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Explaining Religious Differentials in Family Size Preferences: Evidence from Nepal in 1996

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Abstract

This paper presents an examination of how religio-ethnic identity, individual religiosity, and family members' religiosity are related to preferred family size in Nepal. Analyses of survey data from the Chitwan Valley Family Study show that socioeconomic characteristics and individual experiences can suppress, as well as largely account for, religio-ethnic differences in fertility preferences. These religio-ethnic differentials are associated with variance in particularized religious theologies or general value orientations (like son preference) across groups. In addition, individual and family religiosity are both positively associated with preferred family size, seemingly because of their association with religious beliefs that are likely to shape fertility strategies. These findings suggest improvements in how we conceptualize and empirically measure supra-individual religious influence in a variety of settings and for a range of demographically interesting outcomes.

Keywords

Fertility preferences; Religion; Nepal; South Asia

Existing theory about fertility behavior emphasizes how structural or economic changes in society lead to changes in birthrates and highlights changes in family size preferences as a key mechanism in the process (Notestein 1945; Becker 1960; Easterlin and Crimmins 1985). In settings with persistently high fertility, discussions of how to further limit birthrates often focus on how to meet unmet need and how to lower family size preferences. In this paper, we present an investigation of family size preferences in Nepal, a relatively high fertility setting, and a regularly hypothesized source of high family size ideals – religion.

Sociologists and demographers have documented numerous social contexts across time in which fertility behavior differs along religio-ethnic lines, including Western Europe (Derosas and van Poppel 2006), the United States (Freedman et al. 1959; Ryder and Westoff 1971; Mosher et al. 1992), the Middle East (Chamie 1981), and South and Southeast Asia (Knodel et al. 1987; Johnson 1993; Morgan et al. 2002; Dharmalingam and Morgan 2004; Mishra 2004). However, we have little empirical evidence of why or how religion is related

to fertility preferences and behaviors (c.f., Derosas and van Poppel 2006; Hayford and Morgan 2008). Studies of religious differences often stop at the finding of statistically significant differences between religious groups, after controlling for socioeconomic confounding variables (Goldscheider 2006). This type of approach is limited, because residual statistically significant differences could also stem from unmeasured non-religious characteristics. This lack of empirical examination of proposed mechanisms for religion-fertility links limits our understanding of why religious differences exist.

The three most frequent explanations for religious differences in fertility are that particularized theologies related to contraceptive use lead to higher fertility, that status differentials drive minority groups to delay or forgo births in an effort to be socially mobile, and/or that socioeconomic differences between groups explain the differences observed across religious groups (Goldscheider 1971). In addition, to more fully understand religion's impact on fertility, we should consider both specific and general components of religious ideologies that might influence fertility, as well as the extent to which these ideologies are actively engaged, reinforced, and referenced in individuals' lives through religious practice and interaction with others who are religious (McQuillan 1999, 2004; Goldscheider 2006).

This paper presents a theoretical framework expanding current theories of religion's relationship to fertility by specifying multiple dimensions of religion and conceptualizing the influence of religious others. From the framework, we specify setting-specific hypotheses about the relationship between religion and the family size preferences of young adults (ages 15-24) living in the Chitwan Valley of south-central Nepal. We then present results from tests of these hypotheses using data from the Chitwan Valley Family Study (CVFS).

Connections between Religion and Fertility

The role of religion and cultural factors is apparent across many theories of fertility. For example, Notestein (1945) discusses how religious doctrine encourages high fertility and writes that the power of values and customs could limit the influence of economic development on fertility. Elaborating classic transition theory, Lesthaeghe and others (Lesthaeghe 1983; Lesthaeghe and Wilson 1986; Lesthaeghe and Surkyn 1988) argue that the loss of religious authority over realms of life such as family, along with increasing individualism, were key factors in European fertility transitions. Also, Thornton (2005) contends that "developmental idealism," a package of ideas promoting small families and affecting family change, has at times been both encouraged and hindered by religion.

Many empirical studies of religion and fertility focus on the influence of membership in a particular religious group on fertility behavior. Three alternative, but not mutually exclusive, hypotheses have been offered for the differences found. First, Goldscheider (1971) argues that *particularized theologies*, or explicit theological canon about family size and contraception, and more general value orientations and worldviews may influence demographic behavior. For example, religions that encourage early marriage, universal childbearing, a patriarchal home environment in which women have little say in reproductive decisions, son preference, or an overall fatalistic outlook in life, also indirectly

promote higher fertility (McQuillan 2004; Hayford and Morgan 2008). In general, those who belong to a religio-ethnic group in which particularized theologies or general value orientations encourage larger families, will desire more children than those affiliated with religio-ethnic groups whose ideologies are less pronatalist. Following from this, the more committed one is to a pronatalist religion, the more pronatalist that individual should be (Hayford and Morgan 2008).

A second explanation for religio-ethnic fertility differentials is the *characteristics* proposition. Social, demographic, and economic attributes of various religio-ethnic groups often partly explain how a group's reproductive behavior differs from others (e.g. access to educational and economic opportunities; Goldscheider 1971; Jeffery and Jeffery 1997). The typical way in which these ideas are tested is to ascertain respondents' religious affiliations or identifications and assign dummy variables delineating the major religious groups to be compared. Baseline models include dummy variables and standard demographic controls. Subsequent models include socioeconomic variables, such as education or income to see if the effects of religious affiliation are minimized or disappear. If statistically significant differences between religio-ethnic groups remain, there is said to be evidence for a *particularized theologies* effect. We extend this approach by empirically exploring how identification with a certain religion relates to family size preferences through specific values and ideologies.

