Preferences for the Sex-composition of Children in Vietnam: An Examination of its Effect on Fertility Desire

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Abstract
This paper aims to investigate whether of the variation in preferences for the sex-composition of children can explain the variation in fertility desires of women with one child and describing the trend, pattern of fertility desires in Vietnam. Using the national data set from Vietnam Multiple Indicator Cluster Survey (MICS) data sets 2014 investigates the relationship between gender of children and fertility desire. The broad-brush preliminary results from logistic regression show that number of children and gender of children that women have, will effect on her fertility desire. Mothers who have one child that is a girl having higher potential fertility desire compare with others. There is indeed a positive relationship between son preference and fertility desire in Vietnam. Women who do not have at least one son have the highest fertility desire. The findings can potentially have some policy implications for specific Vietnamese fertility policy.

Keywords: son preference, fertility, fertility desire, Vietnam

Introduction

A recent phenomenon in Vietnamese society is a "missing" women that are deficit of girls because of son preference. Together with China and India, Vietnam are the leaders in Asia in son preferences (Das Gupta, 2010; Guilmoto, 2007). Deficit of girls becomes more popular in Vietnam, particular in North of Vietnam. Explaining for son preference in Vietnam can be based on the culture, religion and belief system of the Vietnamese. Vietnamese parents believe boys are more valuable than girls. Typically, the proverb is "Nhất nam viết hữu thập nữ viết vô" (One son is having some, ten daughters are having none) and “Con gái đái không qua ngọn cỏ” (Girls do not cross the grass). Unless the son is born, the woman will be under pressure from her husband's family, especially her mother-in-law and her husband. Without having a son, the husband would be discriminated, even mocked as "weak or poor" by his friends, relatives, and colleagues. If parents do not have a son, it is considered as not having the next generation because of a lost family name. The son of Vietnam receives more economic and social benefits than daughters, such as inheriting of special assets such as land or house, caring for elderly parents, worshiping or religious roles that only sons can perform, perpetuation of the family name (Le et al., 2017; UNFPA Vietnam, 2012; Vui LT, Duong DTT, & Hoa DTP, 2012).

In May 2017, the Minister of Health Vietnam issued an alert about the imbalanced sex ratio at birth in Vietnam. Nearly 50% of provinces and cities have a higher sex ratio at birth than in the previous year. The difference in fertility desire among mothers based on two indicators of their history birth, which are the number of children and sex of children. Although a number of quantitative studies on the association between fertility and son preference has been done based on evidence from a number of countries, there is an absence of a quantitative insight based on the evidence from Vietnam, where both fertility and son preference has undergone significant changes. To do so, the paper uses the female individual-level data from the sample of the Multiple Indicator Cluster Surveys in 2014. Logistic regression were used to see the relationship of sex composition of children and fertility desire controlling for socio-demographic variables in Vietnam.

This paper, as a result, aims to investigate whether of the variation in sex composition of children can explain the variation in fertility desires both over time and across region and describing the trend and pattern of fertility desires in Vietnam in 2014 by using MICS data. Specifically, we examine how gender of children (emphasis on the number of boys that women had) affect fertility desire in six economic region in Vietnam where are well-documented about son preference.

Literature Review

The Theory of Planned behavior

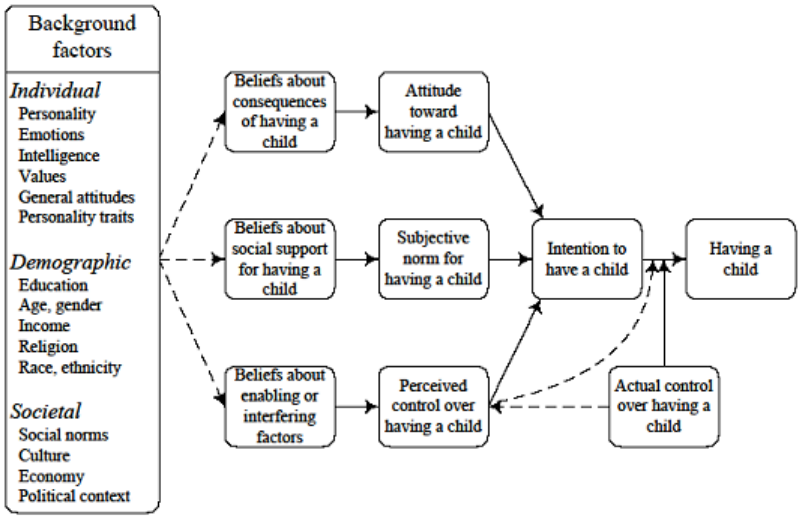
Fertility desire or desire in generally is branches/forms of behavior. Based on the theories of behavior we can identify the factors that directly and indirectly affect on fertility derise. One of the theories of behavior is theory of planned behavior that was introduced by Ajzen and Fishbein in 1991.

