Religion and Desire for Additional Children in a Son-preference and Low Fertility Society: Evidence From Vietnam

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Plain English Summary

Aim of the research: This research aims to look into the association between religion and the desire to have additional children of women in Vietnam. We focus on women of reproductive age (15-49 years old).

Background: Vietnam provides a unique case study. The country is known for son preference and low fertility. The majority of Vietnamese people have no religion. The two main religions in Vietnam are Buddhism and Christianity.

Data and methods: We use data from the 2014 Vietnam Multiple Indicator Cluster Survey. We use statistical analysis to find out the relationship between religion and desire for additional children among women of reproductive age. We conduct the study for overall Vietnam and for each region, as there are large differences across regions.

Main findings: Religion has a strong relationship with the desire for additional children, and the relationship differs across regions. In three out of six regions, Christians are more likely to want another child compared to those with no religion. In Mekong River, Buddhists are less likely to want another child compared to those with no religion. For Northern Midlands, however, Buddhists are more likely to want another child compared to those with no religion. The study also shows that son preference exists in all regions of Vietnam, with the level increasing from the South towards the North.

Policy implications: Understanding the relationship between religion and desire for additional children for each region can support the formulation of appropriate population policies for each region in Vietnam.

24   **Abstract**

25   **Background:** The association between religion and desire for additional children has

26   remained controversial and varies depending on the social context of the study. This study

27   empirically investigates the relationship between religion and desire for additional children in

28   Vietnam, a society characterized by son preference and low fertility.

29   **Methods:** Using nationally representative data from the 2014 Vietnam Multiple Indicator

30   Cluster Survey, the study employs Probit regression analysis to investigate the relationship

31   between religion and desire for additional children among women of reproductive age (15-49).

32   The sample consists of 5,585 women across all six economic regions.

33   **Results:** Religion has a strong impact on the desire to have an additional child, and the

34   relationship differs across economic regions. In three out of six regions, Christians have higher

35   fertility desire compared to non-religious people. Fertility desire of Buddhists differs from fertility

36   desire of non-religious people in two out of six regions, namely Northern Midlands and Mekong

37   River. Fertility desire of those belonging to other religions is different from that of non-religious

38   people only in Mekong River.

39   **Conclusions:** Identifying the impact of religion on desire for additional children can help

40   promote appropriate family planning policies. The study also demonstrates that son preference

41   exists in all regions of Vietnam, with the level increasing from the South, towards the Central and

42   peaks in the North, especially in the regions bordering China.

43   **Key words:** Religion, fertility desire, desire for additional children, son preference, Vietnam.

44

45

Introduction

The world is facing a shift in fertility not only from high to low, as observed during the late 1950s to the late 1970s (1), but also unpredictable changes in fertility trends, especially prolonged low fertility, new unions with lower demand for children, and voluntary childlessness (2). Besides, due to the direct, indirect, and long-term effects brought about by changes in fertility trends, such as population aging, economic consequences, and sex-imbalance due to son-preference, efforts to intervene in fertility behavior are key policies for many countries (3).

The relationship between fertility desire and fertility is well documented (4). Fertility desire is considered an important first step to achieve actual fertility (5). Thus, understanding fertility desire will help policy makers to predict fertility and enable them to design appropriate policies (6). There are many studies that have documented the determinants of fertility desire, including economic conditions (7), health status (8), national population policy, socio-cultural context, environmental impacts, and beliefs about values and benefits of children (9, 10). Religion is reported to have a strong relationship with fertility desire as well as fertility in many countries (11, 12). For example, religious women tend to have higher fertility desire and higher fertility than women without religion in the United States, Spain and most European countries (13).

Vietnam provides a unique case study, as the country has a special socio-political structure. Under the Communist party's leadership, the majority of Vietnamese people follow the atheism idea due to the policy set by the government (14). In addition, given the country's past experiences, there are many different religions in Vietnam such as Confucianism, Cao Dai, Christianity, Buddhism, etc. (15, 16). In addition, to the best of our knowledge, while there are a number of in-depth studies on religions in Vietnam (17), so far there is no quantitative research to explore the relationship between religion and demographic behaviors such as fertility desire. In addition,

69 previous studies have shown that fertility desire in Vietnam is shaped by traditions and norms such

70 as son preference (10). As previous research has shown that fertility desire in Vietnam is

71 determined by socio-cultural ideology, this study hypothesizes that religion, a belief factor similar

72 to social culture, also determines fertility desire in Vietnam.

