Sex of First Child and Actual Fertility Among Vietnamese Women from Generations X, Y, and Z: Examining Intergenerational Patterns of Son Preference

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Abstract

Drawing on data from the 2020–21 Vietnam Multiple Indicator Cluster Survey (MICS), which includes 7,813 women from Generations X, Y, and Z, this study makes a unique contribution by applying survival analysis to examine intergenerational shifts in son preference—an approach not previously applied, to our knowledge. The analysis investigates how the sex of the first child affects both the likelihood and timing of subsequent children. The findings reveal that son preference persists, with Generation Z demonstrating a stronger inclination toward having sons compared to Generations X and Y, despite Vietnam's notable economic progress and policy efforts to address gender imbalance. This persistent pattern likely reflects deeply rooted institutional and cultural norms that favor male offspring. As a result, women may feel compelled to continue childbearing until a son is born, driven by the belief that sons offer better social and economic prospects. These insights highlight the urgent need for more targeted policy interventions to challenge the cultural son preference, especially in the context of Vietnam's declining fertility rates.

Keywords

Fertility decline; fertility decisions; sex ratio at birth; son preference; survival analysis

Introduction

Son preference contributes to demographic imbalances and a range of socioeconomic consequences (Asadullah et al., 2021; Guilmoto, 2012; Milazzo, 2018). These include sex-selective abortions, skewed sex ratios at birth, disparities in breastfeeding practices, and gender bias in educational investment (Datta & Kingdon, 2022; den Boer & Hudson, 2017; Jayachandran, 2015). While son preference has been documented in many countries, particularly in East and South Asia, the Middle East, and North Africa, there has been a noticeable decline in many contexts. Research has demonstrated a decline in son preference in countries such as South Korea, Taiwan, Bangladesh, and India (Asadullah et al., 2021; Bhatnagar, 2023; Chung & Gupta, 2007; Lin, 2009).

Several factors have contributed to this shift, including industrialization, socioeconomic development, improvements in women's education and employment, as well as supportive public policies and government programs (Chung & Gupta, 2007; Lin, 2009). Changes in son preference may take time to materialize through actual fertility decisions. For example, in Bangladesh, Asadullah et al. (2021) found that while son preference has weakened in stated fertility intentions, it continues to influence actual fertility decisions. Additionally, cohort differences reveal a generational decline in son preference, partly explained by the fact that younger cohorts are better educated and have experienced more socially progressive environments than older cohorts (Lin, 2009).

Conversely, Vietnam presents a unique case for examining generational differences in son preference as reflected in actual fertility behavior. Despite experiencing rapid economic growth and a significant decline in fertility rates, son preference remains prevalent (Nguyen & Sukontamarn, 2022). Son preference is well documented in Vietnam (Guilmoto et al., 2009; Nguyen & Sukontamarn, 2022; UNFPA & General Statistics Office, 2016). The sex ratio at birth (SRB) in Vietnam began to rise above the biologically normal level around the year 2000 and has remained elevated since (Chao et al., 2021; United Nations, 2024). Between 2010 and 2021, the SRB fluctuated between 111 and 112 male births per 100 female births. At the same time, Vietnam's total fertility rate (TFR) has sharply declined. From 1968 to 2021, the TFR dropped from 6.03 to 1.94, falling below the replacement rate of 2.10 in 2000, when it reached 2.07 (United Nations, 2024).

Since the late 1980s, the Vietnamese government has introduced policies aimed at reducing fertility. In 1988, the national family planning policy—commonly known as the one-or-two-child policy—was enacted, limiting government employees and Communist Party members to a maximum of two children (Ngo, 2020). Over time, this policy has helped establish a two-child norm across the population (Yen et al., 2020). Additionally, the Vietnamese Ministry of Health aimed to maintain a TFR of 1.9 under the 2011–2020 Population and Reproductive Health Strategy (Yen et al., 2020). Despite these demographic and policy shifts, gender imbalance persists across various age groups in Vietnam. According to the United Nations (2024), this disparity is particularly pronounced from early childhood through the reproductive years, reflecting a continued cultural preference for sons that shapes the population structure.

Women from different generations in Vietnam have experienced distinct socioeconomic conditions and policy regimes. This paper investigates whether son preference varies across generations, specifically among women from Generations X, Y, and Z, by focusing on their

actual fertility decisions. In particular, we examine whether and how the sex of the first child influences the likelihood of having another child and the timing of the subsequent birth. This study utilizes a nationally representative dataset from the 2020–21 Vietnam Multiple Indicator Cluster Survey (MICS) conducted by the United Nations Children's Fund (UNICEF). The sample comprises 7,813 women of reproductive age (15-49 years), categorized into Generation X (ages 45-49), Generation Y (ages 26-44), and Generation Z (ages 15-25). This study does not provide a general comparison of the three generations; rather, it focuses specifically on women who had at least one child at the time of the survey. We employ survival analysis techniques to estimate the transition from the first to the second childbirth, controlling for the sex of the first child.

