Influence of age of child on differences in marital satisfaction of males and females in East Asian countries

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Abstract

Using individual-level data from China, Korea, and Japan for 2006, this research examines how the age of children of the relationship influences marital satisfaction for males and females in East Asian countries. Our results show that the marital satisfaction of males is barely affected by a child of the relationship, whereas the marital satisfaction of females with a young child is lower than that of females who do not have a child. This result holds for countries of different development stages. There is also a gender differential regarding the effect of young children on marital satisfaction. Furthermore, the more developed the country, the greater this difference becomes.

Keywords: Marital satisfaction, child, East Asian countries, probit.

JEL Classification codes: D19, J13, J16

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1. Introduction

Marital satisfaction[1] has long been a topic of interest to sociologists but not economists. Although some authors have developed economic models that offer an explanation as to why parents need to have children from an economic perspective (for example, Becker, 1981; Barro and Becker, 1989; Boldrin and Jones, 2002; Moav, 2005)[2], there has been little research on marital happiness in economic literature. Nevertheless, in recent years, a number of economists have investigated the impact of socio-economic conditions on different measures of subjective well-being (SWB), measured as self-reported levels of happiness or life satisfaction (for an excellent review, see Dolan et al., 2008). These empirical studies primarily focus on the effects of microeconomic and macroeconomic conditions on individual well-being (life satisfaction and happiness)[3]. Thus, little has been written on marital satisfaction. Children are often considered as a source of gratification in such formal literature. There is also empirical evidence from economics of happiness literature, which states that having children increases SWB (Dolan et al., 2008). However, in psychology literature, there are several studies that suggest that the presence and number of children decrease marital satisfaction (for instance, White et al., 1986; Tsang et al., 2003; Twenge et al., 2003).

There are two ways to theorize why a child influences marital happiness. First, women are expected to work hard, and devote more time and energy to their children.

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1 In formal literature, several terms are often used interchangeably to introduce the same concept: marital satisfaction, marital happiness, and marital quality. See Campbell et al. (1976) for a methodological discussion on happiness and satisfaction. In this paper, we use the term marital satisfaction because the survey specifically asks about satisfaction.

2 Children can be considered as an investment good, or may serve as cheap labor. Another reasoning to have children is to get support for the old age as a way of reducing economic uncertainty but also to secure economic, physical and emotional care.

3 Influence of happiness on various facet of modern life has been also examined. For instance, Sabatini (2011) found the positive relation between happiness and health status.

Therefore, women spend less time with their spouse, and devote more time to domestic duties (Nomaguchi and Milkie, 2003; Dew and Wilcox, 2011).[4] Second, marital satisfaction can also decline because the expectations of women regarding equitable and fair work are not met (Twenge et al., 2003; Dew and Wilcox, 2011): it may be a husband's lack of contribution to housework. Women are happier when they can share their domestic tasks and child care with their husbands (for instance, Amato et al., 2003). This may also influence their self-esteem.

The relationship between marital satisfaction and the presence of children may also vary across gender. This is especially true for women, who are often expected to take a primary care-giving role for the child. For instance, mothers in Asian cultures are tasked with the academic and social development of the child, and there are rigid norms or rules that must be carried out. This may result in her feeling taxed, and this is on the top of the biological investment the mother has made. In addition, this effect can be stronger in developed countries because there are higher expectations and perhaps less family support (female relatives who are available to help out with childcare) (see Dillon and Beechler, 2010). From this perspective, it is expected that women would experience greater dissatisfaction compared with men.

The relationship between marital happiness and children may also vary according to the age of child. The amount of time demanded by child care is greater when the child is young because infants require practically constant attention and care. Older children demand less care and spend much of their time in school. Thus, they

[4] For instance, in China domestic duties remain overwhelming for women, with no indication of a decrease (Chen, 2005).

create less of a conflicting role for parent caregivers (Kalenkoski et al., 2009; Twenge et al., 2003). Recently, in sociological literature, Dew and Wilcox (2011) examined how the presence of a child influences marital satisfaction, but not the effect that the child's age may have on marital satisfaction. Thus, the impact of the age of a child on marital satisfaction has not been fully explored in formal literature, and even less so in economic literature. We also believe that marital satisfaction declines slightly after the birth of a child, with a possible spike when the child becomes independent. In life satisfaction literature, Clark et al. (2008) used German panel data to show that parents' life satisfaction decreased over time, with higher levels at the birth of a child, and lower levels when the child is 5 years old. We can interpret this result as suggesting that the age of a child influences the parents' life satisfaction.

Finally, the majority of studies that confirm the negative impact that children have on marital satisfaction focus on individualistic countries such as the United States and Canada. Nevertheless, the relationship between children and marital satisfaction may also vary according to cultural context (for example, Dillon and Beechler, 2010). Thus, we are interested in this paper to see if this effect occurs cross-culturally, and if it can be found in collectivist cultures, which are generally found in Asia, Africa, or Latin American (Moghaddam et al., 1993).

