

## THE PREFERENCE FOR AN ADDITIONAL CHILD AMONG MARRIED WOMEN IN SEOUL, KOREA

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**Summary.** South Korea reported a total fertility rate (TFR) of 1·08 in 2005. This is the lowest level of all nations in the Organisation for Economic Co-operation and Development (OECD). Recently, the decline in the fertility rate has been a dominant phenomenon in Korea's major cities. This study investigated the relationship between social environmental factors and fertility intentions for married women in Seoul, the capital of Korea, using a sample of 2211 married women who responded to the Seoul Citizens Health and Social Indicators Survey, 2005. Here, the effects of selected social environmental characteristics on fertility intentions are explored using multivariate logistic regression models. The relationships among a woman's age, number of living children, job type, housing type, and social group participation were strong indicators of the intention to have additional children. Younger women living with fewer children generally have a higher intention to have additional children. Among women's job types, blue-collar workers have a lower preference for additional children than white-collar workers and housewives. Married women participating in social groups have a lower preference for additional children than non-participants. Women's participation in social activities appears to have various benefits, both individually and socially. However, whereas women's participation in economic activities has been linked to questions of fertility in previous studies, the relationship between fertility and social activities has been downplayed. Women's participation in social activities has increased over the past several decades, and the trend continues to grow. Therefore, women's participation in social activities must be accepted as the status quo, and compatibility between women's participation in social activities and childrearing needs to be increased. Consequently, a strong foundation for a fertility-friendly environment is needed, focusing on blue-collar workers and participation in social activities by married women.

### Introduction

Low fertility is a common phenomenon in a number of countries, but is now a critical issue in South Korea. In 2005, the total fertility rate (TFR) stood at 1·08, the lowest

in the world (Korea National Statistical Office, 2006). Korea's TFR is markedly lower than the average TFR of 1.6 of the Organisation for Economic Co-operation and Development (OECD) nations (Population Reference Bureau, 2006).

The determinants of a low fertility rate are various and complex. An increase in women's economic activity, women's high educational attainment, late marriage, childcare and education expenses, changing valuations of children, household income and the instability of employment status and residence are important factors contributing to the declining fertility rate (Ermisch, 1988, 1989; Caldwell & McDonald, 2002). In Korea, the decline in the fertility rate is a striking phenomenon in major cities. For instance, in 2005, Seoul, the capital of Korea, had the nation's second lowest TFR of 0.92, following the lowest TFR of 0.88 in Pusan (Korea National Statistical Office, 2006). The direct cause of the decreased fertility rate among women living in big cities is the difficulty of childrearing attributed to the increase in women's economic activity (Choi & Kim, 2005).

Women's economic activities in Korea have increased rapidly due to the nation's high economic growth. This increase has been surprisingly faster than that of other OECD nations over a relatively short period. For instance, the gross national product (GNP) of Korea increased from US\$100 in 1965 to US\$12,000 in 2005.

As women's economic activities have expanded, so too have women's social activities and rights in Korean society (Korean Ministry of Women & Family, 2007). The accompanying phenomenon of low fertility has brought increased recognition that a more fertility-friendly social environment is needed.

Recent studies have emphasized the importance of understanding the broader social environment in which fertility decisions are made (e.g. Choi & Kim, 2005). Specifically, social networks and support within the social environment significantly affect the decision of whether to have children (Madhavan *et al.*, 2003; Buhler & Fratzak, 2004). Previous studies have shown that a supportive social network has a positive effect on fertility intentions (Philipov & Shkolnikov, 2001; Philipov *et al.*, 2004). For example, the number of parents, the number of supportive colleagues and friends, and the existence of unrelated older women in the social network are main influences on a women's intention to have a child (Madhavan *et al.*, 2003; Buhler & Fratzak, 2004).

A main inhibitor of fertility in Korea has been reported to be the conscious decision not to have children by women over 35 (Chun, 2003). These women are turning from childbirth and rearing to more active participation in social activities. Women living in urban centres are particularly active in social group participation.

