Family size desires and intentions in the lowest fertility region in Vietnam [version 1; peer review: awaiting peer review]

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Abstract

Background: Vietnam’s total fertility rate has been relatively stable around the replacement level since 2005. Meanwhile, fertility in the Southeast of Vietnam has always been far below the replacement level. As reproductive desires and intentions are important determinants of fertility, the article estimates family size desires and intentions in the Southeast and analyse related sociodemographic factors, contributing insights to the low fertility in this region.

Methods: Based on data from a survey of people aged 18-45 in the Southeast in 2020, bivariate analysis and multinomial logistic regressions were applied to examine family size desires and intentions in this region.

Results: Most respondents want two (57.3%) or more (33.1%) children, and only 8.4% of them want to have fewer than two children. There are wide gaps within reproductive desires and intentions and the actual fertility. The mean intended family size is nearly 2.1, lower than the mean desired family size but much higher than the total fertility rate in 2020. Young people and unmarried females are more likely to have desires and intentions of fewer than two children. The most frequent reason for no intention of attaining desired family sizes is the fear of not having enough financial resources to raise their children as their expectations.

Discussion and Conclusion: The low fertility in the Southeast of Vietnam is not due to a substantial decline in the value of children, but mainly because socioeconomic conditions are not favourable for having two or more children. In the current context in the Southeast, when most people of reproductive age still want and intend to have at least two children, support policies to reduce difficulties and obstacles to having would be much more effective in increasing the fertility rate than later when the desire of fewer than two children become more popular.
Introduction
Southeast is the region with the most developed economy in Vietnam. According to Vietnam Population Census in 2019, the Southeast has nearly 17.83 million people, accounting for 18.5 percent of the country’s population. In the past two decades, while Vietnam’s fertility has been relatively stable around the replacement level (2.1), fertility in the Southeast has been always remarkably lower. In particular, the total fertility rate (TFR) in this region decreased from 1.85 in 1999 to only 1.46 in 2016 and then increased slightly to 1.62 in 2020. Meanwhile, the TFR in the Red River Delta, the second highest income region in Vietnam with Hanoi capital centred, was 2.34 in 2020 and has never been below 2.0 (GSO, 2022). Low fertility rates have been observed in many countries during the process of modernization and economic development (Jones et al., 2008; Timeus and Moultrie, 2020). However, low fertility in the Southeast is certainly a distinct phenomenon among regions in Vietnam that needs to be examined to identify and evaluate the key socioeconomic determinants. This became even more important as the government of Vietnam recently launched a new population strategy, with a sustainable development orientation and the goal of firmly maintaining the replacement fertility rate, through an ambitious plan to reduce fertility in provinces with a TFR higher than 2.1 and to increase fertility in provinces with a TFR lower than 1.8 (Government, 2019, 2020). But the new population strategy has not been fully legislated into laws, as the Ordinance on Population issued by the National Assembly in 2003, revised in 2008 with a provision stipulating that each couple has only one or two children, is still in effect. Perhaps due to the lack of scientific evidence, there are both concerns that Vietnam's fertility will fall far below the replacement level as in the Southeast region and that fertility will increase sharply if the one-or-two-child policy is officially removed.

Nevertheless, there is very little research on fertility desires and intentions in Vietnam, particularly after its total fertility rate declined to the replacement level in 2005. The most recent national survey in Vietnam collecting information on desired and intended family sizes was the Demographic and Health Survey in 2014 and the analytical framework of Bongaarts (2001) found two main direct factors determining the low total fertility rate in the Southeast, including the high rate of未婚married women and the postponement of childbearing among married women (Nguyen, 2017). However, this analysis had to rely on the assumption that the mean desired family size in the Southeast was approximately two children. So far, understandings on the reasons of low fertility in the Southeast are still limited. This article investigates family size desires and intentions in the Southeast and their determinants, aiming to answer the question whether low fertility in this region is mainly caused by changes in social norm on values of children or other factors.

Theoretical background
Desired family size is conceptualized as the need for children, or the number of children parents would have if there were no subjective or economic obstructs involved in childbearing. Intended family size is the number of children parents planned to have after considering their desires and actual involved conditions (McClelland, 1983; Thomson, 2015). There have been many studies worldwide indicating that desired and intended family sizes are important determinants of actual number of children as well as fertility (Bongaarts, 2001; Duvander et al., 2020; Schoen et al., 1999; Tan and Tey, 1994; Thomson, 1997; Westoff, 1990, 2010), although there are always certain gaps between these factors (Toulemon and Testa, 2005; Philipov, 2009; Vitali et al., 2009; Miller, 2011; Dommermuth et al., 2015; Mencarini et al., 2015; Casterline and Han, 2017; Trinitapoli and Yeatman, 2018). Desired family size is often reported inconsistently at the individual level but very reliably at the aggregate level. In comparison to intentions, family size desires often reflect less closely future fertility but may be a useful indicator of social norms in examining fertility (Bankole and Westoff, 1998; Trinitapoli and Yeatman, 2018; Westoff, 2010). Studies often show good overall consistencies between ideal and actual family sizes over an entire lifetime, but the relationship between fertility intentions and actual fertility behaviour is relatively weak, as it depends on many other factors (Toulemon and Testa, 2005). Related research has led to a conclusion that “fertility intentions remain the central concept for understanding contemporary fertility trends and differences” (Hagewen and Morgan, 2005: 524).

