

# Did Christian Women Lead Fertility Decline in South Korea?

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## Short abstract

Research on religion and fertility has paid less attention to East Asia, where fertility declines have been very rapid. South Korea provides a unique setting to study this association between religion and fertility as its population includes a large non-religious segment as well as sizeable groups of Buddhists, Protestants, and Roman Catholics. While Buddhism is a traditional religion, both the Protestant and Catholic groups have greatly expanded their membership in the last half century. We explore the role and contribution of religion in the fertility decline in South Korea. Using the 1985, 2005, and 2015 census 1% samples data and other surveys on contraceptive use, we analyze fertility differentials by religious affiliation and how they change over time. Building on prior research, we also test whether difference in contraceptive use contributes to fertility differentials across religious groups by affecting the pace of fertility decline.

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## Introduction

People with different religions are associated with different levels of fertility. Literature has documented considerable variations in fertility across religious groups. For instance, Catholic and Protestant women usually show higher levels of fertility than non-religious people in the United States and most European countries (e.g., Adsera 2006; Frejka and Westoff 2008; Heaton 1986; Lehrer 2004; Mosher and Hendershot 1984; Mosher, Johnson and Horn 1986; Mosher, Williams and Johnson 1992; Westoff and Jones 1979; Zhang 2008). Fertility differentials between Muslims and Protestants and between Muslims and other groups have been extensively studied in the countries in Europe, South Asia, Middle-East and sub-Saharan Africa although the results are mixed across studies (e.g., Agadjanian, Fawcett and Yabiku 2009; Chamie 1977; Dharmalingam and Morgan 2004; Heaton 2011; Knodel et al. 1999; Morgan et al. 2002; Stonawski, Potančoková and Skirbekk 2015). Such fertility differentials by religious affiliation have important implications for change in relative size and composition of religious groups in the future (Hackett et al. 2015).

Fertility differentials across religious groups are usually explained with several pathways: particularistic theology, characteristics, and the social status of religious groups. Different levels of fertility across religious groups can be attributed to the content of religious teachings that affect demographic behaviors. Even though not all religions have direct rules and teachings on reproductive behaviors, such as contraception and abortion, general teachings on values and attitudes toward family, gender roles, and childbearing can affect fertility behaviors in indirect ways. The characteristics approach attributes fertility differentials by religion to difference in socio-economic characteristics, such as education, income, and occupation (Goldscheider 1971). According to this hypothesis, difference in fertility across religious groups should disappear or remain marginal once both difference in teachings and distinct socio-economic characteristics are taken into account in empirical models. However, religious difference in fertility often remains even after adjusting for those factors. Researchers also look at broader context between religious groups. The status of religious groups affects members' fertility behaviors and thus, can be important for understanding their fertility (Goldscheider 1971; Goldscheider and Uhlenberg 1969); when a certain religion is minority in a society, members of the group may try to overcome social barriers reducing fertility. Otherwise, they may have rather higher fertility to preserve their group's position and identity. Three hypotheses provide a basis for understanding fertility differentials by religious groups, but do not completely explain the complexity between religion and fertility that varies with time and space.

The effect of religion on fertility can be changed in diverse directions. According to McQuillan (2004), religion affects fertility when it has norms linked to fertility, the means to communicate its teachings, and members who feel strong attachment and identity of the religious community. These conditions are not constant and thus change over time. Religious teachings and organizations can be modified and improved according to social and political conditions. Meanings of religion and one's ties with religious community are also subject to change. Chamie (1981) proposed interaction hypothesis that the relationship between religion and fertility changes over time in a society because different religious groups develop at different paces

according to social and political context. In a place where no modern contraceptives are available, fertility differentials should not exist or be marginal. The minor difference in fertility at the beginning becomes larger at the intermediate level of development, which is expected to disappear once the entire society achieves a certain level of development. This hypothesis sheds light on the changing feature of religious differentials in fertility, but it has not yet extensively studied (e.g., Alagarajan 2003; Chamie 1977; Heaton 2011; Knodel et al. 1999).

The interaction hypothesis taking local context into account is important for understanding the complexity between religion and fertility, especially in many developing countries in which have accepted cultures and various religions from the West. The basis of the hypothesis lies on difference in contraceptive use across religious groups. Once any modern contraceptives becomes available, levels of fertility begin to depart from one another according to the responses of religious leaders and communities. Of course these responses are determined within historical and social context. Local politics as well as economic circumstances also affect that process, especially in developing countries where experience rapid modernization and industrialization. Despite significant implication, however, our understanding of the dynamic relationship between religion and fertility is still limited.