Previous studies have indicated that as women become more socially active, they are less inclined to have a baby directly after marriage (Shapiro & Mott, 1994; Andersson, 2000; Engelhardt *et al.*, 2004). However, other studies in European countries have indicated that countries with relatively high levels of women's social participation have correspondingly higher levels of fertility (Del Boca, 2003).

The objective of this paper was to investigate the influences of social environmental determinants, including social networks and support, on the fertility intentions of married women in an urban centre.

This analysis presumes that participation in social activities that are included in social networks and support, as much as women's economic activity participation, affects the fertility intentions of women living in an urban setting.

## Methods

### *Subjects*

The raw data were obtained from the mother and child's health and social behaviours survey, part of the Seoul Citizens Health and Social Indicators Survey, 2005. The subjects were 2211 married women between the ages of 25 and 39, living with their husbands.

The survey was conducted as face-to-face interviews for 15,000 households from 25 districts in Seoul. The households were selected in proportion to the population from each district. The Seoul Citizens Health Indicators Survey, 2005, was the third such survey to be conducted since the first survey in 1997. This was the most recent survey to be conducted since 2001. This survey is the most representative population-based health and social behaviours survey in Korea. Moreover, the sample size of the survey is the largest among health and behaviour surveys in Korea (Metropolis of Seoul & Korean Institute of Health and Social Affairs, 2002). The results of this survey have been used by each of Seoul's 25 districts as basic data for the establishment of district plans.

### *Variables and measurements*

The dependent variable was the intention to have additional children. This question can either be answered in the negative or the positive. The independent variables were classified into five categories: demographic factors, socioeconomic (SES) status, prior consideration in the decision of parity, social network and support, residential satisfaction and stability.

Demographic variables included the woman's age and number of children she had already had. Socioeconomic indicators included educational attainment, occupation class and monthly family income. Educational attainment was classified into less than junior high school, high school graduate, college graduate, and university graduate. Occupation class was classified into manual, non-manual, and not-employed. Manual (i.e. blue-collar worker) included those working in the fields of service and sales; non-manual (i.e. white-collar worker) included managers, professionals and administrative employees; not-employed included housewives and students.

Monthly family income was classified in units of ten thousand won (US\$10) of less than 150 (US\$1500), 151–250 (US\$1510–2500), and more than 250 (US\$2500).

The reasons for women's fertility decisions were assessed using the survey question: 'What is the primary reason for the decision?' This could be answered with any of the following four items: economic problems, health problems, values or need for children and support or childcare issues. Indicators of social networks and support included social group participation, having close family, friends and relatives, counsellors, and health care support. The questions referring to these issues were as follows: 'Do you have close family or relatives living nearby?', 'Do you participate in any of the following four social groups: religious organizations, hobby activities, volunteer activities, or gatherings of friends?', 'Do you have a person who listens to your worries?', 'Do you have a caregiver when you are sick?', and 'Do you have an

economic supporter?' These questions were answered on the survey with a 'Yes' or 'No' response.

Social networks and support data were measured at the individual level at the time of the 2005 survey. Residential satisfaction was included in questions concerning residential area and neighbourhood relationship. Residential stability was classified according to housing type.

### *Data analysis and statistical models*

As a first step, this study used chi-squared tests to assess the relationships between women's socio-environmental determinants and fertility intentions. This evaluation was followed by the use of logistic regression models to assess the effects of independent variables on fertility intentions. Model 1, the demographic model, controlled for the demographic factors of age and parity. Model 2, the socio-demographic model, controlled for the effects of women's demographic and socio-economic status. Model 3 controlled for the effects of the women's socio-demographic characteristics combined with the primary reasons for the fertility decision. Model 4 controlled for the effects of the women's socio-demographic characteristics, prior consideration of the fertility decision, and women's social networks and support. Model 5 controlled for the effects of the women's socio-demographic characteristics, prior consideration of the fertility decision, women's social networks and support, and residential satisfaction and stability. All models showed sufficient goodness-of-fit (Hosmer–Lemeshow test,  $p > 0.10$ ). All analyses were performed using SPSS (version 12.0) software.