The aim of this paper is to examine the association between children's ages and marital satisfaction using a large individual dataset from several Asian countries (China, Korea, and Japan) at different development stages. To our knowledge, this study is the first attempt at a cross-country analysis of the association between age of child and

marital satisfaction in three major Asian countries—China, Japan, and Korea. We also use compatible cross-country (individual-level) data that enables us to consistently compare the results among the countries. The key contribution of this paper is to provide a comparative approach regarding the association between age of children and marital satisfaction, and to determine whether this varies for men and women. The remainder of the paper is organized as follows.[5] The following section describes the data and empirical methodology. Section 4 reports the main empirical results and section 5 concludes.

3. Data and methodology

3.1. Data

The empirical analysis in this paper is based on micro data collected from the CGSS (China), JGSS (Japan), and KSS (Korea), which were conducted in 2006 and provided by the East Asian Social Survey Data Archive (EASSDA, 2006). These surveys provide rich information regarding respondents' demographic and socioeconomic status and other particular aspects of the surveyed country. The surveys were designed uniformly and have common questionnaires, which make them largely comparable with each other. With the aim of comparing the effect of age of child on marital satisfaction between different countries, we used the integrated EASS data collected by participating institutions in China, Korea, and Japan.[6] In the first survey

[5] Given the cross-sectional nature of the data, we are not able to provide our results in terms of cause and effect, but rather, in terms of association. Indeed, one might also argue the existence of reverse causality between children and marital satisfaction.

[6] The participating institutions in China, Korea and Japan are as follows: the Department of Sociology, Renmin University of China (Bijin); Survey Research Center, Sungkyunkwan University (Seoul); JGSS Research Center, Osaka University of Commerce (Osaka); and the Institution of Taiwan also participated in EASS. This paper attempts to compare countries representing different stages of economic development. Taiwan and Korea are considered to be at a similar level of economic development. Hence,

round, the questionnaire incorporated a special module on "Family in East Asia (EASS, 2006)". This family module questionnaire included questions concerning behaviors and attitudes of respondents toward their family members and relatives. Specifically, it focused on intergenerational support, attitudes toward the obligation to support aged parents, and attitudes to primogeniture.[7] Three survey rounds have been conducted so far.

From the three countries, China, Korea, and Japan, 7,872, 2,500, and 3,998 individuals were invited to participate in the survey, respectively. The survey collected data from 3,208 (China), 1,605 (Korea), and 2,130 (Japan) individuals, with response rates of 38.5%, 65.7%, and 59.8%, respectively. The construction of samples used in this research is shown in Table 1. Further, we exclude those who have missing values for the dependent variable, marital satisfaction. As a result, the sample included 2,586 respondents from China, 1,053 from Korea, and 1,512 from Japan, when it was limited to those who responded to the question regarding marital satisfaction.[8] Furthermore, after excluding observations from those without valid answers for key explanatory variables such as age, education, and household income, the sample size was 2,368 individuals from China, 1,008 from Korea, and 1,098 from Japan. Final sample size appears to be gender balanced across the surveyed countries (see Table 1).

Dependent variable

The outcome variable of interest is self-reported marital satisfaction. In the

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Taiwan was excluded in this paper.

7 The data was provided by the website of EASS (http://www.eass.info/about/about01.php) accessed on November 1, 2009.

8 The number of missing values excluded from the study were 622, 552, and 618 for China, Korea and Japan, respectively.

current study, we assumed that marital happiness reflects more directly and accurately perceptions regarding family-related issues. In particular, this measure derives from the respondents' answers to the question, "**Considering all things together, how would you describe your marriage? Would you say that you are very satisfied or dissatisfied with your marriage?**" on a five-point scale (1 = "strongly dissatisfied" to 5 = "strongly satisfied"). This self-reported measure assesses global satisfaction of marriage (overall happiness of marriage), but not specific aspects of marriage (e.g., extent of understanding, agreement with spouse, amount of affection and love, sexual frequency). Accordingly, the sample is limited to those who are currently married. As can be seen in Figure 1, the distribution of marital satisfaction varies across East Asian countries. In particular, the most frequent response in China, Korea, and Japan is 4 (satisfied). This tendency is especially obvious in China. Furthermore, with respect to 4 and 5 (strongly satisfied), the rates are higher for females compared with males in China, whereas those responses are lower in females than males in Korea and Japan. This suggests that there are fewer satisfied females than satisfied males in more developed countries. In other words, the degree of economic development influences the difference in marriage satisfaction between males and females, implying that socio-economic conditions should be paid careful attention when comparing marriage satisfaction rates by gender.