This study examines how the sex of the first child, whether a son or daughter, influences the likelihood of having another child and the timing between births. The analysis aims to assess whether women's actual fertility behavior reflects a continued preference for sons. The results indicate that son preference continues to shape fertility decisions among Vietnamese women across all three generations. However, generational differences are evident in the degree and expression of this preference. These findings highlight the urgent need for targeted policy interventions to address the enduring cultural bias toward sons, particularly in the context of Vietnam's declining fertility rates.

Background

Generation differences in Vietnam

A generation typically comprises individuals born within a 15–30-year span who share common historical and cultural experiences that shape their values and behaviors. Generational identity is formed through exposure to key societal events during one's formative years (Mannheim & Kecskemeti, 2013; Strauss & Howe, 1991). In Vietnam, generational shifts in reproductive behavior reflect distinct historical contexts, including wartime experiences, economic reforms such as the Đổi Mới policy (Beresford, 2008; Ngo, 2020), and evolving population policies.

Generation X (born 1965–1976) experienced post-war recovery and the implementation of the two-child policy, both of which reinforced traditional son preference. Generation Y (born 1977–1995) came of age during a period of economic liberalization and globalization, which encouraged smaller families and shifting gender roles. Generation Z (born 1996–2015) has grown up with digital technology and increased exposure to global discourses on gender equality, favoring greater reproductive autonomy and a continued trend toward smaller families (Yen et al., 2020).

Generational shifts in Vietnam's family planning reflect the combined influence of policy reforms and evolving cultural norms. While son preference has declined in certain contexts, it remains persistent in others, highlighting a tension between traditional values and modern attitudes toward gender and reproduction. Unlike many other countries, Vietnam's demographic changes are deeply rooted in its unique history of war, post-conflict recovery, and rapid socioeconomic transformation, with state policies playing a central role. Understanding these generational dynamics is essential for designing policies that align with evolving cultural values and address the country's current socioeconomic challenges.

Literature review

Research conducted in both large and small countries has demonstrated that strong child sex preferences significantly influence fertility rates (Blau et al., 2020; den Boer & Hudson, 2017; Kumar et al., 2020; Wang et al., 2020). Parents may opt to stop childbearing if they are satisfied with the sex of their first children; otherwise, they might decide to have additional children (Blau et al., 2020; Dubuc, 2018; Khan et al., 2021). This kind of preference is often associated with the sex of the first child (Blau et al., 2020; den Boer & Hudson, 2017; Kumar et al., 2020; Wang et al., 2020; Yoo et al., 2017), but other factors also play important roles. These include ethnicity (Blau et al., 2020; Tang, 2012), the woman's educational level (Bharati et al., 2011; Rashid et al., 2018), age at first marriage (Islam & Rahman, 2020; Nitsche & Hayford, 2020), and the husband's age (Kuna et al., 2018; Mills & Begall, 2009; Nitsche & Hayford, 2020), female headship and autonomy (Bauer & Kneip, 2014; Haque et al., 2021), place of residence (Kim & Lee, 2020; Mills & Begall, 2009; Murphy et al., 2011; Yadav et al., 2020; Yao et al., 2010), household wealth (Zhu & Hong, 2021), attitudes toward domestic violence (Oni et al., 2021), and the presence of older family members in the household (You et al., 2020).

Women may choose not to have a second child if the first is a son —a pattern commonly observed in Vietnam (den Boer & Hudson, 2017), South Korea (den Boer & Hudson, 2017; Yoo et al., 2017), India (Bharati et al., 2011; Kumar et al., 2020; Yadav et al., 2020), China (Wang et al., 2020), and Malaysia (Rashid et al., 2018). This tendency is particularly prevalent in patrilineal societies where sons are valued for continuing the family lineage (Murphy et al., 2011). One key reason for the expectation that sons will provide support for their parents in old age is that daughters typically marry into their husbands' families and assume caregiving responsibilities for their in-laws (You et al., 2020). Additionally, son preference may be reinforced by cultural and religious traditions, such as Confucianism, which emphasizes filial piety and the role of sons in performing ancestral rites (Tang, 2012).