73   In sum, religion in Vietnam is likely to influence behaviors in many ways, but goes

74 unnoticed in formulating population policies. Moreover, there has been no previous work on the

75 impact of religion on fertility behavior in Vietnam. Therefore, this study is expected to be one of

76 the first studies in Vietnam to investigate the relationship between religion and fertility desire. We

77 aim to explore how religion influences fertility desire in a son-preference and low fertility society

78 dominated by atheism. Research results are expected to play an important role in the formulation

79 of population policies in Vietnam.

80

81   **Country context**

82   **Religion and culture belief in Vietnam**

83   Vietnam is recognized as a country with many religions, beliefs and socio-cultural

84 traditions. For example, Buddhism was introduced to Vietnam very early and dominated the

85 cultural and spiritual life from the first century to the 7th century, until the arrival of Confucianism

86 from China (17). From the beginning of the 10th century till present, Confucianism has mainly

87 dominated the socio-cultural life and the behavior of Vietnamese people due to over a thousand

88 years of Chinese domination (16). The Confucian morality stipulates that men must be the main

89 breadwinner of the family who make decisions on important family matters and educate all family

90 members (18). On the other hand, women's main role is to take care of the family. A woman is

91 required to always obey her father when she is unmarried, her husband during marriage, and when

92 the husband dies, listen to her eldest son (19). Confucianism promotes the idea of respecting men

93 because men take on the role of continuing the lineage and worshiping ancestors (20).

94 Confucianism places importance on having at least one son, as daughters are thought to belong to

95 their husbands' families after marriage (21).

96   Christianity in present-day Vietnam has two main branches which are Roman Catholic and

97 Protestant (22). Roman Catholic is considered the first of Christianity in Vietnam and was

98 evangelized during the French colonial period, and Protestantism came to Vietnam around 1911

99 (23). By 2019, Catholics accounted for the highest percentage (6.1 percent) among the group of

100 people with religion, while the proportion of Protestants was 1.0 percent (24). Unlike Buddhism,

101 which does not clearly state the view of the value of children, both Catholic and Protestant Bibles

102 clearly state that children are gifts from God. Thus, Catholics and Protestants are expected to have

103 higher fertility desire compared to those not belonging to these two religious groups (25).

104   Since 1954, under the communist political regime, Vietnam has become an atheist state.

105 At present, the proportion of people without religion is higher than the proportion of those with

106 religion (14, 15). According to the 2019 population and housing census, the percentage of the

107 population without religion accounts for 86.3 percent (24). In addition, Vietnam is also home to

108 different religious groups such as Cao Dai, Hoa Hao Buddhism, Islam, and other religions that

109 appeared in the early 20th century (17). As of 2009, each of these groups accounted for less than

110 1 percent of the population (24).

111   As a result, religions in Vietnam today are quite diverse due to the mixture of different

112 religious forms along with the development of the nation. Conceptions of each type of religion and

113 belief are also changed to suit people's beliefs (19). However, son preference still has a heavy

114   influence on Vietnamese society, in parallel with the strong development of atheism according to

115   the communist ideals.

116

117   **Methods**

118   **Study Design**

119   This study draws on nationally representative data from the 2014 Vietnam Multiple

120   Indicator Cluster Survey (MICS). In-person interviews were conducted in six economic regions of

121   Vietnam, where the information was collected from reproductive-age women (15 to 49 years). The

122   2014 MICS survey collected data from 10,018 households and 9,827 women residing in the

123   households. The information on the households and on the women were provided in two separate

124   datasets. In this study, we merged these separate datasets, using a unique identifier, to capture

125   information both at the household level and the individual level. Given that the main purpose of

126   this study is to investigate the association between religion and desire for additional children, we

127   restricted the dataset to women with at least one child. This produced a sample of 5,585 women

128   with at least one child.

129   **Measures**

130   **Fertility desire:** The dependent variable is fertility desire. This is captured by women's

131   desire to have additional child in the future at the time of interview. Women who had at least one

132   child were asked "Would you like to have (a/another) child, or would you prefer not to have any

133   more children?" (0=no more, 1=have another child). We excluded women who were not physically

134   able to get pregnant.