Following theory of planned behavior: intentions/desires are seen as directly dependent on three components: attitudes, norms and perceived behavioral control. Attitudes are a key construct in psychology and in the study of social change. An attitude can be defined as "the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question. Social-psychological approaches to decision-making emphasize attitudes as a key determinant of desires and, therefore, subsequent behavior as opposed to more distant value orientations. Attitudes have frequently been used as explanatory factors in demographic studies of childbearing desires and behavior (Billari, Philipov, & Testa, 2009)

Ajzen and Fishbein (2005) classify background factors in three groups. First, “individual” factors, such as personality traits, mood, emotion, intelligence, values, stereotypes, general attitudes, experience. Second, “social” factors, such as education, age, gender, income, religion, race, ethnicity and culture. Third, “information” factors, such as knowledge, media, and intervention. A desire to perform a specific behavior. In other words, TPB focuses on purposeful actions. There is a positive relationship between specific desire and specific behaviors.The magnitude of this relationship depends on the type of behaviour and on the time-interval between intentions and behaviour. In order to understand the mechanisms of individual decision-making, following TPB framework necessary to understand the determinants of intentions. Second, attitudes subjective norms, and perceived behavioural control attached to a specific behaviour are the proximate antecedents of behavioural intentions.

In 2009, Billari, Philipov & Testa applied the theory of planned behavior to consider fertility intention. According to the theory of planned behavior approach, background factors influence the construction desires through their effect on attitudes. These may include, for instance, economic theories (emphasizing income, wealth, education) and ideational theories of fertility (emphasizing religion, value orientations), as well as general demographic factors such as gender, age, cohort (Billari et al., 2009). Billari, Philipov & Testa classify background factors in three groups. First, "Individual" factors, such as personality traits, mood, emotion, intelligence, values, Stereotypes, general attitudes, experience. Second, "social" factors, such as Age, education, gender, income, religion, race, ethnicity. Thirdly "social" factors include social norms, culture, economic and political context.

Figure 1: The theory of planned behavior applied to fertility decisions



The Theory of traits-desires-intentions-behavior sequence

Warren Miller and David Pasta were the first authors mention about the traits-desires-intentions-behavior sequence (TDIB). In their theory, they concerned about male's desire and female's desire that combined couple's behavior. TDIB sequence characterizes the process through which latent motivations enter consciousness in the form of specific desires, which then generate specific intentions, which in turn lead to goal-related behaviors. Miller and Pasta (2000) used a four variable: age at menarche, age at first sexual intercourse, age at first pregnancy, and number of pregnancies and variables as respondent's age, education, religion, religiosity, ethnicity, marital status, parity, work status, and gender role, income ect as determinants of fertility desire. They assume that motivations/attitude affect both the intensity of desire for children and the number of children desired; together with attitudes and beliefs concerning child timing, these factors translate into actual child-timing desires and intentions

In a series of papers, Miller and Pasta present and apply a detailed theoretical model in which "childbearing motivations" affect fertility desires, desires and behavior. In turn, childbearing motivations are influenced by biologically based dispositions that may be partially inherited as well as influenced by early life-course experiences. Miller and Pasta assume that motivations affect both the intensity of desire for children and the number of children desired; together with attitudes and beliefs concerning child timing, these factors translate into actual child-timing desires and desires. The "Childbearing Questionnaire" originally proposed by Miller (1995) measures childbearing motivation by separating "Positive Childbearing Motivation" and "Negative Childbearing Motivation". Among the positive childbearing motivation some subscales are identified concerning "(1) joys of pregnancy, birth and infancy; (2) traditional parenthood; (3) satisfaction of child rearing; (4) feeling needed and connected; (5) instrumental values of children", among the negative childbearing motivation the subscales identified concern "(1) discomforts of pregnancy and childbirth; (2) fears and worries of ; (3) negatives of child care; (4) parental stress (Miller, Bard, Pasta, & Rodgers, 2010; Miller, Severy, & David, 2004)

Data and sample

This study is based on the information from Viet Nam Multiple Indicator Cluster Survey (MICS) data sets 2014 in Vietnam. The information related to women of reproductive ages, ranging from 15 to 49 years. For each year's MICS survey have a different sample size. In 2014 Viet Nam Multiple Indicator Cluster Survey collected 10,018 households, with 9,827 women and 3,316 children interviewed. In 2011 MICS survey interviewed 11,614 households, with 11,663 women (age 15-49) and 3,678 children under age five. In 2006 interviewed 8,356 households, with 10,063 women (age 15-49) and 2,707 children under age five.