The distribution of marital satisfaction across the five generations (20–29 year olds, 30–39 year olds, 40–49 year olds, 50–59 year olds, and 60–69 year olds) for the three East Asian countries used in this study is displayed in Figure 2. In China, (Figure 2(a)), with the exception of those in the 60s age group, each generation represented approximately 20% of the sample. We should draw attention to the fact that there were

no respondents over 70 years old in the China sample.[9] Therefore, the average age of Chinese respondents is considered to be relatively young. As for Korea in Figure 2(b), the percentage of respondents in the younger generations, that is, those in their 20s, 30s, and 40s, are higher than rates for the older generations. In contrast, Japan's rates, shown in Figure 2(c), are higher for the older generations (respondents in their 50s, 60s, and 70s) than the younger age groups. This suggests that the Japanese respondents are older, as a whole, compared with China's and Korea's. With regard to Table 2, the rate of respondents having a child aged over 19 years is approximately 57% for Japanese respondents, whereas the rates are 44% and 34% in China and Korea, respectively. In contrast, the rate of respondents having a child younger than 12 years old is only 17% in Japan, and approximately 26% and 30% in China and Korea, respectively. The composition of the respondents' children's ages is thought to reflect the composition of the respondents' ages.

Individual variables

As referred to in the introduction, the psychological and economic costs of having a child are profoundly associated with the age of the child. For instance, the time required for active care is longer when the child is younger (see Kalenkoski et al., 2009). Thus, age of child appears to be associated with marital satisfaction. Hence, CH_12, CH13_18, and CH_19 are incorporated to capture the age of child effect.[10] The period

[9] All invited survey respondents were below 70 years old in China. Hence, there is no category for those in their 70s in Figure 2(a).

[10] The education system is similar in China, Korea, and Japan as follows: elementary school age is 6–12-year-olds. After graduating from elementary school, students advance to junior high school (3 years) and the high school (a further 3 years). This means that students usually graduate from high school at 18 years old. After completing high school, university is a further 4 years. Information regarding the education systems in China, Korea, and Japan can be accessed as follows: http://www.mext.go.jp/b_menu/hakusho/html/hpbz198103/index.html. (accessed on July 28, 2010); http://education.stateuniversity.com/pages/1400/South-Korea-EDUCATIONAL-SYSTEM-OVERVIEW.html. (accessed on July 28, 2010); and http://www.edu.cn/20041203/3123354.shtml. (accessed on July 28, 2010).

prior to a child entering junior high school is captured by CH_12, when a mother must pay special attention to child care. For instance, primary school students finish their school day early and they are too young to look after themselves. Thus, it is necessary for parents to take care of the younger children outside of school hours. After entering junior high school, children often develop into troubled teenagers, and so the relationship between child and parent enters a different stage, which is captured by CH13_18. Parents are required to make an effort to maintain a good relationship with their child, leading to higher economic and psychological costs. Once the teenage years have passed, a child becomes adult and is considered to be independent of their parents, captured by CH_19.[11] The reference group holds those who do not have any children. If the cost of raising a child is the main reason for a decrease in parents' marital satisfaction, CH_12 and CH13_18 are predicted to take the negative sign. The coefficient's absolute value of CH_12 is larger than that of CH13_18.

The levels of education between partners are usually considered as control variables in marital satisfaction literature (for instance, White and Rogers, 2000). There are a number of studies that suggest that the quality of marital relationships is positively associated with partners' education levels (e.g., Stanley et al., 2006; Halfrod et al., 2003). In this study, education level is coded as years of schooling completed by respondents and their spouses (EDU and SPEDU, respectively). Females lose a large amount of their potential income as a consequence of leaving work to give birth and raise children.[12] The higher a female's opportunity cost becomes, the higher her

[11] Once a child becomes independent, the parents' cost of having a child is thought to be invariable.

[12] In Japan, if a female university graduate returns to employment as a part-time or casual worker, her rate of lost earnings will be over 80% of her potential lifetime wages (Cabinet office, Government of

education level (Cabinet Office, Government of Japan, 2005). Hence, EDU for females and SPEDU for males are expected to take the negative sign, while the sign for EDU for males and SPEDU for females are ambiguous. In our sample, EDU is 8.4, 11.9, and 12.2 in China, Korea, and Japan, respectively. This suggests that years of schooling are greater in more developed countries.

Negative experiences like unemployment are expected to influence marital happiness. Unemployment affects individuals beyond simply income loss; it also influences people at an emotional level, and often leads to depression. The stress resulting from one partner being unemployed and the necessity of taking care of a child may also aggravate partner marital satisfaction. That is, children at home can influence the relationship between unemployment and marital satisfaction. To consider the employment status of the respondents, we included a dummy variable that takes a value of 1 when the individual is unemployed. The sign for *UNEMP* is expected to be negative.