In this study, we explore change in the relationship between religion and fertility in South Korea. Research on religion and fertility has concentrated on Abrahamic religions, primarily Catholics, Protestants, and Muslims and often Hindus in South Asia (Skirbekk et al. 2015). Literature has paid less attention to East Asia in which none of Abrahamic religions dominates the majority in a society. The region is well known for her economic growth and rapid fertility decline. Despite significant implications, the role and contribution of religion in the fertility decline in the region has been less understood. A recent study (Skirbekk et al. 2015) points that Buddhist affiliations is associated with lower levels of fertility (not elevated levels of fertility at least) in East Asia, but their samples were restricted only to the nations where Buddhists dominate.

South Korea provides a unique setting that none of religious groups win the majority. Unlike many countries over the world, non-religious people dominate the majority holding around 45% of the total population while Buddhism, Protestants, and Catholics in order occupy three largest religious groups. The well-mixed composition of religious affiliations indicates that people with different religious backgrounds are mingled together in a similar condition in everyday life. As the country has been considered ethnically homogeneous, any confounding effects based on race-ethnic differences and majority/minority group status should be negligible. More importantly, the rapid economic growth and fertility decline the country has experienced provides a rare opportunity to test whether different religious groups have experienced different paces of fertility decline.

## **Religion in Korea**

The religious denomination in Korea is a mixture of non-religious and three major religions, Buddhism, Protestantism, and Catholicism. According to the 2005 census, about half

(46.5%) of South Koreans have no religion while Buddhists, Protestants, and Catholics occupy 22.8%, 18.3% and 10.9% respectively. The mixture of three large religious groups has settled along with the country's modern history, primarily in the last century with modernization and industrialization. No one can deny the significant influence of Buddhism in Korean history as it has deeply rooted in culture and popular sentiment since its introduction from China in the fifth century. Korean Buddhism enjoyed prosperity when it was the state religion of the Goryeo dynasty (918–1392). However, as the following Joseon dynasty (1392–1897) adopted neo-Confucianism as a ruling ideology, Buddhism has been discouraged and often prosecuted for five centuries. For instance, Buddhist monks could not enter the capital and other cities' walls and thus, Buddhist temples could be located only in remote places like mountains or rural areas. This separated Buddhism from their followers limiting its influence only to lower-class people in rural areas.

After the liberation of Korea from the Japanese rule (1945), the number of Buddhist temples and denominations have increased as one of the dominant religious groups. During the modernization and industrialization process, political leaders were not so friendly toward Buddhism, but it has successfully expanded the number of followers and temples. Buddhist groups began to provide social service and establish temples in city centers as Christian missionaries did in Korea. Many of Buddhist dominations however do not visit Buddhist temples regularly but do so only for specific dates, such as Buddha's birthday and traditional holidays (e.g., Seolnal and Chuseok). Accordingly, attachment to Buddhist temples and religious identity might not be strong as much as other religious groups. Korean Buddhism has been closely linked with indigenous religion including Shamanism, which often focus on seeking individual fortune and happiness. Buddhist temples in remote areas commonly have a couple of small buildings dedicated to the mountain God and other spirits, which are often used for those who pray for seeking a son or hoping their family's happiness and fortune. In this sense, many of those expressing Buddhist affiliations, as well as many of non-religious people, may be followers of the Shaman, which is not considered as a formal religion in the country.

Christianity of Korea was initiated as indigenous movement among the aristocracy through studying the text and things western. Christianity began to spread when Yi Seung-Hun was first baptized in 1784 while his visit to China. There was no formal Catholic clergy in Korea until 1835. Christians suffered from martyrdom in the nineteen century because they did not participate in ancestor worship, which was essential in the Confucianism of the Joseon Dynasty, and because the country insisted on isolationism against the Western powers in those days.

The first Protestant missionary arrived in 1863 and later more Christian missionaries came in mostly from the United States in the 1880s. As proselytizing was prohibited, Protestant missionaries first focused on establishing educational facilities and medical clinics and providing social service, the so-called Nevius method that concentrates on social service rather than directly preaching a sermon (Lee 2014). In fact the country's first western medical clinic, modern school for boys and girls, and orphanage were all established by Christian missionary (Kim 2001). Some of major universities in contemporary Korea are also rooted in their missionary work—either Catholic or Protestant. In the very late nineteenth century and the early

twentieth century, advanced modern medicine and modern schools played a significant role in creating positive impression about things Western among common people in Korea as well as the Royal court. Christian churches also contributed to independent movement during the Japanese occupation (1910–1945) sharing national sentiment. These activities of Christian missionaries become a fundamental basis of their rapid expansion in the country later.

