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**Working Paper**

# Adaptation under Traditional Gender Roles: Testing the Baseline Hypothesis in South Korea

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# Courant Research Centre
## 'Poverty, Equity and Growth in Developing and Transition Countries: Statistical Methods and Empirical Analysis'

**Georg-August-Universität Göttingen**
**(founded in 1737)**

Discussion Papers

**No. 101**

**Adaptation under Traditional Gender Roles: Testing the Baseline Hypothesis in South Korea**

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# Adaptation under Traditional Gender Roles

## Testing the Baseline Hypothesis in South Korea

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***Abstract:***

Using detailed longitudinal data from the Korean Labor and Income Panel Study (KLIPS) from 1998 to 2008, this paper analyzes gender-specific impacts as well as anticipation and adaptation to major life and labor market events. We focus on six major events: marriage, divorce, widowhood, unemployment, first job entry, and introduction of the five-day working week. While our results indicate full adaptation to some events, and even more so for women, to others we see no or only partial habituation. Yet, the results show striking gender-specific differences particularly regarding the impact of events related to marital status change. Husbands remain on a higher happiness level throughout marriage. They also suffer more from, and show less rapid or even no adaptation to widowhood and divorce. Women return to their baseline level of happiness relatively quick after marriage and divorce. Surprisingly, widowhood is not associated with negative effects for women. If anything, moderate positive effects can be found here. Husbands' additional long-run happiness gain during marriage is equivalent to an (husband-only) increase of annual per-capita household income of approximately US$17,800. We show that the intra-marriage happiness gap between husband and wife is strongly related to the intra-couple earnings difference, providing evidence for both intra-household bargaining and the gender identity hypothesis. The studied labor market events point to a gender-segregated labor market. The evidence shows that more effort is needed if Korea wants to achieve higher gender equity.

*JEL:* A13, D13, I31, J12, J16, J31.

*Keywords:* Life Satisfaction; Adaptation; Gender; Intra-marriage bargaining.

# 1. Introduction

Recent work in subjective well-being has shown that individuals' perception of happiness tends to adapt to most life and labor market events (e.g. Gardner and Oswald, 2006; Stutzer and Frey, 2006; Clark et al., 2008; Clark and Georgellis, 2010; Frijters, Johnston, and Shields, 2008; Oswald and Powdthavee, 2008). These papers argue that individuals are equipped with a certain form of baseline happiness which can mainly be explained by quasi-fix factors such as genes, early childhood education, and persistent psychological traits. Only a small share of an individual's happiness is attributed to demographic and socio-economic factors and these rather short-term variables are assumed to induce fluctuation around the baseline level.[1] The argument is that changes in most demographic and socio-economic variables have no long-run effect on an individual's level of happiness or life satisfaction, and so individuals rather experience both anticipation of and adaptation to most life events. This has recently changed our understanding of the intertemporal dimension of well-being and requires further research. How do shocks, positive or negative, effect individuals over time? Do people fully recuperate after a particular shock, or is there a lasting shift in happiness levels? And if so, which are the factors that do not only temporarily, but permanently shift an individual's well-being? Do differences exist in the impact of and adaptation to shocks between women and men?

Looking at major life events like marriage, or labor market events like unemployment calls for an in-depth study of gender differences in life satisfaction responses over time. Particularly in countries with rather traditional gender roles, both the magnitude of a certain event's impact on individual well-being as well as adaptation to it might differ significantly between women and men. While some related studies have found that women are more likely to adapt to unemployment than men, to the best of our knowledge no study has ever found significant gender differences for a number of events yet. This might be due to the spatially selective nature of happiness research in the past. Most studies in this field concentrate on "Western" OECD countries with comparatively low levels of gender inequality. In their study of German panel data (GSOEP), Clark et al. (2008) estimate intertemporal changes in life satisfaction due to marriage, divorce, widowhood, birth of child, unemployment and layoff separately for the two sexes. They find full or partial adaptation to most events and conclude

[1] Lykken and Tellegen (1996) show that demographic and socio-economic factors account for only a small part of the variance in subjective well-being measures. They estimate the contribution of the stable component of subjective well-being, which they ascribe to genes and persistent psychological traits, to explain as much as 80 percent.

that the anticipation and adaptation patterns due to life events are "remarkably similar between men and women". In a follow-up paper, Clark and Georgellis (2010) confirm these findings for British panel data (BHPS) and conclude that adaptation might be a "general phenomenon". Frijters, Johnston and Shields (2008) use quarterly life event data from the Household, Income and Labour Dynamics in Australia (HILDA) survey for the study of ten events, in which they mainly show that life events are not randomly distributed and thus stress the importance of fixed-effects estimation.

In this study, we will perform a similar analysis, yet for a country with still stronger traditional gender roles. Within such a society, intra-marriage bargaining might be skewed in the sense that women's financial dependence might lead to a gender gap in decision-making and eventual utility outcomes. Thus, we are interested in the main determinants of this potential gap. Psychology literature suggests that the wife's absolute and relative earnings play important roles for intra-marriage well-being. Higher female employment and income can have positive effects for married women if other roles such as being a housewife are less satisfying (Ross, Mirowsky and Goldsteen, 1990). For men, the effect mainly depends on prevailing gender roles and the level of economic hardship. In case of more liberal roles or more severe economic hardship, men will appreciate higher contributions of their wives in broadening the household's total economic resources. In contrast, if gender roles are rather traditional and the family does not necessarily depend on the wife's earnings, then a higher share of female earnings might give the impression that the man is unable to fulfill the breadwinner role and this can have negative effects on the husband's well-being (Hochschild, 1989; Rogers and DeBoer, 2001). Higher earnings of wives improve female bargaining in the household, and thus can lead to changes in the household division of labor, and in spousal roles more generally. This can have beneficial effects for the couple if more liberal roles are prevalent. However, it may also increase the risk of female-sided marital breakup.

There are two related theoretical threads of literature in the economics field. First, there is an established literature on intra-household bargaining and decision-making (e.g. Haddad, Hoddinott and Alderman, 1997). These studies basically argue against income pooling within a household and Becker's (1981) altruistic dictator model and rather claim that it is important for intra-household decision-making *who* earns the money. It has been shown in several studies that the higher the relative share of income earned by a woman (alternatively the share of assets brought into marriage), the higher her relative bargaining power (e.g. Phipps and Burton, 1998; Brown, 2009; Lise and Seitz, 2011). Related to higher female income is an

increase in the credibility of her potential divorce threat, equipping a woman with a viable alternative in case of an unsatisfying marriage. Women who are financially more dependent might not have this alternative at hand, since expected income after divorce will be rather low. In this paper, we will extend this idea by looking at happiness outcomes related to female earnings shares in a society in which traditional gender roles still prevail.

For our analysis, we use eleven waves of the Korean Labor and Income Panel Study (KLIPS) from 1998 to 2008 to study gender-specific impacts as well as anticipation and adaptation patterns in Korea. We will explicitly focus on the happiness impact of the following six major life and labor market events: marriage, divorce, widowhood, unemployment, first job entry, and working day reduction/introduction of the five-day working week. Determinants of gender differences, such as different bargaining variables, will then be analyzed in detail.

We contribute to the literature in the following way. First, we will expand the happiness literature to include East Asia. Only few studies have recently started to analyze subjective well-being questions in the East Asian context (e.g. Kang, 2010; Rudolf, 2011). Second, by choosing Korea this will be the first study to examine gender differences in the impact of, and adaptation to major events in an environment of strong traditional gender roles.

Third, this study will then link the adaptation literature with that of intra-household bargaining and Akerloff and Kranton (2000)'s concept of identity. Fourth, we will make use of state-of-the art fixed-effects ordered logit estimators which allow to control for unobserved factors and to account for an ordinal dependent variable at the same time. While our main estimation technique will be linear fixed-effects for the benefit of assigning monetary values to the coefficients, we will check the consistency of the estimates using most recent fixed-effects ordered-logit estimators by Ferrer-i-Carbonell and Frijters (2004) and Baetschmann, Staub, and Winkelmann (2011).

Our findings provide evidence for partial and full adaptation to most events. Results suggest a somewhat faster and more complete adjustment for women. Moreover, the results indicate strong gender-specific impacts of various events, particularly of changes in marital status. While marriage has a strong and lasting positive effect on male happiness, the average female happiness gain is limited to not more than two years. Men suffer more than women from divorce and widowhood, while women show no negative effects in the case of their spouse's death. Concerning labor market events, our findings point towards a gender-segregated working culture.

The paper is organized as follows: Section 2 discusses gender inequality in Korea in more detail. Section 3 introduces the data set and methodology used for the analysis. Section 4 then discusses regression results. While the first subsection covers marriage-related events, the second discusses labor market events. Finally, the intra-marriage gender gap is analyzed in greater detail in the last subsection. Section 5 concludes.

