

The Effects of Religion on Fertility-Related Attitudes and Behavior in Japan, South Korea and Singapore

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Introduction

Japan and Singapore continue to have below-replacement fertility since the mid-1970s even though Japan experienced it before the 1970s including 1966, the year of fire-horse. South Korea (hereafter, Korea) also started having below-replacement fertility in the late 1980s and has surpassed Japan in terms of fertility decline in recent years. In 2000 Japan had the total fertility rate (TFR) of 1.36 which was still a little lower than in Korea (1.47) and much lower than in Singapore (1.60). But, in 2001, Japan's TFR was 1.33 which was already higher than that of Korea (1.30) but a little lower than that of Singapore (1.41). Even though Korea had one of the lowest TFR in the world in 2002, the relative position was similar: 1.32 in Japan, 1.17 in Korea and 1.37 in Singapore. However, in 2003 Japan (1.29) was surpassed in terms of fertility decline not only by Korea (1.18) but also by Singapore (1.27). In 2010 Singapore (1.16) had lower TFR than Korea (1.23) and Japan (1.39), while Taiwan had the world's lowest fertility of 0.855 because of the tiger-year fall in Chinese-tradition societies.

The rapid fertility decline in Korea has been promoted by a rise in living standard accompanied by the sustained economic growth, rapid social change described as "condensed modernity" (Chang 2003) as well as the "too successful" family planning programs implemented until the early 1990s. A rise in living standard, social change and successful family planning programs are likely to have changed fertility-related attitudes, particularly those related to the necessity of children and the ideal family size, and thus to have caused faster fertility decline in Singapore and Korea than in Japan.

On the other hand, the role of son preference in the process of fertility decline has attracted attention in East Asia, particularly after the spread of ultrasonic devices in the prenatal examination causing sex-selective abortion and high sex ratio at birth (SRB),

for which Korea was distinguished until recently. The SRB looks normal in Japan, but there is a possibility of “canceling out” due to “balance preference” (Nagai et al. 2002). The SRB in Korea was the highest around 1990, but it has declined to the level around 110 in the early 2000s, while it is around the normal level in recent years (105.7 in 2011 and 2012). As a long-term consequence of unbalanced SRB since the early 1980s, marriage squeeze due to the relative shortage of women in marriage market has already started in East Asian societies including Korea, which has already experienced an increase in intermarriage as an advance response to it.

Rapid fertility decline in the three societies and changing SRB in Korea seem to be related to changes in fertility-related values and attitudes as mentioned above. According to the UN (2003) classification, East Asia (together with Southern Europe, Austria, Canada, and Germany) is characterized by high age at first birth, high proportion of childlessness, and low propensity to have two or more children. Why is the fertility in these societies characterized by these traits? Is it related to culture including religion? Or is it related to the gender roles or the type of welfare state? Is it also related to the fact that these societies are late comers in the Second Demographic Transition (SDT)? Is it possible that the single-gender preference for children in East Asia depresses fertility further in a short run and a long run? It is also a good question whether the revival of gender preference for children (“balance preference”) changes fertility behavior in Western societies. We might as well analyze the determinants of fertility-related attitudes in East Asia to start exploring the possible answer to these questions.

While religion is a “forgotten” variable in Japanese social surveys except in internationally comparative surveys, it has been known to affect various socioeconomic and demographic attitudes and behaviors in many other societies. In the case of Singapore, religion and ethnicity (called “race” in Singapore) have occasionally independent effects (Kojima 2012a), but the effects of religion has not been analyzed possibly because of the sensitivity. While Koreans are considered to have more Confucian values than other Asians, the society seems to be in the process of Christianization. In the US and Europe there may be the reversal of secularization and tendency toward post-materialism due to the revival of religion, the rise of fundamentalism and economic crisis/stagnation.

This study presents the results of comparative analysis of the effects of religion on fertility-related attitudes and behavior in Japan, Korea and Singapore, drawing on the microdata from the 2009 Survey on Comparative Study of Family Policies in East Asia (South Korea, Singapore and Japan), which was conducted by the Section for Measures against Declining Birthrate, Director-General for Policies on Cohesive Society, Cabinet Office (Japanese Government). It also examines the effects of religion on the discrepancy between attitudes and behavior regarding fertility. This is

an extension of the author's past study analyzing the effects of religion on fertility-related attitudes and behaviors (e.g., Kojima 2003, 2004, 2006, 2011, 2012a, 2012b, 2013).

Literature Review

There are an increasing number of studies on the effects of values and culture on fertility behaviors and attitudes since the 1980s as indicated by van de Kaa (1996). There seem to be differences in fertility values even among European societies sharing a similar culture (Surkyn and Lesthaeghe 1999). The studies focusing on the effects of religion are also on the increase (e.g., Lehrer 2004, McQuillan 2004, Adsera 2004, Derosas and van Poppel 2006, Ellison and Hummer 2010 and Brown 2012). Although there have been studies on the value of children (VOC) in the 1970s (e.g., Arnold et al. 1975), they do not seem to be directly related to this line of studies. More recently, there are studies on the effects of religion on family-related attitudes including Manabe and Onodera (2000) comparing Japan and Germany, but they are based on cross-tabulations. The present author's recent multivariate analyses also examined the effects of religion on fertility-related attitudes in Japan, Korea and Taiwan for the general adult population (Kojima 2003, 2004, 2006). The recent comparative study by Skirbekk et al. (2013) analyzed the effects of Buddhism on fertility behaviors in Asia including two East Asian societies (Japan and Korea).

The following short literature review of multivariate analyses on the effects of religion on fertility-related attitudes and behavior in East Asia focuses on the four fertility-related attitudes: felt necessity of children, desired number of children, son preference and the discrepancy between fertility attitudes and behavior. It draws mainly on Japanese and English materials since Korean empirical studies are not readily available and not always accessible to the author due to the language barrier.

Felt Necessity of Children

In Japan, Itoh's (1997) regression analysis of tolerance toward childless couples can be the first one related to the felt necessity of children, but religion was not included as an independent variable (perhaps, it had not been asked in the Tokyo survey). Kojima (2003, 2004) analyzed the felt necessity of children among the adult population, using the JGSS and TSCS-2001. Kojima (2003), applying logit models to the JGSS-2000 and the JGSS-2001, found that Japanese male respondents with personal religion are less likely to feel non-necessity to have children and female respondents with household religion are more likely in 2000, but female respondents with a personal religion are more likely. Kojima (2004) found a similar tendency for the analysis by sex of respondents in Japan in 2000, 2001 and 2003 (similar to 2002).

Kojima (2006) revealed that Japanese women of reproductive age with personal religion are less likely to feel non-necessity in 2001 and that those with household religion are less likely in 2002, while Korean Buddhist and Protestant women are less likely in 2000.

Seo (1992) conducted a regression analysis of the necessity of children, drawing on the 1991 Korean National Fertility Survey, but she could not find any significant effects of Christianity. The present author could find no similar multivariate analyses on the effects of religion on felt necessity of children for Singapore.

Desired Number of Children

The ideal number of children has been more extensively analyzed in Japan. The earlier studies include Retherford and Ogawa (1991), Retherford et al. (1999), Otani (1987), Kojima (1993), Kojima (2000), Kojima (2003), but the effects of religion has not been analyzed except in the present author's works because religion is not a standard question in Japanese surveys. Kojima (2003) found no significant effects of religion on a small family (two children or less) among male respondents in 2000 and 2001, but he found a negative effect of household religion in 2000 and a negative effect of personal religion in 2001 among female respondents. Kojima (2006) revealed that Japanese women of reproductive age with personal religion are less likely to have small ideal number of children in 2000, while Korean Buddhist, Protestant and Catholic women are less likely in 2000.

Seo (1992) conducted regression analyses of the ideal number of children (two or less) in Korea, but she could not find any significant effect of Christianity. The present author could find no similar multivariate analyses for Singapore. However, Li et al. (2011) have recently found that Singaporean women are more materialistic than American women and, thus, they are less likely to favor marriage and childbearing due to their lower life satisfaction and higher income standard placed on potential mates. On the other hand, Swinyard et al. (2001) found that in both Singapore and the US more materialistic respondents tend to have less life satisfaction, which is partly mediated by religion. Thus, we might examine more direct relationship between religion and attitudes toward family formation, including those related to family policies.

Lesthaeghe (2010) has recently suggested that East Asia is experiencing the Second Demographic Transition (SDT) and revealed that the effects of value-related factors on the delay in childbearing in Japan, Korea and Singapore are similar to those in Western societies, but only in the case of Japan factors related to religion-secularization values tend to have effects in the opposite direction. This is in line with Kojima's (2006) finding that Japan is different from Korea and Taiwan for the positive effects of interaction between religion and young age on pronatalist attitudes.