Few studies have addressed the relationship between family income and marital happiness, and the empirical evidence is mixed. While some studies find a positive association between family income and marital happiness (Amato et al., 2003), others find no association (Amato and Rogers, 1997). To take into account family income, we included household income (HINCOM) measured as the total net income of the household from all sources. To control for age, generation dummies are included as

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Japan 2005, Ch. 3).

independent variables although they do not appear in the equation.[13] We further included regional dummies to account for unobserved characteristics of the region in which the respondent resided.

Variable definitions and summary statistics of the key variables used for the estimations are reported in Table 2.

3.2. Methodology

As marital happiness is ordered and discrete, an ordered probit model was used (for more details, see Greene, 1997). Ordered probit analysis has been used in the literature to examine the determinants of marital satisfaction (e.g., Lee and Ono, 2008; Oshio et al., 2011). The estimated function takes the following form:

$$MSATIS_i = \alpha_1\ CHI\_12_i + \alpha_2\ CHI13\_18_i + \alpha_3\ CHI\_19_i + \alpha_4\ EDU_i + \alpha_5\ SPEDU_i + \alpha_6\ UNEMP_i + \alpha_7\ HINCOM_i + u_i,$$

where *MSATIS* represents the dependent variable in the case of respondent *i*, α represents regression parameters, and u_i is the error term that follows a standard normal distribution. The dependent variable is the self-rated marital satisfaction.

Self-selection effects must be controlled in this case, because self-reported marital satisfaction is only observed for currently married individuals. Some authors apply Heckman's two-step procedure to deal with this problem. However, given the ordinal nature of the dependent variable, maximum likelihood (ML) is more convenient and therefore used in this paper because accounting for sample selection in non-linear models is complicated.

[13] Corresponding to Figure 2, we constructed 6 generation group dummies: (1) 10s and 20s, (2) 30s, (3) 40s, (4) 50s, (5) 60s, and (6) over 70s.

When the coefficient takes the positive sign, a positive change in the independent variable decreases the probability of the lower ranked outcome and increases the probability of the highest ranked outcome. However, "the marginal effects of the regressors on the probability are not equal to the coefficients" (Greene 1997, p. 927). Therefore, we encounter a difficulty in the interpretation of coefficients. Instead of coefficients, the marginal effects can be calculated in each dependent variable category (Greene, 1997, pp. 927–931). Hence, for a closer examination of estimation results, in addition to coefficients, as presented in Table 5, we also report the marginal effects of key variables such as CH_12, CH13_18, and CH_19 in Prob(*MSATIS* = 1), Prob(*MSATIS* = 2), Prob(*MSATIS* = 3), Prob(*MSATIS* = 4), and Prob(*MSATIS* = 5).

It can be seen from Table 3 that the average marital satisfaction score for those who have a child is lower than those who do not, regardless of gender in China, Korea, and Japan. This mean difference is, however, not statistically significant for males in any of the three countries. In contrast, this difference is statistically significant for females in all three countries. Thus, it follows this that having a child reduces marital satisfaction in females, but does not decrease male satisfaction. It can be argued, therefore, that women disproportionately carry the burden of child care, which results in the gap in marital satisfaction across the sexes.

4. Estimation results and interpretation

4.1. Child age dummy

Tables 4(a) and (b) display the results for males and females, respectively.

Starting with the results for males, it can be seen in Table 4(a) that CHI_12, CHI13_18, and CHI_19 take the positive sign, with the exception of CHI_19 in column (1), while being statistically insignificant. This suggests that age of child is not relevant to the marital satisfaction of males in Asian countries. For females, the coefficients for CHI_12 and CHI13_18 produce negative signs in all estimations. Further, CHI_12 is statistically significant in all estimations, while CH13_18 is only statistically significant in column (3). In contrast, the sign for CH_19 is positive in all estimations despite being statistically insignificant. These results reveal that the presence of children up to entering junior high school reduces marital satisfaction in females in all countries, while teenagers at junior high school or high school have a detrimental effect on marital satisfaction for females in Japan, but not China and Korea.

A closer examination of the effects of CHI_12, CHI13_18 and CHI_19 illustrated in Tables 5(a), (b) and (c) show a marginal effect on the marital satisfaction of females in China, Korea, and Japan, respectively. Coefficients for CHI_12 are –0.04, –0.06, and –0.08 for China, Korea, and Japan, respectively. These reveal that females in China, Korea, and Japan, who have a child too young to enter junior high school have a 4%, 6%, and 8%-point lower probability, respectively, of being strongly satisfied with married life than those without a child. In contrast, as exhibited in column (1), the coefficients for CHI_12 are 0.004, 0.01, and 0.03 for China, Korea, and Japan, respectively. These results imply that raising a younger than junior high age child increases the probability of being strongly dissatisfied with married life by 0.4%, 1% and 3%-points for China, Korea, and Japan, respectively. The results shown in Table 5 lead us to argue that the negative effect of having young children is greater in more developed countries.