Child preference is shaped by several sociodemographic factors, notably women's education. Higher levels of education are associated with lower son preference, as educated women tend to have greater autonomy, decision-making power, and financial independence (Aksan, 2022; Behrman & Duvisac, 2017; Bharati et al., 2011). Educated women are also more likely to embrace egalitarian values and prioritize career goals, reducing adherence to traditional gender roles within the family (Bose, 2012; Shu, 2004). Age at first marriage also plays a significant role; women who marry later typically have fewer children and lower son preference, often placing greater emphasis on child quality rather than quantity (Bianchi, 2011; Islam & Rahman, 2020; Oppenheimer, 1988). While wealthier families may be more inclined to have additional children, the presence of older family members can encourage higher fertility by providing childcare support and fostering expectations of reciprocal care in the future (Chen, 2021; You et al., 2020; Zhu & Hong, 2021).

The influence of various factors on child preferences varies notably across generations. Older generations tend to exhibit stronger son preference rooted in traditional cultural and economic values. In contrast, younger generations are increasingly shaped by modern values and a growing emphasis on gender equality. Higher levels of education and economic independence among younger generations contribute to more progressive attitudes, which in turn lead to a reduction in son preference. Increased awareness of gender equality and shifting societal norms further reinforce this generational divergence. In Vietnam, generational differences have significantly influenced child preferences, particularly regarding the sex of

the child (Guilmoto, 2012; Ngo, 2020; Vu, 2014; Yadav et al., 2020). Older generations often value sons as carriers of the family name, providers of financial support, and caretakers of older parents, especially in rural contexts (Guilmoto, 2012; Nguyen & Sukontamarn, 2022; Yen et al., 2020). By contrast, younger Vietnamese generations are more likely to endorse modern, egalitarian values. Urbanization, higher education, and increased exposure to global discourses on gender roles contribute to these shifts, resulting in a decline in son preference as younger individuals prioritize personal aspirations and autonomy (Chao et al., 2021; Nguyen & Sukontamarn, 2022). Besides, research on generational differences in child preference remains limited. While existing studies have examined factors such as education, economic conditions, and social norms, their interaction across generations remains unclear. Addressing this gap would offer a more nuanced understanding of the evolving dynamics of child preference in Vietnam and support the development of more targeted and effective policy interventions.

In contexts such as Vietnam, where Confucian traditions reinforce rigid gender roles, Gender Role Theory (Eagly & Wood, 2012) provides a strong framework for understanding the persistence of son preference across generations. According to this theory, traditional societal expectations assign public, economic, and leadership roles to men while relegating women to caregiving and domestic responsibilities. In patriarchal societies like Vietnam, these entrenched gender norms have sustained a strong cultural preference for sons, who are seen as crucial for maintaining family lineage, providing financial security, and upholding ancestral worship. Daughters, by contrast, are often viewed as eventually joining another family through marriage, leading to a perceived "loss" of investment. As a result, son preference reflects the deeply embedded societal belief that males are better positioned to fulfill roles considered vital for family continuity, economic security, and social status.

Materials and methods

Data source

This study utilizes nationally representative data from the 2020–21 Vietnam Multiple Indicator Cluster Survey (MICS) conducted by the General Statistics Office with the support of UNICEF (General Statistics Office & UNICEF, 2021). The MICS is a critical data source for monitoring progress on more than 30 Sustainable Development Goals (SDGs), collecting standardized information on household living conditions, women's reproductive health, and child well-being in developing nations. The 2020-21 Vietnam MICS is the most recent nationally representative dataset available at the time of this study, enabling the analysis of both actual fertility behavior and fertility desires among Vietnamese women.

Vietnam has participated in MICS since 1996, with the most recent round conducted in 2021. The survey employed face-to-face interviews with women aged 15–49 and covered households across all six economic regions, as well as the two major cities, Hanoi and Ho Chi Minh City. Data were collected on a range of topics, including health, education, and access to household resources.

Analytic strategy

This study draws on data from the 2020–2021 Vietnam Multiple Indicator Cluster Survey (MICS) dataset to explore generational differences in reproductive behavior, with a particular focus on son preference. The primary objective is to examine the factors influencing birth spacing across generations, with an emphasis on the role of the sex of the firstborn child. The central hypothesis posits that Generation X exhibits stronger son preference than Generation Z, reflecting shifts in cultural norms over time. Generations X, Y, and Z in Vietnam have been shaped by distinct cultural, historical, and socioeconomic contexts. Generation X came of age during the post-war recovery, marked by economic uncertainty and pro-natalist policies, followed by the introduction of population control measures (Goodkind, 1995). Generation Y experienced an era of economic growth and increased exposure to globalization, which contributed to more progressive attitudes toward family planning and gender equality. Generation Z, raised in the digital age, places a higher value on personal autonomy and gender equality and is more inclined toward smaller families and egalitarian gender roles (Dimock, 2019; Yen et al., 2020).