Christianity has rapidly expanded in Korea since the liberation in 1945. The country has heavily been influenced by American culture in the 1940s–1950s, first because of the United States military government soon after the liberation and later because of economic and military reliance on the United States during and after the Korean War (1950–1953). The modern image of the United States has been built up and strengthened in the country and therefore, everything from the United States including religions, began to be considered advanced and something to be learned, contributing to the rapid expansion of Christianity after the Korean War (Shin 2003). Politics in South Korea were also in favor of Christianity because of the close link with the United States and policy direction towards modernization and industrialization, which are often confounded with westernization. Many political leaders including Rhee Syngman, the first president of South Korea, and a few following presidents also had their religious background in Protestants. Christian churches were successful for expanding their members, absorbing massive internal migrants from rural to urban during the period of rapid urbanization and industrialization (Kim 2000). Many internal migrants from rural areas sought Christian churches for psychological comfort, fellowships, and social service in hard-hearted cities.

Christian churches also consciously and unconsciously incorporated indigenous cultures. Compared to other countries, the sermons of Protestant leaders in Korea include more prays for this-worldly fortune, happiness, and health (Kim 2000:120). It is also not uncommon that Protestants and Catholics in Korea participate in filial piety and ancestor worship. Taken together, these efforts and localization strategy contributed to the unprecedented expansion of Christianity, especially Protestantism, in Korea in the last half century.

### *The effect of religion on fertility*

The effect of religion on fertility in Korea is obscure. Korean literature on religion tends to focus on how religions have developed through rapid modernization process and how Christian churches could achieve unprecedented growth in Korean society. Research on the relationship between religion and demographic outcomes is rare in South Korea. As an exception, Kim and Song (2007) find that imbalanced sex ratio at birth is high in the region in which more Buddhist temples are located in. That is, communities where Buddhists dominate are more generous about sex-selective abortion than others. People living in Buddhist communities could have more conservative values, such as patriarchy tradition. However, Korean Buddhism has no specific tenets that are anti- or pro-natalist perspective at least. Literature also suggests Buddhists in South Korea have lower level of educational attainment and economic class holding conservative views and social values compared to Christians (Kim 2002). Thus, we can expect

that Buddhist people are more likely to maintain traditional values and attitudes toward fertility including contraceptive use.

In most cases, Christianity is associated with higher level of fertility compared to non-religious and Buddhist groups because of its teachings that prohibit (or at least do not encourage) birth controls. Such tradition definitely exists in South Korea as well, but attitudes towards contraceptive use in the country have clearly been distinguished from those of Western nations. Protestant leadership and communities often cooperated to Government policy including family-planning program. Religious articles on modern contraceptives and campaigns encouraging birth controls to member of Protestant churches have easily been found in the 1970s' and 1980's public magazines. A few of them also used to stress that using birth controls is not against Protestant church's teachings given the growing concern over 'population explosion' in those days. Relatively higher socioeconomic status among Protestants and Catholics could also have differentiated their contraceptive use from others. Accordingly, we expect that despite the negative teachings on contraception, Christian groups including both Protestants and Catholics do not necessarily have higher fertility than non-religious and Buddhist groups, probably because of their characteristics and because of their adjustment to local context.

## **Data and Methods**

### *Data*

In South Korea most censuses and surveys do not include a question on religious affiliation. Any question on religiosity is even fewer than that. Accordingly we use self-reported religious affiliation from selected censuses and fertility surveys. Our data come from 1985, 2005, and 2015 census 1% samples microdata. Korean census is conducted every five year, but information on religious information is only available in 1985, 1995, 2005, and 2015. Unfortunately, however, the 1995 census does not include information on the number of children ever born. As the 2015 census microdata was just released in September 2017, we could not update our results with the latest data but will include it in our final paper. Thus, we only use the 1985 and 2005 censuses for the present paper. We use the census data to understand the relationship between religious affiliation and fertility and how that has changed in two decades.

We also use the 1991 and 2009 National Surveys of Fertility, Family Health and Welfare as supplementary data. The surveys are cross-sectional and have been conducted every three year since 1991. The surveys are nationally representative samples of ever-married women, but questions on fertility and contraceptive use are restricted to currently married women only. In addition, information on religious affiliation is available only in selected years irregularly. Despite these disadvantages, we use the 1991 and 2009 surveys, which are close to the period covered by census data (1985–2005), so that we can trace and understand different trends in contraceptive use across religious groups.

Both censuses and surveys complement each other in circumstance which no data contain religion, fertility, and contraceptive use together. The census data provide enough sample size

covering the entire women in the country, but do not have information on contraceptive use. In contrast, the survey data include information on contraceptive use as designed, but are limited to ever-married women only. As both data cover the transitional phase from high to low fertility rates spanning around two decades, it should be enough for us to look at the dynamic change between religion and fertility in the process of fertility decline in Korea. Neither data include information on religiosity and religious participations. To our knowledge, these are the best data among available in the country.