## 2. Gender Gap in Korea

The Republic of Korea presents a very interesting case of economic and socio-cultural change. The Korean economy has shown spectacular growth rates over the past fifty years. Related rapid socio-economic development allowed the country to join the group of high-income OECD countries in 1996.[2] At the beginning of the 21st century, Korea is an established member of the rich world. However, traditional gender roles show themselves to be much more resistant to change than political or economic variables. Until today, Korea has maintained strong traditional values, particularly when social and family relations are concerned.[3] In 2010, Korea had the third lowest female labor force participation rate (25-54 years of age) among the 34 OECD countries. Lower rates were only observed in Turkey and Mexico. In 2005, the UNDP dedicated an entire report to the issue. The "Korean Human Development Report on Gender" points out that "women's participation in political and economic sectors, especially in decision-ranking positions is very low in Korea, despite marked growth in the country's economy over the past decades". While Korean women, when compared internationally, are highly educated, they still face a number of obstacles preventing them from engaging in the labor market in a similar manner as men do. The most prominent of these are strong gender gaps in earnings, very long working hours, the absence of part-time work options outside the low-skilled service sector, and deficits in child care supply. Table 1 presents the gender gap in Korea in a cross-country comparison. Korea ranks particularly low in indicators that strictly focus on the gender gap measured in terms of female-to-male ratios of education, health, economic and political empowerment (Gender Empowerment Measure (GEM) and Global Gender Gap Index (GGG)). The presumably most comprehensive attempt to measure the gender gap in a society is the GGG index which has been published by the

[2] In terms of GDP per capita in purchasing power parity units, Korea is expected to reach the level of Germany within the next decade.

[3] For an introduction to Korean gender relations, see e.g. Kim (2007) or Clasen and Moon (2010).

World Economic Forum since 2006. According to this index, Korea ranks only 104th out of 134 countries in 2010, suggesting very high levels of gender inequality in Korea. Korea's low rank is not at last due to low female-to-male ratios in the following sub-indexes: "wage inequality for similar work", "professional and technical workers", "legislators, senior officials, and managers", "tertiary enrolment ratio" and "seats in parliament". Traditional gender roles in Korea have been further acknowledges in a recent OECD "Society at a Glance" report (2011) comparing male and female shares in housework across OECD countries. While according to the OECD country average, women do 2.13 times the housework that men do, in Korea this ratio amounts to 5.05. For comparison, this ratio is 1.48 in Norway, 2.75 in Spain, and 3.24 in Turkey. Moreover, comparing Korea to Singapore, another Asian growth miracle, further suggests that high gender inequality is not inevitable in countries with Chinese cultural heritage.[4] While Korea and Singapore take up similar ranks in the human development index (HDI), Korea ranks much lower in gender gap measures. Rudolf (2011) shows for married Korean couples that even if a woman is doing most of the market work, she still takes care of about 70 percent of the housework. The same article also argues that very long working hours and the absence of high-skilled part-time work pose important restrictions on further female engagement in the labor market. Lee (1998) argues that many Korean girls only strive for higher education in order to increase the likelihood to find a well-educated husband. This might be a rational strategy under the present circumstances, given that marital sorting is relatively high in Korea (Lee, 2008). It might thus be a good sign that gender roles are slowly starting to change in Korea and so does marital labor-sharing. Young generations of husbands already show slightly higher engagement in housework and labor force participation of women in their prime motherhood years has risen from 55.8 to 62.3 percent between 1998 and 2010 (Rudolf, 2011; OECD, 2011). Yet, to sum up, it becomes evident that Korea, in contrast to its economic and human development achievements, is still lacking behind substantially in terms of gender equality.

[Table 1 about here]

[4] Chinese cultural understanding of a proper female life is mainly influenced by Confucian and Daoist thought. Both philosophies suggest gender segregation of work, yet Confucianism stresses even stronger the subordination of wives to their husband (Adler, 2006).

# 3. Data and Methodology

## 3.1 Data

Data for our analysis comes from the Korean Labor and Income Panel Study (KLIPS) for the years 1998 to 2008. KLIPS is a nationally representative longitudinal study of urban Korean households, modeled after the US National Longitudinal Surveys (NLS) and Panel Study of Income Dynamics (PSID). It is conducted annually by the Korea Labor Institute, a government-sponsored research institute. The study started in 1998 with 5,000 households and 13,783 individuals aged 15 years or older. KLIPS collects a wide range of information on individuals, such as earnings, family, education, employment backgrounds, and demographic characteristics. In addition, it offers broad information on various indicators of life and job satisfaction.

The data quality KLIPS provides satisfies highest international standards. The panel maintains 76.5% of the original sample throughout all waves, which is comparable to the US PSID (78%); the German Socio-economic Panel (GSOEP, 79%); and the British Household Panel Survey (BHPS 77%). Kang (2010) shows that potential bias produced by attrition is negligible in KLIPS data.

We restrict our sample to the age group of 16 to 60 year olds which yields a total number of 55,447 person-year observations for females and 57,574 for males. For the analysis of widowhood, we extend the upper age limit to 80 years, resulting in a sample of 66,592 person-year observations for females and 65,986 for males. The panel is unbalanced in that not all individuals are present in all waves. Thus, our minimal requirement is that an individual was observed at least once before and after the event, thus excluding left-censored spells.

The central variable for our analysis is overall life satisfaction. In KLIPS' individual questionnaire, the question on overall life satisfaction is preceded by a set of detailed questions on the satisfaction with different aspects of life: household income, leisure life, housing environment, family relations, relations with relatives, and social relations. The exact wording of the overall life satisfaction question is then: *"Overall, how satisfied or dissatisfied are you with your life?"* Individuals are asked to respond according to a scale ranging from 1 ("very satisfied") to 5 ("very dissatisfied"). For the sake of easier interpretation, we recoded the scale so that higher numbers correspond to higher levels of satisfaction.

Table 2 shows the distribution of life satisfaction for the sample of 16-60 year olds separately for men and women. About half of all women and men report to be "neither satisfied nor dissatisfied". More people report to be "satisfied" than "dissatisfied". It might be a cultural particularity that Koreans tend to avoid the extreme categories "very satisfied" or "very dissatisfied". This contrasts with studies on e.g. Germany or Great Britain, where usually around 10 percent of the sample chooses the highest category of satisfaction.[5] Compared to their male counterparts, females in Korea report about the same if not a slightly higher average life satisfaction.

[Table 2 about here]

In order to examine the intertemporal change in satisfaction levels due to major life and labor market events and potential gender differences that might arise, we will analyze the following six major events: marriage, divorce, widowhood, unemployment, first job entry, and introduction of the five-day working week. Since we would like to avoid potential bias through habituation to events, we only take into consideration the first event of its kind for each individual during the sample period. Thus, observations are right-censored in case of e.g. second unemployment spells or remarriages.

For changes in marital status and first job entry, the questionnaire explicitly asks for the exact year and month of the change or entry. This allows us to calculate for each person-year observation the years passed since the event, or the years from a particular wave until the event if it has yet to occur.[6] Compared to simply looking at marital status changes between two interviews, this has the advantage to be able to identify "quick remarriages", where individuals become divorced or widowed and then remarry within only two survey waves. Moreover, we can better identify the exact date of change in case there is a gap of two or more years between two interviews. We then coded lead and lag dummies for each year reaching from "3 to 4 years before the event" to "5 or more years after the event". For example, the latter dummy in the case of the event "marriage" would take the value 1 if at

[5] Compare Clark et al. (2008); Clark and Georgellis (2010). It is rather unlikely that so few people are "very satisfied" in Korea, as compared to Western European countries. Instead, we believe that this has to do with cultural-specific behavior: a modest and humble use of language is often required by Korean social norms. Especially when talking to an unknown interviewer about your personal happiness, Koreans might be inclined to respond in a more reserved way.

[6] A few observations only reported the year of the event, but not the exact month. Here, the middle of the year is used to calculate the time elapsed since the event (e.g. 1998+0.5 years). Additionally, we check for the person's marital status at the time of the event and the year preceding it.

least five years have passed since a person's first marriage *and* if she has not had a change in marital status in the meantime. It would take the value 0 otherwise.

For unemployment we use a similar methodology as Clark et al. (2008) who use the occupational status of individual *i* in each period, *t*=1 to *T*, to calculate if and for how long an individual currently is and has been unemployed. And if currently working but unemployed in the future, it is calculated how far she is away from future unemployment. In 2004, following a change in national legislation, the official six-day working week was replaced by a five-day working week. To model this empirically, we observe the date of the first change from above five to five working days for each individual. We demand for an individual to have worked on average at least 5.5 days a week during two years, and to then have adopted and maintained a five-day working week (4.5≤ average weekly working days <5.5) for at least another two periods.