However, there are not many Japanese studies analyzing the effects of religion on demographic attitudes and behaviors partly because it is not a standard question item in Japanese surveys.

Son Preference

While Kureishi and Wakabayashi (2012) conducted multivariate analysis of realized son preference in Japan and Fuse (2013) conducted that of daughter preference attitude, religion was not included as an independent variable in these studies. Kojima (2003, 2004) seem to be the only multivariate analyses of the effect of religion on son preference for Japan and Taiwan. Kojima (2003) found the positive effects of personal religion on son preference among both male and female Japanese in 2000, but no significant effects in 2001. Kojima (2004) found similar effects for Japan in 2000 and 2001 and a positive effect of household religion among male Japanese in 2002 as well as a positive effect of Christianity among male Japanese. Kojima (2006) revealed that Japanese women of reproductive age with personal religion are less likely to have son preference in 2000, and that Korean Buddhist women are more likely, while Korean Protestant and Catholic women are less likely (depending on the measure) in 2000.

Seo (1992) also conducted regression analyses of son preference in Korea and found negative effects of Christianity. The present author could find no similar multivariate analyses on the effects of religion on son preference for Singapore. On the other hand, Kim and Song (2005) found a positive effect of Buddhism on son preference in Korea by logit analysis.

Discrepancy

Kojima (1993) is probably the first multivariate analysis of the discrepancy between fertility attitudes and behavior, but it did not include religion as an independent variable because the information on religion is not available in the microdata. Morita (2006), Matsuura (2008) and Suzuki and Wada (2010) also conducted multivariate analyses of the discrepancy, but they did not analyze the effects of religion due to the lack of information. The present author could find no similar multivariate analyses on the effects of religion on the discrepancy for Korea or Singapore.

Hypothesis

It is somewhat difficult to generalize the results of small number of studies regarding the effects of religion on fertility attitudes and behavior in the three societies. We can only broadly hypothesize that religion is often associated with pronatalist attitudes, but that it may not be always the case for Christianity and some

other religions.

Data and Methods

The microdata used in this study derive from the 2009 Survey on Comparative Study of Family Policies in East Asia (South Korea, Singapore and Japan), which was conducted by the Section for Measures against Declining Birthrate, Director-General for Policies on Cohesive Society, Cabinet Office (Japanese Government). Even though Singapore is located in Southeast Asia, it was included because it has been conducting an active pronatalistic family policy during the past three decades and it exhibits diversity in terms of ethnicity and religion.

The details about the survey procedure are found in CAO (2009). The survey in Japan applied two-stage stratified sampling to randomly selected municipalities and the area sampling based on age and sex quota in the sampled municipalities to obtain 1,000 (male and female) respondents aged 20-49. The respondents of surveys in other countries seem to be selected in a similar manner. The original questions and choices for fertility-related attitudes and behavior (dependent variables) to be analyzed in this study are as follows:

Having Children

Q14. How do you feel about having children? Please choose up to three answers.

- 1) It is natural to have children (“Natural”).
- 2) I will be able to leave behind descendants (“Descendants”).
- 3) I will gain social recognition for having children (“Recognition”).
- 4) Having children will enrich my life and make it more enjoyable (“Enjoyable”).
- 5) My children will support and provide for me in my old age (“Old-age Support”).
- 6) Children are the future of the society (“Society’s Future”).
- 7) Children help to improve the relationship with my spouse (“Spouse Relation”).
- 8) I want to have children with the person I love (“Loved One”).
- 9) My spouse, parents, or others have wanted me to have children (“Family Demand”).
- 10) I want to continue with the family name (“Family Name”).
- 11) Having children will reduce my personal time (“Time Squeeze”).
- 12) Having children will increase my financial burden (“Money Burden”).
- 13) Having children will increase my physical and mental health burden as I need to take care of them (“Health Burden”).
- 14) Others— Please specify

15) None (DO NOT READ)

16) Don't know

Whether You Should Have Children After Marriage

Q15. To what extent do you agree or disagree that one should have his/her own child after marriage?

1) Strongly agree; 2) Somewhat agree; 3) Somewhat disagree; 4) Strongly disagree; and 5) Don't know

Desired Number of Children

Q16. How many children would you like to have?

_____ Children

Desired Sex of Children

Q17. Would you prefer your first child to be a boy or a girl?

1) Boy; 2) Girl; and 3) Doesn't matter

Actual Number of Children

Q18a. How many children (including adopted children) do you have in total?

1) _____ Children

2) Do not have children

The dependent variables for the multivariate analysis of attitudes toward having children include the binary one on whether or not the respondent selected the following seven choice in Q14: "1. Natural," "2. Descendants," "4. Enjoyable," "6. Society's Future," "7. Spouse Relation," "8. Loved One" and "12. Money Burden." The dependent variables for multivariate analysis of fertility attitudes and behavior include the binary one on whether or not the respondent agrees to the statement saying that one should have children after marriage ("Kids Necessary") in Q15. They also include the following three trichotomous variables: "Desired Number of Kids" based on Q16: 0-1, 2, 3+; "Desired Sex of 1st Kid" based on Q17: Male, Female, Either; "Actual Number of Kids" based on Q18a: 0-1, 2, 3+; and Desired Number – Actual Number of Kids: 1<, 1, 2+ (The categories with an underline are reference ones).

The methods used in this study are the bivariate analysis and the logit analysis. For the bivariate analysis, the independent variable is religion (affiliation): Buddhist and No Religion for Japan; Buddhist, Catholic, Protestant and No Religion for Korea; and Buddhist, Catholic, Protestant, Muslim, Taoist, Hindu and No Religion for Singapore. The means of dependent variables for each religion will be presented in Tables 1 and

2.

The logit analysis with comparable predetermined models include, as independent variables, Buddhist for Japan, Buddhist, Catholic, and Protestant for Korea and Buddhist, Catholic, Protestant, Muslim, Taoist, and Hindu for Singapore. The models also include, as control variables, age (20-29, 30-39, 40-49), marital status (Married, Others), education (Higher, Lower, Medium) and urban/rural residence (Metropolitan, Rural, Medium Size City) for Japan and South Korea and nationality (Foreigner, Others) for Singapore. Lower Education was not included for Korea due to the extremely low frequency. For the estimation of logit models, CATMOD procedure in the SAS statistical package is used.

Results

1. Bivariate Analyses

1) Attitudes toward Having Children

Table 1 shows the percentage of respondents choosing each feeling about having children by sex and religion in Japan, Korea and Singapore. It reveals that the percentage choosing "1. Natural" is the highest among the thirteen items in all the three societies (except Japanese women who have a somewhat higher percentage for "4. Enjoyable") and its level is the highest in Korea and the lowest in Japan. The second highest percentages are found for "4. Enjoyable" in Japan and Singapore, but the percentages are higher for "7. Spouse Relation" in Korea. Consequently, the third highest percentages are found for "4. Enjoyable" in Korea and "7. Spouse Relation" in Singapore, but it is not definite for Japan. Among Japanese women "8. Loved One" has by far a higher percentage than others, but among Japanese men "2. Descendants," "7. Spouse Relation," "8. Loved One," and "12. Money Burden" have similar percentages of around 20%. In addition to these six feelings mentioned above (1, 2, 4, 7, 8 and 12), we will also analyze below "6. Society's Future," of which percentages exceed the 20% mark in Singapore.

The first column of Table 1 shows that among Japanese men Buddhists are slightly more likely to choose "1. Natural" than those without religion, but that it is the opposite among Japanese women. Among Korean men and women Catholics are most likely to choose "1. Natural," while Buddhists are least likely. But such an effect of Catholicism is not observed in Singapore where Taoists are most likely to choose "1. Natural" among both sexes, while Protestants men are least likely and women without religion are least likely.