Through this study, we focus on women aged 25–44. As most women finish their education by the mid–20s, especially for the observed period, we use age 25 as a lower limit of age interval to test the effect of educational attainment on the relationship between religion and fertility. We also use age 44 as an upper limit because women who are older than age 44 are less likely to have child.

### *Methods*

We check the distribution of religious affiliation and cohort fertility, measured by the number of children ever born among married women aged 25–44. We review whether the association between religion and fertility changed between 1985 and 2005 and how that differs by age group. Then, we model the number of children ever born among married women and compare whether that changes over time. In doing so, we take into account covariates that are known to affect fertility, such educational attainment, marital status, economic participation, and age. We also test interaction terms between religious affiliation and census year to check whether religious differentials in fertility change between two observations. With the 1991 and 2015 National Surveys of Fertility, Family Health and Welfare, we also review religious difference in fertility intentions and contraceptive use. We conduct logistic regression models to see whether religious affiliations make any difference in fertility intention and contraceptive use and if any, whether such difference changed in two decades.

## **Preliminary results**

### *Descriptive results*

Figure 1 shows cohort fertility of women aged 40–44 according to religious affiliation. Cohort fertility for all women at ages 40–44 declined from 3.41 in 1985 to 1.88 in 2005. Obvious fertility differentials by religious affiliation in 1985 significantly declined and became marginal in 2005. Interestingly, both Christian groups show the lowest levels of fertility in 1985, which are followed by Buddhists, non-religious, and other groups in order. As it is close to the end of women's reproductive span, the fertility levels observed here should be free from 'tempo effect' or other distortions related to the timing of childbearing. The distinction in fertility became negligible in 2005, and none of pairs between groups are statistically significant at 0.05.

*<Figure 1 is here>*

Table 1 confirms the change in fertility differentials and distribution by religious affiliations occurred in all age groups. Both Protestants and Catholics show the lowest levels of cohort fertility in all age groups. As seen in the table, fertility differentials became marginal and almost disappeared in 2005. However, the distribution of religious affiliations changed. While Buddhist groups lost their share (27.5% →22.0%), Catholics and other religious groups grew up rapidly (5.9% to 12.0% and 2.2% to 9.0% respectively). Interestingly the share of Protestants remain stable; one in five women aged 25-44 (around 19%) were Protestants in both 1985 and 2005. Both Protestants and Catholics together occupy more than 31% of the samples suggesting that the Western religion has successfully landed in the country by 2005.

*<Table 1 is here>*

### *Multivariate analysis*

Table 2 shows results from Poisson regression models predicting the number of children ever born. Compared to non-religious group, the number of children was expected to be higher among Buddhist women and lower among Christian women in the models of 1985. The lower level of fertility is particularly pronounced among Catholic women, and they are associated with 11% lower number of children ever born. When educational attainment, marital status, economic activity, and age were taken into account, religious differences reduced significantly. Fertility level of Buddhist women were not different from non-religious women whereas Protestants and Catholics were expected to have 2% and 4% more number of children ( $p<.05$ ) than non-religious women. No difference and marginal difference in fertility suggests that considerable religious differentials in fertility observed in 1985 were primarily attributable to difference in characteristics. The models of 2005, however, are in contrast with what we just observed. Model III shows that all religious groups, including both Protestants and Catholics, have more number of children ever born than non-religious group. The relationship between fertility and three religious groups—non-religious, Protestants, and Catholics—forms a striking contrast between 1985 and 2005. This is the case in Model IV as well, which controls for other covariates.

*<Table 2 is here>*

Table 3 displays results of the pooled data of 1985 and 2005. Except for “others” group, none of three religious groups show significant difference in fertility when other covariates are included in the model (Model I). Fertility differentials however appear when interaction terms between religions affiliations and census year were added into the model. Compared to non-religious women, Buddhist women do not have meaningful difference in fertility. However, both Protestant and Catholic women display fewer number of children in 1985. While fertility has declined between 1985 and 2005 in all religious groups, the paces of fertility decline were relatively less intense among Protestant and Catholic women, evidenced by the positive odds ratios of the interaction terms between two Christian affiliations and the year of 2005 at the bottom of the table. The different decline in fertility contributed to the convergence of fertility levels across different religious affiliations.

*<Table 3 is here>*



### *Fertility intentions and contraceptive use*

Difference in fertility decline across religious groups can be attributable to difference in their fertility intentions and contraceptive uses. Figure 2 shows change in intention to have a(nother) child among currently married women at ages 25–44 from the survey data. Women who stated “other religions” were dropped in this analysis because of the small sample size (N=35). Fertility intention for an additional child declined among non-religious women whereas it increased among Buddhist women. Both Protestant and Catholic women show no meaningful change in fertility intention. Although the rise in fertility intention of Buddhist women is statistically significant ( $p < .001$ ), the direction is not consistent with what we observed from Poisson regression results above. Convergence in fertility intentions across religious groups however is in line with converging levels of fertility we observed in Table 3. Table 4 also confirms that religious difference in fertility intention is not systematic. The rise in fertility intention among childless Buddhist women is noticeable in Table 4 although it is only marginally significant ( $\exp(b)=1.84$ ,  $p < .10$ ).