Bongaarts (2001) proposed a widely applied framework on the relationship between fertility and desired family size, in which fertility is the result of the “desired number of children” after the combined effects of three factors that increase fertility (unwanted fertility, replacement of deceased offspring, and sex preference) and three other factors that decrease fertility (high reproductive age, involuntary infertility, and competitive preferences). Intended family size is an intermediate variable in this process. Low fertility is often caused by strong effects of competitive preferences or unfavoured socio-economic and demographic conditions that hamper couples from achieving their desired family size, but can also be attributable to changes in social norms on the value of children, or all of them. In many societies, if people

1https://www.gso.gov.vn/wp-content/uploads/2019/12/Ket-qua-toan-bo-Tong-dieu-tra-dan-so-va-nha-o-2019.pdf
2https://vbpl.vn/boyte/Pages/vbpq-toanvan.aspx?ItemID=12661
want to have less than two children on average, it is likely that the total fertility rate will fall below the replacement level and cannot easily recover. On the other hand, if most people want to have two children, then mitigating the reducing fertility factors can help to obtain and maintain replacement fertility. Therefore, desired and intended family sizes are useful indicators for predicting fertility as well as proposing policy implications.

Existing research has paid much attention to examining socioeconomic and cultural factors that influence desired and intended family sizes as well as childbearing intentions. According to the theory of planned behaviours (TPB) proposed by Icek Ajzen (1985, 1991), attitude, subjective norms, and perceived behavioural control are three key components forming behavioural intentions. This psychological theory has been widely employed in developing analytical frameworks of fertility desires and intentions. For example, Miller and Jones (2009) proposed a model of the relationship between fertility desires and intentions, in which preconception childbearing desires (of woman and partners) predict both childbearing intentions and pregnancy desires. Research on childless men and women in Australia found that, unlike fertility intentions, childbearing desires were hardly affected by changing life circumstances, but were often adjusted if people recognized that their desires were not likely to be achieved (Gray et al., 2013). Besides, previous theoretical and empirical findings indicate the link between gender inequality and fertility intention as well as fertility behaviour (Yoon, 2016). Very low fertility may be attributable to the situation of high levels of gender equity in society but low levels of gender equity in families (McDonald, 2000).

In summary, the main factors affecting both family size desires and intentions include personal and family demographic characteristics (age, gender, marital status, ethnicity, religion), education, employment, economic conditions, children’s value, etc. In addition, family size intentions are determined by family size desires and many other factors, such as childrearing costs, gender equality, gender role attitude, division of domestic work, and fertility and family support policies (Hashemzadeh et al., 2021; Preis et al., 2020). Recent research suggests that the patterns of childbearing intentions and behaviours observed in high-fertility societies may not be necessarily applicable in low-fertility settings (Chen et al., 2022). As results from existing research indicate very complex and varying determinants of family size desires and intentions across societies, more research is promising to provide more insights into this topic.

Methods

Ethical statement

The Scientific Ethics Committee of the Institute of Sociology, Vietnam Academy of Social Sciences, granted formal approval to the research protocol (No: 16/2019/XHH-HDKH) on 14th May 2021. Written informed consent was obtained from all participants.

Sampling design

The research conducted a survey in Ho Chi Minh City and Dong Nai, the two largest provinces in the Southeast. The populations of these two provinces in 2020 were 9.23 and 3.18 million respectively, accounting for more than two-thirds of the Southeast population. A multistage sampling method was applied with a designed sample size of 800 individuals of the main reproductive age, corresponding to the 95% confidence level, the 4.9% margin of error, and the estimated design effect of 2.0. In the first stage, seven communes, including one urban commune and one rural commune in Dong Nai and four urban communes and one rural commune in Ho Chi Minh City, were selected by using the PPS (probability proportional to size) method. The numbers of selected communes relatively reflect the levels of urbanization in each province. In the second stage, with an estimated non-response rate of 25%, about 533 households from two communes in Dong Nai and 533 households from five communes in Ho Chi Minh City were randomly selected for the target of 400 completed interviews in each province. Finally, an unmarried person or married woman aged from 18 to 45 years was randomly selected from each household to obtain her/his consent before interviewing. Married men were not selected as information on their family size desires and sociodemographic characteristics were collected via interviewing their spouses.