A third potential explanation of religious group differentials in fertility is the *minority group status hypothesis*. This is the idea that to achieve upward social mobility, minority religious groups will delay or avoid births (Goldscheider and Uhlenberg 1969). Of course, minority religious groups sometimes prefer separation from larger society, thus viewing high fertility as a way to increase their power. Either way, group status or power dynamics can impact fertility (McQuillan 2004). In Nepal, our research setting, we found little evidence of minority group dynamics in family size preferences, so we focus on the first two explanations— particularized theologies and characteristics—in addition to other extensions of a framework for understanding religious differentials.

One key expansion of the framework for understanding religion's influence on fertility we apply is relating the degree to which religious ideologies are practiced and valued to fertility preferences and behavior. Studies of religious influence suggest there are multiple dimensions of religion to consider (Cornwall et al. 1986; Hayford and Morgan 2008). As discussed earlier, membership in a particular religio-ethnic group represents an exposure to certain ideologies (specific and general) on a continuum of pronatalism. However, it is the extent to which religious practices and beliefs are a part of a person's life that influence whether a person is more likely to use religious ideologies to frame acceptable strategies of life, including preferences for family size (Wimberley 1989; McQuillan 2004).

The framework for understanding religion's connection to fertility preferences is also broadened by expanding from an individual-level perspective to an explicitly social perspective. A common approach is to consider the role of one's religious institution, its leaders, and one's fellow congregants (Trinitapoli and Weinreb 2012). Increasingly, research suggests that the religious characteristics of influential others such as spouses, parents, and

friends are related to the attitudes and behaviors of individuals (Stark et al. 1982; Stark 1996; Ellison et al. 1999; Pearce 2002a, 2002b; Pearce and Haynie 2004). Therefore, the more religious and pronatalist an individual's social networks are, the higher their family size preferences might be.

Finally, the framework for studying religion and fertility will benefit from testing its hypotheses outside Western, predominately Judeo-Christian regions. Further study of the multidimensional influence of religion on fertility preferences and behavior in new regions with different religions will help refine present theories and models. This study presented here extends our knowledge of how religion and fertility are connected, by examining their relationship in the Chitwan Valley of Nepal. Below, we describe the setting for this study and present setting-specific hypotheses for links between religion and family size preferences.

Setting

Studying the relationship between religion and family size preferences is most ideal in an area with variation in religio-ethnic groups, in religiosity, and in family size preferences, but little variation in other characteristics. In the study presented here, the focus is on the Chitwan Valley of Nepal, where a variety of ethnic and religious groups coexist, and all residents of the area have been exposed to similar socioeconomic circumstances for decades. The Chitwan Valley lies tucked into the base of the Himalayan foothills in south central Nepal just across the border from the Indian State of Bihar. Aside from a small urban area in the northernmost corner of the valley, the area is primarily rural with most families engaging in agriculture.

Rates of family-related behaviors such as fertility and contraceptive use have been changing in Chitwan, as they have throughout Nepal, over the past 60 years. Nepalese women went from having over six children on average in the 1960s to approximately five in the mid-1990s (Tuladhar 1989; Suwal 2001). An increase in contraceptive use has also been occurring, with fewer than three per cent of married women aged 15-49 using a modern method of contraception before the 1980s and 26 per cent by the mid-1990s (UN 2011). These behavioral changes are in part due to social changes including the increased accessibility of contraception and the spread of media messages encouraging small families (Axinn and Barber 2001; Axinn and Yabiku 2001). Importantly for the study presented here, while fertility has decreased in Chitwan and throughout Nepal it has not done so equally across social groups (Retherford and Thapa 2004). Religion may be a factor in those varying rates of change.

As throughout Nepal, religion, or *dharma*, is a key component of identity and everyday life in the Chitwan Valley. According to the Chitwan Valley Family Study (CVFS) survey data from 1996, the residents of the valley are 76 per cent Hindu and 15 per cent Buddhist, with a small Muslim population (.74 per cent), and an even smaller Christian population (.51 per cent). Only 4.5 per cent of respondents report no religious affiliation. Because the main religions in Nepal are not exclusionary, individuals incorporate a variety of religions in their

system of beliefs and practices. It is therefore important to understand the religious systems common to each religio-ethnic group.

The caste system in Nepal has four general levels, but only three are well-represented in the Chitwan Valley. High Caste Hindus are at the top of the caste system, Lower Caste Hindus are at the bottom, and Non-Hindu Nepalese ethnic groups fall in between. The fourth group which falls just above Lower Caste Hindus but is represented by less than one per cent of Chitwan Valley residents are non-Hindu foreigners (e.g., Muslims who have migrated from India).

According to the CVFS, 94 and 79 per cent of all High and Low Caste Hindus identify as Hindu, respectively. Those who do not identify as primarily Hindu split almost evenly into the categories of Buddhist or no religious affiliation, with a small number saying some other religion. High Caste Hindus generally follow religious mores about bathing, dressing, worshipping, eating, and interacting with others more closely than Low Caste Hindus. They also generally participate in religious ceremonies and rituals more often.

Among CVFS respondents, 81 per cent of all Gurungs, Lamas, and Tamangs identify themselves as Buddhists. They are of Tibeto-Burmese descent and migrated to Chitwan from the hill districts of Nepal. Because government control in Nepal largely belongs to High Caste Hindus, and Nepali is the national language, Hindu rituals and festivals are heavily promoted and encouraged. Although, Hinduism and Buddhism are syncretic religions, with Buddha believed to have been born in Nepal as a reincarnation of a Hindu god (Dastider 1995). Not surprisingly, 10 per cent of Gurungs, Lamas, and Tamangs identify as Hindu. Four and six per cent identify with another or no religion respectively. In general, however, Gurungs, Lamas, and Tamangs are far less likely than Hindu castes to regularly practice Hindu rituals or worship.