135   **Religion:** Religion is the main independent variable. We employ self-reported religion,

136   where the respondents reported their own religion. The question regarding religion in the

137 household questionnaire has the following choice of answers: (1) Buddhism, (2) Islam, (3) Cao

138 Dai, (4) Hoa Hao, (5) Christianity (Catholicism), (6) Christianity (Protestantism), (7) Other

139 religion, (8) No religion. We grouped the responses into the following 4 categories: (1) No

140 religion, (2) Buddhism, (3) Christianity (including Catholicism and Protestantism), (4) Other

141 religions (including all the other religions).

142 **Methodology**

143 First, the test for perfect collinearity is conducted; the results indicate that all independent

144 variables do not have a high correlation with one another. For the descriptive statistics, the Fisher

145 exact test is applied instead of the Chi-squared test because the number of observations for specific

146 religions are small and does not satisfy the condition of sample size for Chi-squared test.

147 For the main analysis, ordered probit regression is employed to examine the relationship

148 between religion and desire for additional children and marginal effects are reported. The

149 estimated probability of desire for additional children comes from:

150 $$F\ (Y = 1|X) = \Phi\ (X^{RC}\beta)$$

151 Where F denotes a fertility outcome (the probability that a woman wants to have additional

152 children), and Φ is the Cumulative Distribution Function (CDF) of the standard normal

153 distribution. Here β is estimated by maximum likelihood. X^{RC} is the set of independent variables

154 that are comprised of:

155 (i) Main independent variables: These are the variables representing religion of the

156   respondent. The information comes from self-reported religion which has 4 categories,

157   namely, Buddhism, Christian, other religion and no religion. Here no religion is the

158   baseline category.

7

159   (ii)   The control variables in the model include socio-demographic characteristics of the

160   women (women's education, age at last birth, whether living in female-headed

161   household, ethnicity, marital status, work status, urban/rural residence), household

162   characteristics (having older persons in household, family wealth status), children's

163   characteristics (sex composition of children and child mortality, number of children

164   alive, age of last child), social indicators and other factors (sex ratio at birth, attitudes

165   towards domestic violence, and access to mass media).

166   The analysis captures son preference culture in the regression model by including sex

167 composition of children and sex ratio at birth at the provincial level. In addition, based on the

168 large differences in TFR across economic regions, the analysis is conducted separately for each

169 economic region. This is to capture the differences in the relationship between religion and fertility

170 desire across regions, which should lead to specific recommendations for each region.

171   For further investigation, the authors also incorporate interactions between religion and the

172 sex composition of children (i.e., having no son) to investigate how religion is associated with the

173 desire for additional children, conditional on the sex composition of children.

174   **Descriptive Statistics**

175   Table 1 presents the percentage of women who wanted to have additional children

176 according to religion and sex composition of living children, classified by region. The differences

177 in desire for additional children based on religion are statistically significant at the 5% level in

178 North Central and Central Highlands, and 10% level in Northern midlands. For North Central,

179 women belonging to other religions have the highest percentage wanting additional children, while

180 Buddhists have the lowest percentage, followed by those with no religion. In the case of Central

181 Highlands, Christians have the highest percentage of women who wanted another child, while

182 Buddhists have the lowest percentage. On the other hand, for Northern midlands, Buddhists have

183 the highest proportion of women who wanted to have additional children, followed by Christians,

184 and those with no religion, respectively. For South East, Red River, and Mekong River, the

185 differences are not statistically significant.

186   The percentage of women who wanted another child based on sex composition of living

187 children provides clear evidence of son preference across all regions of Vietnam. The percentage

188 of women with no son who wanted additional children is much higher than in the case of women

189 with at least one son. The differences are statistically significant at the 1% level for all six regions

190 of Vietnam.

191

192   **Empirical Findings**

193   Tables 2 and 3 present the relationship between religion and fertility desire. Table 2 reports

194 the results with the level terms only, while Table 3 additionally includes the interaction terms

195 between dummy variables representing different religions and having at least one son.