Survey and data analysis

The CAPI (computer-assisted personal interviewing) was applied with a structured questionnaire installed on smartphones via CSPro software version 7.3 to collect data about fertility desires and intentions, socio-demographic characteristics, attitudes on marriage and value of children, and perception of factors affecting childbearing and childrearing. The main questions to identify family size preferences of the respondents include “How many children would you like to have if there are no economic or health constraints?”, “How many children do you currently have?”, and “How many more children do you plan to have?” for unmarried people or “How many more children do you and your spouse plan to have?” for married women. Family size intentions are measured as the sum of the number of existing children and the number of additional planned children. A copy of the full questionnaire can be found in the Extended data (Nguyen, 2022a).
After a pre-test in March 2020, the main survey was carried out in May 2020, completing interviews with 808 individuals, including 382 cases from Dong Nai and 426 cases from Ho Chi Minh City, or 273 unmarried persons and 535 married women. In addition, family size desires and socio-demographic characteristics of 535 married men were asked when interviewing their spouses. As such, the survey collected information on the family size desires of 1,343 individuals. The analyses were performed using SPSS version 26, in which the dataset was weighted as individuals were not selected with equal probability. Bivariate analysis with chi-square test, independent samples t tests and one-way analysis of variance (ANOVA) were performed to describe family size desires and intentions in and their differentials across groups. Then multinomial logistic regressions were applied to identify the determinants of desired and intended family sizes. For a dependent variable with three choices, the multiple logistic regression estimates the parameters for the following two equations (Long, 1997:154)

\[
\ln(p_1/p_0) = \beta_{11} X_1 + \beta_{12} X_2 + \beta_{13} X_3 + \ldots + c_1 + \epsilon_1
\]

\[
\ln(p_2/p_0) = \beta_{21} X_1 + \beta_{22} X_2 + \beta_{23} X_3 + \ldots + c_2 + \epsilon_2
\]

where \(p_0\), is the probability of the reference choice (2 children); \(p_1, p_2\) are the probabilities for choices of “fewer than 2 children” and “more than 2 children” respectively; \(p_2/p_0\) and \(p_2/p_0\) are odds ratios; \(\beta_{21}\) and \(\beta_{21}\) are the regression coefficients for the independent variables \(X_i\); \(c_1\) and \(c_2\) are constants; \(\epsilon_1\) and \(\epsilon_2\) are random errors. A small number of individuals who answered “Do not know” or have no answer about their desired and intended family sizes are excluded from those bivariate and multivariable analyses.

**Results**

**Family size desires**

The results show that more than half (57.3%) of the respondents want to have two children and about one-third (33.1%) want more than two children, while only 8.4% of them want fewer than two children (Table 1). That means the desire for medium or large family size (two or more children) remains very popular in society. Indeed, the mean desired family size is nearly 2.4 (Table 2), approximately the mean ideal number of children from the national survey of married women in Vietnam in 2002 (Westoff, 2010: 4), but remarkably higher than the current TFR in the Southeast region of Vietnam.

The differences in desired family size by socio-demographic characteristics are presented in Table 2. In general, the mean desired family sizes are not significantly different between the two provinces, between rural and urban areas, and within levels of economic status, but vary slightly across categories of other socio-demographic factors. The groups with mean desired family sizes over 2.5 children include people aged 35 or older, married men, people with under secondary education, at least seven years of staying in the commune, working for self or family, and below average economic status. The figures suggest that some characteristics of a traditional society seem to be still significant factors affecting the desire for large family sizes. Meanwhile, the mean desired family sizes are higher than 2.0 in all groups presented in Table 2, and particularly lowest in unmarried women (2.02 children), in the group aged 18-24 years (2.12 children), and students or not-working people (2.13 children).

In the context of the government’s new policy to encourage the universal two-child family model, the proportion of people with the desire for two children is an important indicator. Results from the survey in the Southeast reveal that the

| Desired family size | Unweighted N | Weighted N | Percent (%) | 95% confidence interval | Standard error (%) |
|---------------------|--------------|------------|-------------|------------------------|--------------------|
| No children         | 5            | 2          | 0.1         | 0.0 – 0.5              | 0.1                |
| 1 child             | 85           | 112        | 8.3         | 7.0 – 9.9              | 0.8                |
| 2 children          | 735          | 770        | 57.3        | 54.7 – 60.0            | 1.3                |
| 3 children          | 335          | 288        | 21.4        | 19.3 – 23.7            | 1.1                |
| More than 3         | 165          | 157        | 11.7        | 10.1 – 13.5            | 0.9                |
| No answer           | 18           | 15         | 1.1         | 0.7 – 1.8              | 0.3                |

Data: Survey in the Southeast Vietnam in 2000.
Table 2. Differences in desired family size by socio-demographic characteristics.