The other ethnic group we examined in the study presented here is the Tharu who are a group indigenous to the Chitwan Valley. The Tharu belief system and rituals have become more Hindu-like over the years (Gurung 1992; Guneratne 1994). Of the Tharus living in the Chitwan Valley, 81 per cent identify themselves as followers of Hinduism and the rest divide relatively evenly into the categories Buddhist or no religious affiliation and a smaller percentage of other religion.

Setting-Specific Hypotheses

Religious Ideology and Family Size Preferences

The theoretical framework outlined above hypothesizes that particularized theologies and general value orientations will explain religio-ethnic group differentials in family size. Here, we describe specifically how features of Hindu and Buddhist ideologies may influence fertility preferences.

Most religions are pronatalist, but within Hinduism pronatalism finds a rather strong voice. There are two paths to Hindu enlightenment. The rarer option is the path of asceticism where all worldly goods and attachments (including family) are denied. The more common path is called the “householder's path” (Bennett 1983) which encourages the building of

merit and the partial fulfillment of religious duty through good deeds such as childbearing. According to Hindu teaching, not only is it a woman's religious duty to have children, but vasectomized men are considered impure and cannot participate in religious ceremonies (Gray 1995). In general, Hinduism gives childbearing a powerful meaning and portrays it as necessary to complete life.

The Mahayana Buddhism practiced in Nepal is much less explicitly pronatalist than Hinduism is. Thus, for members of the more Buddhist religio-ethnic groups, childbearing is less essential in religious terms. We are not suggesting that Buddhism is anti-natalist, rather that there are fewer Buddhist theologies directly encouraging the value of larger families.

When it comes to general value orientations, one feature of Hinduism distinguishing it from Buddhism is its emphasis on fatalism (Bista 1991). When family size is considered to be out of one's control, preferred family size and achieved fertility are high. During semi-structured interviews with Hindus about their family size preferences, "preferred family size" is often described as "what *Bhagwan* (God) gives" or "according to *Bhagwan*." Those from more Buddhist religio-ethnic groups do not reference God's will as often.

Hinduism also differs from Buddhism in that it contains a strong and explicit patriarchal component. Family organization is patrilineal, and men generally hold greater power than women in household decision-making. Hindus believe fathers are reborn in their sons and that sons are necessary for performing death rituals (Bennett 1983). On the other hand, in Buddhist homes, women face less discrimination, and death ceremonies do not require the presence of sons (Watkins 1996). Mahayana Buddhism is largely egalitarian including enlightenment being gender-neutral (Watkins 1996).

Due to both specific religious ideology and general values contained in certain religions' worldviews, identifying with different religions gives individuals different schema for viewing the importance of having children and ideas for appropriate family size. In this context, we expect that members of the more Hindu religio-ethnic groups (High Caste Hindus, Low Caste Hindus, and Tharu) will have higher family size preferences than those of the more Buddhist religio-ethnic groups (Gurung, Lama, and Tamang). However, these differences will probably not be observable unless socioeconomic status is controlled.

In Nepal, the majority religio-ethnic group with historic power and prestige are the High Caste Hindus. They have had relatively unfettered access to schools and well-paying jobs, affording them more leisure time and resources to consume media such as television and movies that glamorize small families. Because these advantages are also associated with *lower* family size preferences, analyses to measure associations between religio-ethnic group and family size preferences must control for factors such as education and media exposure to observe the positive association between Hindu affiliation and family size preferences. Note that the relationship between religio-ethnic identity and fertility or family size preferences is not necessarily only a spurious relationship driven by education, or other socioeconomic characteristics, but in some situations, religious groups purposefully either encourage or discourage educational attainment (Sherkat and Darnell 1999; Glanville et al 2008). In that case, religio-ethnic differences are working through educational attainment.

Our experience in this setting suggests Hindu and Buddhist principles rarely operate to encourage or discourage education, so we theorize education as a correlate of both religio-ethnic identification and family size preferences, not a mechanism for the relationship between them.

Another characteristic of young adults that is likely associated with family size preferences is marital status. Those who are married at the time of the survey have tended to marry earlier than their peers, leading to larger family sizes in the end (Morgan and Taylor 2006). Further, we expect that religio-ethnic identification is related to marriage timing (Yabiku 2006), so it is important to control for marital status when examining whether religious identification is related to family size preferences at a given point in time.

Religious Practice and Family Size Preferences

If, in a setting like this, all religions support having children to some degree, any type of religious involvement signals exposure and commitment to ideas that encourage larger families (Berghammer 2012). Also, the more individuals value larger families, the more they may participate in religion, knowing it is a social institution that justifies having many children. Thus, religious practice should be positively associated with preferred family sizes.

Even though religion's influence is often conceptualized at the individual level, we expect the religious characteristics of one's social networks will also shape his/her family size preference. In a previous study in this setting involving interviews with 17 young adults, the most influential socioreligious context in their lives was the family context (Pearce 2002b). Young adults were unable to articulate their own religious beliefs or practices but could easily describe those of their parents or grandparents. Therefore, the more religious a young adult's household is, the more likely his/her family members hold and encourage high family size preferences.

Data and Methods

To test our hypotheses, we used survey data from the Chitwan Valley Family Study (CVFS). The CVFS is based on a sample of 171 neighborhoods systematically selected from the Chitwan Valley in south central Nepal (Barber et al. 1997). Within the CVFS neighborhoods, all 15-59 year-old residents, and their spouses (who may reside outside the selected neighborhoods), were interviewed privately in person between August 1996 and February 1997. Interviews were obtained from 97 per cent of the selected respondents, resulting in 5,272 total respondents. These data include measures of multiple dimensions of religiosity, a variety of beliefs and attitudes, parental characteristics, and complete life histories with regard to school, family, and other life experiences. Although these data are now almost 20 years old, they are important because they allow us the unique opportunity to explore these relationships in a setting where there is still substantial variation in religiosity and family formation preferences and behaviors.