196   The results in Table 2 suggest that son preference is prevalent across all regions of Vietnam.

197 The variable 'having at least one son' is negative and statistically significant for overall Vietnam

198 and all six regions. The results imply that women with at least one son are less likely to want

199 another child compared to women with no son. The magnitude of the marginal effect ranges from

200 smallest (-0.04) in South East and Mekong River, to largest (-0.15) in Northern Midlands. The

201 results suggest that the level of son preference is increasing from the South, to the Central, to the

202 North of Vietnam. The level of son preference appears strongest in the northernmost part of

203 Vietnam which borders China (namely Northern Midlands). The results also show that women

204 with more children are less likely to want another child, as expected.

205   In the case of Buddhism, the results in Table 2 suggest that, for Northern Midlands,

206   Buddhists are more likely to want another child compared to those with no religion, controlling

207   for other factors.   On the other hand, for Mekong River, Buddhists are less likely to desire

208   additional children compared to those with no religion. For all other regions and overall Vietnam,

209   the difference is not statistically significant. The results in Table 3 show that, for Northern

210   Midlands, the level term 'Buddhism' is positive and statistically significant, while the interaction

211   term between 'Buddhism' and 'having at least one son' is negative and statistically significant.

212   The level term result implies that, for women with no son, Buddhists are more likely to want

213   another child compared to those with no religion.   The interaction term result suggests that,

214   conditioned on having at least one son, Buddhists are less likely to want another child compared

215   to women with no religion. The results together imply stronger son preference among Buddhists

216   as compared to those with no religion in Northern Midlands. For all other regions and overall

217   Vietnam, the level term 'Buddhism' and the interaction term between 'Buddhism' and 'having at

218   least one son' are not statistically significant.

219   For Christianity, the results in Table 2 demonstrate that, controlling for other factors,

220   Christians are more likely to want another child compared to women with no religion in the case

221   of South East, North Central, Central Highlands, and overall Vietnam. Table 3 shows that the

222   level term 'Christianity' is positive and statistically significant in the case of South East and overall

223   Vietnam. The results imply that, for those with no son, Christians are more likely to want another

224   child compared to women with no religion in the case of South East and overall Vietnam. The

225   interaction term between 'Christianity' and 'having at least one son' is negative and statistically

226   significant in the case of South East, and positive and statistically significant in the case of North

227   Central. For South East, conditioned on having at least one son, Christians are less likely to want

228 another child compared to women with no religion. On the other hand, for North Central,

229 conditioned on having at least one son, Christians are more likely to want another child compared

230 to those with no religion.

231   For other religions, the results in Table 2 suggest that women belonging to other religions

232 are less likely to want another child compared to those with no religion in Mekong River. For all

233 other regions and overall Vietnam, the difference is not statistically significant. Table 3 presents

234 the results including the interaction term between 'Other religions' and 'having at least one son'.

235 In the case of Central Highlands and overall Vietnam, for those with no son, women belonging to

236 other religions are less likely to want another child compared to those with no religion. On the

237 other hand, in the case of North Central, for those with no son, women belonging to other religions

238 are more likely to want another child compared to those with no religion.

239   Tables 2 and 3 show that several control variables are correlated with desire for additional

240 children. Education appears an important factor determining desire for additional children. For

241 overall Vietnam, women with lower secondary, upper secondary, and university education are

242 more likely to want another child compared to those with primary education or lower. The positive

243 relationship between education and desire for additional children is observed in South East and

244 Northern Midlands. On the other hand, women with higher education are less likely to want

245 another child compared to those with primary education or lower in the case of Red River. For

246 other regions, there is no statistically significant relationship between education and desire for

247 additional children.

248   The relationship between income and desire for additional children also varies depending

249 on the region. For overall Vietnam, those belonging to the middle group are more likely to want

250 another child compared to the rich. For Red River and Mekong River, women who are poor are

251 more likely to want another child compared to those who are rich. On the other hand, for South

252 East, women who are poor are less likely to want another child compared to those who are rich.

253 Several socio-demographic characteristics of the women, children's characteristics, and

254 social indicators are correlated with desire for additional children. For overall Vietnam as well as

255 all six regions, women whose last child is older are less likely to want additional children, as would

256 be expected. Moreover, women who were older when their last child was born are less likely to

257 desire additional children. For overall Vietnam and all six regions, compared to women who are

258 married, those who are widowed/divorced/separated are less likely to want additional children.