|                                | Distribution (%) | Mean | SD | Weighted N |
|--------------------------------|------------------|------|----|------------|
|                                | One or no child  | 2 children | 3 or more children |          |
| **Province***                  |                  |      |    |            |
| Dong Nai                       | 3.8              | 62.5 | 33.7 | 2.40       | 0.79     | 355     |
| Ho Chi Minh City               | 10.3             | 56.3 | 33.4 | 2.38       | 1.05     | 973     |
| **Area**                       |                  |      |    |            |
| Urban                          | 10.1             | 56.9 | 33.0 | 2.38       | 1.05     | 939     |
| Rural                          | 5.0              | 60.6 | 34.5 | 2.39       | 0.82     | 389     |
| **Age *** +++**                |                  |      |    |            |
| 18-24                          | 11.1             | 68.6 | 20.3 | 2.12       | 0.67     | 308     |
| 25-29                          | 5.2              | 63.0 | 31.7 | 2.42       | 1.06     | 260     |
| 30-34                          | 8.8              | 62.1 | 29.2 | 2.28       | 0.86     | 239     |
| 35-39                          | 6.0              | 50.6 | 43.4 | 2.58       | 1.01     | 242     |
| 40-45                          | 10.9             | 44.4 | 44.7 | 2.57       | 1.21     | 279     |
| **Ethnicity ** +**             |                  |      |    |            |
| Kinh                           | 7.7              | 58.4 | 33.9 | 2.40       | 1.00     | 1207    |
| Other ethnic groups            | 17.1             | 53.4 | 29.5 | 2.20       | 0.91     | 121     |
| **Religion *                   |                  |      |    |            |
| No religion                    | 8.6              | 57.6 | 33.8 | 2.38       | 0.95     | 976     |
| Buddhism                       | 10.2             | 52.2 | 37.6 | 2.43       | 1.05     | 211     |
| Catholic, other religions      | 6.0              | 68.9 | 25.1 | 2.35       | 1.17     | 141     |
| **Gender and marital status *** +++** |                  |      |    |            |
| Unmarried male                 | 2.8              | 71.8 | 25.3 | 2.32       | 0.89     | 312     |
| Unmarried female               | 16.2             | 67.1 | 16.6 | 2.02       | 0.84     | 269     |
| Married male                   | 6.7              | 44.5 | 48.8 | 2.74       | 1.13     | 371     |
| Unmarried female               | 9.6              | 53.2 | 37.1 | 2.35       | 0.90     | 377     |
| **Existing children *** +++**   |                  |      |    |            |
| None                           | 10.0             | 69.1 | 20.9 | 2.16       | 0.87     | 624     |
| 1 child                        | 14.1             | 55.4 | 30.5 | 2.22       | 0.76     | 235     |
| 2 children                     | 3.6              | 53.3 | 43.1 | 2.60       | 0.99     | 374     |
| 3 or more children             | 4.7              | 10.3 | 85.0 | 3.39       | 1.35     | 96      |
| **Sex of existing children *** +++** |                  |      |    |            |
| Daughter                       | 11.4             | 49.5 | 39.1 | 2.41       | 0.92     | 243     |
| Son                            | 5.6              | 48.2 | 46.1 | 2.61       | 0.96     | 215     |
| Both son & daughter            | 4.5              | 46.7 | 48.8 | 2.73       | 1.20     | 246     |
| **Education *** +++**          |                  |      |    |            |
| Under secondary                | 10.7             | 47.3 | 42.1 | 2.51       | 1.12     | 477     |
| Secondary                      | 8.0              | 66.4 | 25.5 | 2.26       | 0.83     | 485     |
| College, university            | 6.6              | 61.3 | 32.1 | 2.37       | 0.99     | 363     |
| **Duration of living in this commune *** +++** |                  |      |    |            |
| Since I was born               | 8.7              | 63.6 | 27.7 | 2.29       | 0.89     | 615     |
| Seven years or more            | 7.7              | 50.1 | 42.2 | 2.57       | 1.19     | 365     |
| Under 7 years                  | 9.3              | 56.2 | 34.5 | 2.36       | 0.91     | 348     |
| **Employment *** +++**         |                  |      |    |            |
| Work for self or family        | 10.1             | 46.3 | 43.6 | 2.56       | 1.20     | 247     |
| Public sector                  | 3.6              | 67.5 | 28.9 | 2.31       | 0.69     | 229     |
| Private sector                 | 8.2              | 56.4 | 35.4 | 2.45       | 1.04     | 599     |
| Not working, student           | 12.4             | 64.5 | 23.1 | 2.13       | 0.80     | 253     |
The finding that more than 90% of people want to have two or more children is surprising if compared to the low fertility rate in the Southeast. The fertility of this region is lower than the replacement level despite of high value of children in people's perception, indicating that actual socio-economic and health conditions are unsuitable, not only for large family sizes but also for the two-child family model. The proportion of desire for fewer than two children is not high, but more concentrated among young women and in urban areas, indicating that this rate will increase with the process of urbanization and generational transition in the Southeast.