Table 3 shows average satisfaction of leads and lags by event and sex. We can see that for almost all events there was a considerable upward or downward change in life satisfaction after the event took place. Most yet not all effects are as expected. In the case of marriage we see the expected increase in average satisfaction by 0.35 for females and 0.34 for males in the year following the wedding as compared to the year preceding the wedding. Looking only at descriptive data, both females and males manage to stay on a higher average level of life satisfaction even after more than five years. While women after two years then seem to partially return to their baseline level of happiness, it looks as if men are do slightly better in remaining on a higher level after marriage. In the case of divorce, both women and men are already relatively unhappy before the event. Relative to their baseline level, women experience a brief decline and a fast recovery while men seem to experience a long-lasting negative effect of being and staying divorced. Particularly surprising are the gender-specific results for widowhood. For this on average elder age cohort, we would expect gender roles to be most traditional (compare Rudolf, 2011). Men are happier than women by about 0.3 units in the years preceding the event. After becoming widowed, women's life satisfaction increases while that of men suffers a brief decline, but then seems to recover rather fast. Thus, we do not observe serious negative effects of widowhood, and if so, only for men.

[Table 3 about here]

Next, we are interested in labor market events. Considering unemployment effects, it seems that there is some anticipation of unemployment in the preceding year both for women and men. When getting unemployed, average life satisfaction of women drops by 0.15 and that of men by 0.27 as compared to one to two years before the event. Women seem to quickly adapt to unemployment, returning to the old level when being unemployed for one or more years. Men, on the other hand, recover only partially even after two or more consecutive years of unemployment.[7] The next two columns of Table 3 refer to the time around a graduate's first job entry. In the case of females, we see a gradual increase in life satisfaction after leaving school, college or university and entering their first job. Growing experience, a better standing in the company, and higher income might be potential explanations. The increase observed for males is comparable; however, their initial happiness increase in the year of starting the first job is stronger. This might be due to higher performance expectations and related social pressure on men as future main breadwinners.[8]

The last two columns of Table 3 show the effect of the reduction in working days on satisfaction with working hours. We see that while there is a general upward trend in hours satisfaction due to gradual working hours reductions that took place in Korea during the time of our study, there is a particularly strong effect when working days are reduced from above five to five days a week.[9]

## 3.2 Anticipation and Adaptation Model

In order to capture the intertemporal effects of the discussed events in a multivariate regression framework, we estimate the following empirical model. We use life and hours satisfaction as our main response variables. As Ferrer-i-Carbonnel and Frijters (2004) point out, assuming cardinality or ordinality of the satisfaction measure does produce very similar results. In order to be able to better interpret the magnitude of the impact of, and adaptation to the events followed in this study, and to assign monetary values, we will use linear fixed-effects estimation as our main technique and use fixed-effects ordered logit estimators for consistency checks. Controlling for fixed-effects is essential in satisfaction models since

[7] The extremely low levels of unemployment in general and long-term unemployment in particular found in our data restrict the analysis of the effect of long-term unemployment on life satisfaction.

[8] While young men are supposed to have a secure job and income before being able to marry, women often have to give up their career for family duties after marriage (Lee et al., 2008).

[9] For more information on working hours reduction see Rudolf (2011).

unobserved personality traits are likely to be correlated with certain decisions that appear on the right hand side of the equation, such as employment and marital status (Clark, 2003; Stutzer and Frey, 2006).

Satisfaction *S* of individual *i* in period *t* is modeled as follows:

$$S_{it} = LE_{it}\beta + X_{it}\gamma + u_i + \eta_t + \varepsilon_{it}, \quad i = 1, \dots, N \quad t = 1, \dots, T \tag{1}$$

where $LE_{it}$ is a vector containing a set of binary lead and lag variables to control for the intertemporal effect of a certain life or labor market event.

$$LE_{it} = (LE_{-4,it}, LE_{-3,it}, LE_{-2,it}, LE_{-1,it}, LE_{0,it}, LE_{1,it}, LE_{2,it}, LE_{3,it}, LE_{4,it}, LE_{5,it})' \tag{2}$$

$X_{it}$ is a vector of standard control variables in satisfaction models, including individual and household demographic and socio-economic variables. $u_i$ is individual *i*'s fixed effect, $\eta_t$ controls for year effects, and $\varepsilon_{it}$ is an i.i.d. error term. Since it is very likely that $E(u_i, X_{it}) \neq 0$ and $E(u_i, LE_{it}) \neq 0$, we should estimate this model using a fixed-effects estimator in order to yield consistent estimates of the model parameters $\beta$ and $\gamma$. In order to yield gender-specific estimates we will run the regressions separately for men and women.

While the basic model is estimated by linear fixed-effects, for consistency checks we will then also use the FF-estimator (Ferrer-i-Carbonell and Frijters, 2004) and the BUC-estimator (Baetschmann, Staub and Winkelmann, 2011) which estimate fixed-effects in the presence of an ordinal dependent variable. The FF-estimator was recently used by Booth and van Ours (2008; 2009) for their study of working hours and life satisfaction in Germany and Australia. We will use the "mean version" of the estimator in our analysis. Very recently, Baetschmann, Staub and Winkelmann (2011) proposed the BUC-estimator and they show in Monte-Carlo simulations that it performs best among a set of fixed-effects ordered logit estimators.

## 3.3 Intra-Marriage Gender Happiness Gap Model

In order to examine closer the drivers of a potential gender-specific impact of marriage, we use an intra-household bargaining model as a methodological starting point. According to these models, women are able to increase their relative bargaining power within the household as soon as their share in total earnings rises (Haddad, Hoddinott, and Alderman,

1997). Related to higher female income is a more credible divorce threat, leaving a woman with a viable alternative in case of an unsatisfying marriage.

Thus we would expect the utility difference, $Udiff_j$, between husband and wife of couple *j* to decrease with the wife's share $\tau_j$ in total couple earnings: $\frac{\partial Udiff_j}{\partial \tau_j} < 0$.

Another related hypothesis is that of Akerlof and Kranton (2000) who introduce the psychological-sociological concept of "identity" into an economic model of behavior. In their model, individual *i*'s identity or self image, $I_i$, depends on own actions, $a_i$, other's actions, $a_{-i}$, the assigned gender, $sex_i$, own given characteristics, $\varepsilon_i$, and the social ideal of the assigned gender (gender prescription), *P*.

$$I_i = I_i(a_i, a_{-i}, sex_i, \varepsilon_i, P)$$

Individual well-being, $U_i$, then depends on own actions, $a_i$, other's actions, $a_{-i}$, and own identity.

$$U_i = U_i(a_i, a_{-i}, I_i)$$

Complying with expected gender behavior is rewarded, while non-compliance can have a negative effect on own utility. This leads us to the following regression model where we regress satisfaction of wife, husband, the sum of the two and their difference in separate regressions on own occupation, spouse's occupation, and a set of bargaining variables, $bargain_{it}$, namely the share of women in total couple earnings, as well as the husband-wife age and education (years of schooling) differences. We add a number of standard household demographic and socio-economic controls. We would expect social prescriptions to reward men relatively more when these are main breadwinners and have a higher share of earnings.[10]

The regression model for the life satisfaction husband-wife difference of partner *i* is denoted as follows:

$$S_{diff,it} = ownocc_{it}\beta + spouseocc_{it}\gamma + bargain_{it}\delta + X_{it}\lambda + u_i + \eta_t + \varepsilon_{it} \qquad (3)$$

where $ownocc_{it}$ and $spouseocc_{it}$ are own and spouse's occupation for partner *i* in period *t* and $X_{it}$ is a vector of further controls. The model in equation (3) will be estimated separately for wives, husbands, and for joint couple happiness using linear fixed-effects estimation.

[10] Further research should also include the effect of assets brought into marriage on the gender happiness differential. Traditional practice in Korea requests the groom's parents to provide the house for the new couple, while the bride's parents should provide the necessary house equipment. As the relative price of housing has been constantly on the rise, this usually entails a higher share of assets brought into marriage by the groom.

# 4. Regression Results

Table 4 shows the results of the linear fixed-effects regressions by event and sex. Anticipation only plays a minor role in most events. It is only significant in the case of both male and female unemployment and female transition to the five-day working week. Concerning impact and adaptation, our data produces interesting findings. Most events show substantial gender-specific impacts on life satisfaction. The estimates indicate full adaptation to some events, particularly for women. However, to others we see no or only partial habituation. Table 5 presents determinants of the observed intra-marriage gender happiness gap.