## **Results**

Married women between the ages of 33 and 36 comprised a large proportion (44.5%) of the total 2211 women in the sample aged 25–39. Overall, 57.1% of married women had two or more children, whereas 30.4% had one child, and 12.5% had no children. A large majority (51.8%) of the sample had graduated from college or university, as this was greater than those who had only high school degrees (47.1%). Housewives made up a substantial proportion (73.8%) of the occupation class, followed by non-manual workers (15.6%) and manual workers (9.4%). Those with a medium level of income made up the highest proportion (49%) of subjects (see Table 1).

The proportion of women who intended to have additional children varied significantly with age and parity. The proportion wanting additional children was also greater among college and university graduates and non-manual workers.

Support and day-care access was significantly related to the consideration of fertility decisions. In addition, the factor of economic problems was statistically significant.

Social networks and capital were significantly related to fertility decisions. Married women who actively engaged in social activities, i.e. participation in social groups and with a general satisfaction with their residential neighbourhood, were apt to desire fewer additional children. In contrast, women with caregivers, such as those who

**Table 1.** Socio-demographic characteristics of 2211 married women aged 25–39 in Seoul, Korea

	Number	Proportion of total (%)
<b>Age</b>		
25–28	238	10.8
29–32	683	30.9
33–36	985	44.5
37–39	305	13.8
<b>Current children</b>		
0	276	12.5
1	672	30.4
>2	1263	57.1
<b>Education</b>		
Middle school	24	1.1
High school	1042	47.1
College, University	1145	51.8
<b>Occupation class</b>		
Manual	208	9.4
Non-manual	344	15.6
Not-employed	1659	75.0
<b>Equivalent income (10,000 won/month)</b>		
<150	132	6
151–250	1084	49
>250	945	42.7

would provide support during illness, composed the highest proportion of preference for additional children. Women living in rental housing composed a higher proportion of the intent for additional children than those who owned their homes (see Table 2).

This study also used multivariate logistic regression analysis to assess the independent effects of women's socio-environmental factors on their desire to have additional children using five different models. In all multivariate logistic regression models, age and the number of children were significantly related to fertility decisions (Table 3). Model 1 showed an association between additional childbirth intentions and women's demographic characteristics. Older women who already had two or more children tended to have a lower desire for additional children. Model 2 showed that women's occupation, age and current parity were significantly related to the preference for additional children. Manual workers (blue-collar workers) had less desire for additional children than women in other occupations. Model 3 controlled for women's demographic characteristics, socioeconomic status and prior considerations of the parity decision. As in Model 2, in this model, age, number of living children and occupation were significantly related to women's fertility intentions.

**Table 2.** Distribution of the intention for additional childbirth by socio-demographic status, social networks and residence stability in 2203 women aged 25–39 in Seoul, Korea