Results from the multi-logistic regression indicate that some of the socio-economic characteristics are significantly predictive of changes in family size desires (Table 3). In comparison to living in Ho Chi Minh City, living in Dong Nai province is associated with a lower likelihood to desire one or no child but not statistically significant for desire for three or more children. Unmarried men are related to a higher possibility of desire to have two children than married men. Higher education is associated with a lower likelihood to desire a two-child family. Religion does not significantly affect the desire for a one-or-no-child family but increases the probability of desire to have more than two children. People who work for themselves or for their families are associated with a higher likelihood for desire of three or more children than students or people who do not work or work in the public sector. On the other hand, age, urban-rural area, ethnicity, and respondents' self-perception of their living standard are not found to be related to changes in the desired family size.

### Family size intentions

The figures in Table 4 show that 70% of the respondents intend to have two children, but only about 17.4% of them intend to have more than two children and 11.9% intend to have fewer than two children. The mean intended family size is 2.07, very close to the replacement level of fertility and remarkably lower than the mean desired family size, but still higher than the TFR in 2020 in the Southeast of Vietnam. This pattern of fertility preference has been observed in a number of studies in developing and developed countries (Bongaarts, 2001; Westoff, 2010).

The differences in family size intentions by sociodemographic characteristics are presented in Table 5. It is not surprising that people in more developed areas (Ho Chi Minh City, urban areas) intend to have smaller family sizes. Similar to the desired family sizes, the mean intended family sizes are low in unmarried women (1.84 children), the group aged 18-24 years (1.91), the non-Kinh ethnic groups (1.93), Catholic and other religions (1.93), and people with one child (1.84). Correspondingly, the percentages of intention to have fewer than two children in those groups are significantly higher than 12% (from 17.4% to 23.3%).

The intended family size is found to be significantly lower than the desired family size, but there is undoubtedly a strong association between the two variables, especially between the two-child desire and the two-child intention. Indeed, nearly 88% of people who want a two-child family intend to realize this desire. The corresponding figures are 64.6% for the intention of one-or-no child and only 44.5% for the intention of three-or-more children. On the other hand, nearly 30% of people who want fewer than two children and more than half (51.1%) of people who want more than two children plan to have two children. The results suggest the existence of factors that hinder people from realizing their desired number of

### Table 2. Continued

| Self-assessment of living standard | Distribution (%) | Mean | SD | Weighted N |
|-----------------------------------|------------------|------|----|------------|
|                                   | One or no child | 2 children | 3 or more children |
| Below average                     | 8.7             | 55.3   | 36.0   | 2.54       | 1.19   | 138  |
| Average                           | 8.0             | 59.6   | 32.4   | 2.36       | 0.95   | 1027 |
| Above average                     | 12.1            | 50.3   | 37.7   | 2.43       | 1.05   | 164  |
| Total                             | 8.6             | 58.0   | 33.5   | 2.38       | 0.99   | 1328 |

Note: The individuals with “no answer” on desired family size are not included in the table. Chi-square test: *p < 0.05, **p < 0.01, ***p < 0.001; T-test or ANOVA: ‘p < 0.05, **p < 0.01, ***p < 0.001. Data: Survey in the Southeast Vietnam in 2000.
children. In the present social, cultural and policy context of the Southeast, the desire for a two-child family seems to be the easiest to accept and receive more encouragement. Therefore, many people want to have fewer or more than two children but intend to have two children like most other couples in society. Most of the gap between family size desires and intentions is generated by the shift from the desires of three-or-more children and one-or-no child to the intention to have two children. Among those people who want a two-child family, only 12.1% of them intend to have more or fewer than two children.

Results from the multi-logistic regression reveal several socioeconomic characteristics, that are significantly predictive of the variation in family size intentions (Table 6). In comparison to the two-child intention, living in Ho Chi Minh City, in
the age from 30 to 34 years, being an unmarried woman, working in the public sector, and having an average living standard are the factors associated with a lower likelihood of the intention to have three or more children. On the other hand, being unmarried females, younger than 25 years of age, non-Kinh ethnic groups, and being Catholic or other non-Buddhism religions are related to a higher possibility of intention to have fewer than two children.

In the context of low fertility in the Southeast, the survey also interviewed the respondents about their awareness of challenges they would face if having one more child (Table 7). It is reasonable that the challenges perceived by the respondents will be a significant barrier to their determination to realize their family size intentions. The results show that all three most commonly perceived challenges are related to the financial aspect. High proportions of respondents informed that they were worried about how to have enough money to raise children (65%), for children’s education (56%), and for children’s medical care (51.3%). These proportions are highest among married females, as more than 90% of them already have at least one child and have experienced these financial challenges, but lowest among married females, who might feel less responsible than unmarried men in being the breadwinners in their future family. The next challenges are less frequently reported and may be considered as indicators of competitive preferences in the framework proposed by Bongaarts (2001). About 38% of the respondents were concerned that “It takes much time and effort to take care of children”, and unmarried males are more likely to think about this challenge (40.5%) than unmarried females (35.6%). The proportion of concern that one more birth would badly affect women’s health and appearance is nearly 29% among unmarried women and 24.1% among married women, but only 17.1% among unmarried men. More than 21% of female respondents but only 11.4% of unmarried men were afraid of many hardships and risks during pregnancy and childbirth, possibly including infertility and miscarriage. Similarly, nearly 24% of unmarried women but only 11.6% of unmarried men worried about losing their job opportunities and promotions. Only 6.4% of respondents were concerned of housing problems if they have one more child.