## 4.1 Marriage-Status-Related Events

Columns (1) to (6) of Table 4 show the effects of different changes in marital status on life satisfaction. Females experience a strong positive and significant effect in the first year after marriage. Yet, this positive effect halves one year later and disappears completely after two years from marriage, shifting women back to their baseline level of happiness. In comparison, males also experience the strongest positive effect in the year of marriage and this effect more than halves in the second year. For them, however, the effect regains in strength three years after marriage and is then sustained in the long run. The results suggest that men might benefit more from marriage than women. Full results for the event "marriage" including all covariates can be seen in Table A1 in the appendix. Here, the main findings are confirmed for the two ordered logit estimators (FF and BUC). The results provide additional evidence for the fact that life events are not randomly distributed (Stutzer and Frey, 2006). Comparing lead effects of simple ordered logit estimates in columns (1) and (5) with the fixed-effects estimates, it can be seen that among the still unmarried individuals of the same age cohort those that eventually get married are already happier several years *before* marriage. Thus, those with happier personality traits are more likely to marry.[11] While this confirms once more the importance to control for fixed effects to avoid potential selection bias, the comparison of different estimators also indicates that the choice of the fixed-effects estimator does not change the main results.

[11] Full results are only displayed for the event "marriage" here because of space limitations. They can be obtained for all other events from the authors on request. Examining potential selection effects for the case of divorce, we find that unhappier female personality traits are more likely to get divorced, a finding that does not hold for men in our data.

[Table 4 about here]

Bearing in mind the additional marital benefits for men, results for divorce and widowhood can be better understood. In general, results suggest that men suffer much more from marital dissolution. When getting divorced, women experience a short negative effect in the first year following divorce but quickly manage to recover.[12] Men experience a twice as strong negative initial effect, and when staying divorced never return to their marital level of happiness within the observed time frame. Results on widowhood also differ between men and women. While widowed men show a transient negative effect and full adaptation thereafter, widowed women on average show no negative effect after their spouses pass away. They experience, if anything, small positive effects between the second and the fourth year after the event.[13]

These results are particularly interesting when comparing them to the findings of Clark et al. (2008) and Clark and Georgellis (2010) for German and British women and men. In their analyses of more gender-equal societies, they do not find significant gender differences in adaptation to marriage-related events. Both women and men adjust to the positive (negative) effects of marriage (widowhood) rather quickly and return to their baseline happiness within a similar time horizon as that of our paper. Only in the long run (five or more years) do they find significant negative effects for women. In the case of divorce, German and British women and men show strong negative effects before getting divorced and then increase their happiness gradually after. Here also, no specific gender effects were established. Therefore, Korean results do significantly differ from what has been found so far in the literature.

In a next step, we want to visualize the magnitude of the gender happiness gap. Thus, we assign monetary values to the effect, as has been done, for example, by Oswald and Powdthavee (2008) in the case of calculating compensation payments for disabled people. When looking at column (8) of Table A1 in the appendix, we see that the average long-run happiness shift for men is at around 0.15. This conservative calculation is almost double the effect of living in one's own house (.083), and it is equivalent to approximately a 300 percent increase in per-capita household income (assuming that we could raise only male per-capita

[12] Note that if the woman has been a housewife throughout marriage, she is entitled to receive 30 percent of the wealth accumulated during marriage when divorce takes place within the first 10 years, and 40-50 percent thereafter. Wealth that was already formed before marriage goes to the partner who brought it into marriage. In the case of female widowhood, she is treated with a factor of 1.5, and each child of 1. Thus the woman receives about 43 percent of total inheritance in the case of one daughter and one son.

[13] Of course, the latter results of widowhood focus on the eldest generation and cannot be generalized for younger marriages. Gender inequality is likely to be highest in the eldest generation (see also Rudolf, 2011).

household income). Since the mean of log annual household per-capita income in our sample is equivalent to 6.08 million Korean Won (KRW) in real 2005 value, an increase of 300 percent is equivalent to an increase of about 18.2 Million KRW. Applying an average yearly exchange rate of 1,024 KRW/$US in 2005, this is equivalent to the happiness effect (exclusively for the husband) of raising yearly per-capita household income by approximately US$17,800.

## 4.2 Labor Market Events

Columns (7) to (12) of Table 4 show estimation results for effects of unemployment, first job entry, and the introduction of the five-day working week on happiness. Unemployment and its long-run effects can only partially be analyzed with the help of Korean data. The dynamic nature of Korea's labor market and the virtual absence of public unemployment insurance both result in a very low number of long-term unemployed. Thus we had to reduce the number of lag categories in our model. Still, the results suggest partial adjustment for women already after more than one year of unemployment. Men seem to not adjust over the limited time horizon. Their negative satisfaction response does not diminish in size after two or more years of continuous unemployment, it rather increases slightly. This is in line with Jang et al. (2009) who show that Korean men suffer much more from depressive symptoms than their female counterparts when unemployed, early retired or out-of-labor-force.

Entering one's first job does not show significant effects on happiness, once we control for income effects. If anything, one might notice that men have rather positive coefficients and women only negative ones following first job entry. In the long-run we can observe a negative effect for women who stay in their first job.[14]

Finally, we look at what happens when individuals move from a six- to seven-day to a five-day working week. Effects on life satisfaction are in general rather weak. The estimates suggest slightly positive effects for men in the years after the reduction in working days. Women do not show significant effects after the reduction. Table A2 in the appendix examines this satisfaction response in more detail. It reports the results of the same model; only now, results are additionally estimated with hours and job satisfaction as dependent

[14] Direct gender discrimination in the Korean labor market not only takes the form of significant gender wage differentials but also manifests itself through unequal promotion chances (Lee et al., 2008).

variables.[15] The results show that while women experience no effect on either of the three satisfaction measures, men show positive responses in both their satisfaction with working hours and their overall job satisfaction. The latter indicators show positive and significant effects starting one to two years before the actual reduction; these then last in the long-run. Thus, we cannot reject non-adaptation to the observed working days reduction for men.[16] It seems that men, who, on average, show higher labor force participation and work more days and hours than women, benefited more from the introduction of one additional leisure day per week.

To sum up, the findings on labor market events show that men are both harder hit by unemployment and benefit more from a reduction in working days.

## 4.3 Determinants of Intra-Marriage Gender Happiness Gap

The finding of a significant intra-marriage gender happiness gap in the preceding subsections leads us to the analysis of the determinants of this gap. The results are presented in Table 5. The female share in earnings has the expected negative significant effect on the husband-wife happiness gap.[17] When women strengthen their relative bargaining position in the household, they also increase their happiness *relative* to their husbands (column (1)). However, does this effect work through an increase of female happiness or through a decrease in male happiness? As the last three columns show, the latter is the case. When female shares in earnings rise, husbands' happiness falls (column (4)). Since there is no effect for the wife (column (3)), the sum of husband's and wife's happiness is negatively affected by a relative increase in female earnings (column (2)). This result can be interpreted in two ways: On the one hand, it could be used as evidence supporting intra-household bargaining theories. The husband's happiness might have decreased because of a decrease in relative bargaining power. On the other hand, it could also provide evidence for the gender identity hypothesis. He might suffer a negative

[15] The job satisfaction question is *"Overall, how satisfied or dissatisfied are you with your main job?"*, while hours satisfaction is derived from the answer given on the aspect *"Working hours"* following the question *"How satisfied or dissatisfied are you with regard to your main job on the following aspects?"*. Both variables use the same scale as life satisfaction, i.e. from 1 ("very dissatisfied") to 5 ("very satisfied") in our analysis.

[16] Note that the result of non-adaptation does not change after introducing working hours controls. Thus, the mere shifting of working time from six or seven days to only five days a week appears to have lasting positive effects.

[17] Note that the female share in married couple earnings in our sample rose from 1998 (0.17) to 1999 (0.22), but then stagnated until 2008 (0.23).

utility effect from not meeting societal expectations. While our data does not facilitate identifying the relative importance of the two effects, we do believe that both effects play a role. Further support for the identity effect can be seen when comparing the effect of unemployment on female versus male happiness. The husband's unemployment does not only have a strong effect on male happiness, but also on female happiness. In fact, women are affected even stronger by male unemployment. Being confronted with the wife's unemployment has a much smaller effect on the household's combined happiness. Thus, gendered role prescriptions are likely to influence utility. Another interesting finding is that women seem to compare themselves more with others than men, as indicated by a much stronger negative effect of log regional per-capita income on women's happiness. Interestingly, men seem to prefer their wives to not stay at home as a housewife, but to work instead. Thus, while working by women increase male happiness, relative to when not working, a higher female earnings share is detrimental for male well-being. Women themselves seem to be indifferent between working and being a housewife.