Multiple Indicator Cluster Surveys which are collected in 1999,2000,2006, 2011,2014 applied for the entire population in Vietnam by 3 types of questionnaire namely household questionnaire, individual questionnaire for women, questionnaire for children under five. In some countries have individual questionnaire for men but this questionare do not have in MICS survey in Vietnam (General Statistic Office, 2011; Kersten, 2010). Funding for the survey was provided by the United Nations Children's Fund (UNCEF)

MICS programe was born in order to provide an international household survey that can internationally comparable between countries. Starting in the 1990s until now MICS was launched sixth round with specific purpose for each round. The aim of the 1st round to adapt to the World Summit for Children, 3rd round in 2006 response to the Millennium Development Goals (MDGs). The most recent round is the sixth round that set up with global goals - Sustainable Development Goals (SDGs)

Variables

Dependent variable

The key outcome of our research was fertility desire. Fertility desire plays a role as dependent variable of this research. Fertility desire was defined as the desire to have another child in the future of women from 15-49 at the time of interview. Firstly, respondents were divided two groups , including women who were currently pregnant and otherwise. And then asked if they desired to have another child in the future. Those that will desire to have another child in the future were asked about how far in the future (months/years) they wanted to wait to have another child, and the period of waiting was categorized as <1 year, 1–2 years, 3–4 years or 5 or more (5+) years.

Independent variable

The main independent variable in my study is sex composition of children. The first to measure sex composition of children is still controversial at present. To look deeply at the impact of gender of children on women's desire to have more children, in our study, sex composition of children of women with one child was measure as dummy variable with 1: have a son and 0: otherwise.

3.2.3 Control variables

There are three kinds of control variables in this study.
Firstly, The characteristics of the women, which includes age, level of educational attainment, access to mass media: newspaper, radio, television, computer, and internet, number of child death (experience of child death), physically able to get pregnant (fecundity), Age at first married, Age child of last birth, marital status, and the characteristics of the household which includes religion, wealth index, region, having older person in household. Secondly, control variable is region. Thirdly, gender equality/women empowerment with proxy variable is attitude with domestic violence . The key variables are women's empowerment that it was measured by types of attitudes about gender roles. These information were extracted from sets of questions included in MICS questionnaire. Attitudes toward domestic violence consider by a series of question "Sometimes a husband is annoyed or angered by things that his wife does. In your opinion, is a husband justified in hitting or beating his wife in the following situations: If she goes out without telling him? If she neglects the children? If she argues with him? If she refuses to have sex with him? If she bums the food? If she does not complete housework to his satisfaction; if she is doubted about her being faithful; if she disclosed that she was unfaithful". Base on context of Vietnam, the authors divide into 3 groups of women's empowerment indicators. Attitudes toward wife beating: Belief that none of the 6 reasons for wife beating are justified. Must to say No with one of 6 variables: If she goes out without telling him? If she neglects the children? If she argues with him? If she bums the food? If she does not complete housework to his satisfaction; if she is doubted about her being faithful. Attitudes toward refusing sex: Belief that women have a right to refuse sex (is a husband justified in hitting or beating his wife in the following situations: If she refuses to have sex with him?). Attitudes toward faithful: (is a husband justified in hitting or beating his wife in the following situations: if she disclosed that she was unfaithful).

Methodology

In order to achieve research goals, we would like to use the following methods:
To see the trend of fertility, fertility desire, sex composition of children and sex ratio at birth of Vietnamese women 2014, the paper uses the female individual-level data from the multiple indicator cluster survey (MICS), provided by http://mics.unicef.org/. Descriptive Statistics is used for describing, presenting, summarizing current situation and trend of gender of children and fertility desire in Vietnam.

To investigate the effect of gender of children on women's desire to have more children through social norm affect, a model set up as follow:

$$F_{ih} = \propto_0 + \beta_1 G_{ih} + \beta_2 C_{ih} + \beta_2 W_i + \beta_3 H_i + \beta_4 Y_h + \beta_5 R + \beta_6 E_i + \beta_7 T_i + u$$

Where lowercase $_i$ denotes for individual and $_h$ denote for household. F_{ih} is the measure of fertility desire of individual women in household indicating whether women want to have more children or not; G is a vector of gender of children that affect to fertility desire
Logistic regression were used to see the relationship of sex composition of children and fertility desire controlling for socio-demographic variables in Vietnam.

The Findings

Table 1 shows number observations and percentage of sex composition of current children according to women's fertility desire. It is clear that the majority of women with at least one son do not want to have additional children whereas women with at least one daughter report high percentage of wanting to have more children. The summary statistics show that in group one child and no want to have more chidren, the larger percentage are the ones with son (61.36%).