259 Women who are heads of households are less likely to want another child in the case of Red River.

260 For North Central, women who have experienced child mortality are more likely to want additional

261 children compared to those who do not have such an experience. Access to mass media is

262 positively correlated with desire for additional in the case of Northern Midlands. In the case of

263 overall Vietnam and Mekong River, women from provinces with higher sex ratio are more likely

264 to want another child compared to those from provinces with lower sex ratio. For region of

265 residence, compared to women in South East, those in North Central are more likely to want

266 another child, controlling for other factors.

267

268 **Discussion**

269 The results show that there is a significant relationship between religion and fertility desire

270 in Vietnam, and the relationship differs across economic regions. This can be explained by the

271 differences in the degree of son preference as well as the sectors of employment and economic

272 conditions across the regions. Christians have higher fertility desire compared to non-religious

273 people in three out of six regions, namely Southeast, North Central and Central Highland. Fertility

274 desire of Buddhists differ from fertility desire of non-religious people in two out of six regions,

275 which are Northern Midlands and Mekong River. For those belonging to other religions, their

276 fertility desire is different from that of non-religious people only in Mekong River. Compared

277 with earlier studies which investigate the relationship between socio-cultural factors (in particular

278 son preference) and fertility desire (26, 27), this study adds to previous findings that spiritual

279 factor, namely religion, is also linked to fertility desire.

280 Another contribution of the study is the demonstration that son preference exists in all

281 regions of Vietnam, with the level increasing from the South, towards the Central and peaks in the

282 North, especially in the regions bordering China. This result is consistent with the research on

283 fertility desire of Vietnamese women (10), where son preference has been confirmed to exist in all

284 regions of Vietnam, and the level is higher in the North than in the South. Therefore, the study

285 provides support for more explicit intervention policy in eliminating traditional patrilineal systems,

286 son preference, and gender bias in Vietnam for more effective fertility control.

287 Regarding Buddhism, the results show the difference in fertility desire between Buddhists

288 and those with no religion in Northern Midlands and Mekong River. In Northern Midlands,

289 Buddhists tend to want more children compared to those with no religion. On the other hand, in

290 Mekong River Buddhists are less likely to want another child compared to those with no religion.

291 The combination of the differences in the sectors of employment, the level of son preference and

292 economic status can provide reasonable explanations. The forestry land use in Northern Midlands

293 and Mountain areas was 6098.5 thousand hectares compared to 511.2 thousand hectares in Mekong

294 River (28). As a result, Northern Midland's main economic sector is based on forestry, so there is

295 more need for children to support the household economy. Also, as mentioned above, the level of

296 son preference is very high in Northern Midlands (Northern part of Vietnam) compared to Mekong

297 River (Southern part of Vietnam). Moreover, in Northern Midlands, Buddhists are the poorest

298 group in society, while in Mekong River Buddhists are among the richest. It is possible that, in

299 Northern Midlands, Buddhist are more likely to want another child compared to those with no

300 religion as they are poorer and likely to work in agriculture. As those with no religion in Northern

301 Midlands are more likely to work for the government, their fertility desire is possibly affected by

302 the one-or-two child policy. On the other hand, for the more economically developed Mekong

303 River, Buddhists are among the richest groups in society and are more likely to work in the service

304 sector such as trade. As Mekong River has low Total Fertility Rate (TFR), and Buddhists do not

305 have specific religious value of children (as in the case of Christians), they are more likely to

306 follow the social norms of lower fertility in the region. This possibly explains the lower fertility

307 desire of Buddhists compared to those with no religion in the region. Previous studies have

308 demonstrated the relationship between economic conditions and fertility both in developed and

309 developing countries (29, 30). The results here show that, while religion is associated with fertility

310 desire, economic conditions can shape the direction of the relationship.

311   Another interesting finding is that the Buddhists have stronger son preference than those

312 without religion in the Northern Midlands. In Vietnam, non-religious people are likely the group

313 that work in government agencies because non-religiousism is the direction of the communist

314 regime (31). They also tend to have higher education which is required for government positions,

315 and high educational attainment has been linked to low fertility in many studies (32, 33).

