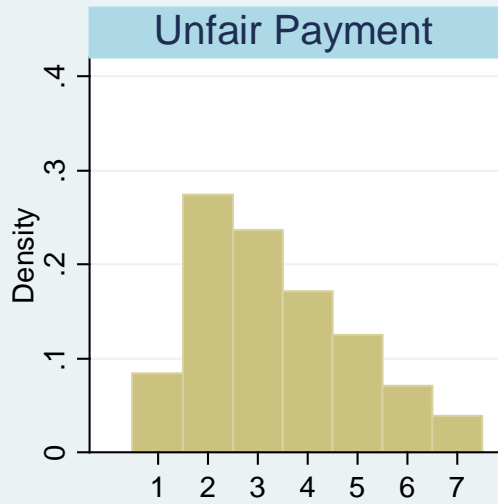
Work Stressor Index
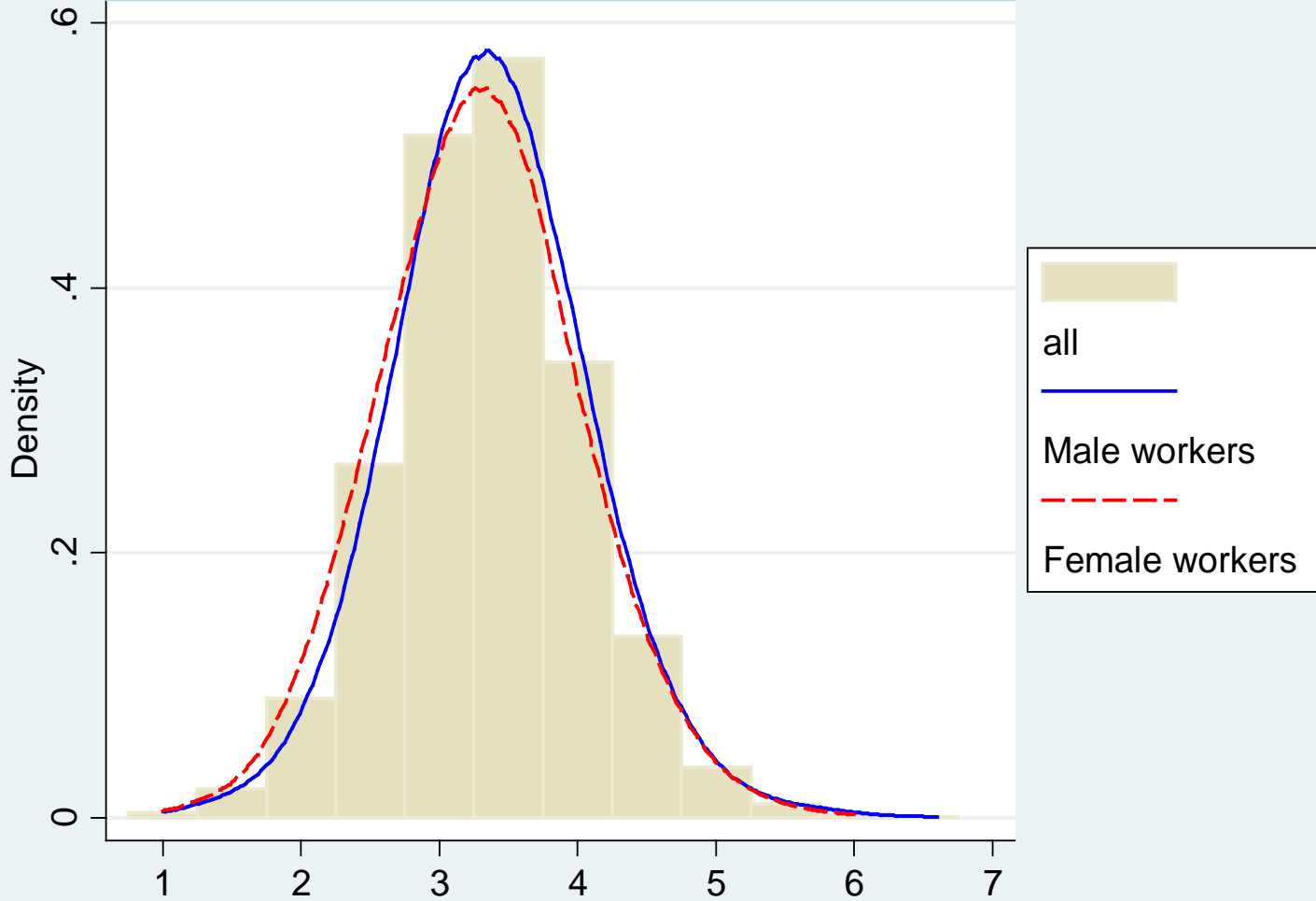