*<Figure 2 and Table 4 are here>*

Figure 3 illustrates change in contraceptive use between 1991 and 2009. Overall the proportion of women who are currently using contraception is very similar within and between religious groups, except for non-religious group which has lower prevalence of contraception. Interestingly, using modern contraceptive methods, such as condom, pills, and sterilization, declined in all groups between 1991 and 2005 whereas the share of women who use traditional methods, such as rhythm and withdrawal, commonly increased in the same groups. The decline in modern contraceptive use was offset by the rise in traditional methods contributing to relatively stable proportion of women who are currently using any birth controls staying around 80–85% across religious groups and between the observed periods.

*<Figure 3 is here>*

Multivariate analysis in Table 5 suggests that change in contraceptive use is distinct in four religious groups depending on whether women have a child or not. Contraceptive use increased among childless women between 1991 and 2009, but that was particularly pronounced among Protestants ( $\exp(b)=1.55$ ,  $p < .05$ ). In contrast, the use of birth controls declined among those who have a child or more in the same period, but the declining pattern was less intense among Buddhist women and more severe among Protestant women. Because Buddhists were already using contraception more than Protestants in 1991, the contrast in change between two groups resulted in the similar likelihoods of using birth controls in 2009. Consequently contraceptive use did not differ by religious affiliation when other characteristics were taken into account in the model. The difference observed at the starting point was eventually disappearing in 20 years, which accounts for the change in the relationship between religion and fertility. The changing pattern and convergence in contraceptive use are robust whether or not we look at modern contraceptive methods or traditional methods. The change in contraceptive use, which was uneven across religious groups, in part explains why religious differentials we observed before disappeared in the 2000s.

<Table 5 is here>

### **Preliminary summary**

The preliminary results already demonstrate that fertility differentials by religious affiliation have disappeared in South Korea in the past decades. Unlike other countries, both Christian groups—Protestants and Catholics—had lower fertility than non-religious and Buddhist groups, which directly contrasts to a recent study reporting the association between Buddhism and low fertility (Skirbekk et al. 2015). We argue the Korean experience provides an important case for advancing our theories in understanding the dynamic change in religion and fertility in developing countries outside the West. Existing hypotheses, such as particularized theology, characteristics, and minority group status do not account for the unique pattern of religious differentials in fertility in South Korea; relative lower fertility among Christian women contradict particularized theology hypothesis while minority group status is not applicable to the country where none of religious groups occupy the majority. As the religious differentials in fertility remain even after taking into account socioeconomic factors, the characteristics approach is also not enough. Beyond such approach, more dynamic relationship between fertility and religion might have operated in the country. For instance, in a place where fertility has declined fast, a certain religious group may play a role in accepting small-family size norms and contraceptive use, which is often followed by other groups.

In our final paper, we will add the latest data, the 2015 census so that our results can cover the period of very low fertility. We will test whether the leader-follower model exists between religious groups, as an advanced form of interaction hypothesis. We will elaborate our models and include additional analysis. To better understand relative contributions of covariates to change in religious differentials in fertility, we are considering Oaxaca-Blinder non-linear regression decomposition. We will check the details on fertility intentions and contraceptive uses, how these factors are related to the change in fertility differentials. We will discuss possible pathways about the relationship between religion, modernization, and fertility in South Korea.

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Table 1. Cohort fertility by age and religious affiliation among women aged 25–44, 1985 and 2005

Year	Age	Not religious	Buddhists	Protestants	Catholics	Others	Total
1985	25-29	1.27	1.36	1.22	1.08	1.46	1.27
		(52.5)	(20.3)	(19.6)	(6.0)	(1.5)	(100.0)
	30-34	2.23	2.26	2.09	1.99	2.59	2.20
		(44.5)	(26.3)	(21.0)	(6.3)	(1.9)	(100.0)
	35-39	2.86	2.77	2.60	2.48	3.17	2.76
		(41.9)	(30.0)	(19.5)	(6.3)	(2.3)	(100.0)
40-44	3.55	3.38	3.18	2.95	3.89	3.41	
	(42.0)	(33.6)	(16.2)	(5.5)	(2.8)	(100.0)	
Total	2.47	2.71	2.27	2.14	3.16	2.50	
	(45.8)	(27.5)	(18.7)	(5.9)	(2.2)	(100.0)	
2005	25-29	0.41	0.35	0.37	0.33	0.32	0.38
		(51.7)	(18.3)	(17.8)	(11.5)	(7.0)	(100.0)
	30-34	1.25	1.24	1.29	1.22	1.35	1.25
		(49.9)	(18.9)	(18.7)	(11.7)	(8.0)	(100.0)
	35-39	1.72	1.77	1.76	1.76	1.71	1.75
		(44.9)	(22.7)	(19.6)	(11.9)	(9.0)	(100.0)
40-44	1.86	1.90	1.89	1.90	1.99	1.88	
	(39.2)	(27.4)	(19.4)	(13.0)	(1.0)	(100.0)	
Total	1.30	1.43	1.39	1.36	1.45	1.35	
	(46.2)	(22.0)	(18.9)	(12.0)	(9.0)	(100.0)	