316 Additionally, government workers have pension funds, so they do not need to financially depend

317 on children during old age. High education and old age financial security can lead to low fertility

318 desire among government workers. The one-or-two child policy also applies only to those

319 employed by the government and members of the Communist Party. Therefore, non-religious

320 people working for the government are also likely to limit their desire to have children. On the

321 other hand, Buddhists in Northern Midlands are poor and more likely to work in agriculture,

322 therefore having sons can be important for them as sons can help in agricultural work.

323   Regarding Christianity, Christians are more likely to want another child compared to

324 women with no religion. The difference in fertility desire can be influenced by the value of children

325 among Christians, where children are considered a gift from God. Therefore Christians are more

326 inclined to have children compared to non-religious people (25, 34). Additionally, both Christians

327 and Protestants refrain from using contraception because it is against the fundamental principle of

328 Roman Catholic marriage and against the Protestants' bible content "be fruitful and multiply" (35).

329 Besides, for those with no son, Christians are more likely to want another child compared to

330 women with no religion. As discussed above, non-religious people tend to work as government

331 officials, therefore the one-or-two-child policy can be an explanation here. On the other hand,

332 Christians are free to have more children until they have a son.

333   In addition, there are two conflicting trends in the fertility desire between Christians and

334 non-religious people who have at least one son in South East and Northern Midlands. For South

335 East, conditioned on having at least one son, Christians are less likely to want another child

336 compared to women with no religion. On the other hand, for Northern Midlands, conditioned on

337 having at least one son, Christians are more likely to want another child compared to those with

338 no religion. TFR in the South East has always been lower than TFR the Northern Midlands over

339 the past decade (28). Christians with at least one son in South East are perhaps more likely to

340 follow the social norm of low TFR in the region. For Northern Midland, it is possible that

341 Christians are more likely to follow the social norms of high TFR while those with no religion are

342 more likely to be constrained by the one-or-two child policy. Moreover, mix-gender preference is

343 also confirmed in Northern Midland (10). Therefore, in the case of Christians (who are not

344 constrained by the one-or-two child policy), even if they already have one son, they might be more

345 likely to want another child in order to have children of both genders.

346   In the case of other religions, in Mekong River, women belonging to other religions are

347 less likely to want another child compared to those with no religion. Further analysis reveals that

348 there are differences in the level of education and economic status between those belonging to

349 other religions and those with no religion in Mekong River. People belonging to other religions

350 have lower education and economic status compared to non-religious people. It is possible that, in

351 certain context, those with low education and economic status have lower fertility desire compared

352 to those with high education and economic status. This result is in line with studies indicating that

353 higher education and income can lead to higher fertility due to the ability to bring up children (36).

354 It is also possible that the beliefs of women belonging to other religions influence their fertility

355 desire.

356   On the other hand, in Northern Midlands and Mountain Areas, for those with no son,

357 women belonging to other religions are more likely to want another child compared to those with

358 no religion. There are two plausible reasons for this. Firstly, we expect followers of other religions

359 to be from mountainous ethnic minorities, therefore, they have the opportunity and are allowed to

360 have many children according to the government's fertility incentive policy aimed at protecting

361 ethnic minorities. Secondly, as explained above, son preference and the need for a son to support

362 the family in the agricultural and forestry sector is quite high in the Northern Midlands. This is

363 possibly the case for those belonging to other religions as they are likely to work in agriculture.

364

365   **Conclusions**

16

366   Our research provides key findings on the relationship between religion and desire for

367   additional children in Vietnam, a society characterized by son preference and low fertility.

368   Religion has strong impact on desire to have an additional child, especially for women with low

369   economic status. Those who have a religion are more likely to want another child compared to

370   those with no religion. In Vietnam, government officials are constrained by the one-or-two child

371   policy and are also more likely to report having no religion (or are Buddhists rather than

372   Christians). This could partly explain the finding that those who reported having no religion are

373   less likely to want additional children compared to those having a religion (particularly Christians

374   and Buddhists). The findings also suggest strong son preference in Vietnam, with the highest level

375   in the Norther part bordering China. Preventing ultrasounds to detect fetal sex, sex-selective

376   abortion and improving women's empowerment have long term implication for reducing son

377   preference and improving women's health. This paper has identified the relationship between

378   religion and fertility desire, and the findings have implications for appropriate family planning

379   policies for a developing country as Vietnam.

380

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