For the analyses presented in this paper, we used a subsample of CVFS respondents. To examine childbearing preferences among young adults in the early years of family formation, we restricted the cases to those who are ages 15-24. We deleted members of

religio-ethnic groups which were too small in total size to provide reliable group comparisons. We also removed 14 people who were living alone at the time of the interview, because we cannot calculate household level-religiosity measures for this very small and unusual group. After these restrictions, the final sample size was 1,518 individuals. Descriptive statistics for this subsample of respondents are available in Table 1.

Dependent Variable

The dependent variable was a scale created from a set of questions designed by Lolagene Coombs (1974) to ascertain underlying family size preference. The first item in the Coombs Scale measure was: “People often do not have exactly the same number of children they want to have. If you could have exactly the number of children you want, how many children would you want to have?” Using this preferred number as a basis, the second item was: “If you could not have exactly [the number the respondent gave] children, would you want to have [one number lower] or [one number higher]?” Then for the third question: “If you could not have [the second choice number] of children, would you want to have [one number lower] or [one number higher]?” Figure 1 displays the options a respondent has when answering the Coombs Scale questions. Depending on the path a respondent followed in answering these questions, s/he was coded as somewhere between 1 and 25. The median score for our sample was 5, corresponding with a first preference for two children, then one child (as opposed to three), and then three children (as opposed to none). Half of respondents had a score of 5 or 6 and almost 90 per cent had a score between 4 and 7, revealing a general preference for 2 or 3 children.

This family size preference may seem low since the TFR was around 4 in the mid-1990s. However, this is a young cohort and their childbearing unfolded over the following years. By 2006, when the youngest in our sample was 25, the TFR was just over 3, implying that the behavior of this cohort was ultimately not far off from their stated preferences (Ministry of Health and Population, et al. 2012).

The Coombs Scale's multiple question strategy has been used successfully in a number of studies around the world including the U.S., Korea, Taiwan, Malaysia, Hungary, the Philippines, and Bogota (Coombs 1977, 1979; Coombs and Sun 1978). Individuals typically have a range of acceptable numbers of children, something that is masked by asking for one preferred number, and this scale reveals an individual's “potential or bias toward a larger or smaller family size” (Coombs 1979, pg. 26). We treated the Coombs Scale as an interval level measure.

Independent Variables

Religio-ethnic identity—During the CVFS individual-level interview, respondents were asked, “What is your father's caste/ethnicity?” For the analyses, we chose to focus on the four largest combinations of religio-ethnic groups found in this region: High Caste Hindus, Low Caste Hindus, Hill Tibeto-Burmese groups (Gurung, Lama, and Tamang), and Tharu. For each of these four groups there was a dummy variable coded 1 if a respondent belonged to that religio-ethnic group, otherwise coded 0. In all analyses presented here High Caste Hindus was the comparison category.

Religiosity: religious practice—All respondents were asked about their own religious practice outside of the home: “How often do you do *pūja* (worship) at a temple? More than once a month (coded 2), once a month or less (coded 1), or never (coded 0)?” Earlier versions of our analyses included religious practice in the home as an independent variable. However, there were no statistically significant relationships with in-home religious practice, so we focused solely on temple worship. To create a household-level average of religious practice, responses to this question were summed and averaged across all household members other than the focal respondent. For 66 per cent of respondents this household measure included their parents. Of the remaining respondents, 88 per cent (N=513) are married, implying that they are likely living with their spouse's parents. Together, this means that the household measures generally refer to natal homes for the unmarried and marital homes including parental in-laws for the married respondents. Both the individual and household averages range from 0 to 2 with a mean slightly more than 1, corresponding with praying at a temple once a month or less.

Particularized Theologies

Religious theologies: To assess the role of particularized religious theologies in these models, two measures of religious beliefs were used. First, respondents were asked about the belief that “Men who do not have children cannot go to *swarga* (heaven).” Response options were “strongly agree” (coded 4), “agree” (coded 3), “disagree” (coded 2), and “strongly disagree” (coded 1). The second measure was about the importance of performing religious funeral rituals when someone dies. Respondents were asked, “How important is it to you to perform *shradha/arghau/tarpan* (a religious ceremony pertaining to their particular religio-ethnic group) for dead ancestors?” Response options were “very important” (coded 1), and “somewhat important” or “not important at all” (both coded 0 because only .05 per cent responded “not important at all”).

General value orientations: To capture the role of general value orientations in the connection of religion with family size preference, measures representing patriarchy, son preference, and the importance of childbearing were used. The measure of patriarchy was based on the statement, “Men should make all the decisions in a household.” Response options were “strongly agree” (coded 4), “agree” (coded 3), “disagree” (coded 2), and “strongly disagree” (coded 1).

A measure of son preference was created from a set of questions designed by Lolagene Coombs (Coombs 1977). Each respondent was first asked, “Let's forget the children that you have now for a while. If you had only three children would you want to have three daughters only, one son and two daughters, two sons and one daughter, or three sons only?” If a respondent answered “three daughters” his/her answer was coded as a “1” indicating strong daughter preference. Conversely, if a respondent answered “three sons,” his/her answer was coded as an “8” indicating strong son preference. If a respondent answered with a mixed gender preference, they were then asked up to three questions forcing them to choose and identify their preferred gender composition. The more positive their gender composition score, the more they preferred sons over daughters. (See Figure 2 for coding.) This multi-question measure, patterned similarly to the dependent variable of interest in this paper,

provided an intricate measure of individuals' views on preferable family gender composition.

The measure regarding childbearing was based on the following item: "It is okay for a person to decide not to have children." Response options were "strongly agree" (coded 4), "agree" (coded 3), "disagree" (coded 2), and "strongly disagree" (coded 1).