[Table 5 about here]

## 5. Conclusion

The main aim of this paper was to provide evidence for the baseline hypothesis for a society with relatively strong traditional gender roles. Korea presents an ideal case study, since compared to its economic and human development achievements, the country still ranks very low in terms of gender equity. Our analysis revealed that the inter-temporal nature of major life and labor market events matters. While partial and full adaptation can be observed for most events, anticipation only plays a minor role. We find important gender-related differences in both impact of, and adaptation to major events. All events have a lower absolute initial impact on women's happiness. This can partly explain why women then return to their baseline happiness more quickly than men. Moreover, particularly the events related to a change in marital status provide evidence for a significant gender gap during marriage in Korea. While marriage has a strong and lasting positive effect on male happiness, females' happiness gain is limited to not more than the first two years after marriage. We find that the long-run male happiness shift due to marriage is equivalent to twice the effect of living in

one's own house and to an increase of yearly per-capita household income by approximately US$17,800. Men suffer relatively more than women from divorce and widowhood. Female widows do not show any negative effects after their partner passes away. If anything, rather small positive effects can be observed. Examining potential determinants of the intra-marriage gender happiness gap revealed that low female earnings shares provide an important explanation for the happiness gap. Two theoretical explanations can be thought of. First, financial dependence lowers relative female bargaining power in the household, which might have impacts on the intra-marital happiness distribution. Second, if societal prescriptions are such that men should have the dominant earnings share, and if social comparison matters for utility, then higher female earnings might induce lower male happiness.

With respect to unemployment, our findings suggest partial adaptation for women but no adaptation for men to unemployment in the short-run. The reduction of working days and the move towards a five-day working week shows positive effects only for men. Thus, labor market events also point towards the importance of gendered roles. Men's role as the main breadwinner might explain stronger male responses to labor market events.

Although gender roles are changing in Korea today, the fact that the married women's share in couple earnings has stagnated between 1999 (0.22) and 2008 (0.23) indicates that past reforms have not led to significant improvements for married women yet. As traditional gender roles and a highly male-dominated labor market continue to be major obstacles to the pursuit of gender equity in happiness in Korea, reforms in this area should be continued and require critical evaluation. Future reforms should ensure equal pay and equal promotion chances for women, as well as the creation of family-friendly job opportunities, particularly in high-skilled employment. In order to better separate gender-specific impacts of the event from gender-specific adaptation patterns, further research is needed.

# References


Adler, J. (2006). Daughter/Wife/Mother or Sage/Immortal/Bodhisattva? Women in the Teaching of Chinese Religions. ASIANetwork Exchange, 14(2).

Akerloff, G. A. and Kranton, R. E. (2000). Economics and identity. Quarterly Journal of Economics, 115, 715–53.

Becker, G. S. (1981). A Treatise on the Family. Cambridge, Mass.: Harvard University Press.

Baetschmann, G., Staub, K. E., and Winkelmann, R. (2011). Consistent estimation of the fixed effects ordered logit model. University of Zurich Working Paper Series.

Booth, A. L., and J. C. van Ours (2008). Job Satisfaction and Family Happiness: The Part-time Work Puzzle. Economic Journal, 118, 77-99.

Booth, A. L., and J. C. van Ours (2009). Hours of Work and Gender Identity: Does Part-time Work Make the Family Happier? Economica, 76, 176-196.

Brown, P. H. (2009). Dowry and Intrahousehold Bargaining. The Journal of Human Resources, 44(1), 25-46.

Clark, A. E. (2003). Unemployment and social norms: psychological evidence from panel data. Journal of Labor Economics, 21, 323–51.

Clark, A. E., Diener, E., Georgellis, Y., and R. E. Lucas (2008). Lags and Leads in Life Satisfaction: A Test of the Baseline Hypothesis. The Economic Journal, 118(June), F222-F243.

Clark, A. E. and Georgellis, Y. (2010). Back to Baseline in Britain: Adaptation in the BHPS.

Clasen, R. and Moon, Y.-K. (2010). Family Status, Working Experience, And Korean Women's Attitude to Feminism. Korean Studies Forum, 4, 245-266.

Ferrer-i-Carbonell, A. and P. Frijters (2004). How Important is Methodology for the Estimates of the Determinants of Happiness? Economic Journal, 114, 641-659.

Frijters, P., Johnston, D. W., and M. A. Shields (2008). Happiness Dynamics with Quarterly Life Event Data. IZA DP No. 3604. (forthcoming in Scandinavian Journal of Economics)

Gardner, J. and A. J. Oswald (2006). Do divorcing couples become happier by breaking up? Journal of the Royal Statistical Society A, 169(2), 319-336.

Haddad, L., Hoddinott, J., and Alderman, H. (Eds) (1997). Intrahousehold Resource Allocation in Developing Countries: Models, Methods and Policy. Baltimore: Johns Hopkins University Press.

Hochschild, A. R. (1989). The second shift. New York: Viking.

Jang, S-N. , Cho, S-I. , Chang, J., Boo, K., Shin, H-G. , Lee, H., and L. F. Berkman, (2009). Employment status and depressive symptoms in Koreans: results from a baseline survey of the Korean longitudinal study of aging. Journal of Gerontology: Social Sciences, 64B(5), 677–683.

Kang, S.-J. (2010). The Analysis on the Determinants of Life Satisfaction in Korea. Kyongjehak Yongu, 58(1), 5-36. (한국인의 생활만족도 결정요인 분석, in Korean)

Kim, S.-K. (2007). Family, Gender, and Sexual Inequality. In: Kim, H.-R. and Song, B. (2007): Modern Korean Society: its development and prospect. 131-157. U California, Berkeley: Institute of East Asian Studies.

Lee, M. (1998). Women's Education, Work, and Marriage in Korea: Women's Lives Under Institutional Conflict. Doctoral Thesis, Seoul: Seoul National University Press.

Lee, S.-H. (2008). Preferences and Choice Constraints in Marital Sorting: Evidence from Korea. Stanford Institute for Economic Policy Reasearch Discussion Paper 07-042.

Lee, B. S., Jang, S., and J. Sarkar (2008). Women's labor force participation and marriage: The case of Korea. Journal of Asian Economics, 19, 138–154.

Lise, J. and S. Seitz (2011). Consumption Inequality and Intra-household Allocations. Review of Economic Studies, 78, 328-355.

Lykken and Tellegen (1996). Happiness is a Stochastic Phenomenon. Psychological Science, 7(3), 186-189.

OECD (2011). Society at a Glance 2011: OECD Social Indicators, OECD Publishing. http://dx.doi.org/10.1787/soc_glance-2011-en

OECD (2011). OECD Statistics online (stats.oecd.org).

Oswald, A. J. and N. Powdthavee (2008). Does happiness adapt? A longitudinal study of disability with implications for economists and judges. Journal of Public Economics, 92, 1061-1077.

Phipps, S. and P. Burton (1998). What's Mine is Yours? The Influence of Male and Female Incomes on Patterns of Household Expenditure. Economica, 65, 599-613.

Rogers, S. J., DeBoer, D. D. (2001). Changes in Wives' Income: Effects on Marital Happiness, Psychological Well-Being, and the Risk of Divorce. Journal of Marriage and Family, 63(2), 458-472.

Ross, C. E., Mirowsky, J., and K. Goldsteen (1990). The impact of family on health: The decade in review. Journal of Marriage and the Family, 52, 1059-1078.

Rudolf, R. (2011). The Gender-Specific Effect of Working Hours on Family Happiness in South Korea. CRC-PEG Discussion Paper No. 77, University of Göttingen.

Stutzer, A. and B. Frey (2006). Does marriage make people happy, or do happy people get married? The Journal of Socio-Economics, 35, 326-347.

UNDP (2005). Korean Human Development Report on Gender.

UNDP (various years). Human Development Report.

World Economic Forum (2010). The Global Gender Gap Report 2010.

# Figures and Tables

Table 1: Gender Gap in Korea in Cross-Country Comparison

| | Norway | Germany | Korea | Spain | UK | Singapore | Mexico | Turkey |
|---|---|---|---|---|---|---|---|---|
| *Ranking by indicator* | | | | | | | | |
| HDI rank 2010 (out of 169 countries) | 1 | 10 | 12 | 20 | 26 | 27 | 56 | 83 |
| GNI per capita (PPP 2008 $) | 58,810 | 35,308 | 29,518 | 29,661 | 35,087 | 48,893 | 13,971 | 13,359 |
| | | | | | | | | |
| GII rank 2008 (of 169) | 5 | 7 | 20 | 14 | 32 | 10 | 68 | 77 |
| GEM rank 2009 (of 109) | 1 | 9 | 61 | 11 | 15 | 16 | 39 | 101 |
| GGG rank 2010 (of 134) | 2 | 13 | 104 | 11 | 15 | 56 | 91 | 126 |
| Average rank of three gender indicators | 2.67 | 9.7 | 61.7 | 12 | 20.7 | 27.3 | 66 | 101.3 |
| | | | | | | | | |
| *Ratio female to male (2010 data)* | | | | | | | | |
| Population with at least secondary education (25 or older) | 1.00 | .98 | .87 | .94 | 1.01 | .88 | .91 | .58 |
| Tertiary enrollment rate | 1.62 | 1 | .69 | 1.24 | 1.40 | - | .98 | .78 |
| Labor force participation rate | .94 | .87 | .73 | .77 | .84 | .74 | .55 | .35 |
| Wage equality for similar work | .75 | .61 | .52 | .52 | .67 | .80 | .54 | .57 |
| Legislators, senior officials, and managers | .46 | .61 | .11 | .48 | .53 | .46 | .44 | .11 |
| Professional and technical workers | 1.06 | 1.01 | .69 | .98 | .90 | .82 | .70 | .54 |
| Seats in parliament | .66 | .49 | .17 | .58 | .28 | .31 | .36 | .10 |
| Time spent in housework | 1.48 | 1.64 | 5.05 | 2.75 | 1.82 | - | 3.31 | 3.24 |

Sources: WEF 2010; UNDP 2009, 2010; OECD 2011.