As also observed in Western countries (Akerlof and Kranton, 2000), disparity concerning child care and housework between males and females exists and persists in Asian countries. There is evidence that females who live with their parents are more likely to participate in the labor market (Sasaki, 2002; Mano and Yamamura 2010). A reason for this is that the parents (grandparents) can raise the child, enabling the mother to work. For instance, in a traditional Japanese farming village, "women are usually also employed… in households with a grandmother, she often takes care of young children, while the mother work in the field" (Henry 1981, p. 87). Support for child care through family ties and community networks appears to be on the wane because long-term economic development has led to a decline in social capital (Putnam, 2000). China is considered to be in a highly developed stage at present. Korea has followed Japan and has experienced incredible economic growth, however, it is not yet considered to be a highly developed country. Japan experienced rapid economic growth in the post-war period and has become one of the most developed countries worldwide. Thus, Japanese women have had to address childcare issues, and the childcare industry is considered to be essential to help mothers raise their children, rather than with reciprocal care via informal social networks. Nevertheless, nursery schools, for example, are in short supply in Japan, and mothers are more likely to raise a child than to also participate in the labor market because of a shortage of childcare services (Cabinet Office, Government of Japan, 2005; Date and Shimizutani, 2007). Economic development can further increase the economic and psychological costs for females of raising children. In other words, the effect of having young children on satisfaction depends on the change in socio-economic conditions.

4.2. Control variables

Concerning the results for males exhibited in Table 4(a), coefficients for EDU and HINCOM take the positive sign, but are statistically insignificant, with the exception of EDU in column (3). This result is in line with previous evidence in marital satisfaction literature (Amato and Rogers, 1997). Consistent with our theoretical predictions, UNEMP yields the negative sign, but is not statistically significant in all regression models.

As can be seen Table 4(b), EDU for females takes the negative sign in all estimations, while being statistically significant in Korea. In contrast, SPEDU shows the positive sign in all estimations, implying that a male with higher education levels will increase his spouse's marital satisfaction. As expected, UNEMP produces the negative signs and HINCOM yields the positive signs in all estimations. The negative sign for unemployment is in line with the economic theory of specialization in the division of labor. Female labor participation rates can reduce marital stability (e.g., Becker et al., 1977). In general, the additional work of wives outside the home demands some adjustment in the household division of labor. Therefore, friction or disputes caused by such an adjustment may reduce marital satisfaction. Finally, low-income couples may also face serious financial stressors that negatively influence the quality of their marriage.

5. Conclusion

Socio-economic conditions vary across East Asian countries. However, they also appear to share similar cultural backgrounds, which differ from Western countries. It is worthwhile to examine family relationships and marital satisfaction by comparing

East Asian countries. Using individual-level data from EASS (East Social Survey) from 2006, this study examines how the age of children influences the marital satisfaction of males and females in China, Korea, and Japan.

We found via an ordered probit estimation that the marital satisfaction of males is barely affected by the presence of children, whereas the marital satisfaction of females who have a child younger than 12 years old is lower than that of females with no children. This also holds for countries at different stages of development. This may be due to the imbalance of child care between males and females in each country. That is, females are more likely to be the primary caregiver for young children and so feel the associated stress from it, putting pressure on their psychological state. The division of labor within a household is a further reason for the differences in marital satisfaction between genders. The greater the marginal effect of the presence of the child, the more developed a nation's economic condition. Furthermore, children between 13 to 18 years old only have a negative effect on the marital satisfaction of females in Japan. In our interpretation, the opportunity cost of child rearing becomes higher where people have attained higher levels of education. Accordingly, child rearing affects female marital satisfaction to a greater degree. Thus, we derive the argument that marital satisfaction is obviously influenced by the division of labor within households and the opportunity cost of child care.

Female labor supply partly depends on whether females live with their parents or not (Sasaki 2002; Mano and Yamamura, 2010). In addition, life satisfaction is affected by the characteristics of the parents' neighborhood (Shields et al., 2009). That is, help from parents and reciprocity arrangements with other community members appear to play a significant role in reducing the physical and psychological burden of child care.

Hence, the effect of young children on marital satisfaction is considered varied, and dependent on socio-economic conditions such as family structure and networks within the neighborhood. Economic development is strongly related to family structure and neighborhood relationships, which are, however, not considered in detail in this paper. Furthermore, it is interesting to compare the most developed Western countries with Japan, because while they are all labeled ‘developed countries’, they have very different historical and cultural backgrounds. Thus, these are issues that require further investigation in future studies.