Characteristic	Intention for additional childbirth		<i>p</i> *
	Yes <i>n</i> (%)	No <i>n</i> (%)	
<b>Age</b>			
25–28	156 (65.8)	81 (34.2)	<0.000
29–32	284 (41.9)	394 (58.1)	
33–36	116 (11.8)	867 (88.2)	
37–39	13 (4.3)	292 (95.7)	
<b>Living with children (number)</b>			
0	245 (99.1)	28 (0.9)	<0.000
1	282 (42.2)	387 (57.8)	
>2	42 (3.3)	1219 (96.7)	
<b>Education</b>			
Middle school	3 (12.5)	21 (87.5)	<0.000
High school	209 (20.1)	831 (78.9)	
College, University	357 (31.3)	782 (68.7)	
<b>Occupation class</b>			
Manual	37 (18.0)	169 (82.0)	<0.000
Non-manual	167 (48.8)	175 (51.2)	
Not-employed	365 (18.0)	1290 (82.0)	
<b>Equivalent income (10,000 won/month)</b>			
<150	32 (24.4)	99 (75.6)	0.368
151–250	293 (27.1)	788 (72.9)	
>250	230 (24.4)	711 (75.6)	
<b>Prior consideration</b>			
Economic problems			
Yes	313 (23.8)	1004 (76.2)	<0.004
No	256 (28.9)	630 (71.1)	
Health problems			
Yes	54 (24.4)	167 (75.6)	0.341
No	515 (26.0)	1467 (74.0)	
Values or need for children			
Yes	98 (27.0)	266 (73.0)	0.322
No	471 (25.6)	1368 (74.4)	
Supporter/nursing facilities			
Yes	68 (42.2)	93 (57.8)	<0.000
No	501 (24.5)	1541 (75.5)	
<b>Social network/support</b>			
Social group participation			
Yes	368 (24.1)	1158 (75.9)	<0.004
No	201 (29.7)	476 (70.3)	

**Table 2.** *Continued*

Characteristic	Intention for additional childbirth		<i>p</i> *
	Yes <i>n</i> (%)	No <i>n</i> (%)	
<b>Social network/support (continued)</b>			
Close friend, relatives			
Yes	545 (25.8)	1564 (74.2)	0.528
No	24 (34.3)	70 (65.7)	
Counsellor for worries			
Yes	511 (25.6)	1489 (74.4)	0.196
No	58 (28.6)	145 (71.4)	
Caregiver when sick			
Yes	522 (26.7)	1434 (73.3)	<0.005
No	47 (19.0)	200 (81.0)	
Economic support			
Yes	494 (26.4)	1377 (73.6)	0.08
No	75 (22.6)	257 (77.4)	
<b>Residential satisfaction</b>			
Residential area			
Yes	514 (25.5)	1501 (74.5)	0.15
No	55 (29.3)	133 (70.7)	
Neighbourhood relationship			
Yes	524 (25.3)	1548 (74.7)	0.016
No	45 (34.4)	86 (65.6)	
<b>Residence stability</b>			
Housing type			0.234
Detached house	68 (24.1)	214 (75.9)	
Apartment	275 (24.1)	867 (75.9)	
Multiplex house	218 (29.5)	520 (70.5)	
Type of occupancy			<0.000
Own	234 (21.3)	864 (78.7)	
Rent	333 (31.0)	754 (69.0)	

\*Calculated using chi-squared tests for categorical variables.

In Model 4, the women's social networks and support were added to Model 3. This analysis showed statistically significant results relating to women's social group participation, along with age, number of living children and occupation. Model 5, which was the final model controlling for the variables of Model 4, related this information to additional women's residence satisfaction and stability. In this model, age, number of living children, occupation, social group participation and housing type were significantly related to women's fertility intentions.

Consequently, this analysis demonstrated that women's preference for additional children was associated with age, number of children, job type, housing type and social group participation.

**Table 3.** Odds ratios (and 95% confidence intervals) of preference for additional childbirth from five models containing various socio-environmental factors of women for 2211 married women aged 25–39 in Seoul, Korea