The second column of Table 1 reveals that the percentage of respondents choosing "2. Descendants" is around twice as high among men as among women in all the three societies. The similar male dominance in the choice is also found for

Table 1 Attitudes toward Having Children by Sex and Religion in Japan, South Korea and Singapore

Country Sex & Religion	1. Natural	2. Des- cendants	3. Recog- nition	4. Enjoy- able	5. Old Support	6. Soc. Future	7. Spouse Rel.	8. Loved One	9. Family Demand	10. Family Name	11. Time Squeeze	12. Money Burden	13. Health Burden
Japan													
Male	62.8%	20.3%	2.0%	57.9%	6.1%	13.8%	20.9%	19.5%	2.8%	5.7%	8.9%	20.7%	4.1%
(N)	508	508	508	508	508	508	508	508	508	508	508	508	508
Buddhist	66.7%	22.4%	2.3%	53.9%	6.8%	11.9%	19.2%	19.6%	2.7%	9.6%	5.9%	19.6%	5.0%
No Religion	58.2%	18.8%	1.9%	61.7%	5.4%	14.6%	21.1%	19.5%	3.1%	2.7%	11.9%	21.1%	3.8%
Female	61.1%	10.2%	2.2%	65.2%	7.9%	9.2%	16.5%	33.6%	2.9%	1.6%	10.6%	17.3%	4.1%
(N)	491	491	491	491	491	491	491	491	491	491	491	491	491
Buddhist	59.7%	9.7%	1.9%	70.4%	9.7%	11.2%	18.4%	36.9%	3.9%	2.4%	9.2%	14.6%	1.0%
No Religion	62.8%	10.7%	2.4%	61.7%	7.1%	7.9%	14.6%	30.4%	2.0%	0.8%	11.1%	19.8%	5.5%
South Korea													
Male	84.7%	25.9%	12.2%	41.8%	4.9%	12.5%	48.2%	13.1%	5.3%	5.3%	4.1%	19.2%	4.5%
(N)	510	510	510	510	510	510	510	510	510	510	510	510	510
Buddhist	78.3%	22.9%	15.7%	42.2%	4.8%	7.2%	45.8%	8.4%	12.0%	12.0%	3.6%	18.1%	8.4%
Catholic	94.1%	20.6%	5.9%	52.9%	–	20.6%	38.2%	8.8%	2.9%	2.9%	2.9%	20.6%	5.9%
Protestant	87.3%	28.4%	6.9%	44.1%	3.9%	13.7%	46.1%	16.7%	4.9%	2.0%	3.9%	19.6%	4.9%
No Religion	84.8%	26.2%	13.8%	39.7%	5.9%	12.8%	51.0%	13.8%	3.8%	4.8%	4.5%	19.3%	3.1%
Female	82.1%	11.7%	12.3%	44.9%	8.6%	9.5%	46.9%	21.6%	6.4%	2.7%	11.7%	18.9%	7.0%
(N)	486	486	486	486	486	486	486	486	486	486	486	486	486
Buddhist	79.5%	13.4%	12.5%	46.4%	9.8%	9.8%	41.1%	17.9%	7.1%	4.5%	11.6%	21.4%	7.1%
Catholic	88.6%	18.2%	13.6%	40.9%	4.5%	9.1%	50.0%	29.5%	9.1%	–	6.8%	18.2%	2.3%
Protestant	80.2%	11.9%	10.3%	44.4%	8.7%	10.3%	52.4%	22.2%	5.6%	4.0%	6.3%	11.9%	9.5%
No Religion	83.3%	8.9%	13.3%	45.3%	8.9%	8.4%	46.3%	21.7%	5.9%	1.5%	16.3%	22.2%	6.4%
Singapore													
Male	73.7%	22.3%	5.5%	53.8%	15.2%	23.3%	27.5%	22.9%	3.6%	4.7%	4.5%	7.3%	4.5%
(N)	506	506	506	506	506	506	506	506	506	506	506	506	506
Buddhist	75.7%	19.0%	6.9%	51.9%	15.9%	20.1%	25.4%	24.3%	3.7%	5.8%	4.8%	6.9%	3.7%
Catholic	78.1%	25.0%	3.1%	65.6%	15.6%	12.5%	37.5%	21.9%	3.1%	–	3.1%	3.1%	3.1%
Protestant	61.2%	20.4%	6.1%	51.0%	16.3%	28.6%	26.5%	32.7%	4.1%	6.1%	4.1%	6.1%	2.0%
Muslim	75.3%	21.3%	6.7%	51.7%	19.1%	37.1%	29.2%	21.3%	3.4%	6.7%	–	3.4%	4.5%
Taoist	100.0%	54.2%	–	29.2%	12.5%	20.8%	41.7%	12.5%	8.3%	–	–	12.5%	–
Hindu	66.7%	16.7%	3.3%	73.3%	26.7%	30.0%	36.7%	13.3%	–	6.7%	3.3%	–	3.3%
No Religion	69.6%	22.8%	4.3%	57.6%	6.5%	15.2%	20.7%	22.8%	3.3%	2.2%	10.9%	14.1%	9.8%
Female	77.8%	13.8%	5.5%	58.7%	14.0%	20.9%	27.2%	24.0%	3.3%	0.8%	6.1%	8.9%	4.9%
(N)	492	492	492	492	492	492	492	492	492	492	492	492	492
Buddhist	81.4%	15.4%	6.4%	59.6%	14.9%	17.6%	26.1%	20.2%	2.7%	2.7%	5.9%	8.5%	5.9%
Catholic	75.0%	15.6%	–	65.6%	12.5%	25.0%	34.4%	28.1%	3.1%	–	9.4%	6.3%	–
Protestant	76.1%	6.5%	4.3%	60.9%	6.5%	30.4%	21.7%	28.3%	–	–	10.9%	8.7%	8.7%
Muslim	75.0%	11.8%	11.8%	59.2%	23.7%	28.9%	28.9%	19.7%	3.9%	1.3%	1.3%	2.6%	6.6%
Taoist	95.2%	23.8%	4.8%	57.1%	9.5%	14.3%	19.0%	23.8%	4.8%	–	–	23.8%	4.8%
Hindu	82.1%	17.9%	3.6%	50.0%	7.1%	17.9%	32.1%	28.6%	3.6%	3.6%	–	10.7%	–
No Religion	70.7%	12.1%	2.0%	56.6%	11.1%	17.2%	29.3%	30.3%	4.0%	1.0%	9.1%	12.1%	4.0%

Source: The author's own analysis of CAO (2009) survey microdata.

“10. Family Name” in all the three societies, possibly reflecting East Asian tradition, even though the level is about one fifth of “2. Descendants.” The second column indicates that among Japanese men Buddhists are more likely to choose “2. Descendants” than those without religion, but it is the opposite among Japanese women. Among Korean men Protestants are most likely to choose “2. Descendants,” while Catholics are least likely. Among Korean women, however, Catholics are most likely to choose “2. Descendants,” while those without religion are least likely. In Singapore Taoists are most likely to choose “2. Descendants” among both sexes, while Hindu men are least likely and women without religion are least

likely.

The fourth column of Table 1 shows that the percentage of respondents choosing “4. Enjoyable” is higher among men than among women in all the three societies (mild female dominance), possibly reflecting social desirability bias among women. Japanese men without religion are more likely to choose “4. Enjoyable,” while Japanese Buddhist women are more likely. Among Korean men Catholics are most likely to choose “4. Enjoyable,” while those without religion are least likely. But among Korean women Buddhists are most likely and Catholics are least likely. On the other hand, Singaporean Catholic women are most likely to choose “4. Enjoyable” like Korean Catholic men but unlike Korean Catholic women, while Singapore Hindu women are least likely. However, Singaporean Hindu men are most likely to choose “4. Enjoyable” unlike Singaporean Hindu women, while Singaporean Taoist men are least likely.

As indicated above, the percentage of respondents choosing “6. Society’s Future” in the sixth column of Table 1 is relatively high only in Singapore, but mild male dominance is observed in all the three societies, possibly reflecting social desirability bias among men. Japanese men without religion are more likely to choose “6. Society’s Future,” while Japanese Buddhist women are more likely. Among Korean men Catholics are most likely to choose “6. Society’s Future,” while Buddhists are least likely. But among Korean women Protestants are most likely and those without religion are least likely. While Singaporean Muslim men are most likely to choose “6. Society’s Future,” Singaporean Catholic men are least likely to choose it unlike Korean Catholic men. Singaporean Protestant women are most likely to choose “6. Society’s Future” like Korean Protestant women, while Singapore Taoist women are least likely.

The seventh column of Table 1 reveals that Japanese men without religion are more likely to choose “7. Spouse Relation,” while Japanese Buddhist women are more likely. Among Korean men those without religion are most likely to choose “7. Spouse Relation,” while Catholics are least likely. But among Korean women Protestants are most likely to choose it and Buddhists are least likely. On the other hand, Singaporean Taoist men are most likely to choose “7. Spouse Relation,” while Singaporean Protestant men are least likely. However, Singaporean Catholic women are most likely to choose “7. Spouse Relation,” while Singaporean Taoist women are least likely to choose it unlike Singaporean Taoist men.

The eighth column of Table 1 shows that there is little difference by religion in the selection of “8. Loved One” among Japanese men, but Buddhists are more likely to choose it among Japanese women. In Korea Buddhists are least likely to choose “8. Loved One” among both sexes, while Protestant men and Catholic women are most likely. In Singapore Protestant men are more likely to choose “8. Loved One”

like Korean Protestant men, while Taoist men are least likely. Singaporean women without religion are most likely to choose “8. Loved One,” while Singaporean Muslim women are least likely.

