From Prohibition to Choice: The Impact of Abortion Legalization on Fertility and Child Investments in Nepal *

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Abstract

We examine the impact of the legalization of one of the world's most stringent abortion laws on fertility decisions and child investments. In 2002, Nepal reformed its highly restrictive abortion laws, which previously criminalized pregnancy terminations and led to the prosecution and imprisonment of women and their family members. Exploiting quasi-random variation in the sex of the firstborn child, we estimate how the reform shaped family size, breastfeeding, vaccinations, and child survival. Legalization sharply reduced son-biased fertility stopping, narrowing sibship size disparities between firstborn-girl and firstborn-boy families. It also closed much of the pre-existing gap in breastfeeding duration for daughters, but had limited effects on vaccinations and survival. These results show that abortion access relaxed fertility constraints and selectively improved investments tied to fertility timing, while broader discriminatory practices persisted. The findings extend evidence on the quantity–quality trade-off by demonstrating how reproductive autonomy interacts with gender norms to shape both fertility behavior and child well-being.

Keywords: Abortion, Fertility, Breastfeeding, Nepal

JEL codes: J13, J16, I18, I14

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1 Introduction

Fertility and child investment decisions are jointly determined and shaped by the constraints and opportunities faced by households. Economic models of the family have long emphasized the quantity–quality trade-off, where parents allocate limited resources between the number of children and investments in each child (Becker and Lewis (1973); Becker and Tomes (1976)). When fertility falls, the model predicts an increase in per-child investments, potentially improving child health, education, and long-term outcomes. Empirically, this framework has been central to explaining fertility transitions and the rise of human capital in both historical and contemporary settings (Rosenzweig and Wolpin (1980); Angrist et al. (2010); Li et al. (2008)).

Yet the strength of this trade-off, and its implications for gender equity, depend heavily on context. In societies with son preference, fertility decisions are not only about the number of children but also about their composition. Families may continue childbearing until a desired number of sons are born, a behavior known as son-biased fertility stopping (Gupta (1987); Bhat and Zavier (2003)). This generates two reinforcing patterns: girls in son-preferring households tend to grow up with larger numbers of siblings, diluting resources, and they may also receive less direct investment in health, education, and survival (Jayachandran and Pande (2017)). The interaction of son preference with reproductive constraints thus produces systematic gender gaps in both fertility and child outcomes.

Policy environments play a crucial role in mediating these trade-offs. In contexts where abortion and contraception are restricted, parents have fewer tools to control fertility or sex composition, often leading to high fertility and reliance on discriminatory postnatal practices. Conversely, greater reproductive autonomy may allow parents to achieve desired family size and composition with fewer children, potentially reducing gender disparities in investments. Evidence from the introduction of abortion and contraception in high-income countries shows large impacts on women's autonomy, fertility timing, and child well-being (Goldin and Katz (2002); Bailey (2006); Levine et al. (1996); Gruber et al. (1999); Pop-Eleches (2006)). But the effects in low- and middle-income countries with ingrained son preference remain less well understood.

Nepal provides a compelling case study for investigating these dynamics. Until 2002, the country had one of the most restrictive abortion laws in the world, criminalizing pregnancy termination under all circumstances. Women faced imprisonment for seeking abortions, and unsafe procedures were a leading cause of maternal mortality (Tamang (1996); Thapa et al. (2014)). In response, the government enacted the National Safe Abortion Policy (2002), legalizing abortion under specified conditions and rapidly scaling up services through public–private partnerships (Samandari et al. (2012); Henderson et al. (2013)). This reform dramatically expanded women's reproductive autonomy.

The timing of legalization coincided with two other major shifts: a sharp fertility decline (from 4.6 births per woman in 1996 to 2.6 in 2011 (MoHP 2012)) and the rapid spread of ultrasound technology, enabling relatively cheap prenatal sex detection (Guilmoto (2009); Frost et al. (2013)). These simultaneous changes created conditions in which households could reconcile a smaller desired family size with strong son preference by turning to abortion, including sex-selective abortion. This intersection of declining fertility, gender norms, and expanded reproductive rights makes Nepal a natural laboratory for studying how abortion reforms interact with the quantity–quality trade-off in a son-preferring society.