To conduct this analysis, we categorized women of reproductive age (15–49) into three generational groups: Generation X (45–49), Generation Y (26–44), and Generation Z (15–25). These age ranges were based on birth years (1965–1976 for Generation X, 1977–1995 for Generation Y, and 1996–2015 for Generation Z). Women under 15 were excluded, as they fall outside the typical reproductive age range relevant for fertility research. The sample was further refined by including only women with one or two children, thereby excluding women without children, those currently pregnant, and those with more than two children. The final sample consisted of 7,813 women: 1,189 from Generation X, 5,663 from Generation Y, and 961 from Generation Z. This approach allowed us to analyze generational differences in son preference, birth spacing, and the decision to have a second child within Vietnam's socioeconomic and cultural context.

This article employs survival analysis, a methodology originally prominent in medical research but increasingly used in social science studies, particularly those examining migration, marriage, or fertility patterns (Eryurt & KOÇ, 2012). Survival analysis is characterized by its focus on the timing of events. In our context, we measure the birth interval from the first child to the second child, generating time-to-event data essential for survival analysis. Specifically, we employ the Cox proportional hazards model to investigate the relationship between the sex of the first child and the hazard rate of having a second child within each generation. Survival analysis allows us to estimate the transition from the first to the second childbirth while controlling for the sex of the first child. In other words, we assess how having a son or a daughter influences the likelihood and timing of having another child, including the spacing between births. Subsequently, we investigate generational differences based on the results of a Cox regression analysis. The analysis enables us to assess the extent to which women's actual fertility decisions reflect son preference, addressing the central question, "*Does son preference persist across Generations X, Y, and Z in Vietnam?*"

Variable measurement

Fertility

In this study, fertility is defined as actual fertility observed within the reproductive age range of the sample. Since many women in the sample may have additional children in the future, we employed hazard model analysis to account for censored data and to examine the

influence of certain factors on the likelihood of having another child. Specifically, for women with at least one child, we estimated the hazard rate of giving birth to a second child, taking into account the presence of a firstborn and the time interval between successive births. To ensure comparability across Generations X, Y, and Z, we limited our analysis to women with two or fewer children. This restriction reflects the reality that women in Generation Z are unlikely to have a third child at a young age, given the current trend of delayed childbirth in Vietnam.

Sex of first child: The sex of the firstborn child was defined thus: (1) for a son and (0) for a daughter.

Covariates

The study incorporates a range of control variables that encompass sociodemographic characteristics of women (such as education level, age at first marriage, household leadership status, ethnicity, and urban/rural residence), household attributes (including the presence of older members and the family's economic status), social indicators, and additional factors (such as attitudes toward domestic violence and economic region). Further elaboration on the measurement of these variables is provided in Table 1.

Table 1: Variable Measurements

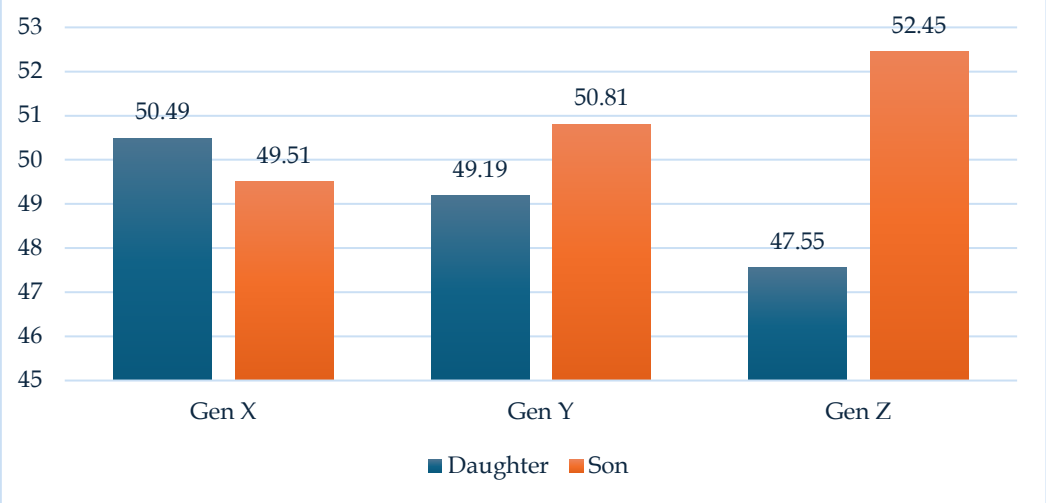
Variable	Measurement
Sex composition of first child	0 = Daughter, 1 = Son
Woman's education	0 = None/primary; 1 = Lower secondary 2 = Upper secondary; 3 = Professional school 4 = University
Age at first marriage	Numerical variable
Female-headed	0 = No; 1 = Yes
Ethnicity	0 = Kinh; 1 = Non-Kinh
Urban	0 = Rural; 1 = Urban
Wealth index	0 = Poor/poorest; 1 = Middle; 2 = Rich/richest
Attitudes toward domestic violence	0 = Unacceptance; 1 = Acceptance
Having older members in the household	0 = No; 1 = Yes
Region	0 = Southeast; 1 = Red River Delta; 2 = Northern Midlands; 3 = North Central; 4 = Central Highlands; 5 = Mekong River Delta