The percentage of those choosing “12. Money Burden” in the twelfth column of Table 1 is low only in Singapore unlike the percentage for “6. Society’s Future.” It is higher among Japanese without religion for both sexes. Among Korean men Catholics are most likely to choose “12. Money Burden,” while Buddhists are least likely. But Korean women without religion are most likely, while Korean Protestant women are least likely. Singaporean men without religion are most likely to choose “12. Money Burden” like Korean women, while Singaporean Hindu men are least likely. Singaporean Taoist women are most likely to choose “6. Society’s Future,” while Singaporean Muslim women are least likely. It is difficult to generalize the above results because the effect of religion varies by choice, sex and society.

2) Fertility Attitudes and Behavior

The first column of Table 2 shows that the level of agreement to the felt necessity to have children is quite high and higher among men (over 90% among men and over 80% among women) in all the three societies. It is the highest among Singaporean men and women, but the discrepancy between sexes is the largest in Korea. In Japan the religious difference does not seem to be large among women, but Buddhist men are more likely to feel it necessary to have children. In Korea Protestant men and Buddhist women are most likely to favor childbearing, while Buddhist men and women without religion are least likely. In Singapore all the Catholic, Taoist and Hindu men and all the Taoist and Hindu women favor childbearing, while Protestant men and women without religion are least likely.

The second column of Table 2 indicates that, on the average, women without religion have the smallest desired number of children in all the three societies, while men without religion have the smallest number except in Singapore where Hindu men have the smallest. In Korea Protestant men and women have the largest desired number of children, while in Singapore Muslim men and women have by far the largest number.

The third column of Table 2 reveals the level of son preference for the first child. The percentage of respondents preferring son is the highest in Korea and it is higher among men than among women in Japan and Korea. In Japan Buddhist men are more likely to prefer son, while women without religion are more likely. In Korea Buddhists of both sexes are more likely to prefer son like Japanese Buddhist men, but Protestant men and Catholic women are least likely. In Singapore Muslim men and Taoist women are most likely to prefer son, while Protestants of both sexes are least likely to prefer son like Korean Protestant men.

Table 2 Fertility-Related Attitudes and Behavior by Sex and Religion in Japan, South Korea and Singapore

Country Sex & Religion	% Need Kids	Desired # Kids	% Prefer Son	Actual # Kids	# Gap	% Negative Gap
<u>Japan</u>						
Male	90.9%	2.39	25.0%	1.18	1.21	0.6%
(N)	508	508	508	508	508	508
Buddhist	93.6%	2.48	27.4%	1.32	1.16	0.5%
No Religion	89.3%	2.33	22.6%	1.08	1.25	0.8%
Female	86.8%	2.40	18.5%	1.42	0.98	1.2%
(N)	491	491	491	491	491	491
Buddhist	87.4%	2.48	17.0%	1.39	1.08	1.9%
No Religion	87.0%	2.32	20.2%	1.42	0.91	0.8%
<u>South Korea</u>						
Male	91.2%	2.27	32.4%	0.97	1.29	–
(N)	510	510	510	510	510	510
Buddhist	89.2%	2.25	37.3%	1.14	1.11	–
Catholic	91.2%	2.41	32.4%	1.03	1.38	–
Protestant	93.1%	2.42	28.4%	0.95	1.47	–
No Religion	91.0%	2.20	32.4%	0.93	1.27	–
Female	84.4%	2.21	24.1%	1.26	0.95	–
(N)	486	486	486	486	486	486
Buddhist	91.1%	2.19	31.3%	1.46	0.72	–
Catholic	86.4%	2.27	18.2%	1.20	1.07	–
Protestant	84.9%	2.37	19.0%	1.24	1.13	–
No Religion	79.8%	2.11	24.6%	1.17	0.94	–
<u>Singapore</u>						
Male	96.4%	2.34	22.5%	1.02	1.32	2.8%
(N)	506	506	506	506	506	506
Buddhist	94.7%	2.22	16.4%	0.94	1.29	2.6%
Catholic	100.0%	2.38	31.3%	1.31	1.06	3.1%
Protestant	93.9%	2.37	16.3%	1.20	1.16	2.0%
Muslim	98.9%	3.04	38.2%	1.38	1.66	5.6%
Taoist	100.0%	2.04	29.2%	0.42	1.63	–
Hindu	100.0%	2.00	23.3%	0.93	1.07	–
No Religion	95.7%	2.08	18.5%	0.83	1.25	2.2%
Female	92.9%	2.34	23.2%	1.51	0.84	7.9%
(N)	492	492	492	492	492	492
Buddhist	93.6%	2.20	22.9%	1.24	0.96	5.9%
Catholic	90.6%	2.13	28.1%	1.31	0.81	9.4%
Protestant	91.3%	2.17	15.2%	1.33	0.85	6.5%
Muslim	96.1%	3.13	32.9%	2.50	0.63	14.5%
Taoist	100.0%	2.62	38.1%	2.00	0.62	9.5%
Hindu	100.0%	2.29	17.9%	1.89	0.39	10.7%
No Religion	87.9%	2.11	17.2%	1.18	0.96	6.1%

Source: The author's own analysis of CAO (2009) survey microdata.

The fourth column of Table 2 shows the mean number of children for all the respondents including the never married. It is the lowest among Koreans of both sexes. It is larger among women because of higher proportion married and lower age at marriage. In Japan Buddhist men have a larger mean number of children, while women without religion have a slightly larger mean number. In Korea Buddhists of both sexes have the largest mean number of children and those men and women without religion have the smallest mean number like Japanese men. In Singapore, however, Muslim men and women have the largest mean number of children, while Taoist men and women without religion have the smallest mean

number.

Consequently, as the fifth column of Table 2 indicates, the discrepancy between the desired number and the actual number of children are larger among men than among women. In Singapore the gap is the largest for men and the smallest for women among the three societies. In Japan men without religion are more likely to have a larger gap, while Buddhist women have a larger gap. In Korea Protestant men and women have the largest gap, while Buddhist men and women have the smallest gap. Among Singaporean men the gap is the largest among Muslims and the smallest among Catholics, while among Singaporean women the gap is the largest among both Buddhists and those without religion and the smallest among Hindus.

In addition, the sixth column shows the percentage of negative discrepancy, which indicates the excess of the actual number of children over the desired number of children. It is somehow zero in Korea, but there is very small negative gap in Japan where men without religion and Buddhist women are a little more likely to have excessive number of child. In Singapore, however, the negative gap is more pronounced, particularly among women than men: Muslim men and women have the largest gap while Taoist and Hindu men have no gap and Buddhist women have the smallest gap.

2. Logit Analyses with Comparable Models: Attitudes toward Having Children

Tables 3 through 5 show, for Japan, Korea and Singapore, the results of binomial logit analyses for the seven feelings about having children, which are discussed above. The results reveal the effects of religion after controlling for age, marital status, education, and urban-rural residence (nationality for Singapore).

The first through seventh columns of Table 3m (upper panel) presents the results for Japanese men and those of Table 3f (lower panel), the results for Japanese women. Among Japanese men Buddhists are marginally less likely to feel having children as “4. Enjoyable” and no significant effects are found for other feelings. Among Japanese women Buddhists are more likely to feel having children as “4. Enjoyable” and “8. Loved One,” while they are less likely to feel it as “1. Natural.”

The first through seventh columns of Table 4m (upper panel) presents the results for Korean men and those of Table 4f (lower panel), the results for Korean women. Among Korean men Buddhists are marginally less likely to feel having children as “1. Natural” and “6. Society’s Future,” while Catholics are more likely to feel it as “1. Natural” and “4. Enjoyable” and less likely to feel it as “7. Spouse Relation.” Among Korean women Buddhists are marginally less likely to feel having children as “1. Natural” and “7. Spouse Relation,” while Catholics are more likely to feel it as “2. Descendants” and Protestants are less likely to feel it as “12. Money Burden.”

The first through seventh columns of Table 5m (upper panel) shows the results

Table 3m Correlates of Attitudes toward Having Children among Japanese Men Aged 20-49:
Results of Logit Analysis

<u>Indep. Var. Categories</u>	1. Natural	2. Descendants	4. Enjoyable	6. Society's Future	7. Spouse Relation	8. Loved One	12. Money Burden
<u>Constant</u>	0.5074 &	-1.4510 #	-0.1647	-1.5219 ***	-1.2863 ***	-1.7097 ***	-1.5260 ***
<u>Age</u>							
20-29	-0.1362	-0.5818	0.1439	-0.3567	-0.2355	1.3964 ***	0.2311
30-39	-0.1287	0.0339	0.0529	-0.3825	-0.4075 &	0.6303 #	0.1898
<u>Marital Status</u>							
Married	0.4949 *	-0.2883	0.6686 **	-0.5691 #	0.4477 &	-0.4652 &	-0.2120
<u>Education</u>							
High	-0.2471	0.2281	0.0400	0.5973 *	-0.1897	-0.4484 #	0.2888
Low	-0.9376 *	0.5516	-0.2561	-0.0401	-0.6174	-0.0217	0.9919 *
<u>U-R Residence</u>							
Metropolitan	-0.2007	0.4356 #	0.4472 *	0.0877	0.3197	-0.4368 &	-0.2179
Rural	-0.2590	0.1639	0.1985	-0.1584	0.1900	0.1342	0.0758
<u>Religion</u>							
Buddhist	0.2342	0.2450	-0.2678 &	-0.2430	-0.1931	0.1366	-0.1052
N	508	508	508	508	508	508	508
d.f.	73	73	73	73	73	73	73
LLR	86.72 &	65.90	100.20 *	70.10	83.70 &	82.58	102.76 *

Source: The author's own analysis of CAO (2009) survey microdata.