Table 2: Distribution of Life Satisfaction by Sex

| | Females | | Males | |
|---|---|---|---|---|
| | # of obs | Percentage | # of obs | Percentage |
| 1 (very dissatisfied) | 798 | 1.5 | 867 | 1.7 |
| 2 (dissatisfied) | 6,281 | 11.9 | 6,197 | 12.0 |
| 3 (neither satisfied nor dissatisfied) | 29,572 | 55.8 | 29,243 | 56.5 |
| 4 (satisfied) | 15,928 | 30.1 | 15,070 | 29.1 |
| 5 (very satisfied) | 426 | .8 | 429 | .8 |
| Total | 53,005 | 100 | 51,806 | 100 |
| Mean | 3.17 | | 3.15 | |
| S.D. | .70 | | .70 | |

Note: Statistics calculated for those aged 16-60. Data: KLIPS 1998-2008

Table 3: Average Life Satisfaction of Leads and Lags by Event and Sex

| | Marriage | | Divorce | | Widowhood | | Unemployment | | First Job Entry | | 5-Day Working | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *Females* | *Males* | *Females* | *Males* | *Females* | *Males* | *Females* | *Males* | *Females* | *Males* | *Females* | *Males* |
| *Leads* | | | | | | | | | | | | |
| 3-4 years hence | 3.21 (314) | 3.08 (289) | 2.96 (69) | 2.89 (72) | 2.76 (180) | 3.05 (39) | 2.98 (119) | 3.00 (211) | 3.19 (253) | 3.08 (150) | 3.31 (96) | 3.41 (345) |
| 2-3 years hence | 3.21 (373) | 3.17 (331) | 2.94 (83) | 3.04 (81) | 2.81 (187) | 3.23 (53) | 3.00 (153) | 2.98 (285) | 3.22 (318) | 3.13 (208) | 3.38 (112) | 3.45 (399) |
| 1-2 years hence | 3.20 (427) | 3.16 (372) | 2.85 (82) | 2.93 (85) | 2.84 (237) | 3.02 (60) | 2.97 (201) | 2.99 (400) | 3.19 (374) | 3.13 (249) | 3.32 (157) | 3.46 (493) |
| Within the next year | 3.21 (519) | 3.19 (462) | 2.84 (103) | 2.97 (99) | 2.78 (255) | 3.08 (62) | 2.88 (283) | 2.89 (589) | 3.20 (461) | 3.12 (364) | 3.36 (159) | 3.49 (503) |
| *Lags* | | | | | | | | | | | | |
| 0-1 years | 3.56 (316) | 3.53 (341) | 2.67 (72) | 2.65 (66) | 2.90 (236) | 2.89 (62) | 2.82 (285) | 2.72 (601) | 3.26 (457) | 3.27 (356) | 3.44 (167) | 3.54 (497) |
| 1-2 years | 3.52 (396) | 3.43 (383) | 2.81 (70) | 2.86 (73) | 3.03 (230) | 3.07 (46) | | 2.69 (65) | 3.31 (238) | 3.36 (166) | 3.51 (164) | 3.51 (502) |
| 2-3 years | 3.40 (385) | 3.44 (337) | 2.88 (66) | 2.72 (69) | 3.05 (193) | 2.93 (45) | | | 3.37 (138) | 3.36 (122) | 3.60 (111) | 3.62 (342) |
| 3-4 years | 3.37 (342) | 3.48 (297) | 2.90 (58) | 2.91 (54) | 3.07 (163) | 3.14 (36) | | | 3.40 (121) | 3.40 (97) | 3.62 (76) | 3.67 (240) |
| 4-5 years | 3.36 (310) | 3.48 (275) | 2.94 (48) | 2.73 (40) | 3.08 (130) | 3.11 (35) | | | 3.45 (77) | 3.43 (80) | 3.57 (37) | 3.65 (135) |
| 5 or more years | 3.40 (790) | 3.50 (613) | 3.01 (73) | 2.76 (68) | 3.10 (262) | 3.22 (55) | | | 3.44 (108) | 3.51 (105) | 3.50 (38) | 3.67 (85) |
| 1 or more years | | | | | | | 3.00 (12) | | | | | |
| 2 or more years | | | | | | | | 2.87 (15) | | | | |

Notes: Numbers of observations are calculated for individuals aged 16-60 (except for widowhood 16-80) and displayed in brackets. Data: KLIPS 1998-2008.

Table 4: Effect of Life and Labor Market Events on Life Satisfaction

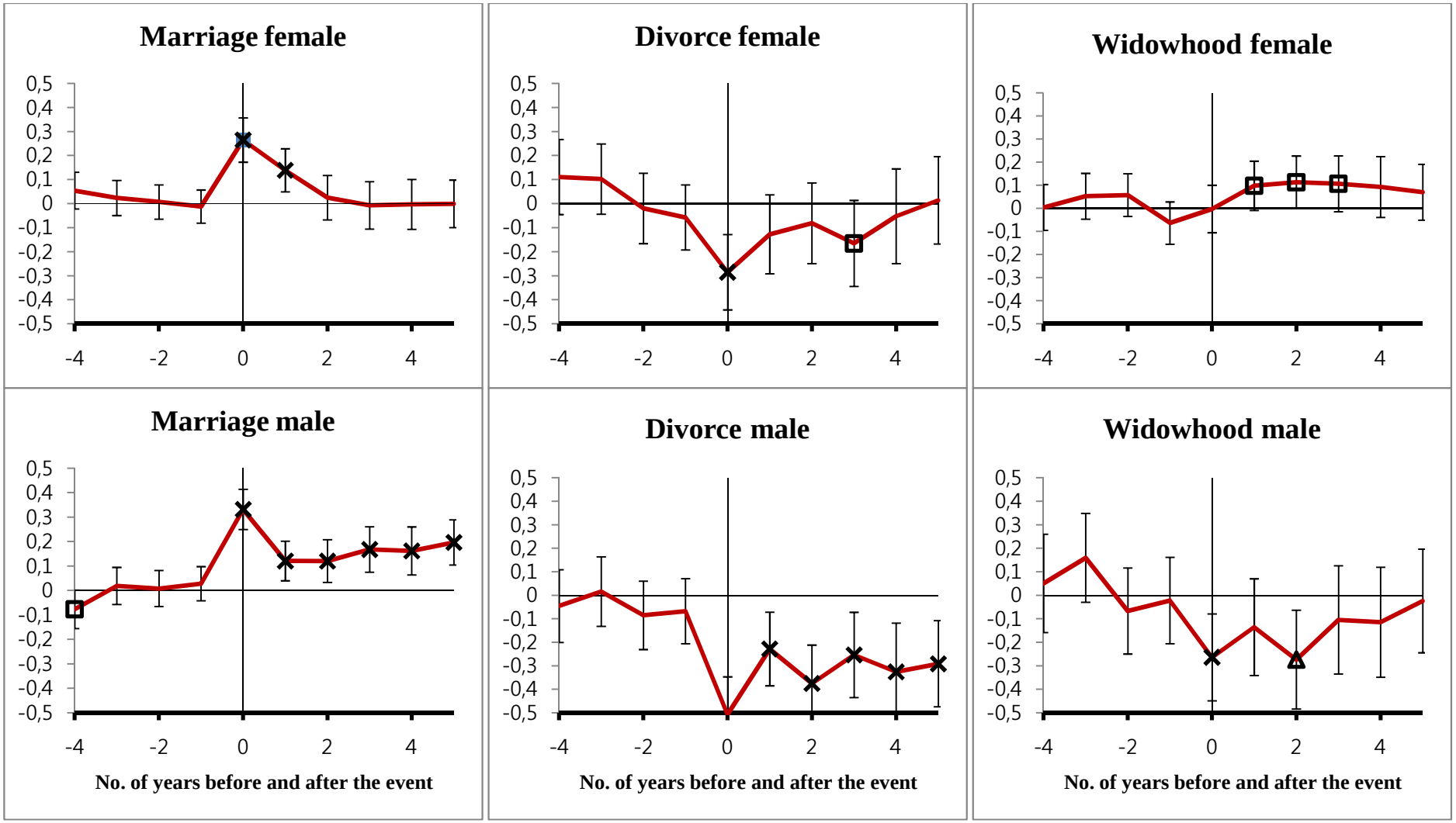
| | Marriage | | Divorce | | Widowhood | | Unemployment | | First Job Entry | | 5-Day Working | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *Females* | *Males* | *Females* | *Males* | *Females* | *Males* | *Females* | *Males* | *Females* | *Males* | *Females* | *Males* |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
| *Leads* | | | | | | | | | | | | |
| 3-4 years hence | .054 | -.077* | .111 | -.046 | .004 | .051 | -.002 | .045 | -.034 | -.063 | -.067 | .020 |
| 2-3 years hence | .023 | .019 | .102 | .016 | .053 | .159* | .007 | -.005 | -.010 | -.015 | -.041 | .034 |
| 1-2 years hence | .007 | .008 | -.020 | -.085 | .058 | -.067 | -.027 | -.011 | -.038 | -.028 | -.118** | .019 |
| Within the next year | -.012 | .028 | -.057 | -.068 | -.064 | -.022 | -.096** | -.058** | -.024 | -.006 | -.092 | .031 |
| *Lags* | | | | | | | | | | | | |
| 0-1 years | .264*** | .332*** | -.286*** | -.507*** | -.003 | -.264*** | -.190*** | -.278*** | -.050 | .032 | -.051 | .060* |
| 1-2 years | .138*** | .121*** | -.128 | -.228*** | .098* | -.136 | | -.249*** | -.041 | .051 | -.024 | .012 |
| 2-3 years | .025 | .120*** | -.082 | -.375*** | .113* | -.274** | | | -.033 | -.011 | .039 | .067* |
| 3-4 years | -.007 | .168*** | -.166* | -.254*** | .106* | -.105 | | | -.039 | .066 | -.009 | .069 |
| 4-5 years | -.004 | .162*** | -.052 | -.326*** | .092 | -.115 | | | -.056 | .044 | -.067 | .061 |
| 5 or more years | -.001 | .197*** | .014 | -.291*** | .070 | -.024 | | | -.186*** | .122 | -.051 | .005 |
| 1 or more years | | | | | | | -.103 | | | | | |
| 2 or more years | | | | | | | | -.314* | | | | |
| Observations | 45,049 | 43,953 | 50,014 | 48,799 | 59,282 | 56,639 | 49,953 | 46,284 | 42,633 | 41,527 | 11,046 | 24,923 |
| Individuals | 5,923 | 6,087 | 6,798 | 6,946 | 7,609 | 7,637 | 6,823 | 6,619 | 6,703 | 6,836 | 2,156 | 3,902 |