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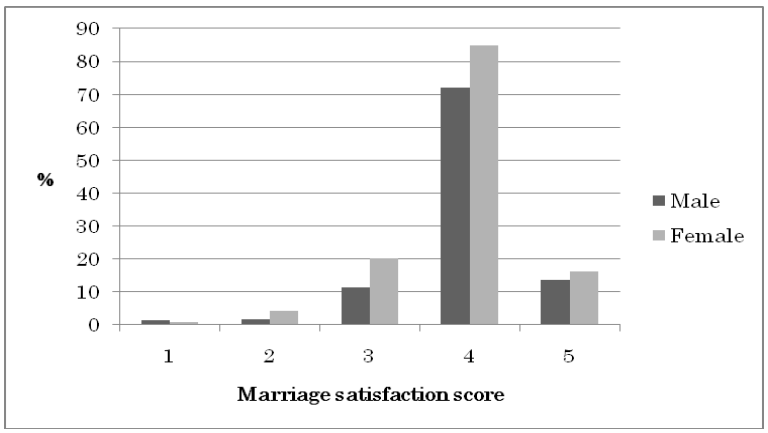
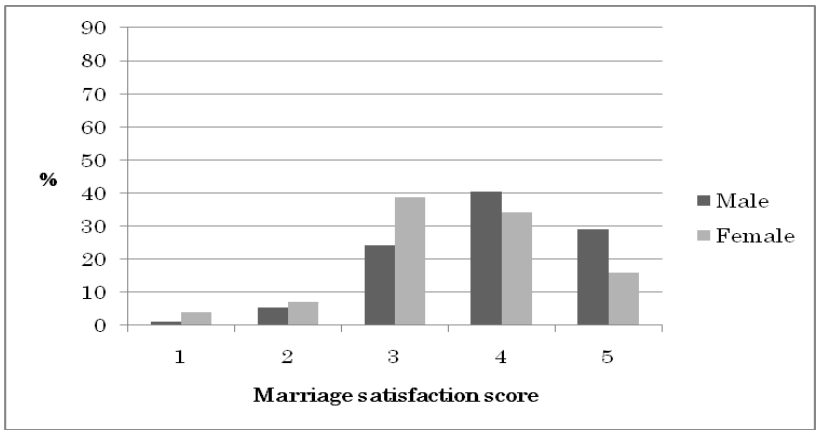
Figure 1. Distribution of marital satisfaction by gender;
from 1 (strongly dissatisfied) to 5 (strongly satisfied)