Note: & p < 0.20, # p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001, \$ few cases.

Table 3f Correlates of Attitudes toward Having Children among Japanese Women Aged 20-49:
Results of Logit Analysis

<u>Indep. Var. Categories</u>	1. Natural	2. Descendants	4. Enjoyable	6. Society's Future	7. Spouse Relation	8. Loved One	12. Money Burden
<u>Constant</u>	0.6183 *	-1.9012 ***	0.0820	-2.1690 ***	-2.5951 ***	-1.1902 ***	-1.4342 ***
<u>Age</u>							
20-29	-0.7282 **	-0.4745	0.2219	-0.8945 *	0.3053	0.8033 **	0.3752
30-39	-0.3030	-0.6633 #	0.0021	-1.0114 *	-0.1185	0.2480	0.0794
<u>Marital Status</u>							
Married	0.5012 *	0.2560	0.3046 &	-0.5268 &	0.6749 *	0.0347	0.0421
<u>Education</u>							
High	0.1874	0.0509	0.2070	0.8983 *	0.2945	-0.0973	-0.5969 *
Low	-0.0695	1.4217 *	-0.5239	0.2941	0.2382	0.8492 &	-1.6659 &
<u>U-R Residence</u>							
Metropolitan	-0.4789 *	-0.2572	0.0599	0.3228	0.5131 #	-0.0882	0.3716 &
Rural	-0.1607	-0.3189	-0.0487	-0.1535	-0.2472	0.3044	0.2995
<u>Religion</u>							
Buddhist	-0.2640 &	-0.1989	0.3986 *	0.3391	0.3195	0.3033 &	-0.2264
N	491	491	491	491	491	491	491
d.f.	62	62	62	62	62	62	62
LLR	64.04	65.32	65.45	53.68	58.14	78.85 #	53.61

Source: The author's own analysis of CAO (2009) survey microdata.

Note: & p < 0.20, # p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001, \$ few cases.

Table 4m Correlates of Attitudes toward Having Children among Korean Men Aged 20-49:
Results of Logit Analysis

Indep. Var. Categories	1. Natural	2. Descendants	4. Enjoyable	6. Society's Future	7. Spouse Relation	8. Loved One	12. Money Burden
Constant	1.4449 **	-1.5388 ***	-1.1386 ***	-1.7427 ***	-0.3832	-1.3015 **	-0.7837 *
<u>Age</u>							
20-29	-0.2585	0.2187	0.0592	0.0751	-0.1054	-0.0226	-0.4883
30-39	-0.2394	0.1863	-0.0542	-0.3034	-0.0769	0.1110	-0.2785
<u>Marital Status</u>							
Married	0.4320	0.0613	0.3940 &	-0.1558	0.2529	-1.1076 **	-0.3136
<u>Education</u>							
High	-0.0026	0.4137 #	0.4661 *	0.1570	0.1082	-0.1359	0.0575
Low	-	-	-	-	-	-	-
<u>U-R Residence</u>							
Metropolitan	0.5689 *	0.1495	0.3399 #	-0.2932	0.5857 **	0.0120	-0.5071 *
Rural	-0.5219	0.2873	1.0820 *	0.0372	-0.0902	0.1093	-1.8630 #
<u>Religion</u>							
Buddhist	-0.4338 &	-0.1834	0.0719	-0.6098 &	-0.2138	-0.4810	-0.0314
Catholic	1.1484 &	-0.3608	0.5298 &	0.5395	-0.4879 &	-0.5413	0.0624
Protestant	0.1644	0.0820	0.1566	0.1067	-0.2471	0.2611	0.0289
N	510	510	510	510	510	510	510
d.f.	80	80	80	80	80	80	80
LLR	90.03	99.71 #	86.21	73.39	88.40	69.93	86.76

Source: The author's own analysis of CAO (2009) survey microdata.

Note: & p < 0.20, # p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001, \$ few cases.

Table 4f Correlates of Attitudes toward Having Children among Korean Women Aged 20-49:
Results of Logit Analysis

Indep. Var. Categories	1. Natural	2. Descendants	4. Enjoyable	6. Society's Future	7. Spouse Relation	8. Loved One	12. Money Burden
Constant	1.5368 ***	-2.6224 ***	-0.3898	-2.4293 ***	-0.6784 #	-1.3310 **	-0.6572 &
<u>Age</u>							
20-29	-0.5431 &	0.0049	-0.1128	-0.3043	-0.2136	0.6626 #	0.5642 &
30-39	-0.6630 *	0.5680 #	0.3000 &	-0.1981	-0.0787	0.1138	0.3047
<u>Marital Status</u>							
Married	0.7298 *	0.2120	0.1244	0.3596	0.3014	-0.2122	-0.6086 #
<u>Education</u>							
High	0.2739	-0.2224	-0.2435	-0.1931	0.2032	-0.1553	-0.2904
Low	-	-	-	-	-	-	-
<u>U-R Residence</u>							
Metropolitan	-0.0766	0.1235	0.2346	0.2494	0.5935 **	-0.0792	-0.8648 ***
Rural	-0.4919	0.1123	1.3577 *	-0.4942	0.9826 #	-0.3369	-1.9374 #
<u>Religion</u>							
Buddhist	-0.4158 &	0.3781	-0.0269	0.0108	-0.3399 &	-0.0879	0.2143
Catholic	0.4707	0.8440 #	-0.1233	0.0362	0.2057	0.4672	-0.2934
Protestant	-0.2722	0.3105	0.0158	0.1215	0.2203	0.0829	-0.6855 *
N	486	486	486	486	486	486	486
d.f.	81	81	81	81	81	81	81
LLR	98.01 #	75.29	85.49	58.13	90.94	90.82	92.44 &

Source: The author's own analysis of CAO (2009) survey microdata.

Note: & p < 0.20, # p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001, \$ few cases.

Table 5m Correlates of Attitudes toward Having Children among Singaporean Men Aged 20-49:
Results of Logit Analysis

Indep. Var. Categories	1. Natural	2. Descendants	4. Enjoyable	6. Society's Future	7. Spouse Relation	8. Loved One	12. Money Burden
<u>Constant</u>	1.0813 **	-0.9106 *	-0.1211	-2.2540 ***	-1.4408 ***	-1.9153 ***	-0.0067
<u>Age</u>							
20-29	-0.2256	-0.3361	0.1924	0.6024 #	-0.1290	0.7747 *	-1.3103 *
30-39	-0.1483	-0.5935 *	-0.1001	0.3994 &	0.1447	0.2192	-0.4338
<u>Marital Status</u>							
Married	0.2095	-0.0238	0.7532 **	0.4638 &	-0.1133	0.4633 &	-2.5044 ***
<u>Education</u>							
High	-0.4200 &	-0.2895	0.1421	0.0860	0.2981	0.1687	-0.0538
Low	-0.3373	0.1841	-0.4061 #	-0.2831	-0.0247	-0.1953	-0.3365
<u>Nationality</u>							
Foreigner	-0.2211	1.0005 **	-0.4257 &	0.0431	0.1057	0.1687	0.7960 &
<u>Religion</u>							
Buddhist	0.3263	-0.3675	-0.1148	0.3295	0.3242	0.1942	-0.8740 *
Catholic	0.5520	-0.0687	0.3233	-0.4263	0.7507 &	-0.1340	-1.4056 &
Protestant	-0.3713	-0.2109	-0.3316	0.7190 #	0.3470	0.5121 &	-0.7272
Muslim	0.3581	-0.2972	-0.0129	1.2740 **	0.6224 #	0.0305	-1.3834 #
Taoist	10.5153 \$	1.3131 **	-0.8890 #	0.4235	1.1761 *	-0.6876	-0.2596
Hindu	-0.0105	-0.8009 &	0.8560 #	0.6892 &	0.7610 &	-0.7628	-9.2520 \$
N	506	506	506	506	506	506	506
d.f.	112	111	111	111	111	111	112
LLR	120.13	124.52 &	129.18 &	95.35	127.88 &	120.05	76.98

Source: The author's own analysis of CAO (2009) survey microdata.

Note: & p < 0.20, # p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001, \$ few cases.