Source: our own estimates based on censuses 1985 and 2005

Table 2. Results from Poisson regression models predicting the number of children ever born among women at ages 25–44, 1985 and 2005

Variables	1985 Census		2005 Census	
	Model I Exp(b)	Model II Exp(b)	Model III Exp(b)	Model IV Exp(b)
<b>Religious affiliation</b>				
Non-religious	1.00	1.00	1.00	1.00
Buddhists	1.10 ***	1.00	1.11 ***	1.02 *
Protestants	0.94 ***	0.98 *	1.07 ***	1.03 **
Catholics	0.89 ***	0.96 ***	1.05 ***	1.02 *
Others	1.26 ***	1.09 ***	1.12 ***	1.04
<b>Level of educational attainment</b>				
< High school completion		1.16 ***		0.91 †
High school completion		1.00		1.00
Some college		0.81 ***		0.95 ***
Bachelor or higher		0.73 ***		0.83 ***
<b>Marital status</b>				
Currently married		1.00		1.00
Never-married		0.00		0.00
Divorced/separated/widowed		0.77 ***		0.84 ***
<b>Economic activity</b>				
Not employed nor looking for job		1.00		1.00
Employed or looking for a job		0.91 ***		1.05 ***
<b>Age</b>				
25-29		1.00		1.00
30-34		1.45 ***		1.68 ***
35-39		1.73 ***		2.07 ***
40-44		2.06 ***		2.13 ***
Log-likelihood	-26184.17	-9590.12	-69679.64	-44769.02
N	58,674	58,674	73,912	73,912

Source: Korean census 1% samples 1985 and 2005. Note: †  $p < .1$ ; \*,  $p < .05$ ; \*\*,  $p < .01$ ; \*\*\*,  $p < .001$ .

Table 3. Results from Poisson regression models predicting the number of children ever born among women at ages 25–44 with pooled data of 1985 and 2005 censuses

Variables	Model I		Model II	
	Exp(b)		Exp(b)	
Religious affiliation				
	Non-religious			
	Buddhists	1.00		1.00
	Protestants	0.99		0.97 ***
	Catholics	0.99		0.94 ***
	Others	1.10	***	1.11 ***
Level of educational attainment				
	< High school completion	1.17	***	1.17 ***
	High school completion	1.00		1.00
	Some college	0.84	***	0.85 ***
	Bachelor or higher	0.75	***	0.75 ***
Marital status				
	Currently married	1.00		1.00
	Never-married	0.00		0.00
	Divorced/separated/widowed	0.80	***	0.80 ***
Economic activity				
	Not employed nor looking for job	1.00		1.00
	Employed or looking for a job	0.97	***	0.97 ***
Age				
	25-29	1.00		1.00
	30-34	1.52	***	1.52 ***
	35-39	1.85	***	1.85 ***
	40-44	2.04	***	2.04 ***
Census year				
	1985	1.00		1.00
	2005	0.71	***	0.70 ***
Interaction between religion * census year				
	Buddhists * 2005			1.01
	Protestants * 2005			1.06 ***
	Catholics * 2005			1.10 ***
	Others * 2005			0.94
Log-likelihood		-54820.28		-54791.47
N		132,586		132,586

Source: Korean census 1% samples 1985 and 2005.

Note: †  $p < .1$  ; \*,  $p < .05$ ; \*\*,  $p < .01$ ; \*\*\*,  $p < .001$ .