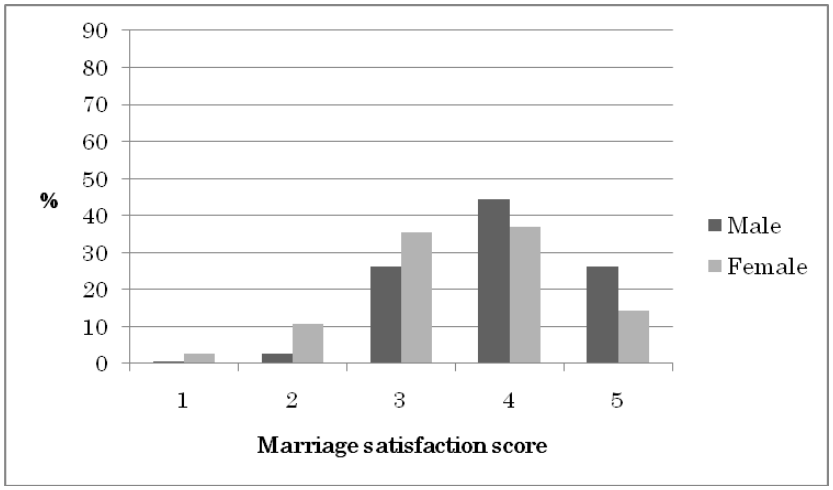
(a) China



(b) Korea



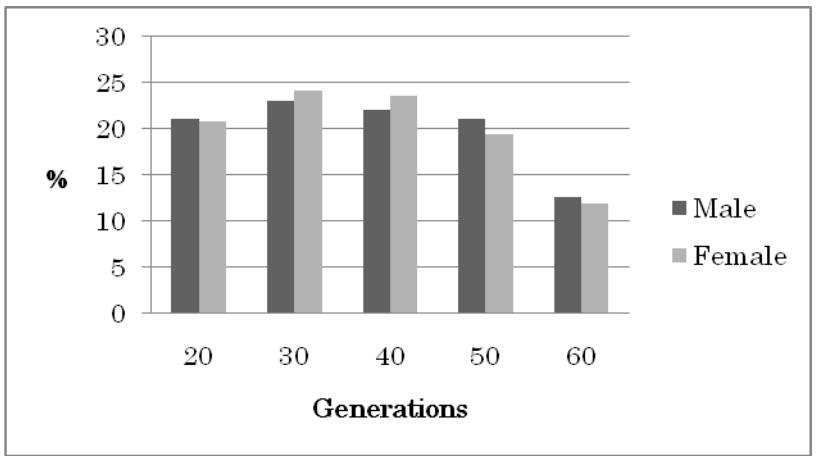
(c) Japan



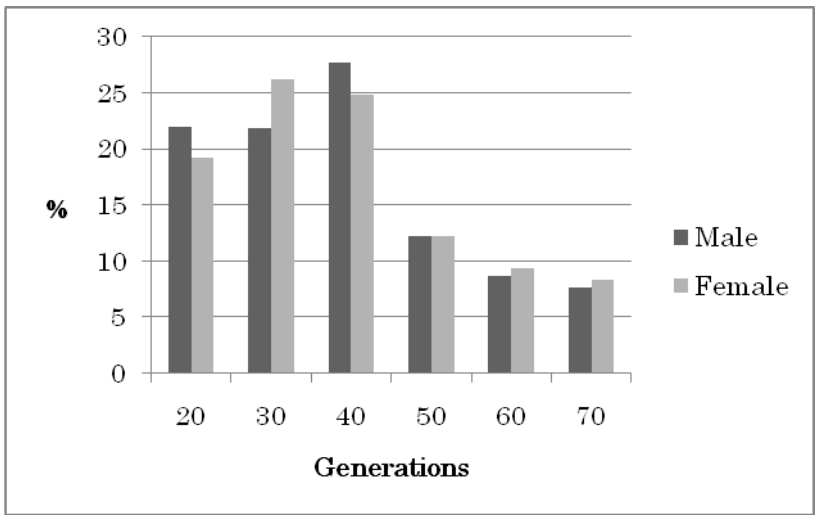
Source: EASS data 2006

Figure 2. Distribution of generations by gender

(a) China



(b) Korea



(c) Japan

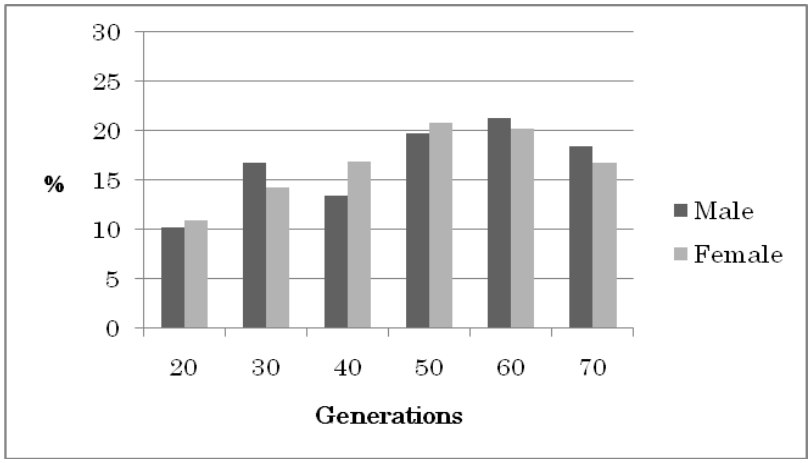


Table 1.

Construction of research sample

Description	China	Korea	Japan
Original sample	3208	1605	2130
Marriage satisfaction (dependent variables)	2586	1053	1512
Various independent variables	2368	1008	1098
Male [a]	1064	448	553
Female [b]	1304	560	545

Note:

a. Samples used in male estimations.

b. Samples used in female estimations.

Table 2.

Variable definitions and mean values

Variables	Definition	China	Korea	Japan
CHI_12	Dummy variable: 1 if respondent has child less than 12 years old; otherwise 0 (%)	26.0	30.9	17.3
CHI13_18	Dummy variable: 1 if respondent has child between 13 and 18 years old; otherwise 0 (%)	22.9	21.4	13.0
CHI19_	Dummy variable: 1 if respondent has child more than 19 years old; otherwise 0 (%)	44.2	34.2	56.9
EDU	Years of schooling	8.4	11.9	12.2
SPEDU	Spouse's years of schooling	8.6	12.6	12.4
UNEMP	Dummy variable: 1 if respondent is unemployed; otherwise 0 (%)	1.6	6.4	1.6
HINCOM	Household income	23 [a]	331[b]	549 [c]

Note: Values for dummy variables are rates for observations that take the value of 1.

Values of EDU and INCOME are mean values.

a. Thousands Yuan.

b. Thousands Won.

c. Million Yen.