Notes: Linear fixed-effects estimator. Other control variables include 5-year-age-cohorts, dummies for household head and spouse, years of schooling, household size, number of young (0-14 years) and old (15-30 years) children in the household, number of old females and males in the household, dummies for marital status, log per-capita household income, log per-capita regional income, house ownership, 14 regional dummies, 10 year dummies, dummies controlling for current occupation status. ***/**/* indicate a parameter estimate is significant at the 1%/5%/10% level. Data: KLIPS 1998-2008.

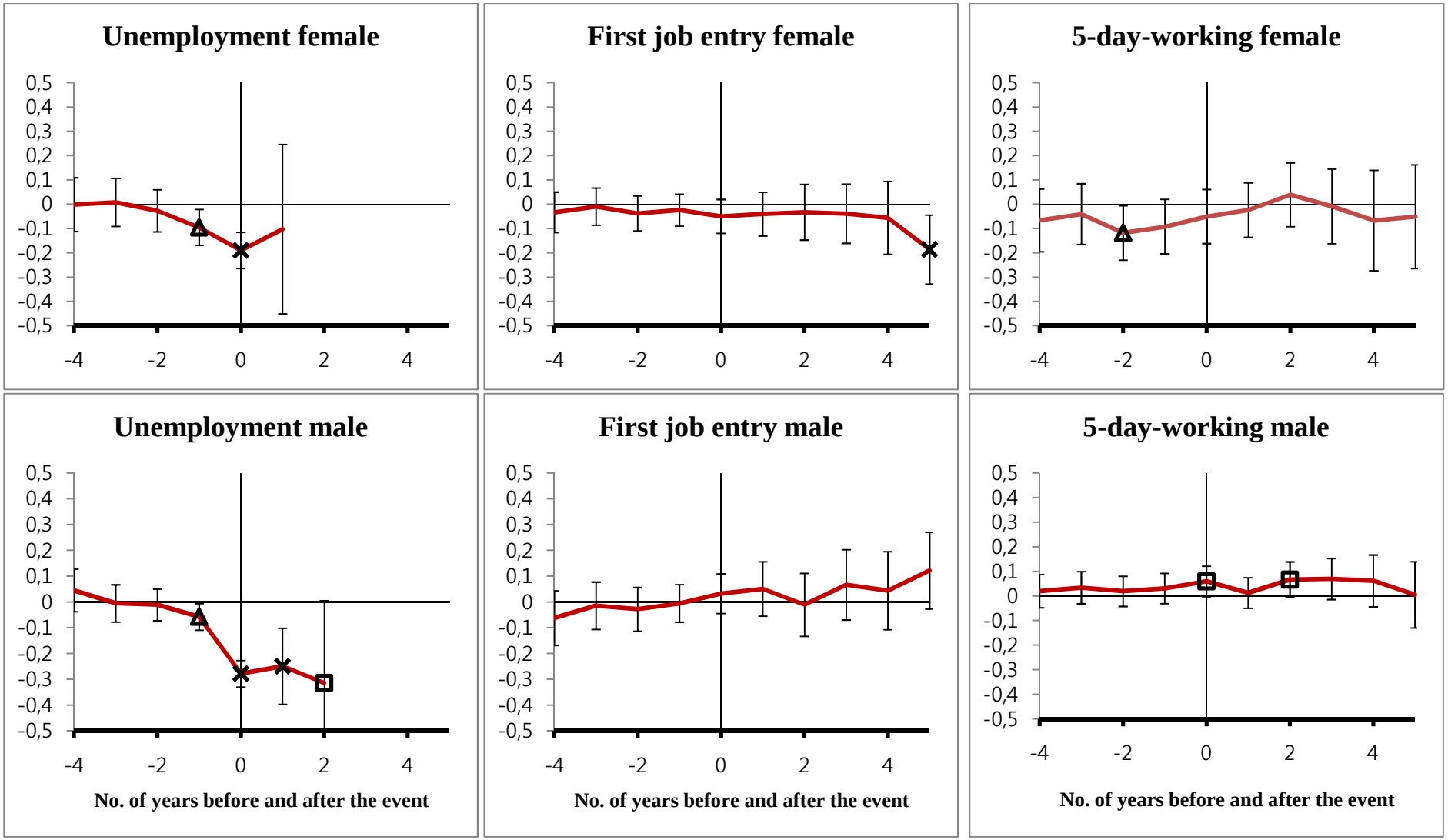
Table 5: Intra-Marriage Happiness Inequality

| Dep. Variable: Life satisfaction - | Difference (husb-wife) | Sum (husb+wife) | Wife | Husband |
|---|---|---|---|---|
| ***Relation (husband to wife)*** | | | | |
| Female share earnings | -.163*** | -.144** | .009 | -.154*** |
| Age difference | -.036* | .042 | .039** | .003 |
| Years of schooling difference | -.005 | .002 | .003 | -.001 |
| ***Wife's occupation*** | | | | |
| Hours 1-30 | -.020 | -.072** | -.026 | -.046** |
| Hours 31-40 | -.005 | .016 | .011 | .005 |
| Hours 51-60 | .022 | .020 | -.001 | .021 |
| Hours 60+ | -.036* | -.008 | .014 | -.022 |
| Housewife | -.069*** | -.072** | -.001 | -.071*** |
| Unemployed | -.045 | -.394*** | -.175*** | -.220*** |
| Retired | -.066 | .082 | .074 | .008 |
| In education | -.288*** | .206 | .247** | -.041 |
| Illness | -.028 | -.266*** | -.119** | -.147*** |
| Other occup | -.022 | -.124** | -.051 | -.073** |
| ***Husband's occupation*** | | | | |
| Hours 1-30 | -.005 | -.181*** | -.088*** | -.093*** |
| Hours 31-40 | -.020 | -.013 | .003 | -.017 |
| Hours 51-60 | -.001 | -.066*** | -.033*** | -.033*** |
| Hours 60+ | -.018 | -.022 | -.002 | -.020 |
| Houseman | .124 | -.095 | -.109 | .015 |
| Unemployed | .060 | -.712*** | -.386*** | -.326*** |
| Retired | .143*** | -.113 | -.128*** | .015 |
| In education | -.012 | -.098 | -.043 | -.055 |
| Illness | .034 | -.352*** | -.193*** | -.159*** |
| Other occup | .006 | -.294*** | -.150*** | -.144*** |
| ***Other controls*** | | | | |
| No of children 0-14 | .012 | -.041** | -.027*** | -.014 |
| No of children 15-30 | .009 | -.035** | -.022*** | -.013 |
| Years of schooling wife | -.012 | .007 | .009 | -.003 |
| Log per-capita hh income | -.006 | .103*** | .055*** | .048*** |
| Log per-capita reg income | - | -.246*** | -.151*** | -.095* |
| Own house | .004 | .136*** | .066*** | .070*** |
| Constant | .026 | 7.016*** | 3.674*** | 3.342*** |
| Observations | 27,559 | 27,559 | 27,559 | 27,559 |
| Individuals | 4,977 | 4,977 | 4,977 | 4,977 |