SWB: Life Satisfaction
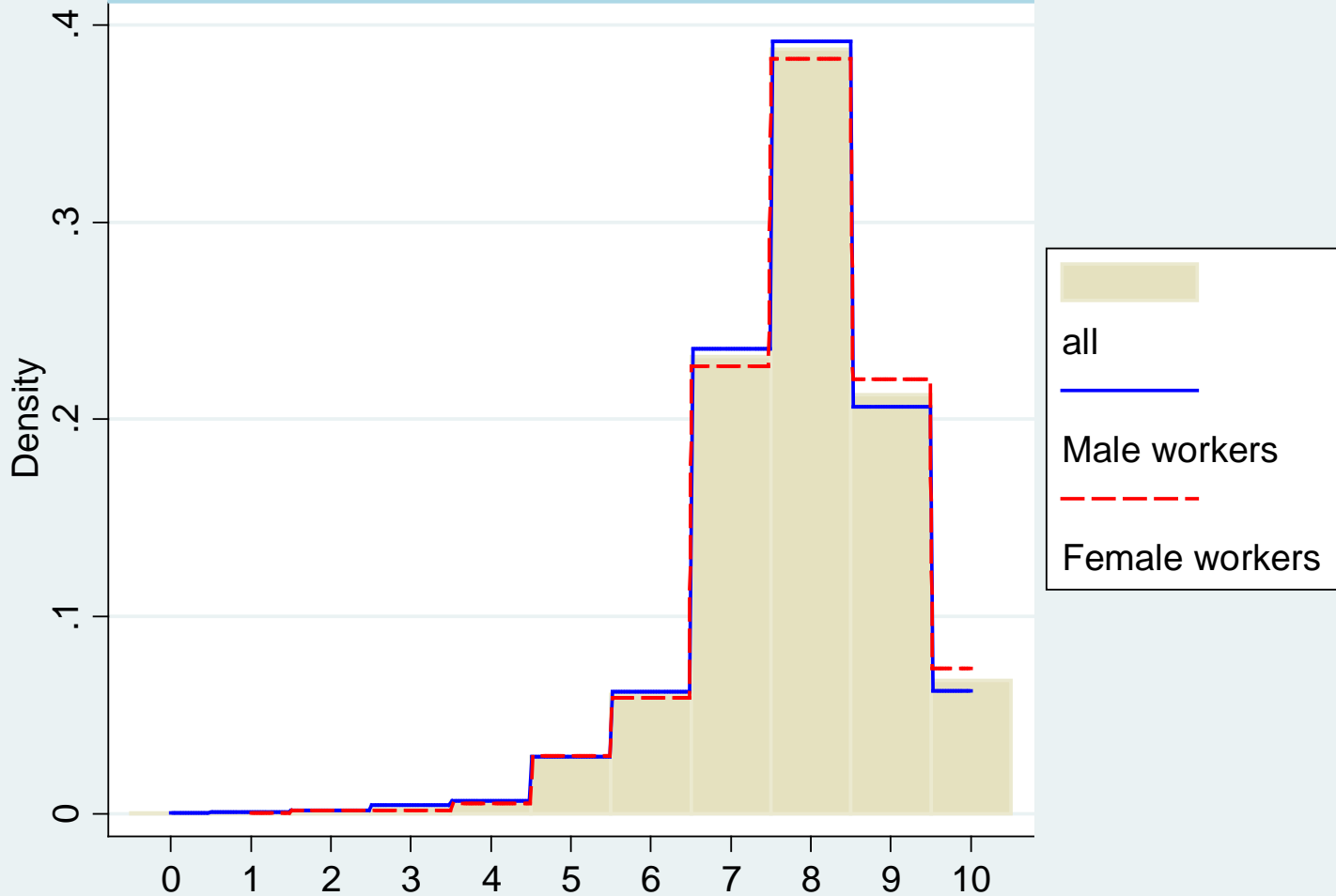
Fixed effects model (with IV)