Table 4. Results from logistic regression models of intention to have a(nother) child among currently married women at ages 25–44, 1991 and 2009

Variable	Childless women		Women w children	
	Exp(b)		Exp(b)	
Religious affiliation				
	Non-religious	1.00		1.00
	Buddhists	1.67		1.01
	Protestants	0.86		0.98
	Catholics	1.21		1.04
Age				
	25-29	3.90	***	4.66
	30-34	1.00		1.00
	35-39	0.95		0.54
	40-44	0.16	***	0.19
Number of children ever born				
	1			1.00
	2			0.57
	3			0.29
	4+			0.91
Residence				
	Metro	1.00		1.00
	Small city	0.72	†	0.96
	Rural	1.28		1.21
Level of educational attainment				
	< High school completion	1.12		0.86
	High school completion	1.00		1.00
	Some college	0.59	*	1.22
	Bachelor or higher	1.28		0.95
Job				
	Not employed	1.00		1.00
	White-collar jobs	0.86		0.95
	Blue-collar jobs	0.90		0.95
Survey				
	1991	1.00		1.00
	2009	1.49	*	1.19
Interaction btw. Religion * survey year				
	Buddhists * 2009	1.84	†	0.93
	Protestants * 2009	0.75		1.12
	Catholics * 2009	0.86		1.12
-2LL		484.52		4,124.30
Unweighted N		584		9,092

Note: Infertile women were excluded while sterilized women were included as ‘modern method’ users; estimates were weighted; †  $p < .1$  ; \*,  $p < .05$ ; \*\*,  $p < .01$ ; \*\*\*,  $p < .001$ .

Source: National Surveys on Fertility, Family Health and Welfare 1991 and 2009



Table 5. Results from logistic regression models of current contraceptive use (modern + traditional methods) child among currently married women at ages 25–44, 1991 and 2009

Variable	Childless women		Women w children	
	Exp(b)		Exp(b)	
Religious affiliation				
	Non-religious	1.00	1.00	
	Buddhists	1.13	0.82	**
	Protestants	0.97	1.04	
	Catholics	0.81	1.20	
Age				
	25-29	0.96	0.53	***
	30-34	1.00	1.00	
	35-39	1.30	1.82	***
	40-44	1.05	1.25	**
Intention to have another child				
	No	1.00	1.00	
	Yes	0.79	0.47	*** †
Number of children ever born				
	1		1.00	
	2		1.67	***
	3		1.19	†
	4+		0.87	
Residence				
	Metro	1.00	1.00	
	Small city	1.05	1.01	
	Rural	0.63	0.97	†
Level of educational attainment				
	< High school completion	1.34	0.90	
	High school completion	1.00	1.00	
	Some college	0.98	1.05	
	Bachelor or higher	0.91	1.05	
Job				
	Not employed	1.00	1.00	
	White-collar jobs	0.93	1.22	*
	Blue-collar jobs	2.03	1.09	***
Survey				
	1991	1.00	1.00	
	2009	1.88	0.82	***
Interaction btw. religion * survey year				
	Buddhists * 2009	0.87	1.13	†
	Protestants * 2009	1.55	0.86	*
	Catholics * 2009	1.06	1.04	
-2LL		640.77	5484.81	
Unweighted N		584	9,092	

Note: Infertile women were excluded while sterilized women were included as ‘modern method’ users; estimates were weighted; †  $p < .1$  ; \* ,  $p < .05$ ; \*\* ,  $p < .01$ ; \*\*\* ,  $p < .001$   
Source: National Surveys on Fertility, Family Health and Welfare 1991 and 2009

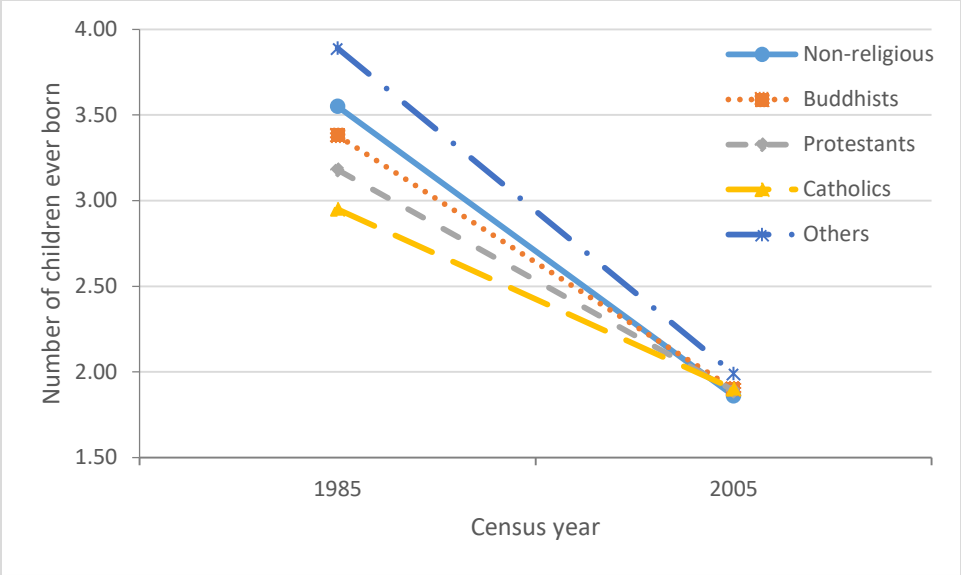


Figure 1: Cohort fertility of women at ages 40–44 by religious affiliation, 1985 and 2005

Note: Difference in cohort fertility between all pairs of religious groups is not significant in 2005.