Discussion and conclusion

The analysis of survey data in the Southeast reveals that most people want two or more children, and only a small proportion of them want to have a childless or one-child family. As a result, the mean desired family size is nearly 2.4, indicating the persistence of a relatively high value of children in the Southeast social norms, though the primary value of children might have transited from economic assistance to psychological and social merits to their parents during an impressive process of economic development and modernization of this region over the past several decades. In other words, the low fertility in the Southeast of Vietnam is not due to a substantial decline in the value of children, but mainly because current socioeconomic conditions are not favourable for having and raising two or more children with current standards. Indeed, the analysis found wide gaps within reproductive desires and intentions and the actual fertility. The mean intended family size is approximately 2.0 children, significantly lower than the mean desired family size but much higher than the total fertility rate in 2020. The results indicate the existence of socioeconomic factors that hinder people from attaining their desired family size.

There is a strong association between family size desires and intentions, especially between the two-child desire and the two-child intention. Most people who want a two-child family intend to realize this desire. Moreover, nearly 30% of people wanting fewer than two children and more than half of people wanting three or more children plan to have a two-child family. The intention for a two-child family seems to be more easily accepted and encouraged in the current socio-political and cultural context in the Southeast as well as in Vietnam. Therefore, many people want to have fewer or more than two children but intend to have two children like most other couples in society. In contrast, among those people who want two children, only about one-eights of them intend to have a larger or smaller family. Nevertheless, the difference between family size desires and intentions in the Southeast seems to be positive for the government’s policy of
Table 5. Differences in family size intentions by socio-demographic characteristics.

|                      | Distribution (%) | Mean | SD  | Weighted N |
|----------------------|------------------|------|-----|------------|
|                      | One or no child  | Two children | 3 or more children |          |
| Province *** *       |                  |      |     |            |
| Dong Nai             | 10.4             | 64.3 | 25.3 | 2.14       | 0.80   | 361   |
| HCM City             | 12.5             | 72.7 | 14.8 | 2.04       | 0.62   | 973   |
| Area ** ++           |                  |      |     |            |
| Urban                | 13.3             | 71.4 | 15.3 | 2.03       | 0.63   | 941   |
| Rural                | 8.7              | 68.2 | 23.1 | 2.15       | 0.77   | 393   |
| Age *** +++          |                  |      |     |            |
| 18-24                | 17.4             | 70.7 | 11.9 | 1.91       | 0.71   | 310   |
| 25-29                | 9.2              | 75.0 | 15.8 | 2.10       | 0.58   | 259   |
| 30-34                | 10.7             | 75.3 | 14.0 | 2.03       | 0.62   | 240   |
| 35-39                | 4.8              | 68.7 | 26.5 | 2.27       | 0.65   | 245   |
| 40-45                | 15.8             | 63.2 | 21.0 | 2.06       | 0.73   | 281   |
| Ethnicity *** +      |                  |      |     |            |
| Kinh                 | 10.8             | 71.4 | 17.8 | 2.08       | 0.66   | 1213  |
| Other ethnic groups  | 23.3             | 60.6 | 16.1 | 1.93       | 0.78   | 121   |
| Religion *** +       |                  |      |     |            |
| No religion          | 9.7              | 73.7 | 16.6 | 2.09       | 0.60   | 987   |
| Buddhism             | 18.8             | 58.7 | 22.5 | 2.05       | 0.80   | 206   |
| Catholic, other religions | 17.4       | 64.9 | 17.6 | 1.93       | 0.89   | 142   |
| Gender and marital status *** +++ |
| Unmarried male      | 11.1             | 72.4 | 16.6 | 2.04       | 0.74   | 312   |
| Unmarried female    | 21.9             | 69.9 | 8.3  | 1.84       | 0.68   | 270   |
| Married             | 8.8              | 69.8 | 21.4 | 2.16       | 0.62   | 753   |
| Existing children *** +++ |
| None                | 16.7             | 71.1 | 12.2 | 1.94       | 0.71   | 625   |
| 1 child             | 23.2             | 71.4 | 5.5  | 1.84       | 0.55   | 239   |
| 2 children          | 0.0              | 87.0 | 13.0 | 2.14       | 0.37   | 373   |
| 3 or more children  | 0.0              | 0.0  | 100.0 | 3.19     | 0.44   | 97    |
| Sex of existing children *** ++ |
| Daughter            | 16.1             | 72.8 | 11.1 | 1.98       | 0.60   | 244   |
| Son                 | 7.4              | 75.2 | 17.4 | 2.14       | 0.60   | 218   |
| Both son & daughter | 0.0              | 62.1 | 37.9 | 2.41       | 0.56   | 247   |
| Education *** +++    |                  |      |     |            |
| Under secondary     | 10.7             | 68.0 | 21.3 | 2.15       | 0.71   | 477   |
| Secondary           | 14.1             | 72.4 | 13.4 | 1.97       | 0.63   | 490   |
| College, university | 10.8             | 70.6 | 18.6 | 2.08       | 0.67   | 365   |
| Duration of stay in this commune ++ |
| Since I was born     | 13.9             | 68.8 | 17.3 | 2.02       | 0.71   | 618   |
| 7 years or more     | 8.7              | 71.6 | 19.7 | 2.16       | 0.69   | 367   |
| Under 7 years       | 12.0             | 72.1 | 15.9 | 2.06       | 0.57   | 349   |
| Employment * ++     |                  |      |     |            |
| Work for self or family | 13.1             | 62.6 | 24.3 | 2.16       | 0.72   | 247   |
| Public sector       | 13.9             | 69.8 | 16.2 | 1.96       | 0.76   | 232   |
| Private sector      | 10.7             | 72.3 | 17.0 | 2.08       | 0.65   | 599   |
| Not working, student| 12.1             | 74.1 | 13.8 | 2.04       | 0.58   | 256   |
| Self-assessment of living standard ** |
| Below average       | 9.6              | 66.7 | 23.8 | 2.18       | 0.66   | 138   |
| Average             | 11.4             | 72.4 | 16.2 | 2.05       | 0.66   | 1032  |
| Above average       | 17.4             | 61.1 | 21.6 | 2.08       | 0.74   | 165   |
### Table 5. Continued