Results

Figure 1 illustrates a gradual shift in the sex ratio of firstborn children across three generations. Generation X shows an almost equal distribution of sons and daughters (50.49% daughters). Generation Y displays a slight preference for sons, while Generation Z exhibits a more pronounced imbalance, with 47.55% of firstborns being daughters. This trend may reflect the evolution of societal, cultural, biological, and technological factors over time. Further research is needed to identify the underlying causes of this shift.

Descriptive statistics

Figure 1: Sex Composition of the First Child by Generations



Note: Authors' calculations based on data from MICS Vietnam 2020–2021.

Table 2 shows that a significant portion of individuals across all generations have low education levels, with 39.12% of Generation X, 30.99% of Generation Y, and 28.28% of Generation Z having primary education or less. However, medium and higher educational attainment increased across generations, particularly in Generation Z, where 24.37% completed upper secondary education, compared to 16.48% in Generation Y and 12.38% in Generation X. Moreover, 17.34% of Generation Y attained higher education, while only 7.45% of Generation X and 5.35% of Generation Z did.

Table 2: Sample Characteristics by Generation in Percentage

Variable	Gen X	Gen Y	Gen Z
Education			
None/primary	39.12	30.90	28.28
Lower secondary	39.68	30.99	40.91
Upper secondary	12.38	16.48	24.37
Professional school	1.36	4.27	1.10
College/university & above	7.45	17.34	5.35
Age at first marriage (mean)	20.1 years	21.1 years	17.4 years
Age of husband (mean)	49.2 years	38.3 years	25.9 years
Women as a head			
No	73.37	76.08	83.80
Yes	26.63	23.92	16.20
Ethnicity			
Kinh	76.93	73.94	48.73
Others	23.07	26.06	51.27
Resident			
Rural	69.36	70.81	88.26
Urban	30.64	29.19	11.74
Wealth index			
Poor	50.66	52.38	79.75

Variable	Gen X	Gen Y	Gen Z
Middle	17.70	15.51	9.40
Rich	31.64	32.11	10.84
Attitudes toward domestic violence			
Unacceptance	17.30	15.70	19.63
Acceptance	82.70	84.30	80.37
Having older members in the household			
No	84.18	76.72	76.73
Yes	15.82	23.28	23.27
Region			
Red River Delta	21.79	18.84	9.88
Northern Midlands	18.78	23.49	41.80
North Central	12.37	13.44	12.35
Central Highlands	12.45	12.17	15.51
Southeast	18.14	17.25	8.92
Mekong River Delta	16.46	14.81	11.53
Sample size	1,189	5,663	961

Note: Authors' calculations based on data from MICS Vietnam 2020–2021.

These trends indicate a rise in educational attainment, with Generation Y showing the highest levels overall. The average age at first marriage was 20 for Generation X, 21 for Generation Y, and 17 for Generation Z. Over 70% of women in our sample are not household heads, reflecting the cultural norm in Vietnam where the husband typically holds this role. In single-parent households, the eldest son assumes leadership. Approximately two-thirds of the women lived in rural areas, with roughly 20% from each of Vietnam's six economic regions. Generation X has a higher representation in the Red River Delta (21.8%) compared to Generation Y (18.8%) and Generation Z (9.9%). In contrast, Generation Z has a larger share from the Northern Midlands (41.8%) than Generation X (18.8%) and Generation Y (23.5%), possibly indicating shifting migration trends. Other regions show less variation across generations.