This paper situates Nepal's reform within the broader literature. Studies from Taiwan show that abortion legalization, combined with access to prenatal sex detection, altered sex ratios at birth and reduced relative female mortality at higher parities (Lin et al. (2014)). Research from India indicates that access to sex selection sometimes improved postnatal investments in girls by reducing the number of "unwanted" daughters (Anukriti et al. (2016); Hu and Schlosser (2015)), but in other contexts, exacerbated female disadvantage (Almond et al. (2010)). Evidence from Mexico (Clarke and Mühlrad (2016)) and Ethiopia (Holcombe and Kidanemariam Gebru (2022)) suggests that legalization reduced fertility and improved maternal and early child outcomes, though causal evidence on direct postnatal investments remains scarce.

This paper contributes to these debates in three ways. First, it provides the first causal evidence on the effects of abortion legalization on fertility and child investments in Nepal, exploiting quasi-random variation in the sex of the firstborn child as a proxy for parental incentives to engage in sex selection. Second, by combining six waves of the Nepal Demographic and Health Survey (NDHS) and implementing a triple-difference design, it isolates the reform's effects on both fertility (quantity) and gender gaps in parental investments (quality). Third, it speaks directly to the quantity–quality trade-off in a setting where cultural preferences over child gender are strong, showing how reproductive rights reforms reshape not just family size but also the distribution of investments between sons and daughters.

By examining these questions, the paper highlights the broader implications of expanding women's reproductive autonomy in patriarchal societies. Abortion legalization may not only reduce fertility but also alter the intra-household allocation of resources and care, with consequences for gender equity in child well-being.

2 Literature Review and Contribution

This paper situates the study within two key strands of literature: (i) research on the consequences of expanding women's reproductive autonomy on fertility and child outcomes, and (ii) the operation of the quantity–quality trade-off in contexts with entrenched son preference. Together, these literatures provide the theoretical and empirical foundation for understanding how abortion legalization in Nepal shaped fertility behavior and gender gaps in parental investments.

A substantial body of research has examined the role of reproductive autonomy in shaping fertility, women's life trajectories, and child outcomes. In high-income countries, access to contraception and abortion has been shown to transform women's lives. Early access to oral contraceptives expanded women's control over fertility timing, which in turn improved their educational and labor market outcomes and reshaped marriage patterns (Goldin and Katz (2002); Bailey (2006)). Legalization of abortion further reduced unintended fertility and allowed women to better align childbearing with their desired life course.

Evidence also points to large long-term effects. Levine et al. (1996) and Gruber et al. (1999) show that abortion legalization in the United States improved the circumstances of the "marginal child," leading to higher average parental investments and better child outcomes. Pop-Eleches (2006) finds that the reversal of abortion access in Romania worsened children's long-term educational and labor market trajectories, consistent with the idea that unwanted births dilute household resources. Collectively, this literature establishes that reproductive autonomy affects both the quantity of children and the quality of investments per child.

In low- and middle-income countries, evidence remains more limited but is growing. Clarke and Mühlrad (2016) find that abortion legalization in Mexico reduced fertility and maternal mortality, while Holcombe and Kidanemariam Gebru (2022) document similar fertility declines in Ethiopia. In Taiwan, Lin et al. (2014) show that access to abortion in conjunction with prenatal sex detection altered sex ratios at birth and reduced relative female mortality at higher parities. Yet most of these studies focus on fertility and survival outcomes; fewer examine how legalization affects postnatal parental investments such as breastfeeding, vaccination, or schooling.

Economic models of the family emphasize the trade-off between the number of children (quantity) and the investments made in each child (quality) (Becker and Lewis (1973); Becker and Tomes (1976)). In this framework, households face a budget constraint: as fertility rises, resources per child fall, while fertility decline creates scope for greater per-child investment. This model provides a powerful lens for understanding fertility transitions and human capital accumulation.

Empirical evidence supports the existence of the trade-off in diverse settings. Rosenzweig and Wolpin (1980) show that exogenous variation in fertility affected child schooling outcomes in India, while Angrist et al. (2010) demonstrate similar effects in Israel. Li et al. (2008) document a trade-off in China, where fertility reductions were associated with improvements in child education. These findings underscore that declines in fertility often coincide with greater human capital investments, consistent with the predictions of the model.