| Desired family size *** +++ | Distribution (%) | Mean | SD | Weighted N |
|----------------------------|------------------|------|----|------------|
| One or no child            | 64.6             | 1.34 | 0.71 | 111        |
| Two children               | 29.8             | 1.93 | 0.43 | 768        |
| 3 or more children         | 5.6              | 2.49 | 0.74 | 443        |
| No answer                  | 12.0             | 2.07 | 0.67 | 1334       |

Note: The individuals with “no answer” on family size intention are excluded; Chi-square test: *p < 0.05, **p < 0.01, ***p < 0.001; T-test or ANOVA: *p < 0.05, **p < 0.01, ***p < 0.001. Data: Survey in the Southeast Vietnam in 2000.

### Table 6. Multi-logistics regression model of intended family size.

| Independent variables | One or no child | 3 or more children |
|-----------------------|-----------------|--------------------|
|                       | Coef. Std. Error| Coef. Std. Error   |
| Province              |                 |                    |
| Dong Nai              | 0.271 0.273     | 0.606** 0.201      |
| HCM City (ref.)       | 0 0             |                    |
| Urban or rural area   |                 |                    |
| Urban                 | 0.356 0.264     | -0.365 0.192       |
| Rural (ref.)          | 0 0             |                    |
| Age                   |                 |                    |
| 18-24 (ref.)          | 0 0             |                    |
| 25-29                 | -0.636* 0.319   | -0.009 0.295       |
| 30-34                 | -0.350 0.290    | -0.308 0.318       |
| 35-39                 | -0.962** 0.357  | 0.945 0.319        |
| 40-45                 | 0.263 0.341     | 0.248 0.328        |
| Gender & Marital status|                |                    |
| Unmarried male        | 0.136 0.293     | 0.170 0.243        |
| Unmarried female      | 0.880*** 0.248  | -0.681* 0.267      |
| Married (ref.)        | 0 0             |                    |
| Ethnicity             |                 |                    |
| Kinh                  | -0.733** 0.268  | -0.302 0.287       |
| Other ethnic groups (ref.) | 0 0           |                    |
| Religion              |                 |                    |
| No religion           | -0.607* 0.269   | 0.004 0.258        |
| Buddhism              | 0.015 0.324     | 0.546 0.309        |
| Catholic, other religions (ref.) | 0 0     |                    |
| Education             |                 |                    |
| Secondary             | 0.212 0.247     | -0.236 0.199       |
| College, university   | 0.171 0.272     | 0.155 0.214        |
| Lower than secondary (ref.) | 0 0         |                    |
| Employment            |                 |                    |
| Public sector         | 0.102 0.328     | -0.714** 0.275     |
| Private sector        | -0.384 0.255    | -0.339 0.200       |
| Not working, student  | -0.507 0.320    | -0.467 0.273       |
| Work for self or family (ref.) | 0 0      |                    |
| Self-assessment of living standard |            |                    |
| Below average         | -0.684 0.397    | -0.196 0.311       |
| Average               | -0.377 0.263    | -0.478* 0.234      |
| Above average (ref.)  | 0 0             |                    |
| Intercept             | -0.617 0.624    | -0.428 0.566       |

Note: The reference category of the dependent variable is “Two children”; ref. reference category of independent variables; N=1333. Level of significance: *p < 0.05, **p < 0.01, ***p <0.001. Pseudo R-Square (Nagelkerke): 0.142; Log Likelihood: 1510.7 (p <0.001). Data: Survey in the Southeast Vietnam in 2000.
firmly maintaining the replacement fertility rate and promoting a universal two-child family model in Vietnam. Most of this difference is generated by the shift from the desires of three-or-more children or one-or-no child to the intention to have a two-child family. The findings indicate that not family size intentions but the factors affecting the realisation of those intentions have been the key determinants of the below-replacement fertility in the Southeast.