Generation Z has the highest proportion of women identifying as poor (79.75%), compared to Generation X (50.66%) and Y (52.38%), indicating a growing wealth gap. Representation of the middle and upper classes declines in Generation Z, while wealth appears more concentrated in Generations X and Y. Acceptance of domestic violence remains high across all generations, X (82.70%). A higher proportion of Generation X women (84.18%) live without older individuals in the household, compared to Generation Y (76.72%) and Generation Z (76.73%). This may reflect differences in family structure and dynamics across generations, suggesting evolving roles and responsibilities in caregiving.

Empirical findings

Table 3 presents the results of a Cox proportional hazards regression analysis, examining the relationship between having a second child and various factors for women in Generations X, Y, and Z. The factors considered include the sex of the first child, education level, age at first marriage, husband's age, female headship, ethnicity, urban or rural residence, household wealth, attitudes toward domestic violence, presence of older people in the household, and region. The analysis shows that women whose first child is a son are less likely to have another

child compared to those whose first child is a daughter. This trend is seen across all generations, with the strongest effect in Generation Z.

Table 3: Survival Analysis of the Association Between Sex of First Child and the Hazard of Having the Second Child Among Women From Generations X, Y, and Z in Vietnam

	Gen X	Gen Y	Gen Z
Sex of 1st child (Ref. Daughter)	0.892* (0.0583)	0.930** (0.0309)	0.790* (0.0977)
Education (Ref: Primary and lower)			
Lower secondary	0.902 (0.0796)	0.855*** (0.0431)	0.490*** (0.0772)
Upper secondary	0.750*** (0.0808)	0.781*** (0.0463)	0.364*** (0.0729)
Professional school	0.757 (0.160)	0.863* (0.0730)	0.215* (0.185)
University	0.709** (0.105)	0.825*** (0.0567)	0.356** (0.166)
Age of first marriage	0.964*** (0.0104)	0.985*** (0.00536)	1.012 (0.0378)
Age husband	0.997 (0.00871)	0.992*** (0.00284)	1.031* (0.0166)
Women as a household head	0.736*** (0.0672)	0.865*** (0.0368)	0.802 (0.163)
Ethnicity (Ref. Kinh)	1.496*** (0.176)	0.848*** (0.0474)	1.342* (0.214)
Urban (Ref. Rural)	0.803*** (0.0615)	0.833*** (0.0340)	0.538** (0.143)
Wealth index (Ref. Poor)			
Middle	1.092 (0.107)	1.024 (0.0518)	2.036*** (0.492)
Rich	1.016 (0.0977)	1.000 (0.0515)	1.852** (0.455)
Attitudes toward domestic violence (Ref. Unacceptance)			
Acceptance	0.975 (0.0934)	1.068 (0.0555)	0.884 (0.156)
Having older members in the household (Ref. No)	1.167 (0.111)	1.074* (0.0413)	1.094 (0.169)
Economic region (Ref. Southeast)			
Red River Delta	1.097 (0.110)	1.444*** (0.0737)	1.293 (0.355)
Northern Midlands	1.144 (0.150)	1.438*** (0.0882)	1.373 (0.364)
North Central	1.647*** (0.183)	1.273*** (0.0740)	0.770 (0.215)
Central Highlands	1.319** (0.165)	1.402*** (0.0788)	1.155 (0.299)
Mekong River Delta	0.788* (0.104)	0.846** (0.0566)	0.752 (0.214)
Number of observations (N)	1,189	5,663	961

Note: Authors' calculations based on data from MICS Vietnam 2020–21

Higher educational attainment is associated with a lower likelihood of having a second child. Among Generation X, women with upper secondary education and university degrees are significantly less likely to have another child (HR = 0.750 and HR = 0.709, respectively). This pattern persists in Generation Y, where the hazard ratios (HR) for women with at least lower secondary education are also below one and statistically significant. The effect of education is even more pronounced for Generation Z, which shows a significantly lower hazard ratio compared to both Generation X and Generation Y.

Marrying for the first time at a later age significantly decreases the likelihood of having a second child for women from Generation X and Generation Y, with the effect being slightly stronger for Generation X. The insignificance of this factor among Generation Z underscores a generational shift in which the timing of the first marriage plays a diminishing role in younger women's decision to expand their families.

The impact of the husband's age on the likelihood of a woman's having a second child varies across generations. Among Generation X, this variable shows no significant influence. In contrast, for Generation Y, having an older husband is associated with a decreased likelihood of having another child. For Generation Z, the pattern reverses: women with older husbands are more likely to have a second child.