- Only use within person variation to ask the question regarding how work stressor affects worker's subjective well-being

- All analysis are conditional on each individual's unobservable fixed factor.

- Potential endogeneity because using both self reported measure of work stressor and well-being

  ⇒ Omitted information which affects both.

  ⇒ A change in person's well-being may influence how the person views the job.

Fixed effects model (with IV)

- Use person's job characteristics as instruments
    - $\Rightarrow$ assuming these time varying work/job characteristics determine work stressor index but not directly affect their life satisfaction.
    - $\Rightarrow$ test for weak instruments and orthogonality.
- Obtain estimates using LIML (Davison and MacKinnon 2004)
    - $\Rightarrow$ LIML may yield less bias and greater efficiency than the 2SLS estimator (Stock, Wright, and Yogo (2002) .
    - $\Rightarrow$ LIML performs better than 2SLS in presence of week identification (Hahn, Houseman and Kuersteiner 2004)

Data summary (variables in estimation)

Variable	Male workers		Female workers	
	Mean	SD	Mean	SD
Happiness (SWB) (ranging from 0 to 10)	7.819	1.224	7.895	1.192
work stressor index (ranging from 1 to 7)	3.374	0.689	3.299	0.712
< 26 years old	0.020		0.025	
26-35 years old	0.254		0.171	
46-55 years old	0.312		0.375	
> 55 years old	0.031		0.036	
Having dependent children	0.529		0.422	
Married	0.828		0.741	
Inner region	0.222		0.257	
Outer/remote areas	0.105		0.106	
Secondary school	0.118		0.127	
Certificate III or IV or Diploma	0.397		0.237	
Degree and above	0.306		0.370	
Mild health condition/disability (40≤SF36≤49)	0.061		0.047	
Moderate health condition/disability (30≤SF36≤39)	0.032		0.025	
Severe health condition/disability (SF36<30)	0.013		0.020	

Data summary

Marital separation (including death of spouse)	0.013		0.018	
Death of close relatives/ friend	0.160		0.173	
Victim of violence/ property crime	0.057		0.054	
Serious illness to family member	0.148		0.183	
Major improving of financial situation	0.034		0.036	
Major worsening of financial situation	0.016		0.019	
Financial hardship (any of seven)	0.155		0.166	
Laid off	0.024		0.017	
Log weekly wage for current main job	6.949	0.534	6.505	0.622
Excluded instrument				
Casual job	0.074		0.140	
Self employed	0.105		0.052	
Supervisory role	0.615		0.498	
Small size of firm (<20employee)	0.362		0.343	
Short employment tenure (< 3 years)	0.254		0.250	
Part time worker	0.051		0.405	
Machinery operators, Drivers and Labourers	0.177		0.072	
Observations	6837		5610	

Male workers (Fixed effects)