However, the trade-off is not uniform across contexts. Studies emphasize that its magnitude depends on parental preferences, household resources, and cultural norms (Rosenzweig and Zhang (2009); Black et al. (2005)). In particular, gender preferences complicate its operation. When families value sons over daughters, fertility reductions may disproportionately benefit boys, leaving girls disadvantaged even as overall resources per child increase.

In South Asia, strong son preference has long shaped fertility and investment decisions (Gupta (1987); Bhat and Zavier (2003)). Sons are often seen as economic and social assets, while daughters are viewed as financial liabilities due to dowry and marriage practices (Jayachandran and Pande (2017)). This preference manifests in son-biased fertility stopping, where families continue childbearing until a desired number of sons are born. As a result, girls often grow up in larger sibships, facing diluted resources relative to boys.

Empirical work documents the consequences of son preference for child outcomes. Girls in son-preferring households receive less schooling, fewer health inputs, and face higher mortality, despite the biological survival advantage of female infants (Waldron (1998); Jayachandran and Kuziemko (2011)). Access to prenatal sex-detection technologies has further complicated these dynamics. In India, Anukriti et al. (2016) find that access to abortion and sex selection narrowed gender gaps in breastfeeding and vaccination by increasing the "wantedness" of surviving girls. Similarly, Hu and Schlosser (2015) show that in areas with higher uptake of sex selection, girls' nutritional status and survival improved. In contrast, Almond et al. (2010) document that in some settings, prenatal sex determination increased female neonatal mortality without corresponding improvements in postnatal investments. These mixed results highlight that the consequences of sex selection are highly context-dependent, shaped by cultural norms, fertility preferences, and the availability of health services.

This paper makes three contributions to the literature. First, it provides the first comprehensive causal evidence on the consequences of abortion legalization for both fertility and postnatal child investments in Nepal, a country with deep-rooted son preference and historically restrictive reproductive laws. By exploiting quasi-random variation in the sex of the firstborn child, a strong predictor of parents' incentive to engage in sex selection, the analysis isolates the effect of legalization on both fertility (quantity) and gender gaps in investments (quality).

Second, it extends the literature on the quantity–quality trade-off by showing how its operation is mediated by cultural preferences. The results demonstrate that abortion legalization reduced fertility disparities between firstborn-girl and firstborn-boy families and narrowed breastfeeding gaps, consistent with a relaxation of constraints in the trade-off. However, the absence of strong effects on vaccination or survival underscores that cultural son preference continues to shape intrahousehold resource allocation, even when fertility pressures decline.

Third, the chapter contributes to debates on reproductive rights in low- and middle-income countries by highlighting the dual role of legalization: as a public health intervention that reduced unsafe abortion and maternal mortality (Henderson et al. (2013)) and as a demographic intervention that altered the intrahousehold distribution of investments. The Nepal case illustrates that expanding reproductive autonomy can reduce son-biased fertility stopping and modestly improve gender equity in early-life care, but that broader progress requires complementary interventions to challenge discriminatory norms and expand access to child health services.

3 Fertility Trends in Nepal

In Nepal, son preference is deeply embedded in patriarchal traditions. Sons are regarded as economic and social assets, while daughters are often viewed as financial liabilities due to dowry obligations and the expectation of marriage outside the parental home. Structural factors reinforce this bias: inheritance and land rights disproportionately favor men; ageing parents typically depend on sons for support; men's greater participation in formal, income-generating activities places them in household decision-making roles; and certain religious rituals, such as funeral rites, can only be performed by sons.

This strong son preference shapes fertility behavior, leading to larger numbers of male children and unequal allocation of resources to girls, thereby contributing to female disadvantage in health and survival. According to the 2011 Census, among children under age 10, boys outnumbered girls by 2.2 percent, with disparities more pronounced in urban areas (5.6 percent) than rural areas (1.7 percent). Despite the biological survival advantage of female newborns (Waldron (1998)), Nepal's mortality patterns diverge: male neonatal mortality exceeds female rates (37 versus 33 per thousand live births), but female post-neonatal mortality (ages 28 days to one year) surpasses that of males (19 versus 17 per thousand) (MoHP (2012)).