Being the head of the household reduces the likelihood of having a second child for women in Generation X and Generation Y, with the effect again slightly stronger in Generation X. Among the youngest cohort (Generation Z), household headship has no significant influence on the decision to have a second child. The effect of ethnicity on the likelihood of having a second child also varies by generation. In Generation X and Generation Z, non-Kinh women are significantly more likely to have another child than Kinh women (hazard ratios of more than one). The opposite trend appears in Generation Y, where non-Kinh women are less likely to have a second child compared to their Kinh counterparts (HR = 0.848).

Urban women are less likely to have a second child across all generations, with the effect being most pronounced in Generation Z. Wealth has little impact on the likelihood of second childbirth for Generations X and Y but significantly increases the likelihood among wealthier women in Generation Z. The presence of older household members has no significant effect on Generations X and Z but slightly increases the likelihood of a second child for Generation Y (HR = 1.074).

The region of residence significantly affects the likelihood of having a second child for Generation X and Generation Y, with notable differences in hazard ratios observed across regions. For Generation X, women residing in the North Central or Central Highlands regions are significantly more likely to have a second child than those in the Southeast region (hazard ratios of more than one), whereas those in the Mekong River Delta are less likely (HR = 0.788). In Generation Y, women living in the Red River Delta, Northern Midlands, North Central, or Central Highlands regions are also more likely to have another child, while those in the Mekong River Delta are less likely to do so (HR = 0.846), compared to those in the Southeast.

Discussion

Using the 2020–21 MICS Vietnam, a newly updated and nationally representative dataset on women's reproductive health, this study is among the first to underscore a significant connection between the sex of the firstborn child and the likelihood of having a second child among women from Generations X, Y, and Z. The results indicate that son preference may persist in Vietnam. Despite the country's significant economic growth, rapid fertility decline, and decades of policy efforts aimed at reducing gender imbalances at birth, these findings suggest that such policies have had little impact on the trend of son preference. Specifically, the study finds that women whose first child is a son are less likely to have another child. This is true for all three generations, with the effect slightly more pronounced among the youngest cohort, Generation Z. These findings align with previous studies in Vietnam (Nguyen & Sukontamarn, 2022; Yen et al., 2020); however, our study explores this association across generations.

The results further indicate that Generation Z exhibits a stronger preference for sons than Generations X and Y, a pattern that aligns with previous research and the current sociodemographic context of Vietnam. This trend is particularly prominent within the

framework of Vietnam's recent demographic shifts, which have been characterized by a high SRB and a low TFR. The elevated SRB in Vietnam, which surpasses the natural biological norm, reflects a persisting societal bias toward male offspring driven by deeply rooted cultural and economic factors such as continuing the family lineage and providing support in old age. The declining TFR, indicating fewer children per woman, exacerbates this son preference as families may prioritize the birth of a male child within the context of reduced family size. This demographic dynamic helps explain the stronger son preference observed among Generation Z.

Generally, while the findings of the study are intriguing, they are not entirely surprising given the reduced likelihood that Vietnamese women will have a second child when the first child is male. Numerous contemporary studies continue to demonstrate that men are still, in most cases, the family breadwinners and act as the main family representatives, while barriers to leadership and management positions persist for women in Vietnamese society (Nguyen, 2013; Nguyen & Simkin, 2017). The division of the family inheritance remains skewed in favor of sons (den Boer & Hudson, 2017). Daughters are often considered no longer part of their birth family after marriage, as they move in with their husband's family and take on responsibilities such as caregiving and child-rearing (Guilmoto, 2012; Schuler et al., 2006), and sons have traditionally been responsible for family worship and for carrying on the family name (Bélanger, 2002; Knodel et al., 2005). Moreover, given the rapid socioeconomic development in Vietnam, younger generations, particularly Generation Z, are finding it increasingly difficult to purchase real estate or property. In this context, having a son is often viewed as a safe solution for securing property ownership because it is perceived as an indirect means through which families can pass down property.

An emerging body of research suggests that Vietnamese reproductive preferences are becoming increasingly nuanced. While the traditional preference for sons persists, there is a growing inclination toward mixed-gender preference—that is, a desire to have both a son and a daughter. Empirical evidence indicates that families with only a daughter are more likely to progress to a second birth more quickly, whereas households with two sons (and no daughters) are more likely to have a third child sooner than those with one son and one daughter (Yen et al., 2020).