Table 3. Comparison of marital satisfaction between respondents with and without children

Country	Variables	Respondent has at least one child	No child	t-statistics
China	Male	3.94	4.01	0.85
	Female	3.87	4.10	2.69***
Korea	Male	3.89	4.14	1.40
	Female	3.48	3.93	2.45**
Japan	Male	3.93	3.98	0.46
	Female	3.47	3.77	2.10**

Note:

*, **, and *** indicate significance at 10%, 5% and 1% levels, respectively.

Table 4. Regression results of marital satisfaction by gender (ordered probit model)

(a) Male

Variables	(1) China	(2) Korea	(3) Japan
CHI_12	0.01	–0.01	–0.15
	(0.08)	(–0.11)	(–0.83)
CHI13_18	0.05	0.10	0.08
	(0.44)	(0.65)	(0.50)
CHI_19	–0.04	0.35	0.05
	(–0.31)	(1.58)	(0.31)
EDU	0.01	0.01	0.50***
	(1.04)	(0.68)	(2.35)
SPEDU	–0.006	–0.003	0.02
	(–0.48)	(–0.16)	(0.69)
UNEMP	–0.29	–0.43	–0.39
	(–0.64)	(–1.59)	(–0.92)
HINCOM	$0.10*10^2$	$0.39*10^3$*	0.003
	(0.77)	(1.99)	(0.26)
Observations	1064	448	553
Pseudo R square.	0.008	0.02	0.02

(b) Female

Variables	(1) China	(2) Korea	(3) Japan
CHI_12	–0.24**	–0.28**	–0.46***
	(–2.22)	(–2.05)	(–2.65)
CHI13_18	–0.14	–0.10	–0.35**
	(–1.47)	(–0.76)	(–2.42)
CHI_19	0.07	0.21	0.04
	(0.60)	(1.12)	(0.25)
EDU	–0.005	–0.04*	–0.002
	(–0.50)	(–1.73)	(–0.06)
SPEDU	0.02*	0.06***	0.02
	(1.94)	(2.98)	(0.96)
UNEMP	–0.63	–0.36	–0.98*
	(–1.64)	(–1.64)	(–1.79)
HINCOM	$0.19*10^2$*	$0.07*10^3$	0.04***
	(1.79)	(0.75)	(3.45)
Observations	1304	560	545
Pseudo R square	0.01	0.03	0.03

Note: Numbers in parentheses are z-statistics. *, **, and *** indicate significance at 10%, 5% and 1% levels, respectively. Generation dummies are included in all estimations to control for generation effects. However, the results are not reported because of space limitations.

Table 5. Marginal effect of female estimations shown in Table 4(2).

(a) China

Variables	Strongly dissatisfied[a] (1)	Dissatisfied[a] (2)	Neither[a] (3)	Satisfied[a] (4)	Strongly satisfied[a] (5)
CHI_12	0.004*	0.01**	0.04**	–0.01*	–0.04***
	(1.69)	(2.01)	(2.18)	(–1.69)	(–2.33)
CHI13_18	0.002	0.01	0.02	–0.01	–0.02
	(1.24)	(1.37)	(1.45)	(–1.18)	(–1.53)
CHI_19	–0.001	–0.004	–0.01	0.004	0.01
	(–0.59)	(–0.60)	(–0.60)	(0.59)	(0.60)

(b) Korea

Variables	Strongly dissatisfied[a] (1)	Dissatisfied[a] (2)	Neither[a] (3)	Satisfied[a] (4)	Strongly satisfied[a] (5)
CHI_12	0.01*	0.03**	0.06**	–0.04**	–0.06**
	(1.90)	(1.98)	(2.06)	(–2.02)	(–2.05)
CHI13_18	0.007	0.01	0.02	–0.01	–0.02
	(0.72)	(0.74)	(0.78)	(–0.74)	(–0.78)
CHI_19	–0.01	–0.02	–0.50	0.03	0.05
	(–1.14)	(–1.14)	(–1.09)	(1.17)	(1.08)

(c) Japan

Variables	Strongly dissatisfied[a] (1)	Dissatisfied[a] (2)	Neither[a] (3)	Satisfied[a] (4)	Strongly satisfied[a] (5)
CHI_12	0.03**	0.08**	0.07***	–0.09**	–0.08***
	(1.99)	(2.45)	(3.16)	(–2.45)	(–2.94)
CHI13_18	0.02*	0.06**	0.05**	–0.07**	–0.06***
	(1.86)	(2.24)	(2.82)	(–2.21)	(–2.69)
CHI_19	–0.002	–0.006	–0.007	0.007	0.008
	(–0.25)	(–0.25)	(–0.25)	(0.25)	(0.25)

Note: Numbers in parentheses are z-statistics calculated using a robust standard error.
*, **, and *** indicate significance at 10%, 5% and 1% levels, respectively.

a. In the questionnaire, marital satisfaction is evaluated by numerical numbers, ranging from 1 (dissatisfied) to 5 (satisfied).