The spread of prenatal sex-determination technology, particularly ultrasound, has further enabled couples to act on son preference through sex-selective abortion, contributing to elevated sex ratios at birth (SRB) and broader population imbalances (Guilmoto (2009)). Ultrasound services have become widely accessible over the past decade, costing as little as USD 6 even in rural and remote areas (NHSPP (2013)).

At the same time, fertility in Nepal has declined sharply—from 4.6 births per woman in 1996 to 2.6 in 2011 (MoHP (2012)). The legalization of abortion in 2002 (policy details below) and subsequent expansion of safe abortion services have further altered reproductive decision-making. Together, the availability of sex-detection technology, entrenched son preference, expanded abortion access, and rapid fertility decline create conditions conducive to sex-selective abortion, skewed sex ratios, and long-term demographic challenges, including shortages of marriageable women, and potentially heightened risks of gender-based violence, abduction, and trafficking (Hesketh and Xing (2006); Bien et al. (2013)).

National Safe Abortion Policy and Strategy

Prior to 2002, abortion was considered a criminal act (homicide) in the *Muluki Ain* (the National Legal Code). Due to the restrictive law, most of the abortions were conducted illegally by unqualified personnel. These service providers used many barbaric procedures, like inserting cow dung, unknown medicines, or herbal mixtures into the uterus (Tamang (1996)). Deaths from abortion-related complications accounted for more than half of the maternal deaths that occurred in major hospitals (Thapa et al. (2014)). In 1997, 20% of women in Nepali jails had been convicted on charges of abortion or infanticide. Mostly poor and illiterate, they were kept in miserable conditions, unable to afford legal assistance or even to understand what had happened to them. Only women were imprisoned; their male partners and the abortion providers were not held accountable.

In 2002, in response to mounting evidence of maternal deaths and injuries from unsafe abortions and to expand women's reproductive autonomy, the Government of Nepal amended the *Muluki Ain* 1959, which had previously prohibited abortion under all circumstances and classified it as an offense against life. The amendment paved the way for the National Safe Abortion Policy and Strategy 2002, which guarantees access to safe abortion services under specific conditions: up to 12 weeks of gestation with the pregnant woman's consent; up to 18 weeks in cases of rape or incest; and at any stage of pregnancy if it endangers the woman's life, physical, or mental health, or in the case of a severe fetal anomaly, with the recommendation of a medical practitioner and the woman's consent (MoHP (2002)). Sex-selective abortion is "prohibited"[1], and adult consent is required for girls less than 16 years old.

In 2004, Nepal's first certified abortion clinic opened, marking the beginning of a steady expansion of services. In partnership with non-governmental organizations, the government launched a nationwide program to train abortion providers and ensure the safety and accessibility of care (Samandari et al. (2012)). Initially, training in manual vacuum aspiration (MVA) was limited to physicians; however, beginning in 2008, staff nurses and auxiliary nurse midwives were permitted to perform MVA for pregnancies up to eight weeks. Second-trimester abortion training and certification for physicians commenced in 2007, and medication abortion was incorporated into the

[1]Despite sex-selective abortion being banned, evidence suggests that it is still prevalent (Frost et al. (2013); Lamichhane et al. (2011)) because of difficulty ascertaining whether families are seeking abortion for sex-selection purposes, and fear that women will resort to unsafe abortion if they are under pressure to bear sons but unable to access safe abortion services.

safe abortion program in 2009. Research indicates a substantial long-term reduction in maternal health risks, such as infection and injury, following the reform, with declines in sepsis observed even during the early implementation phase (Henderson et al. (2013)).

4 Data and Measurement

4.1 Data

This paper pools the data from six waves of Nepal Demographic and Health Survey (NDHS), conducted in 1996, 2001, 2006, 2011, 2016, and 2022. These surveys are nationally representative and include complete birth histories for surveyed women, including children's year of birth, birth order, age at death, and mother's age at birth. The 1996 survey interviewed 8,429 ever-married women; the 2001 survey interviewed 8,726 women; the 2006 survey interviewed 10,793 women; the 2011 survey interviewed 12,674 women; the 2016 survey interviewed 12,862 women; and the 2022 survey interviewed 14,845 women, all aged 15 to 49.