Variables (significant)	OLS		LIML (IV)	
	Coef	Std. Err.	Coef	Std. Err.
work stressor index (standardized)	-0.132***	(0.015)	-0.382*	(0.154)
< 26 years old	0.415***	(0.114)	0.398***	(0.117)
26-35 years old	0.105*	(0.053)	0.109*	(0.054)
46-55 years old	0.010	(0.048)	-0.008	(0.050)
> 55 years old	0.142	(0.094)	0.098	(0.099)
Married	0.314***	(0.063)	0.301***	(0.065)
Health condition/disability				
Mild (40≤SF36≤49)	-0.283***	(0.050)	-0.254***	(0.054)
Moderate (30≤SF36≤39)	-0.443***	(0.072)	-0.395***	(0.079)
Severe (SF36<30)	-0.365***	(0.111)	-0.315**	(0.117)
Marital separation (including death of spouse)	-0.487***	(0.100)	-0.488***	(0.102)
Major worsening of financial situation	-0.287**	(0.090)	-0.255**	(0.095)
Log weekly wage for current main job	0.086*	(0.041)	0.039	(0.050)

* 0.05 ** 0.01 *** 0.001

First-stage regression (Male workers)

F test of excluded instruments:				
F(7, 5722) = 9.36				
Prob > F = 0.0000				
Weak identification test (Ho: equation is weakly identified)				
Cragg-Donald Wald F statistic(with iid error) :		9.356		
Stock-Yogo (2005) weak ID test critical values:				
10% maximal LIML size		4.18		
15% maximal LIML size		3.18		
20% maximal LIML size		2.73		
25% maximal LIML size		2.49		
(Kleibergen-Paap rk Wald F statistic with cluster-robust error):			6.193	
Overidentification test of all instruments (Ho: instruments are orthogonal)				
Sargan statistic (with iid): 8.042				
Chi-sq(6) P-val = 0.2351				
Anderson-Rubin statistic (with iid) : 8.047				
Chi-sq(6) P-val = 0.2347				
Hansen J statistic (with cluster-robust error): 6.594				
Chi-sq(6) P-val = 0.3600				

Female workers (Fixed effects)

Variables (significant)	OLS		LIML (IV)	
	Coef	Std. Err.	Coef	Std. Err.
work stressor index (standardized)	-0.124***	(0.017)	-0.290	(0.264)
Married	0.348***	(0.069)	0.364***	(0.073)
Health condition/disability				
Mild (40≤SF36≤49)	-0.150*	(0.065)	-0.129^	(0.073)
Moderate (30≤SF36≤39)	-0.209*	(0.092)	-0.186^	(0.100)
Severe (SF36<30)	-0.450***	(0.127)	-0.436***	(0.130)
Marital separation (including death of spouse)	-0.254**	(0.096)	-0.254**	(0.097)
Serious illness to family member	-0.055^	(0.033)	-0.063^	(0.036)
Major improving of financial situation	0.178**	(0.066)	0.172*	(0.068)
Major worsening of financial situation	-0.434***	(0.094)	-0.427***	(0.096)
Financial hardship (any of seven)	-0.090*	(0.043)	-0.077	(0.049)

* 0.05 ** 0.01 *** 0.001

First-stage regression (Female workers)

<u>F test of excluded instruments:</u>			
F(7, 4705) = 4.35			
Prob > F = 0.0001			
<u>Weak identification test</u> (Ho: equation is weakly identified)			
Cragg-Donald Wald F statistic(with iid error) :		4.347	
Stock-Yogo (2005) weak ID test critical values:			
	10% maximal LIML size	4.18	
	15% maximal LIML size	3.18	
	20% maximal LIML size	2.73	
	25% maximal LIML size	2.49	
(Kleibergen-Paap rk Wald F statistic with cluster-robust error):			2.869
<u>Overidentification test of all instruments</u> (Ho: instruments are orthogonal)			
Sargan statistic (with iid):	10.349		
	Chi-sq(6) P-val = 0.1107		
Anderson-Rubin statistic (with iid) : 10.361			
	Chi-sq(6) P-val = 0.1103		
Hansen J statistic (with cluster-robust error):	6.905		
	Chi-sq(6) P-val = 0.3297		

So can your work make you unhappy?

- Yes! Not trivial matter for individual (mental) well-being after controlling all other factors.

- The conventional way of treating work in the consumer utility model may not enough for the new concept of "well-being".

- Worker's work related stress deserves to receive attention as it leads to improvements in individual's well-being.

Acknowledgements:

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