Table 5f Correlates of Attitudes toward Having Children among Singaporean Women Aged 20-49:
Results of Logit Analysis

Indep. Var. Categories	1. Natural	2. Descendants	4. Enjoyable	6. Society's Future	7. Spouse Relation	8. Loved One	12. Money Burden
<u>Constant</u>	0.4756	-2.5978 ***	-0.2287	-1.0793 *	-1.0339 *	-0.7962 *	-0.7818 &
<u>Age</u>							
20-29	0.0784	-0.0085	0.2177	-0.2468	-0.7826 *	0.4572 &	-0.8314 &
30-39	-0.1261	0.1326	0.0587	-0.1344	-0.5273 *	0.3023	0.3315
<u>Marital Status</u>							
Married	0.3781 &	0.4230	0.9708 ***	-0.0791	0.1666	-0.5227 #	-1.4069 ***
<u>Education</u>							
High	-0.2006	-0.2850	-0.2488	-0.2598	0.4000	0.2647	-0.1595
Low	0.4469 &	0.3307	-0.6699 *	-0.1799	0.4009 &	-0.3390	-0.0340
<u>Nationality</u>							
Foreigner	0.3929	0.6241 #	0.0532	-0.6668 #	0.4307 &	0.2132	-1.2636 *
<u>Religion</u>							
Buddhist	0.4986 #	0.2278	0.2757	-0.0373	-0.2111	-0.3947 &	-0.3811
Catholic	0.2940	0.4449	0.5407	0.3533	0.1753	-0.0109	-0.9787
Protestant	0.3762	-0.5109	0.2877	0.6441 &	-0.4139	-0.0675	-0.4457
Muslim	0.0406	-0.0813	0.3585	0.5559 &	-0.0502	-0.2679	-1.8025 *
Taoist	2.0746 *	0.7855	0.1433	-0.3249	-0.6512	-0.1199	0.8454 &
Hindu	0.5431	0.2993	-0.2937	0.1247	-0.0481	0.0517	0.0740
N	492	492	492	492	492	492	492
d.f.	118	118	118	118	118	118	118
LLR	133.96 &	103.53	165.81 **	130.30	129.71	141.11 #	93.05

Source: The author's own analysis of CAO (2009) survey microdata.

Note: & p < 0.20, # p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001, \$ few cases.

for Singaporean men and those of Table 5f (lower panel), the results for Singaporean women. Among Singaporean men Buddhists are less likely to feel having children as “12. Money Burden.” Catholics are more likely to feel it as “7. Spouse Relation” and less likely to feel it as “12. Money Burden,” while Protestants are more likely to feel it as “6. Society’s Future” and “8. Loved One.” Muslims are more likely to feel having children as “6. Society’s Future” and “7. Spouse Relation” and less likely to feel it as “12. Money Burden.” Taoists are more likely to feel it as “2. Descendants” and “7. Spouse Relation” and less likely to feel it as “4. Enjoyable.” But Hindus are more likely to feel it as “4. Enjoyable,” “6. Society’s Future” and “7. Spouse Relation” and less likely to feel it as “2. Descendants” and “12. Money Burden.”

Among Singaporean women Buddhists are more likely to feel having children as “1. Natural” and less likely to feel it as “8. Loved One,” while Protestants are more likely to feel it as “6. Society’s Future.” Muslims are also more likely to feel it as “6. Society’s Future” and less likely to feel it as “12. Money Burden.” But Taoists are more likely to feel having children as “1. Natural” and “12. Money Burden.”

Therefore, in Japan religion have little and marginally significant effects on attitudes toward having children and there is an opposing effect of Buddhism on “4. Enjoyable” among men and among women. In Korea more significant effects of religion are found than in Japan, but they tend to be weak. The negative effect of Buddhism on “1. Natural” is found among both sexes, which is also found among Japanese women. But the negative effect of Catholicism on “7. Spouse Relation” among Korean men is in the opposite direction to the positive effect found among Singaporean Catholic men.

In Singapore much more significant effects of religion are found partly because of its diversity. Religion tends to have positive effects on “7. Spouse Relation” and negative effects on “12. Money Burden” among Singaporean men and positive effects on “1. Natural” among Singaporean women. Christianity and Islam tend to have similar effects possibly due to the Abrahamic tradition. Thus, they tend to have similar effects among both sexes including positive effects of Protestantism and Islam on “6. Society’s Future” and negative effects of Catholicism and Islam on “12. Money Burden.” Taoism tends to have peculiar effects possibly due to the Chinese tradition including pragmatism which is reflected in its positive effect on “12. Money Burden” among Singaporean women.

3. Logit Analyses with Comparable Models: Fertility Attitudes and Behavior

Tables 6 through 8 show, for Japan, Korea and Singapore, the results of binomial and multinomial logit analyses for fertility attitudes and behavior, which are discussed above. The results reveal the effects of religion after controlling for age, marital status, education, and urban-rural residence (nationality for Singapore).

Table 6m Correlates of Fertility Attitudes and Behavior among Japanese Men Aged 20-49:
Results of Logit Analysis

Indep. Var. Categories	Kids Necessary	Desired # of Kids		Desired Sex of 1st Kid		Actual # of Kids		Desired # - Actual # of Kids	
	Yes No	0-1 2	3+ 2	Male Either	Female Either	0-1 2	3+ 2	1 <1	2+ <1
Constant	1.6552 **	-1.2084 *	0.1282	-1.2614 ***	-1.1315 **	2.7782 ***	1.1711 &	-0.1464	0.9327 *
Age									
20-29	0.6793 &	-0.7140 &	-0.7197 *	0.8554 *	0.8218 *	2.3576 ***	-2.1610 *	1.8719 ***	2.6352 ***
30-39	0.3623	-0.1489	-0.5163 *	0.3995 &	0.5564 *	1.0043 ***	-0.9100 **	1.0323 ***	0.8876 **
Marital Status									
Married	0.8723 *	-1.1423 **	0.2189	0.2792	0.6257 *	-3.7868 ***	-1.4775 *	-0.3131	-2.9793 ***
Education									
High	-0.6382 #	0.5942 &	-0.2779 &	-0.3316 &	-0.3204 &	-0.3149	-0.5298 #	-0.9251 ***	-0.3226
Low	-0.4651	1.0309 &	0.2149	0.4994	0.1582	-0.4482	0.8475 &	-0.6675	-0.8218 &
U-R Residence									
Metropolitan	0.1310	-0.8338 #	-0.4540 #	0.1722	0.0375	-0.1814	-0.3283	-0.2546	0.5748 #
Rural	-0.1833	0.3740	0.1032	0.4196	0.0436	-0.4596	-0.2008	0.2832	-0.1975
Religion									
Buddhist	0.6253 #	-0.5943 &	-0.0275	0.2844	0.0094	-0.0698	0.2079	-0.3575 &	0.0457
N	508		505		508		508		508
d.f.	73		146		146		146		146
LLR	66.01		163.21 &		163.29 &		91.32		135.89

Source: The author's own analysis of CAO (2009) survey microdata.

Note: & p < 0.20, # p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001, \$ few cases.

Table 6f Correlates of Fertility Attitudes and Behavior among Japanese Women Aged 20-49:
Results of Logit Analysis

Indep. Var. Categories	Kids Necessary	Desired # of Kids		Desired Sex of 1st Kid		Actual # of Kids		Desired # - Actual # of Kids	
	Yes No	0-1 2	3+ 2	Male Either	Female Either	0-1 2	3+ 2	1 <1	2+ <1
Constant	1.7474 ***	-1.2182 *	-1.0872 **	-1.1898 **	-0.5788 #	1.0293 *	0.0081	-1.6126 ***	-0.7732 #
Age									
20-29	-0.0150	-0.4669	0.3630 &	0.6083 #	0.5185 #	2.5221 ***	-0.4060	2.4287 ***	3.4347 ***
30-39	-0.5339 &	0.0865	0.2579	0.0230	0.1797	0.9197 **	0.3819 &	0.7820 **	0.8316 *
Marital Status									
Married	0.3005	-0.9329 *	0.8522 ***	0.3254	0.4019 &	-2.6139 ***	-0.7670 &	-0.0584	-1.9439 ***
Education									
High	0.3519	0.1662	-0.1063	-0.0871	0.0278	-0.0417	-0.1682	0.0641	-0.0589
Low	1.2007 &	-7.9250 \$	0.8511 &	0.3744	0.7666	-2.5271 ***	-0.6037	-0.4742	-1.6604 *
U-R Residence									
Metropolitan	-0.1049	0.3271	-0.1849	0.2833	0.3391 &	0.4470 &	-0.1795	0.1254	0.2313
Rural	-0.2789	-0.6293	-0.3441	0.5948 &	0.5167 &	0.1866	0.1376	-0.7485 &	0.5817 &
Religion									
Buddhist	0.0182	-0.1937	0.3882 #	-0.2895	-0.2849 &	0.2488	-0.2673	0.6178 *	0.7733 **
N	489		491		491		491		491
d.f.	62		125		124		124		124
LLR	68.37		112.04		137.72 &		107.17		120.31

Source: The author's own analysis of CAO (2009) survey microdata.