For the mortality and postnatal health specifications, all births of the surveyed women are pooled to create a child-level dataset [2]. For birth analysis, we create a mother-year panel in which a woman enters the panel in her year of marriage and exits in the year of the survey. Finally, for the fertility analysis, we pool all surveyed women to form a woman-level dataset. The sample excludes women below the age of 15 and women in the data who had never given birth by the time of the survey.

The summary statistics for fertility, child health investments, and mortality are provided in Table 1. The average mother in the sample is 37 years old, with ages ranging from 16 to 49. A large majority (86 percent) identify as Hindu. Only 21 percent of mothers and 32 percent of fathers have at least a primary education. The mean household wealth index falls around the middle of the distribution (2.67 on a scale of 1 to 5). On average, mothers report having nearly five children, with family sizes ranging from 2 to 16. Children are breastfed for about 21 months on average, though the duration varies widely across families. The under-five mortality rate is 12 percent, and children receive an average of 6.3 vaccinations out of a maximum of 8.

[2] For mortality analyses, we drop children that are less than five years old to allow each child in the sample full exposure to the risk of under-five mortality. We also include drop children who are older than the age of 15 at the time of the survey.

Table 1: Summary Statistics

	Mean	Std. Dev	Min	Max
Mother's age	36.96	7.51	16.00	49.00
$\mathbb{1}$ [Hindu]	0.86	0.35	0.00	1.00
Mother's education (At least primary)	0.21	0.41	0.00	1.00
Father's education (At least primary)	0.32	0.47	0.00	1.00
Wealth Quintile	2.67	1.41	1.00	5.00
Number of children	4.91	2.22	2.00	16.00
Months of breastfeeding	21.33	11.61	0.00	35.00
Under-five mortality (in %)	12.19	32.72	0.00	100.00
No. of vaccinations	6.30	2.69	0.00	8.00

Notes: Data source: Nepal Demographic and Health Survey (NDHS).

4.2 Measurement

Abortion was legalized nationwide in 2002, but service availability expanded gradually.[3] To capture temporal variation in access, we classify the data into three periods: pre-legalization (1990–2002), early legalization (2003–2007), and late legalization (2008–2018), when access and utilization became widespread. Differentiating between the two post-legalization periods is important, as the late period saw the introduction of second-trimester abortion training, the authorization of nurses to provide services, and the integration of medical abortion into the national program. The early legalization period is referred to as $Post^1$ and the late legalization period is referred to as $Post^2$ for the remainder of the paper.

The NDHS includes women's complete birth histories and their children's year of birth and other outcomes. Our first fertility analysis relies on the mother's birth profile. We construct a variable *Birth* which observes each woman from the year of her marriage until the survey year and assign a value of one if the mother gave birth in a certain year and zero if not. The variable *FirstbornGirl* is used directly from the survey data and takes the value of one if the mother's first child is a girl. We interact this variable with the *Post* variables to create our main outcome of interest, $FirstbornGirl \times Post$. Our second fertility analysis uses the variable *N*, which uses the number of children that the mother had during the time of the survey.

For the quality analyses, we use the mother's reported answers for the months of breastfeeding[4] and the number of vaccinations that a child has received during the time of the survey. Finally,

[3]Table A1 provides further details.

[4]Breastfeeding results are based on the last two surviving births of a mother and are based on the sample of children above age two to take into account censoring issues.

the under-five mortality is defined as the percentage of births that die before the age of five.

5 Empirical Strategy

Our identification strategy relies on two key facts: (a) the sex of the firstborn child is effectively random, which we demonstrate empirically rather than assume in Figure A2, and (b) sex-selective abortion at second and higher-order births occurs primarily in families whose firstborn is a daughter (Figure A3). The central identifying assumption, tested directly in our analysis in Figure A1, is that, absent access to ultrasound technology, trends in outcomes would have evolved similarly for families with firstborn sons and firstborn daughters.

We implement a triple-difference strategy, exploiting the birth cohort variation in exposure to the new technology and interacting it with the sex of the mother's firstborn child, a well-established proxy for the propensity to engage in sex selection. Because our primary interest lies in gender gaps in parental investments and survival, we further incorporate the sex of the child as a third interaction. Using a triple DiD also allows us to control for fixed effects by birth year, state, and birth order, as well as their interactions with child sex and the sex of the firstborn.