Characteristics: The next set of variables was comprised of those that are considered to be socioeconomic characteristics that may account for religio-ethnic differences in family size preferences. We included two measures of parental characteristics. First, respondents were asked regarding both parents, "Did your father/mother ever attend school?" This variable was coded 2 if both parents attended school, 1 if one parent attended school, and 0 if neither parent attended school. We also included a continuous measure of the total number of children to whom the individual's mother gave birth.

The other measures we included to test the "characteristics hypothesis" were individual characteristics and experiences. First, we included a measure of the respondent's own education. This was a measure of the highest grade in school a respondent reported completing at the time of the survey (Freedman 1979; Caldwell 1982; Kasarda et al. 1986; Axinn 1993). Second, we controlled for the respondent's own media consumption (Caldwell 1982; Bongaarts and Watkins 1996; Thornton 2005). Respondents were asked about reading the newspaper, listening to the radio, and watching television in the last year. Each question had four response categories ranging from 0 to 3. We created a scale of media exposure, by averaging the scores, to represent the average level of media exposure in the previous year for each respondent. Finally, we included a measure for whether a respondent is married or not (coded 0=no, 1=yes).

Control Variables

In the analyses, we controlled for two individual-level characteristics related to family size preferences that are exogenous to all the religion measures: age and gender. To measure age, we included the respondent's age at the time of the survey, and to assess the influence of gender we included a dummy variable coded 0 if the respondent is male and 1 if the respondent is female.

Analytic Strategy

Because the dependent variable was an interval level measure very closely approximating a continuous variable, we used ordinary least squares regression to estimate our models. The survey sample was clustered in selected neighborhoods, so to control for the tendency for neighbors to be more like each other than non-neighbors, we employed multilevel models that corrected for over-correlated errors.

Results

Overall Relationship of Religion to Family Size Preference

Model 1 in Table 2 presents estimates of the total relationship between religio-ethnic identity and family size preference, controlling for age and gender. Here we see that, Low Caste Hindu and Tharu respondents report larger family size preferences, on average, than High Caste Hindus. Gurungs, Lamas, and Tamangs do not differ significantly from High Caste Hindus, and in analyses not presented here, there is evidence that they have lower family size preferences than Low Caste Hindus and Tharus. In fact, Tharu's have statistically significantly higher family size preferences than all the other religio-ethnic groups.

The Coombs Scale does not reveal one number for desired family size; this is partly what makes it a better measure of fertility preferences but it makes interpreting the coefficients more difficult. Interpreting these religio-ethnic differences in terms of actual desired number of children requires looking at Figure 1. For example, a 19-year-old high caste Hindu woman would have a predicted value for the Coombs Scale of 5. Looking at Figure 1 we see that this corresponds with a fertility preference of first 2, then 1, then 3 children. On the other hand, a 19-year-old Tharu woman would have a predicted value of 7, corresponding more with a pattern of fertility preference of 2 children, then 3, then 4. (A value of 7 could also correspond with a pattern of 3, 2, 1, but few respondents selected that option.) The most appropriate interpretation of the estimated coefficients then is to think of higher or lower preferences more broadly and not in terms of specific numbers (Coombs 1979).

Role of Socioeconomic Characteristics

In model 2, parental education and own education have the expected negative and statistically significant relationship with family size preference. Also, those who are married have statistically significantly higher family size preferences. Even more interesting is what happens to the coefficients for the religion measures in the presence of these control variables. There is now a statistically significant difference between the more Buddhist Gurung, Lama, Tamang groups and the other more Hindu religio-ethnic groups. After controlling for educational attainment, media exposure, and marital status, the more Buddhist religio-ethnic groups score about .35 lower on the Coombs Scale than High Caste Hindus. Also, the difference in family size preferences between Low and High Caste Hindus goes away in the presence of these controls. We estimated adjusted Wald tests and found that these estimated coefficients are also statistically different from one another (this is true for all cross-model comparisons made below).

Analyses not presented here show that the appearance of a difference between High Caste Hindus and Gurungs, Lamas, and Tamangs and the disappearance of a difference between High Caste and Low Caste Hindus are primarily due to the relationship between education and family size preferences. High Caste Hindus typically have higher educational attainment than Low Caste Hindus, so controlling for education, High Caste Hindus' family size preferences are more similar to those of Low Caste Hindus. Also, when controlling for education, we see more of a difference between the family size preferences of High Caste

Hindus versus the Gurung, Lama, Tamang groups. This could potentially stem from the two groups having differing ideologies regarding fertility and family size which we explore next.

Role of Religiosity

An important contribution of the study reported on here is the inclusion of measures of religiosity or religious practice in a non-Western setting and from both the individual- and household-level, as shown in Model 3. Both coefficients of individual and household religious practice are positive and statistically significant—the more a young adult or his/her family members perform worship in a temple, the more children that individual desires. Additionally, the magnitude of the relationship between household average religiosity and family size preference is larger than that between the individual's own religious practice and family size preference providing evidence that one's family members' religiosity may be more related to family ideals than one's own religiosity. A young adult who goes to a temple more than once a month scores about a third of a point higher on the Coombs Scale than one who never goes to a temple. A young adult whose family members all visit temples more than once a month will score almost half a point higher on the Coombs Scale, compared to one whose family members are not religious at all.

Notice that there are small, but statistically significant, changes in relationships between religio-ethnic identity and family size preference when they are in the same model as measures of religious practice. This suggests that the association between religio-ethnic identity and family size preference is partly accounted for by differences between religio-ethnic groups in religious practice. The coefficient for being a Gurung, Lama, or Tamang becomes less negative, so the lower frequency of attending religious temples for members of this group partly explains why they have lower family size preferences than High Caste Hindus. And for Tharus, when religious practice is controlled, they have even higher family size preferences than High Caste Hindus. Given the possibility that religious practice might be more strongly related to family size preferences for some religio-ethnic groups than others, we estimated interaction effects to test this and found no statistically significant results.