Table 1: Sex composition of children by women's fertility desire

	Fertility desire		
Characteristics of Women	No (obs,%)	Yes (obs,%)	P-value
Women with one child (n=1,502)			0.001
1 son	289 (61.36)	537 (52.09)	
1 daughter	182 (38.64)	494 (47.91)	
Total	472(100)	1,031 (100)	

Note: n: Number observation. Obs: observation

Table 2 shows the results of our multivariate logistic regression models. The main hypothesis proposed that women with no sons would be more likely to have higher fertility desire compared to women with at least one son. Our results support this hypothesis. Women without sons show higher odds of having a desire for additional children relative to those with sons. Specifically, among women with one child, those with one daughter are nearly 1.4 times higher the odds of those with one son to desire more children.

We found the relationship between control variables and women's fertility desire. Increasing 1 year in the age of mother leads to 0.9 times decrease in the odds of having more child. For those with one child, women with higher education are more likely to want to have additional children compared to low educated women. Having elderly in the household have higher fertility desire however this variable does not statistically significant. Those who are living in Red river delta higher fertility desire than Southeast. It is consistent with TFR by region in Vietnam where the highest TFR found in Red river delta. The higher wealth index shows higher fertility desire because of the increase of cost raising the child in Vietnam.

Table 2: *Logistic regression odds ratios of women's fertility desire*

	One Child
	O.R. (S.E.)
Group 1: Women with one child (Ref. one son)	
1 daughter	1.459***
	(0.209)
Sex ratio at birth at provincial level	1.031
	(0.0203)
Age of mother	0.898*
	(0.0572)
Age at first married	1.094**

	(0.0463)
Age group of mothers at last birth (Ref 15-20 ages)	
20-24 ages	1.074
	(0.349)
25-29 ages	0.771
	(0.396)
30-34 ages	0.363
	(0.275)
35-39 ages	0.172*
	(0.179)
40 up	0.0957
	(0.137)
Living with a male partner (Ref. Not living with a male partner)	15.35***
	(4.394)
Husband-wife gender equality attitude (Ref. disagree with violence)	1.180
	(0.174)
Contraceptive use (Ref. no using contraception)	0.631**
	(0.114)
Education (Ref: Primary)	
Lower secondary	1.229
	(0.276)
Upper secondary	1.316
	(0.327)
Vocational school	1.486
	(0.525)
College/university & above	1.773*
	(0.532)
Religion (Ref. No religion)	
Buddhism	0.699*
	(0.141)
Christian	1.156
	(0.307)
Other religion	0.468**
	(0.169)
Mass media access (Ref. No Mass media access)	1.101
	(0.675)
Region (Ref.South east)	
Red river delta	1.262
	(0.353)
Northern midlands and mountain area	1.695**
	(0.434)
North central and central coastal area	1.346
	(0.343)
Central highlands	1.427
	(0.356)
Mekong river delta	1.107

	(0.240)
Urban (Ref. Rural)	0.974
	(0.161)
Wealth_index (Ref. poorest)	
Second	1.267
	(0.321)
Middle	1.492
	(0.390)
Fourth	0.968
	(0.252)
Richest	1.169
	(0.356)
Working status (Ref: Still working)	1.063
	(0.225)
Having elderly in the household	1.186
	(0.222)
Experiment child dead (Ref. Not Experiment child dead)	1.651
	(0.717)
Child age last birth	0.946
	(0.0615)
Number observation	1502
Pseudo R-sq	0.304

Notes: *Standard errors in parentheses. Ref.: Reference category. Significance levels: * p<0.1, ** p<0.05, *** p<0.01.*

Conclusions

Our results indicate that the sex composition of children had a strong and statistically significant positive association with women's desires for additional children, after controlling for demographic and socioeconomic factors, gender equality context within the household and social norms of fertility behavior. Having all daughters rather than all sons are associated with higher fertility desire among Vietnamese women of childbearing age. These findings suggest that the strength of traditional cultural norms of son preference prevails in Vietnam and shows childbearing patterns of Vietnamese women. For women with one child, having all daughters rather than all sons was associated with higher fertility desire among Vietnamese women of childbearing age. Women with no son would be more likely to have higher fertility desire compared to women with at least one son. The Vietnamese government has been advocating pronatalism policies, especially with Ho Chi Minh city, where TFR is just 1.4 over the last 10 years. However, in some areas, the campaign is not successful. This study potentially shows that son preference be regarded as one of the important reason for reducing fertility desire with those who already have at least one son in Vietnam

From these results, we suggest some policies as below

- The government should continuously ban ultrasounds to detect fetal sex to reduce sex-selective abortion.
- Combined with encouraging mass media and other social outlets to enhance women's value to society

- Creating conditions for women to promote their roles in the family and society

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