Characteristic	Model 1	Model 2	Model 3	Model 4	Model 5
<b>Age</b>					
25–28	1.0	1.0	1.0	1.0	1.0
29–32	0.73 (0.49–1.09)	0.79 (0.52–1.19)	0.77 (0.51–1.17)	0.80 (0.53–1.210)	0.85 (0.56–1.30)
33–36	0.23 (0.15–0.34)	0.24 (0.16–0.38)	0.24 (0.15–0.37)	0.24 (0.15–0.37)	0.26 (0.16–0.40)
37–39	0.10 (0.05–0.20)	0.10 (0.05–0.22)	0.10 (0.05–0.21)	0.10 (0.05–0.22)	0.11 (0.05–0.23)
<b>Living with children (number)</b>					
0	1.0	1.0	1.0	1.0	1.0
1	0.10 (0.06–0.15)	0.09 (0.06–0.14)	0.09 (0.05–0.14)	0.09 (0.05–0.14)	0.09 (0.06–0.14)
>2	0.01 (0.00–0.01)	0.01 (0.00–0.01)	0.01 (0.00–0.01)	0.01 (0.00–0.01)	0.01 (0.00–0.01)
<b>Education</b>					
Middle school		1.0	1.0	1.0	1.0
High school		0.25 (0.05–1.42)	0.24 (0.04–1.43)	0.24 (0.04–1.41)	0.24 (0.04–1.39)
College, University		0.98 (0.73–1.32)	1.00 (0.74–1.35)	1.00 (0.74–1.35)	0.93 (0.68–1.27)
<b>Occupation class</b>					
Not-employed		1.0	1.0	1.0	1.0
Manual		0.41 (0.23–0.71)	0.45 (0.25–0.81)	0.47 (0.26–0.84)	0.46 (0.25–0.83)
Non-manual		1.18 (0.78–1.77)	1.12 (0.73–1.74)	1.14 (0.73–1.77)	1.12 (0.72–1.76)
<b>Equivalent income (10,000 won/month)</b>					
<150		1.0	1.0	1.0	1.0
151–250		1.11 (0.60–2.10)	1.08 (0.58–2.01)	1.11 (0.59–2.10)	1.20 (0.63–2.28)
>250		1.00 (0.52–1.93)	0.95 (0.49–1.83)	0.96 (0.49–1.85)	1.01 (0.51–1.99)
<b>Prior consideration</b>					
Economic problems (vs no)			1.69 (0.91–3.14)	1.67 (0.90–3.11)	1.53 (0.81–2.90)
Health problems (vs no)			2.10 (1.01–4.37)	2.10 (0.99–4.28)	1.87 (0.89–3.95)
Values for children (vs no)			2.58 (1.30–5.13)	2.60 (1.31–5.16)	2.40 (1.19–4.85)
Supporter/childcare facilities (vs no)			2.20 (1.06–4.58)	2.30 (1.10–4.73)	2.26 (1.06–4.79)
<b>Social network/support</b>					
Social group participation (vs none)				0.68 (0.50–0.93)	0.66 (0.48–0.90)
Close family, friend, relatives (vs none)				1.54 (0.75–3.16)	1.61 (0.77–3.38)
Counsellor for worries (vs none)				0.75 (0.44–1.27)	0.76 (0.45–1.30)
Caregiver when sick (vs none)				1.43 (0.80–2.56)	1.31 (0.73–2.35)
Economic supporter (vs none)				0.99 (0.62–1.59)	1.09 (0.67–1.75)
<b>Residential satisfaction</b>					
Residential area					0.97 (0.59–1.61)
Neighbourhood relationship					1.13 (0.63–2.04)
<b>Residence stability</b>					
House type					
Detached house					1.0
Apartment					0.63 (0.39–1.00)
Multiplex house					0.83 (0.52–1.33)
Type of occupancy					
Rent (vs rent)					1.05 (0.79–1.41)

Model 1 is adjusted for the woman's age and number of current children. Model 2 is adjusted for Model 1 + the woman's education, occupation class and monthly family income. Model 3 is adjusted for Model 2 + prior consideration in deciding parity. Model 4 is adjusted for Model 3 + the woman's social network and support. Model 5 is adjusted for Model 4 + the woman's residential satisfaction and stability.

### Discussion

The aim of this study was to investigate the influence of social environmental factors on the fertility intentions of married women in a major urban centre. Married women who were active participants in social groups had less preference for additional children than non-participants. In addition, there were statistically significant relationships between a woman's age, number of living children, job type and housing type and the preference for additional children.