Additionally, the study finds that women in urban areas, those living in the Southeast region, and those with a lower household wealth index are less likely to have a second child compared to women in rural areas, other economic regions, and those with a higher household wealth index. This trend aligns with expectations, as socioeconomic development often correlates with lower fertility rates (Anderson & Kohler, 2015). The Southeast region, which includes Ho Chi Minh City and Binh Duong Province, is known for its exceptional socioeconomic development (Vietnam Briefing, 2017). As a result, the fertility rate in the Southeast has consistently remained at a record low over the past few decades, resulting in fewer second children compared to other economic regions (General Statistics Office, 2021). In addition, the pressures of childbearing and child-rearing in urban areas have contributed to a decline in birth rates within these regions.

A notable generational variation in fertility behavior was observed in fertility behavior among ethnic minority households. While minority groups were more likely than Kinh households to have a second child in Generations X and Z, the opposite was true for Generation Y. These shifts may reflect differences in access to education and reproductive services, exposure to national family planning campaigns, and persistent cultural norms, highlighting the dynamic and context-dependent nature of ethnic fertility patterns.

An intriguing result is that Generation Y households with older members tend to be more likely to have a second child. Regarding living arrangements and intergenerational support, previous research has highlighted the crucial role that grandparents play in caring for grandchildren (Hayslip et al., 2017; Knodel & Nguyen, 2015), which may encourage Generation Y to have a second child as they navigate the pressures of balancing finances and child-rearing. This pattern was not observed in Generation Z, possibly because the oldest members of Generation Z in the study were only 25 years old and had not yet reached their peak reproductive years. By contrast, Generation X faces less economic pressure in raising children than Generation Y.

Limitations

This study is the first to examine how the sex of the first child influences the likelihood of having a second child among Vietnamese women from Generations X, Y, and Z. However, it has some limitations. The findings may not fully capture trends for Generations Y and Z, as many individuals in these groups may delay childbirth due to demographic and family transitions.

In addition, it is essential to clarify that this study does not compare Generations X, Y, and Z as whole populations but rather focuses specifically on women from these generations who had at least one child at the time of data collection (2020/2021). This distinction is critical, as it ensures that the analysis is conducted within a comparable subset of each generation. However, this approach introduces certain limitations. For Generation Z, in particular, who were aged 15 to 25 at the time of the survey, the sample is inherently restricted by an age limit. This means that Generation Z women included in the study are those who have already begun motherhood at a relatively young age, which is likely associated with lower levels of education and economic status.

In contrast, Generation Z women with higher education and economic status are more likely to postpone marriage and childbirth and, as a result, are underrepresented in this sample. The postponement of first births among younger generations, particularly Generation Z, poses another limitation, as it creates a selection bias that may affect the comparability of behaviors across generations. Consequently, our findings should not be interpreted as reflective of the broader generational cohorts. Instead, this study specifically examines the behaviors of women from Generation X, Y, and Z who had at least one child at the time of the survey while acknowledging the age-related and socioeconomic factors that shape the composition of the Generation Z sample.

Future research should adopt longitudinal approaches to better capture the completed fertility patterns among Generations Y and Z, as many individuals in these cohorts may delay childbearing. Cross-cultural comparisons could also help assess the generalizability of son preference dynamics in diverse and rapidly changing demographic contexts.

Conclusion

This result marks an important milestone in investigating whether the sex of the firstborn child continues to influence the likelihood of having a second child across three generations

of Vietnamese women. It also encourages similar evaluations of son preference trends in Asian countries and other regions with strong male-preference cultures, where having a son is traditionally seen as crucial for securing support in old age and preserving the family lineage, as observed in Vietnam.

Our study highlights the persistence of son preference across generations of Vietnamese women. This tendency appears to be slightly more pronounced in Generation Z, even as the fertility rate in Vietnam has significantly declined in recent decades. These findings serve as a cautionary signal for Vietnam and other socioeconomically developing countries that have maintained low fertility rates for many decades to ensure a balanced gender structure in their populations. A declining number of children combined with entrenched son preference can have long-term consequences such as gender-based violence, rape, and the kidnapping of women, as has been documented in Chinese society.

It is essential for the Vietnamese government to reassess the effectiveness of media interventions aimed at addressing gender roles, particularly the persistence of male superiority ideologies, in light of declining fertility rates that threaten population sustainability. Similarly, countries with comparable demographic and cultural contexts should undertake rigorous empirical studies to evaluate the contemporary prevalence of son preference and to develop evidence-based policy responses. Key interventions should include comprehensive public education campaigns, gender-responsive policy reforms, and targeted media initiatives designed to shift deep-rooted cultural norms. In parallel, nationwide programs that elevate the value of daughters, financial incentives such as educational subsidies and tax benefits for families with daughters, stricter enforcement against prenatal sex selection, and expanded counseling services within reproductive health systems are critical to promoting gender equity and ensuring balanced demographic development.

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