Notes: Linear fixed-effects estimation. Other control variables include 5-year-age-cohorts, 14 regional dummies and 10 year dummies. ***/**/* indicate a parameter estimate is significant at the 1%/5%/10% level. Reference category for occupation status: Working 41-50 hours a week. Data: KLIPS 1998-2008.




×... significant at the 1% level; Δ... significant at the 5% level; □... significant at the 10% level




×... significant at the 1% level; Δ... significant at the 5% level; □... significant at the 10% level

# Appendix

Table A1: Effect of First Marriage on Life Satisfaction

| | *Females* | | | | *Males* | | | |
|---|---|---|---|---|---|---|---|---|
| | Ologit | BUC | FF | FE-OLS | Ologit | BUC | FF | FE-OLS |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| ***Transition to mar*** | | | | | | | | |
| ***Leads*** | | | | | | | | |
| 3-4 years hence | .296** | .189 | .125 | .054 | -.042 | -.290* | -.159 | -.077* |
| 2-3 years hence | .194* | .091 | -.054 | .023 | .195* | .045 | .072 | .019 |
| 1-2 years hence | .160 | .049 | -.092 | .007 | .172 | .003 | .079 | .008 |
| Within next year | .170* | -.074 | -.180 | -.012 | .195** | .115 | .059 | .028 |
| ***Lags*** | | | | | | | | |
| 0-1 years | 1.30*** | 1.03*** | .989*** | .264*** | 1.55*** | 1.33*** | 1.34*** | .332*** |
| 1-2 years | .573*** | .509** | .377** | .138*** | .690*** | .529*** | .450*** | .121*** |
| 2-3 years | .091 | .093 | .039 | .025 | .703*** | .497*** | .414** | .120*** |
| 3-4 years | -.011 | -.076 | -.194 | -.007 | .791*** | .691*** | .684*** | .168*** |
| 4-5 years | -.022 | -.032 | -.183 | -.004 | .707*** | .679*** | .599*** | .162*** |
| 5 or more years | .088 | -.045 | -.117 | -.001 | .800*** | .831*** | .724*** | .197*** |
| ***Oth mar stat*** | | | | | | | | |
| Other married | .195** | -.688** | -.915*** | -.186*** | .503*** | .125 | .059 | .037 |
| Seperated | -.804*** | -1.39*** | -1.52*** | -.403*** | -.644*** | -.899** | -.722** | -.227*** |
| Divorced | -.481*** | -.880*** | -1.04*** | -.232*** | -.513*** | -.862*** | -.749*** | -.219*** |
| Widowed | .006 | -.605* | -.719** | -.174** | -.099 | -.890** | -1.30*** | -.234** |
| ***Individual*** | | | | | | | | |
| Years schooling | .122*** | .048** | .046*** | .011*** | .129*** | .022 | .032* | .004 |
| Working | .300*** | .330*** | .334*** | .090*** | .518*** | .502*** | .454*** | .132*** |
| Housewife | .541*** | .352*** | .324*** | .097*** | -.048 | .070 | .056 | -.001 |
| Retired | .629*** | .486*** | .405*** | .131*** | .240** | .038 | -.004 | .013 |
| Illness | -.122 | -.019 | -.019 | -.011 | -.507*** | -.407*** | -.488*** | -.128*** |
| In education | .556*** | .532*** | .538*** | .140*** | .600*** | .291*** | .258*** | .082*** |
| Unemployed | -.516*** | -.259** | -.287** | -.093*** | -.688*** | -.489*** | -.482*** | -.155*** |
| ***Household*** | | | | | | | | |
| Log hh pci | .349*** | .167*** | .163*** | .049*** | .316*** | .162*** | .164*** | .048*** |
| Log reg pci | -.783*** | -.686*** | -.783*** | -.202*** | -.552*** | -.524*** | -.656*** | -.159*** |
| Own house | .030*** | .344*** | .327*** | .089*** | .584*** | .322*** | .290*** | .083*** |
| HH Size | .0001 | -.009 | -.014 | .0004 | .034** | .039 | .033 | .013** |
| Head | .435*** | .466*** | .461*** | .139*** | .414*** | .516*** | .434*** | .149*** |
| Spouse | .439*** | .371** | .378*** | .099*** | .428 | .776 | .201 | .197* |
| No of child 0-14 | -.017 | -.015 | .006 | -.006 | .006 | -.032 | -.013 | -.008 |
| No of child 15-30 | -.060** | -.047 | -.047 | -.014* | -.002 | -.029 | -.031 | -.008 |
| No of old females | .041 | .048 | .040 | .005 | -.033 | -.020 | -.032 | -.010 |
| No of old males | -.143** | -.093 | -.055 | -.031 | -.203*** | -.358*** | -.344*** | -.088*** |
| Log likelihood | -42,463 | -22,902 | -17,353 | - | -41,128 | -21,810 | -16,430 | - |
| Observations | 45,049 | 63,907 | 41,947 | 45,049 | 43,953 | 61,583 | 40,482 | 43,953 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Individuals | - | 29,024 | 5,170 | 5,923 | - | 27,372 | 5,274 | 6,087 |
| Clusters | 5,923 | 5,231 | - | - | 6,087 | 5,324 | - | - |

Notes: All regressions include 5-year-age-cohorts, 14 regional and 10 year dummies. Pooled cross-sectional ordered logit specifications in (1) and (5) include age and age2 instead of age cohorts. These specifications' standard errors were corrected for clustering of observations. ***/**/* indicate a parameter estimate is significant at the 1%/5%/10% level. Reference never married and in other occupations. Data: KLIPS 1998-2008.

Table A2: Effect of Working Days Reduction on Different Satisfaction Measures

| | *Females* | | | *Males* | | |
|---|---|---|---|---|---|---|
| | Life Satisfation | Hours Satisfaction | Job Satisfaction | Life Satisfation | Hours Satisfaction | Job Satisfaction |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Other five-day | -.041* | .134*** | .029 | .014 | .129*** | .029* |
| Below five day | -.050 | .063* | -.041 | -.065*** | -.015 | -.098*** |
| ***Leads*** | | | | | | |
| 3-4 years hence | -.067 | -.090 | .057 | .020 | -.005 | .002 |
| 2-3 years hence | -.041 | -.030 | .082 | .034 | .032 | -.030 |
| 1-2 years hence | -.118** | -.031 | .012 | .019 | .112*** | .041 |
| Within the next year | -.092 | -.011 | .109* | .031 | .130*** | .067* |
| ***Lags*** | | | | | | |
| 0-1 years | -.051 | -.032 | -.006 | .060* | .324*** | .113*** |
| 1-2 years | -.024 | .041 | .050 | .012 | .280*** | .103*** |
| 2-3 years | .039 | .018 | .101 | .067* | .255*** | .115*** |
| 3-4 years | -.009 | .095 | .092 | .069 | .272*** | .161*** |
| 4-5 years | -.067 | .058 | .081 | .061 | .195*** | .210*** |
| 5 or more years | -.051 | -.083 | -.104 | .005 | .245*** | .235*** |
| Observations | 11,046 | 11,054 | 9,725 | 24,923 | 24,975 | 21,760 |
| Individuals | 2,156 | 2,156 | 2,133 | 3,902 | 3,902 | 3,865 |

Notes: Linear fixed-effects estimator. Other control variables include 5-year-age-cohorts, dummies for household head and spouse, years of schooling, household size, number of young (0-14 years) and old (15-30 years) children in the household, dummies for marital status, log per-capita household income, log of own earnings, log per-capita regional income, house ownership, 14 regional dummies, 10 year dummies, 10 occupation and 16 industry dummies. ***/**/* indicate a parameter estimate is significant at the 1%/5%/10% level. Data: KLIPS 1998-2008; job satisfaction only 2000-2008.