Role of Particularized Theologies

The results from Model 4 address whether or not two particular religious theologies can statistically account for some of the religio-ethnic differences or the influence of religiosity. Both the strength of belief in the Hindu idea that men must have children to achieve ultimate enlightenment and the value that an individual places on his/her religio-ethnic group's religious death rites are positively associated with family size preference. Interestingly, these theologies do not account for any of the relationship between religio-ethnic identity or household religiosity and family size preference, but they do for some of the relationship between individual religiosity and family size preference (the effect of individual religiosity becomes statistically insignificant and the effect estimate decreases when these beliefs are controlled for). In other words, one's own level of religious practice is positively associated with family size preference partly because being more religiously active is associated with believing more strongly that children are essential to men's status in the afterlife and that religious death rituals are essential.

Role of General Value Orientations

Next, we examined the role of more general value orientations tied to religion. Model 5 of Table 2 presents the relationships between three general value orientations (believing that men should make all household decisions, son preference, and the importance of childbearing) and family size preference. The coefficient for the attitude about men's role in household decision making is not statistically significant, but the other two coefficients for general values are. The more a person prefers having sons over having daughters, the more children s/he desires to have. When we include this measure of son preference the coefficient for Gurung, Lama, and Tamang identification becomes insignificant. In other words, the lower family size preferences among the more Buddhist religio-ethnic groups (found after controlling for education, media exposure, and marital status) seem to be partly related to the lesser degree of son preference associated with being a member of these groups. If the more Buddhist groups and the High and Low Caste Hindu groups viewed the importance of sons versus daughters more similarly, their family sizes would be more similar. Son preference also at least partly accounts for the relationship between household religious practice and family size preference—individuals in more religious households have higher family size preferences partly because they also have stronger preferences for sons. It is likely that the more religious family members are, the more they may communicate to each other the importance of having (multiple) sons, thereby cultivating a desire for a larger family.

Also, in analyses not shown here, we found that it is primarily the inclusion of the idea that it is okay not to have children which makes the coefficient for the importance of death rituals statistically insignificant. This is perhaps not surprising given that although the death rituals do not all require the presence of sons, they do require the presence of children, so someone who values death rituals is also likely to believe it is crucial to have children.

In this final and full model (Model 5), several findings stand out. First, there remain differences in family size preferences by religio-ethnic group. The High Caste Hindus have lower family size preferences than the Tharus. Second, the relationships between individual and household-level religious practice and family size preference are not statistically significant, so particularized theologies and general value orientations seem to statistically account for the observed relationship between religious practice and family size preference. Finally, the attitudes about men needing a child to have a better afterlife, son preference, and childlessness all remain statistically significant independent of one another. This suggests there are unique attributes of each attitude that contribute to individuals' thinking about family size. Across our models the decreases in effect sizes are small, but they are statistically significant and support our interpretations.

Conclusions

The evidence presented here highlights how multiple dimensions of religion at the individual and household level are correlated to family size preferences. Findings show that while High Caste Hindus appear to have the lowest family size preferences among religio-ethnic groups in the Chitwan Valley of Nepal, being a member of a more Buddhist ethnic group, like Gurungs, Lamas, or Tamangs, is associated with having even lower family size

preferences than Hindus once education, media exposure, and marital status are controlled. This finding is unique, because there were no initially observed differences between these groups, but upon controlling for socioeconomic characteristics, differences were revealed. Thus, although socioeconomic characteristics explain fertility differentials in some cases, they can suppress them in others. In Nepal, and possibly other relatively high fertility contexts, education remains a powerful force in lowering family size preferences; however, education and other related socioeconomic factors do not completely neutralize the influence of competing schema, or models for what actions are possible and preferable, such as pronatalist ideas promulgated by religions.

As Johnson-Hanks et al. (2011) describe through the theory of conjunctural action, humans have access to multiple, sometimes competing, schema for informing the number of children it would be good to have. For example, in Nepal as in other places undergoing fertility transitions, the increasing value of education and push to invest in the quality instead of the quantity of one's children are part of an education-based schema that encourages fewer births. On the other hand, certain Hindu schema about rewards in this life and the after-life encourage having more children. Both schemas are accessible and appealing in some regard to individuals, especially Hindus, in Nepal, so while one schema may limit the number of children seen as preferable the other may counteract that influence so that religious identity and practice is associated to some degree with one's view of the preferred family size. The extent to which religious schema are reinforced through practices or discussions with family members or more heavily rivaled by schema such as those promoting the economic benefits of smaller families will vary across people and settings, but it does not diminish the fact that these religiously informed schema exist and hold the potential to motivate behavior (Thornton 2005).

Another question raised in considering religion's influence is the extent to which we can assess religion's impact isolated from ethnicity or caste in in settings where religious identity is often ascribed at birth. In fact, rather than use the term, "religious affiliation," we rely on "religio-ethnic identification," to recognize the impossibility of cleanly separating their "effects." Caste introduces even more of a power hierarchy that underlies access to resources relevant to family decision-making. Religion is often part of ethnicity, but two members of the same ethnic group may practice religion differently, and two members of the same religion may belong to different ethnic or caste groups. Religion, ethnicity, and caste are three aspects of identity which are heavily intertwined in ways that cannot be theorized, conceptualized, or measured separately. Rather, we argue for an approach which describes and theorizes the influence of these intersections within religio-ethnic groups, and suggest this be supplemented with further examination of how specific ideologies serve as mechanisms for the relationship between religio-ethnic identity and fertility preferences.

In addition to detailing religio-ethnic differences in family size preference, the analyses presented in this paper demonstrate an association between household religiosity and family size preferences. The more often household members worship at a temple, the more children a young adult desires. This suggests that household religiosity exposes youth to values that promote larger families. Whether this relationship between family religiosity and family size preferences holds up in other settings has yet to be explored, along with relationships

between the religious nature of other social contexts such as peer groups, schools, and work environments, and in relation to other outcomes.