Note: & p < 0.20, # p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001, \$ few cases.

Table 7m Correlates of Fertility Attitudes and Behavior among Korean Men Aged 20-49:
Results of Logit Analysis

Indep. Var. Categories	Kids Necessary	Desired # of Kids		Desired Sex of 1st Kid		Actual # of Kids		Desired # - Actual # of Kids	
	Yes No	0-1 2	3+ 2	Male Either	Female Either	0-1 2	3+ 2	1 <1	2+ <1
Constant	1.2050 *	-2.0993 ***	-1.4450 ***	-0.8702 *	-1.1487 **	1.8694 ***	-1.6845 &	0.2114	0.9233 &
<u>Age</u>									
20-29	0.6217	0.3280	0.1925	0.4868 &	0.4426	3.6678 ***	-5.9704 \$	2.3546 **	3.9051 ***
30-39	-0.2396	1.1951 **	0.2361	-0.4720 #	0.4084 &	1.2672 ***	-0.3818	0.6362 *	1.3811 ***
<u>Marital Status</u>									
Married	1.0092 *	0.1746	0.6567 *	1.0618 ***	0.4651 &	-2.9326 ***	-0.2921	-1.2892 *	-3.7445 ***
<u>Education</u>									
High	0.4188 &	-0.3991	-0.1092	-0.3134 &	-0.3994 #	-0.3720 &	-0.2245	0.3190	0.2787
Low	-	-	-	-	-	-	-	-	-
<u>U-R Residence</u>									
Metropolitan	0.5755 #	-0.3458	-0.0598	0.1466	0.1016	-0.0485	-0.5112	-0.0466	0.2296
Rural	13.4923 \$	-0.0592	0.2795	0.1731	-1.7472 &	-0.2041	0.6520	0.0282	0.3647
<u>Religion</u>									
Buddhist	-0.3322	0.1562	0.2375	0.3096	0.4568 &	-0.1079	0.9783 #	0.0976	-0.0579
Catholic	-0.0046	-1.1739	0.6242 &	0.1907	0.4972	-1.0117 &	0.3576	0.3992	0.5554
Protestant	0.2317	-0.2397	0.6714 **	-0.0519	0.3844 &	0.2860	0.5768	0.1545	1.0065 *
N	510		510				510		510
d.f.	81		160				161		160
LLR	74.35		158.77		194.44 *		111.52		171.55

Source: The author's own analysis of CAO (2009) survey microdata.

Note: & p < 0.20, # p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001, \$ few cases.

Table 7f Correlates of Fertility Attitudes and Behavior among Korean Women Aged 20-49:
Results of Logit Analysis

Indep. Var. Categories	Kids Necessary	Desired # of Kids		Desired Sex of 1st Kid		Actual # of Kids		Desired # - Actual # of Kids	
	Yes No	0-1 2	3+ 2	Male Either	Female Either	0-1 2	3+ 2	1 <1	2+ <1
Constant	1.1132 *	-2.6399 ***	-1.0573 **	-0.2777	0.1131	0.0995	-2.5994 *	-0.0875	0.2662
<u>Age</u>									
20-29	-0.3150	1.0067 *	-0.1811	-0.4368	-0.8899 *	3.9652 ***	-7.3564 \$	2.0297 ***	2.8789 ***
30-39	-0.3105	0.4868	0.2298	0.0763	-0.0008	0.8352 **	0.5804 &	0.3636	0.5960 #
<u>Marital Status</u>									
Married	1.2607 ***	-0.1384	-0.0063	-0.0125	-0.3808	-2.5055 *	0.3613	-1.4481 ***	-2.8246 ***
<u>Education</u>									
High	-0.1209	0.4003	-0.6609 **	-0.2381	0.4176 #	0.7075 *	-1.0313 *	0.2803	0.3805 &
Low	-	-	-	-	-	-	-	-	-
<u>U-R Residence</u>									
Metropolitan	-0.2901	0.3667	0.2569	0.1523	0.3613 &	0.4859 #	0.3346	-0.1987	0.0474
Rural	-0.5629	0.2656	0.6866	0.0340	-0.0969	-0.1804	1.6894 *	-1.2259 &	-0.7935
<u>Religion</u>									
Buddhist	0.8055 *	0.3366	0.3103	0.2223	-0.1727	0.2780	0.0192	-0.1129	0.0326
Catholic	0.6036	0.2932	0.4388	-0.4313	-0.1494	0.4781	0.5333	0.2205	0.2663
Protestant	0.4062	-0.1030	0.8063 **	-0.5495 #	-0.5670 *	0.0642	0.6574 &	0.1264	0.8542 *
N	486		486				486		486
d.f.	81		162				163		162
LLR	78.85		197.19 *		229.25 ***		105.98		141.73

Source: The author's own analysis of CAO (2009) survey microdata.

Note: & p < 0.20, # p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001, \$ few cases.

Table 8m Correlates of Fertility Attitudes and Behavior among Singaporean Men Aged 20-49:
Results of Logit Analysis

Indep. Var. Categories	Kids Necessary Yes No	Desired # of Kids		Desired Sex of 1st Kid		Actual # of Kids		Desired # - Actual # of Kids	
		0-1 2	3+ 2	Male Either	Female Either	0-1 2	3+ 2	1 <1	2+ <1
Constant	-	-1.1139 *	-0.8680 *	-2.2549 ***	-3.8082 ***	4.1270 ***	-0.4342	1.1434 ***	2.3523 ***
<u>Age</u>									
20-29	-	-0.6147	-0.5115 &	1.0325 **	0.9681 *	2.3676 ***	-1.5324 &	1.1686 *	2.0534 ***
30-39	-	-0.2020	-0.5107 *	0.4066 &	-0.0878	1.2404 ***	-0.2195	0.9058 **	0.8951 **
<u>Marital Status</u>									
Married	-	-0.5622 &	-0.0480	-0.1127	0.4694	-4.1219 ***	-1.4907	-1.1955 *	-3.4822 ***
<u>Education</u>									
High	-	-0.0636	-0.0028	0.2752	0.3894	-0.6815 #	0.0498	-1.1423 **	-0.4383
Low	-	0.6616 &	-0.0392	0.4856 &	0.4860	-0.7423 #	0.4084	-1.0302 **	-1.6477 ***
<u>Nationality</u>									
Foreigner	-	0.2993	0.4965 &	0.8932 **	0.1783	0.5168 &	0.7620 &	0.3860	0.2962
<u>Religion</u>									
Buddhist	-	-0.3374	0.4402 &	0.0157	1.2531 *	0.0459	0.6306	0.0428	0.9043 *
Catholic	-	-0.7507	0.3932	0.6848 &	1.0580 &	0.1559	0.9888	0.5278	0.1125
Protestant	-	0.2976	0.7714 #	0.0327	1.1369 #	-0.3598	0.3535	0.8039 #	0.3106
Muslim	-	-10.1781 §	1.8754 ***	0.9903 &	0.9387 &	-0.1692	2.0678 **	-0.8361 &	1.4656 **
Taoist	-	-0.9558	-0.5219	0.2726	-0.1362	9.5378 §	10.5579 §	0.9687	1.5361 &
Hindu	-	-0.2311	-0.6666	0.0836	1.2526 &	0.2406	-0.3968	-0.4248	-0.1962
N	-		506		506		506		506
d.f.	-		223		223		224		222
LLR	-		221.58		221.72		133.24		197.00

Source: The author's own analysis of CAO (2009) survey microdata.

Note: & p < 0.20, # p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001, § few cases.