The multivariate analysis showed that women's participation in social groups diminishes the preference for additional children. This has three potential explanations. First, women who already intended not to have more children may be able to participate more actively in social group activities. This partly supports the finding that socially active women have lower subsequent fertility. Second, social interactions within social groups may diminish the preference for additional children. A previous study of contraception demonstrated that social interactions encompass two distinct mechanisms – social learning and social influence – which affect contraceptive behaviour (Boulay & Valente, 1999). Social learning may have the effect of prompting a woman to reduce fertility or use contraception. The latter process – social influence – emphasizes the influence of an individual's social environment on fertility-related opinions and behaviours. Recently, the diffusion of ideas and behaviours within society has played an important role in lowering fertility rates in Europe and developing countries (Cleland & Wilson, 1987; Rogers, 1995; Bongaarts & Watkins, 1996). Whereas this may be difficult to demonstrate, it is a potential explanation. Contact with peers within social networks might discourage women from having more children. Through these networks, married women could acquire practical information related to childrearing, for example, the difficulties of childrearing and childcare costs and educational expenses. Third, childrearing and participating in social activities are not necessarily compatible. Women's participation in social activities has increased over the past several decades, and the trend continues to rise (Korean Ministry of Women & Family, 2007). Therefore, women's social participation must be accepted as the actual state.

Previous studies have demonstrated various positive effects of women's participation in social activities. Women who participated in any social activity for one to four hours each week had higher purpose-in-life scores and lower depression scores than those who did not participate in social activities or those who participated in social activities for five hours or more per week. Among women aged 35 to 44, appropriate social activity participation had a particularly positive effect on their mental health and sense of fulfilment. Moreover, middle-aged women evaluated social activities as higher than housework in terms of personal satisfaction and providing a relation to society (Yoshii & Yamazaki, 1999). Another study showed that social participation was associated with individual mental health. When controlling for biological and socio-demographic factors, low social participation and few close relationships were associated with increased mortality. The effects of social participation may be at least as important as support from others (Dalgard & Haheim, 1998).

Consequently, women's participation in social activities has been found to have various positive benefits, both individually and socially. To date, emphasis has been

placed on the effect of women's participation in economic activities on fertility rates, whereas the effect of participation in social activities has been de-emphasized. However, in the future, a social environment supporting women's social participation, compatible with women's social roles and values, should be constructed.

Of the study subjects, younger married women had the highest preference for additional children. However, women with two or more children had less preference for additional children than women with one child or those without any children. Previous studies partially support these results. A previous study showed that women with one child had a significantly higher intention for an additional child (Radecki & Beckman, 1992). The number of living children is also strongly related to women's preference for an additional child, regardless of marital and economic status. The preference among blue-collar workers for additional children was lower than that among white-collar workers and housewives. A possible explanation for the low fertility intentions of blue-collar women is the lack of compatibility between work and childrearing.

Therefore, fertility promotion policies need to focus on support for blue-collar workers, including greater availability of childcare, greater opportunities for flexible working hours, part-time employment and more generous parental leave. These policies would make it possible for blue-collar workers to combine work and childrearing.

The exact reason for the lower desire for additional children among women living in apartments is unclear. However, apartment residents cannot enlarge their living space by adding rooms, a restriction that probably tends to reduce their fertility (Marcus & Mauricio, 1975). Although this result should not be generalized, crowded apartment living might inhibit additional fertility.

There were several limitations to this study. First, there is a difference between the total fertility rate (TFR) of the data used and that of all women of child-bearing age living in Seoul. The TFR for Seoul reported by the Korea National Statistical Office represents the rate for all women from the ages of 15 to 49 (the child-bearing period), whereas the subjects for this study were married women between the ages of 25 to 39 living with their husbands. For the Seoul Citizens Health Indicators Survey, 2005, the raw data were for married women aged 19 to 49 living with their husbands. Accordingly, because of data limitations, this study could not include divorced women, widows, women who never married and unmarried mothers as subjects. The results of this study thus do not represent all women living in Seoul in the child-bearing period.