We also present evidence of a tight connection between religious practice and ideology. The relationships that both an individual's own religious practice and the household's level of religious practice have with family size preference are largely due to associations between religious practice and particularized theologies and general value orientations. This offers support for the particularized theologies hypothesis (Goldscheider 1971). However, the specific ideological measures investigated here do not fully explain the relationship between religio-ethnic identity and family size preference. It may be that other theologies or general value orientations are at work (although we explored other measures regarding marriage and the family and did not find any significant effects). It may also be that the remaining association is a result of unmeasured socioeconomic differences between religio-ethnic groups. Given the legacy of Nepal's caste system, religio-ethnic identity and economic opportunity and achievement are highly intertwined. Better measuring these socioeconomic differences could improve our estimates of the relationship between features of religiosity and family size preferences.

Most of the respondents in our analysis were not married at the time of the interview (62 per cent), so the measure of family religiosity refers to members of their natal home, not their marital home. Of those who are married, some had moved to live with in-laws, so the measure of family religiosity represents their marital family with whom they may have only lived a short time in comparison to their natal family. While it is possible that the religiosity of the marital family is different from that of the natal family, it is not likely, particularly in a place like Nepal where religious-endogamy is the norm (Ghimire et al. 2006). The benefit of this measurement strategy is that it captures the more proximal religious environment in relation to fertility preferences, but to the extent that the religiosity of one's natal family could be more influential, it would be more ideal to have a measure of that family context for everyone.

Regarding the specific theologies and general value orientations we were able to examine, we present evidence that strong preferences for sons and for not being childless are highly related to one's family size preference. These results demonstrate how the ideational forces of son preference and of childbearing at least partly account for how High Caste Hindu religio-ethnic identification is associated with larger family size ideals than for the more Buddhist groups. While other studies have shown that son preference generally increases fertility demand and family size (Niraula and Morgan 1995), this study shows how son preference varies by religio-ethnic group. Son preference is not a purely religious ideology. It jointly stems from years of patrilineal family organization and economic advantage granted to males. Religious ideals requiring the birth of a son for a father to be reborn and to conduct parents' funeral rites connect religious identity to thinking about family size strategies necessary for the ideal gender composition.

Overall, demonstrating links between different facets of religion and family size preferences elucidates our understanding of how religion connects to fertility specifically and family processes more generally. Of course, this depends on the strength of the relationship

between fertility preferences and behavior across groups. Stated ideals are often different from actual behavior, but fertility preferences are one of the best predictors of fertility behavior (Schoen et al 1999). In fact, for the cohort in question, their preferred family size in 1996 (between 2 and 3) is not far from Nepal's TFR ten or fifteen years later (3.1 and 2.6 respectively), which is a reflection of their actual, subsequent fertility behavior (Ministry of Health and Population et al. 2012). Furthermore, because we find that religion is related to family size preferences independent of education and parental characteristics our analyses provide evidence that religion is one of the more salient, or dominant, influences on fertility preferences. In the end, the unique evidence we present provides additional motivation for religion to be conceptualized as multi-dimensional, operating through beliefs and practices. It also highlights the value in exploring social dimensions of religious influence. Religious qualities of social networks and contexts influence individuals, independent of their own beliefs and practices.

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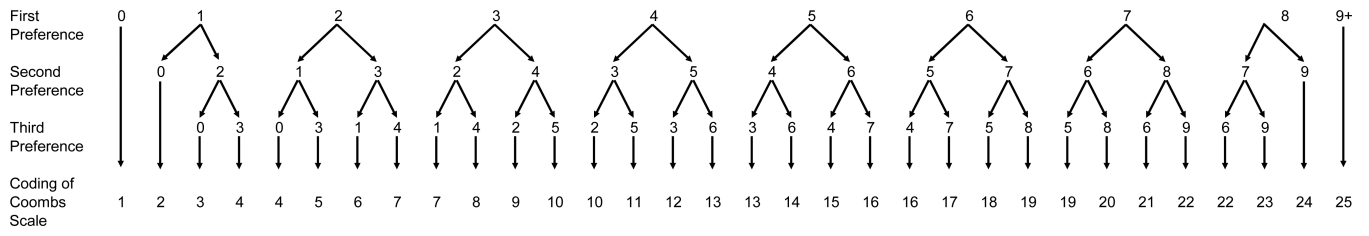


Figure 1.
Response alternatives and coding scheme for Coombs scale family size preference measure