Table 8f Correlates of Fertility Attitudes and Behavior among Singaporean Women Aged 20-49:
Results of Logit Analysis

Indep. Var. Categories	Kids Necessary Yes No	Desired # of Kids		Desired Sex of 1st Kid		Actual # of Kids		Desired # - Actual # of Kids	
		0-1 2	3+ 2	Male Either	Female Either	0-1 2	3+ 2	1 <1	2+ <1
Constant	-	-1.6449 **	-1.3850 **	-2.2299 ***	-1.7131 ***	3.2640 ***	-0.5032	-0.7466	1.6573 **
<u>Age</u>									
20-29	-	-0.7617 &	-0.6406 #	0.9845 **	0.2269	1.4718 **	-1.0681 #	1.2276 **	2.0581 ***
30-39	-	0.0784	-0.0088	0.1990	0.0492	0.3290	-0.8020 *	0.3125	0.4636 &
<u>Marital Status</u>									
Married	-	-0.4268	0.5591 #	0.9801 **	0.5083 &	-3.5219 ***	-0.2872	-0.1534	-2.8835 ***
<u>Education</u>									
High	-	-0.1671	-0.2965	-0.6920 *	-0.7863 *	-0.2126	-0.8636 #	0.3095	-0.0529
Low	-	0.3901	-0.1056	-0.1729	0.0247	-0.6712 #	-0.1464	-0.0156	-1.0941 **
<u>Nationality</u>									
Foreigner	-	0.2488	-0.1207	0.2258	0.4564 &	0.2882	0.3193	-0.2052	0.0842
<u>Religion</u>									
Buddhist	-	0.2556	0.3515	0.3839	-0.1199	0.3403	0.4665	-0.0036	0.3175
Catholic	-	0.4271	-0.0476	0.8973 #	-0.0125	-0.3619	-0.6259	-1.0967 &	-0.0590
Protestant	-	0.4606	0.4618	0.1024	0.3592	-0.2269	0.8668 &	-0.4680	-0.4038
Muslim	-	-1.5562 &	1.7875 ***	0.8537 *	-0.2421	-0.9031 #	2.2667 ***	-0.8534 #	-0.5317
Taoist	-	-0.4533	1.2085 *	1.1969 *	0.1035	-0.3388	1.9274 **	0.0187	-0.1569
Hindu	-	0.0320	0.3713	0.0716	-0.5567	-0.9227 &	0.8666 &	-1.7273 *	-0.6671
N	-		491		492		492		492
d.f.	-		236		236		236		236
LLR	-		244.98		241.80		217.42		244.55

Source: The author's own analysis of CAO (2009) survey microdata.

Note: & p < 0.20, # p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001, § few cases.

The first through ninth columns of Table 6m (upper panel) present the results for Japanese men and those of Table 6f (lower panel), the results for Japanese women. Among them only the first column exhibits the results of binomial logit analysis. It shows that among Japanese men Buddhists are more likely to feel it necessary to have children after marriage, but that no significant effect of Buddhism is found among Japanese women. The second to third columns reveal that Buddhist men are less likely to desire zero or one child and that Buddhist women are more likely to desire three or more children. This suggests the weak pronatalist attitudes of Buddhists in Japan. The fourth and fifth columns indicate that Buddhism has only a marginally negative effect on daughter preference among women. The sixth and seventh columns reveal no significant effects of religion on the actual number of children. The eighth and ninth columns show that Buddhist men are less likely to have discrepancy between the desired number and the actual number of children but that Buddhist women are more likely to have discrepancy between the two.

The first through ninth columns of Table 7m (upper panel) present the results for Korean men and those of Table 7f (lower panel), the results for Korean women. The first column shows that among Korean women Buddhists are more likely to feel it necessary to have children after marriage, but that no significant effect of Buddhism is found among Korean men. The second to third columns reveal that Catholic and Protestant men and Protestant women are more likely to desire three or more children. This suggests the pronatalist attitudes of Christians in Korea. The fourth and fifth columns indicate that Buddhism and Protestantism have only marginally positive effects on daughter preference among men, but that Protestantism has negative effects on both son preference and daughter preference among women. The sixth and seventh columns reveal that Buddhist men and Protestant women are more likely to have a large family and that Catholic men are less likely to have a small family. The eighth and ninth columns show that Protestant men and women are more likely to have large discrepancy between the desired number and the actual number of children.

The first through ninth columns of Table 8m (upper panel) present the results for Singaporean men and those of Table 8f (lower panel), the results for Singaporean women. In the first column the results of binomial logit analysis are not presented because of irregular results from 100% agreement among some religious groups. The second to third columns reveal that Buddhist, Protestant and Muslim men and Muslim and Taoist women are more likely to desire three or more children, while Muslim women are less likely to desire zero or one child. This shows the strong pronatalist attitudes of Muslim men and women and Taoist women. The fourth and fifth columns indicate that Catholic and Muslim men have both son preference and daughter preference and that Buddhist, Protestant and Hindu men have only daughter

preference. It also reveals that Catholic, Muslim and Taoist women have only son preference. The sixth and seventh columns reveal that Muslim men and Protestant, Muslim, Taoist and Hindu women are more likely to have a large family and that Muslim and Hindu women are less likely to have a small family. The eighth and ninth columns show that Protestant men are more likely to have small discrepancy between the desired number and the actual number of children and that Buddhist, Muslim and Taoist men are more likely to have large discrepancy. The eighth column also reveals that Muslim men and Catholic, Muslim and Hindu women are less likely to have small discrepancy.

Therefore, in Japan religion have little and marginally significant pronatalist effects, and there is an opposing effect of Buddhism on the small discrepancy between the desired number and the actual number of children among Japanese men and women. In Korea more significant pronatalist effects of religion, particularly Buddhism and Protestantism, are found than in Japan, but there are similarities and differences between sexes and among societies. The positive effects of Protestantism on a large family and the large discrepancy (between desired and actual number of children) are found among both men and women, but its negative effect on daughter preference is in the opposite direction among men and women. The positive effect of Buddhism on the felt necessity to have children is found among women in Korea, but it is found among men in Japan. The positive effect of Protestantism on a large desired family and the positive effects of Buddhism and Protestantism on daughter preference among Korean men are shared with Singaporean men and the positive effect of Protestantism on a large family among Korean women is shared with Singaporean women.

In Singapore much more significant effects of religion are also found. Religion, particularly Islam tends to have pronatalist effects. Religion tends to have positive effects on son preference among both sexes, but it also has positive effects on daughter preference among men (except Taoism). Thus, the effects are often similar between sexes. The positive effects of Islam on a large desired family, son preference and a large family and its negative effect on the discrepancy are shared by men and women. The positive effects of Protestantism on son preference are also shared by both sexes. Taoism tends to have peculiar effects on a desired large family and son preference among women possibly due to the Chinese tradition, but similar effects are also found among Muslim women.

The negative effects of religion on the discrepancy as a whole among Singaporean women seem to be different from those among Singaporean men as well as those among Japanese and Korean women. This may be related to the smaller mean gap and the higher percentage of negative gap among Singaporean women, which are found in Table 2. Singaporean women, particularly, Muslim, Hindu and Taoist and

Catholic women, seem to have a larger number of children than they desire. However, the results of binomial logit analysis of negative gap with the same model (not presented in the form of table) reveal that only Muslim women are marginally more likely to have a negative gap, while age and marital status have large effects. After controlling additionally for Community Development Council Districts, the significance levels of religion only marginally improve. But it was interesting to see that the residents of the North East CDC District are more likely to have negative discrepancy or excessive fertility.

Conclusion

Even though the religious composition of population is different among Japan, Korea and Singapore, the results of comparative analysis show some similarities in the effects of religion on fertility-related attitudes and behavior among the three societies. Generally speaking, religion turns out to be pronatalist as expected. However, the effects of the same religion are not always the same in the three societies. Japan is often the exception because of low percentage of followers and low diversity of religion. The effects of the same religion on men and women are not always the same. Even among Christians, the effects of Catholicism and Protestantism are sometimes different in Korea and Singapore. The results for Singapore suggest that the discrepancy between fertility attitudes and behavior is different between Abrahamic religion (monotheism) and others including non-monotheist religion and non-religion.

It is a good question what religion represents. It may not only be the values, but also the social networks and the social status which may be more closely related to pragmatism and materialism. According to the WVS (World Values Surveys) culture maps by Inglehart and Welzel (2010), Korea moved in the opposite direction to secularization from around 2000 to around 2005, possibly due to its Christianization. This seems to be in the opposite direction to secularization which was observed as the background for the SDT (Second Demographic Transition) in the West, while the empirical part of the SDT relies on the WVS. Even in the West, the reversal of secularization can be observed after the collapse of Soviet Union, particularly after the recent financial crisis. Thus, it is possible that the background for the SDT (secularization and post-materialism) has changed its nature even in the West and that the background for the SDT is different in East Asia which has been relatively secular and materialistic. The discrepancy between fertility attitudes and behavior can be one of the facets to capture the different nature of the SDT in East Asia.

Finally, not only the effects of global trends but also the effects of local areas should be taken into account when the effect of religion on the SDT is studied. In

many societies religious groups are often concentrated in certain local areas. Even in a small society such as Singapore CDC Districts have significant effects on the discrepancy between fertility attitudes and behavior. Kojima (2013) suggests that local areas may affect it through culture and/or policy intervention in local areas. There may be also the effects of diffusion on the discrepancy, which were suggested in the historical study of European fertility transition. Therefore, Singapore can be an excellent and fertile laboratory to study the SDT and its diffusion in Asian societies with a higher proportion of non-religious populations and non-Abrahamic religious populations. The interaction of religion and region may be also something to be explored further in the study of the SDT in East Asia.

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