Second, the possibility of measurement error cannot be ruled out. The binary response option to the question regarding desire for additional children might force an answer from women who are undecided. However, such an error would not have affected our main results.

Third, group membership within social networks and support variables could not be subdivided because the survey used only broad questions on these matters. The social group participation of survey respondents was ascertained using a single question: 'Do you belong to any social groups such as religious groups, volunteer groups, hobby groups, charities, social gatherings, etc.?' However, social groups vary widely. Some are more likely to encourage face-to-face contact, whereas others merely

require the payment of membership dues and offer only passive group activities (Kawachi *et al.*, 1999). However, this question could not be considered further owing to data limitations.

Fourth, another question that deserves attention is whether fertility intentions predict subsequent fertility behaviour. Previous studies have demonstrated that fertility intentions provide fairly accurate predictions of subsequent fertility behaviour (Miller & Pasta, 1995; Thomson, 1997; Schoen *et al.*, 1999). In particular, the predictive power of couples' intentions is greater than that of the husband or wife alone. Although they do not entirely countermand the effects of other variables, fertility intentions have predictive power (Tan & Tey, 1994; Schoen *et al.*, 1999).

Fifth, because this was a cross-sectional study, the direction of causation could not be distinguished. The association between social participation and fertility intention may be a mixture of effects in both directions. Therefore, this relationship may not directly index the effects of fertility promotion intervention on socially active married women.

### Conclusion

The social environment was found to be significantly associated with fertility intentions among married women in Seoul, Korea. Specifically, married women who were members of social group(s) had less preference for additional children than non-members. In addition, blue-collar workers had less preference for additional children than white-collar workers and housewives; and women living in apartments had less preference for additional children than the women living in detached or multiplex houses.

To date, emphasis has been placed on the relationship between women's participation in economic activities and fertility rate, without much attention to the importance of participation in social activities. Women's participation in social activities has increased over the past several decades, and this trend will continue. Moreover, women's social participation has various benefits, both individually and socially. Therefore, it is important that fertility promotion efforts include measures to reduce conflicts between participation in social activities and childrearing. Policies to build a fertility-friendly environment need to focus on women actively engaging in social participation and women in blue-collar occupations.

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### References

- Andersson, G. (2000) The impact of labor-force participation on childbearing behavior: pro-cyclical fertility in Sweden during the 1980s and the 1990s. *European Journal of Population* **16**, 293–333.