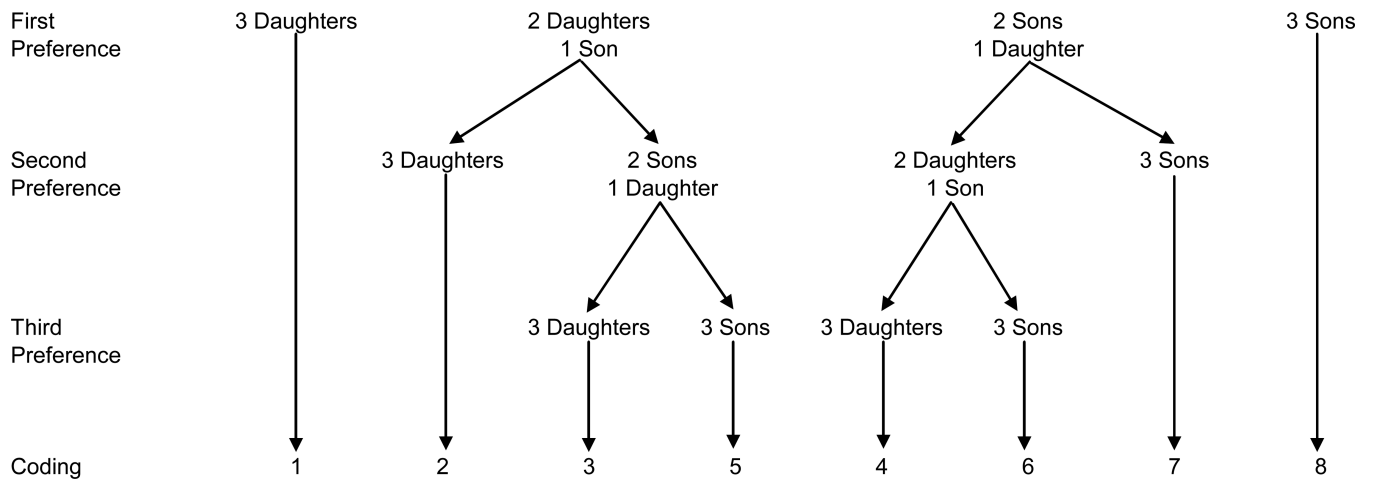


Figure 2. Coding of Coombs gender preference scale, a measure of general value orientation

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Table 1

Descriptive statistics for all variables used in the analysis of the association between religion and family size preferences among 15-24 year olds, Chitwan, Nepal, 1996 (N=1,518)

	Mean	Std Dev	Min	Max
<i>Family size preference</i>				
Coombs Scale (see Figure 1 for coding scheme)	5.66	1.74	1	22
<i>Religio-ethnic identity</i>				
High Caste Hindu	0.57	0.50	0	1
Low Caste Hindu	0.13	0.33	0	1
Gurung/Lama/Tamang	0.16	0.37	0	1
Tharu	0.14	0.35	0	1
<i>Religiosity: religious practice (frequency of praying at temple)</i>				
Individual	1.04	0.55	0	2
Household average	1.02	0.40	0	2
<i>Particular Theologies</i>				
<i>Religious theologies</i>				
No children, no heaven	2.18	0.69	1	4
Importance of death rituals	0.74	0.44	0	1
<i>General value orientations</i>				
Men should make household decisions	2.91	0.82	1	4
Son preference scale	6.00	1.43	1	8
It is okay for a person to decide not to have any children.	2.32	0.64	1	4
<i>Characteristics</i>				
<i>Parental</i>				
Parents' attended school (0=none, 1=one, 2=both)	0.69	0.71	0	2
Number of mother's children ever born	5.31	2.11	1	15
<i>Individual</i>				
Own education (years)	6.69	3.47	0	14
Own media exposure	1.72	0.70	0	3
Respondent ever married	0.38	0.49	0	1
<i>Demographic controls</i>				
Female	0.57	0.50	0	1
Age	18.98	2.83	15	24

Source: Chitwan Valley Family Study, 1996

Table 2

Multilevel regression estimates (odds ratios and significance statistics) of associations between religion measures and family size preferences among 15-24 year olds; Chitwan, Nepal, 1996

	1	2	3	4	5
<i>Religio-ethnic identity^a</i>					
Low Caste Hindu	0.32* (2.19)	-0.12 (-0.79)	-0.10 (-0.63)	-0.10 (-0.63)	-0.10 (-0.67)
Gurung/Lama/Tamang	-0.15 (-1.09)	-0.35** (-2.52)	-0.29* (-2.13)	-0.29* (-2.07)	-0.22 (-1.58)
Tharu	1.05*** (6.87)	0.64*** (3.92)	0.72*** (4.37)	0.74*** (4.45)	0.74*** (4.54)
<i>Religiosity: religious practice (frequency of praying at temple)</i>					
Individual			0.15* (1.93)	0.13 (1.63)	0.12 (1.55)
Household average			0.23* (1.99)	0.22* (1.94)	0.19 (1.64)
<i>Particular theologies</i>					
<i>Religious theologies</i>					
No children, no heaven				0.11* (1.77)	0.13* (1.99)
Importance of death rituals				0.17* (1.70)	0.12 (1.19)
<i>General value orientations</i>					
Men should make household decisions					-0.04 (-0.70)
Son preference scale					0.10*** (3.23)
It is okay for a person to decide not to have any children.					-0.39*** (-5.83)
<i>Characteristics</i>					
<i>Parental</i>					
Parents' attended school (0=none, 1=one, 2=both)		-0.12* (-1.77)	-0.12* (-1.81)	-0.11* (-1.71)	-0.10 (-1.54)
Number of mother's children ever born		0.02 (1.13)	0.02 (1.03)	0.02 (0.88)	0.02 (0.89)
<i>Individual</i>					
Own education (years)		-0.06*** (-3.67)	-0.06*** (-3.70)	-0.06*** (-3.39)	-0.06*** (-3.30)
Own media exposure		-0.12* (-1.65)	-0.14* (-1.91)	-0.14* (-1.87)	-0.12 (-1.64)
Respondent ever married		0.31** (2.60)	0.30** (2.51)	0.30** (2.48)	0.24* (2.02)
<i>Demographic controls</i>					
Female	-0.13 (-1.45)	-0.39*** (-4.11)	-0.40*** (-4.20)	-0.41*** (-4.32)	-0.38*** (-3.97)
Age	-0.01 (-0.83)	-0.05** (-2.44)	-0.04* (-2.29)	-0.04* (-2.24)	-0.04* (-2.00)
Intercept	5.8***	7.23***	6.82***	6.44***	6.74***
-2 Log Likelihood	5917	5887	5885	5885	5851
ICC	0.05	0.04	0.04	0.04	0.04

N=1518

Source: As in Table 1.

^aReference category is High Caste Hindu

* $P < .05$, one tailed test

** $P < .01$, one tailed test

*** $P < .001$, one tailed test; t-ratios in parentheses

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