The analysis reveals the existence of some socioeconomic factors affecting family size desires and intentions. Young people and unmarried females are more likely to have desires and intentions of fewer than two children, suggesting possibly even smaller family size and lower fertility in the next generation. Being non-Kinh ethnic groups, non-Buddhism religions and some indicators involved in modernization, such as living in urban areas or in big cities, are the factors associated with a lower likelihood of the intention to have one or no child. The process of economic development and modernization has significantly improved the income and living conditions in the Southeast, but also brought about new social contexts, with many factors discouraging childbearing, even just one or two children. Young people, especially women, need to devote much time and effort for education and employment, and have many other preferences that compete with having children. Indeed, the survey in the Southeast found considerable proportions of people of reproductive age were afraid that having an additional child would require too much time and effort to take care, badly effect women’s health and appearance, or diminish their job opportunities, promotions. However, the most common challenge perceived by both married and unmarried people in the survey the Southeast is the costs of raising children according to current standards and expectations, supposing they have one more child. That is certainly one of the main factors of the gaps between the relatively high desired family size and the medium intended family size and the low fertility rate in the Southeast. Moreover, the concern about unaffordable costs of raising children may help to explain for the delay of childbearing, one of two major determinants of low fertility in the Southeast as found in previous research (Nguyen 2017). From the theoretical aspect, the factor of competing preferences in the framework of Bongaarts (2001) should be understood as including both competing preferences and obstacles in the current context of Vietnam.

In regard to Vietnam’s new population strategy aiming to firmly maintain the replacement fertility rate, the two-child family model can be promoted but unlikely to be universal as childbearing depends on various objective and subjective factors. In the current context in the Southeast, when most people of reproductive age still want and intend to have at least two children, support policies to reduce difficulties and obstacles to childbearing and childrearing would be much more effective in increasing the fertility rate than later when the desire of fewer than two children become more popular.

There are two major limitations in this study that could be addressed in future research. The first limitation is that information on family size desires and intentions of married men was derived through interviewing their wives, and this may lead to a certain bias. The second limitation is related to the gender equality factor, an important determinant of fertility intentions in existing literature, but was not included in the analysis.

| Table 7. Awareness of challenges of having another child. |
|----------------------------------------------------------|
| Unmarried males | Unmarried females | Married females | Unit: % Total |
|-----------------|------------------|----------------|---------------|
| Worry about lack of money to raise children (food, clothing) | 61.9 | 56.8 | 73.6 | 65.0 |
| Worry about how to have enough money for children's education | 57.4 | 48.2 | 61.0 | 56.2 |
| Worry about how to have enough money for children's medical care | 50.2 | 43.7 | 57.7 | 51.3 |
| It takes much time and effort to take care of children | 40.5 | 35.6 | 37.6 | 38.0 |
| Bad impact on women's health and appearance | 17.1 | 28.7 | 24.1 | 23.1 |
| Many hardships and risks during pregnancy and childbirth | 11.4 | 21.1 | 21.9 | 18.2 |
| It takes much effort to educate children | 19.2 | 24.1 | 12.3 | 17.9 |
| Loss of job opportunities, promotions | 11.6 | 23.9 | 18.1 | 17.6 |
| Housing would be more cramped | 6.2 | 5.1 | 7.4 | 6.4 |
| Don't know, no answer | 2.3 | 9.8 | 0.3 | 3.7 |
| Weighted N | 313 | 275 | 377 | 966 |

Note: Married males are not included; p < 0.001. Data: Survey in the Southeast Vietnam in 2000.
Data availability
Underlying data
Harvard Dataverse: Survey on fertility preference in the Southeast of Vietnam in 2020. https://doi.org/10.7910/DVN/XXOEWV (Nguyen 2022a)

This project contains the following underlying data:

- SEVNFS2020.SAV (SPSS format; all datasets have been de-identified in accordance with the Safe Harbor method.)

Data are available under the terms of the Creative Commons Zero “No rights reserved” data waiver (CC0 1.0 Public domain dedication).

Extended data
Harvard Dataverse: Questionnaire for Survey on fertility preference in the Southeast of Vietnam in 2020. https://doi.org/10.7910/DVN/3G7FW9 (Nguyen, 2022b)

This project contains the following extended data:

- Questionnaire for Survey on fertility preference in the Southeast of Vietnam in 2020

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