- Bongaarts, J. & Watkins, S. C.** (1996) Social interaction and contemporary fertility transitions. *Population and Development Review* **22**, 639–682.
- Boulay, M. & Valente, T. W.** (1999) The relationship of social affiliation and interpersonal discussion to family planning knowledge, attitudes and practice. *International Family Planning Perspectives* **25**(3), 112–118, 138.
- Buhler, C. & Fratzczak, E.** (2004) *Social Capital and Fertility Intentions: The Case of Poland*. Max-Planck Institute for Demographic Research, Rostock, Germany, April 2004.
- Caldwell, J. & McDonald, P.** (2002) Policy responses to low fertility and its consequences: a global survey. *Journal of Population Research* **19**(1), 1–24.
- Choi, S-H. & Kim, J-W.** (2005) *The Determinants of Low Fertility after Foreign Exchange Crisis in Korea*. Bulletin of Samsung Economic Research Institute, Department of Population Policy.
- Chun, K-H.** (2003) Fertility transition in Korea: progress and prediction. *Statistics Research* **8**(1), 33–58.
- Cleland, J. & Wilson, C.** (1987) Demand theories of the fertility transition: an iconoclastic view. *Population Studies* **41**(1), 5–30.
- Dalgard, O. S. & Haheim, L. L.** (1998) Psychosocial risk factors and mortality: a prospective study with special focus on social support, social participation, and locus of control in Norway. *Journal of Epidemiology & Community Health* **52**, 476–481.
- Del Boca, D.** (2003) Why are fertility and participation rates so low in Italy (and Southern Europe)? Paper presented at the *Annual Meeting of the Italian Academy at Columbia University*, New York, NY, October 29th 2003.
- Engelhardt, H., Kogel, T. & Prskawetz, A.** (2004) Female and women's employment reconsidered: a macro-level time-series analysis for developed countries 1960–2000. *Population Studies* **58**(1), 109–120.
- Ermisch, J. F.** (1988) Econometric analysis of birth rate dynamics in Britain. *Journal of Human Resources* **23**(4), 563–576.
- Ermisch, J. F.** (1989) Purchased childcare, optimal family size and mother's employment: theory and econometric analysis. *Journal of Population Economics* **2**(2), 79–102.
- Kawachi, I., Kennedy, B. P. & Glass, R.** (1999) Social capital and self-related health. *American Journal of Public Health* **89**(8), 1187–1194.
- Korea National Statistical Office** (2006) *Annual Report on Birth and Death Statistics, 2006*. National Statistical Office, Seoul, Korea.
- Korean Ministry of Women & Family** (2007) *Bulletin of Women & Family Statistics*. Korean Ministry of Women & Family, Seoul, Korea.
- Madhavan, S., Adams, A. & Simon, D.** (2003) Women's networks and the social world of fertility behavior. *International Family Planning Perspectives* **29**(2), 58–68.
- Marcus, F. & Mauricio, S.** (1975) The fertility-inhibiting effect of crowded apartment living in a tight housing market. *American Journal of Sociology* **80**(6), 1410–1427.
- Metropolis of Seoul & Korean Institute of Health and Social Affairs** (2002) *The Health Level and Medical Service in the Citizens of Seoul*. The Metropolis of Seoul & Korean Institute of Health and Social Affairs, Seoul, Korea.
- Miller, W. B. & Pasta, D. J.** (1995) Behavioral intentions: which ones predict fertility behavior in married couples? *Journal of Applied Social Psychology* **25**, 530–555.
- Philipov, D. & Shkolnikov, V.** (2001) Fertility intentions and coping strategies: results from the 1988 round of the Russian Longitudinal Monitoring Survey. Paper presented at the *Annual Meeting of the Population Association of America*, Washington, DC, March 29th–31st, 2001.
- Philipov, D. et al.** (2004) Fertility intentions and their timing: theory and evidence from Bulgaria and Hungary. Paper presented at the *Annual Meeting of the Population Association of America*, Boston, MA, April 1st–4th, 2004.

- Population Reference Bureau** (2006) *World Population Data Sheet*. Washington, DC.
- Radecki, S. E. & Beckman, L. J.** (1992) Determinants of child-bearing intentions of low-income women: attitudes versus life circumstances. *Journal of Biosocial Science* **24**(2), 157–166.
- Rogers, E. M.** (1995) *Diffusion of Innovations*, 4th edn. Free Press, New York, NY.
- Schoen, R., Astone, N. M., Kim, Y. J., Nathanson, C. A. & Fields, J. M.** (1999) Do fertility intentions affect fertility behavior? *Journal of Marriage and the Family* **61**(3), 790–799.
- Shapiro, D. & Mott, F. L.** (1994) Long-term employment and earnings of women in relation to employment behavior surrounding the first birth. *Journal of Human Resources* **29**(2), 248–275.
- Tan, P. C. & Tey, N. P.** (1994) Do fertility intentions predict subsequent behavior? Evidence from Peninsular Malaysia. *Studies in Family Planning* **25**(4), 222–231.
- Thomson, E.** (1997) Couple childbearing desires, intentions, and births. *Demography* **34**, 343–354.
- Yoshii, K. & Yamazaki, Y.** (1999) The effects of paid employment, social activities participation on women's health and comparison of role qualities. *Nippon Koshu Eisei Zasshi* **46**(10), 869–882.