Source: Our own estimates based on censuses 1985 and 2005

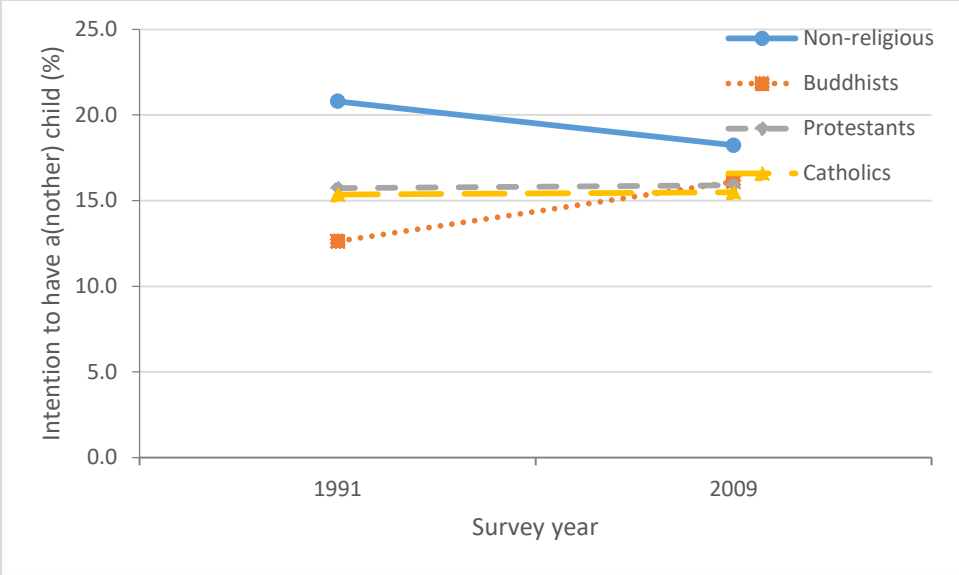


Figure 2: Intention to have a(n)other child among currently married women at ages 25–44 by religious affiliation

Note: Infertile women were excluded while sterilized women were included as ‘modern method’ users; estimates were weighted.

Source: our own computations based on the National Surveys on Fertility, Family Health and Welfare 1991 and 2009

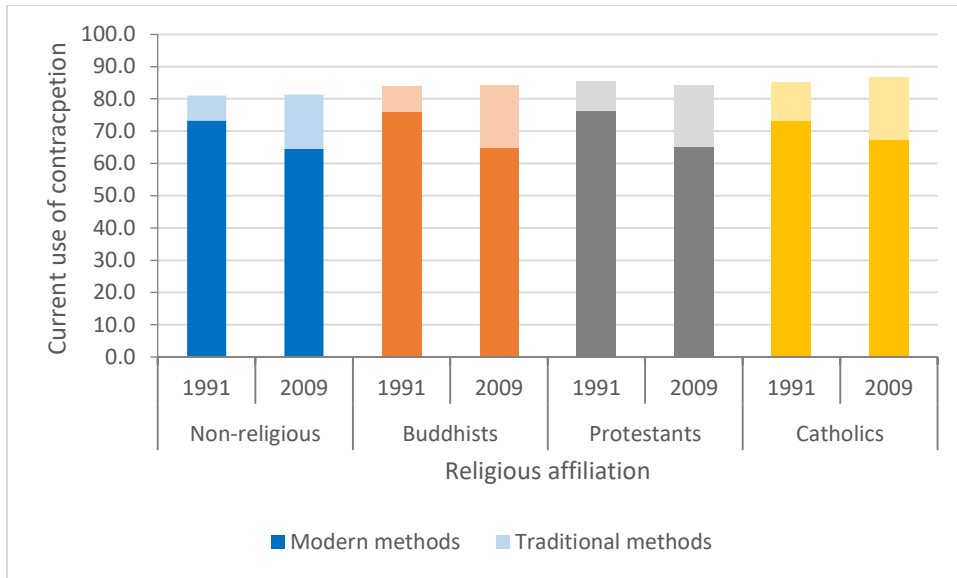


Figure 3: Current use of any contraception (modern methods + traditional methods) among currently married women at ages 25–44 by religious affiliation

Note: Infertile women were excluded while sterilized women were included as ‘modern method’ users; estimates were weighted.

Source: our own computations based on the National Surveys on Fertility, Family Health and Welfare 1991 and 2009