Following Anukriti et al. (2016), we examine the impact of the legalization of abortion in gender gaps in fertility in two ways. First, we test if the legalization changed the probability of birth in a given year for mothers with firstborn girls versus firstborn boys. To do this, we construct a retrospective mother-year panel, where each woman is observed from the year of her marriage until the survey year. We estimate

$$
\begin{aligned}
Birth_{it} = \alpha + \beta_1 FirstbornGirl_i \times Post^1_t + \beta_2 FirstbornGirl_i \times Post^2_t + \\
\gamma FirstbornGirl_i + \omega_t + \boldsymbol{X}'_i \tau + \phi_a + \psi_b + \sigma_r + \delta_d + \nu_d FirstbornGirl_i + \theta_{dt} + \epsilon_{it} \quad (1)
\end{aligned}
$$

for mother i from district d, aged a in year t, who has had $b-1$ children by year t and whose last birth occurred r years ago. The outcome variable $Birth_{it}$ equals one if the mother gave birth in year t. The variable $FirstbornGirl_i$ equals one if mother j's first child is a girl, and zero otherwise. $Post^1_t$ indicates that year t falls within the early years after the abortion legalization (2003-2007), while $Post^2_t$ corresponds to the later years after the abortion ban was lifted (2008-2018). The vector $\boldsymbol{X}_i$ comprises indicators for household wealth quintiles, the mother's and her husband's education level, region of residence, residence in a rural area, and the mother's year of birth. The fixed effects include year (ω_t), district (δ_d), birth parity (ψ_b), years since last birth (σ_r), district-specific firstborn-girl fixed effects ($\nu_d FirstbornGirl_i$), and district-specific year fixed effects (θ_{dt}). The standard errors are clustered by district, and we have seventy-five districts in our sample.

The second analysis examines whether the legalization of abortion had an effect on the total number of children a woman had at the time of the survey. We estimate

$$\begin{aligned} N_{jt} = \alpha + \beta_1 FirstbornGirl_j \times Post_t^1 + \beta_2 FirstbornGirl_j \times Post_t^2 + \gamma FirstbornGirl_j + \sigma Post_t^1 \\ + \psi Post_t^2 + \boldsymbol{X}_j' \tau + \delta_d + \nu_d FirstbornGirl_j + \theta_d Post_t^1 + \omega_d Post_t^2 + \epsilon jt. \quad (2) \end{aligned}$$

for mother j from district d who has had N_{jt} children as of the year of the survey t. To ensure consistent exposure, we restrict the sample to mothers who had all their births within a single period—either pre-legalization, early legalization (2003–2007), or late legalization (2008-2018). Thus, $Post_t^1$ and $Post_t^2$ indicate that the woman began and completed childbearing during the early or late legalization periods, respectively. As before, $FirstbornGirl_j$ is an indicator for whether the woman's first child was a girl. The vector $\boldsymbol{X}_j$ includes controls for household wealth quintiles, the education levels of the woman and her husband, rural residence, and the woman's birth year. The coefficients β_1 and β_2 test our hypothesis that there was less son bias in fertility decisions after the legalization.

We examine three quality outcomes for children: months of breastfeeding, number of vaccinations, and under-five mortality. For all three, we estimate the following equation

$$\begin{aligned} Y_i = \alpha + \beta_1 FirstbornGirl_j \times Female_i \times Post_t^1 + \beta_2 FirstbornGirl_j \times Female_i \times Post_t^2 \\ + \gamma FirstbornGirl_j \times Female_i + \omega_t FirstbornGirl_j + \sigma_t Female_i + \boldsymbol{X}_{ijt}' \tau + \delta_r Female_i \\ + \nu_r FirstbornGirl_j + \psi_b Female_i + \xi_b FirstbornGirl_j + \rho_{bt} + \eta_{bd} + \phi_{dt} + \epsilon_i \quad (3) \end{aligned}$$

for child i of birth order b born to mother j in year t and district d. The dependent variable Y_i is an indicator for either the months of breastfeeding, number of vaccinations, or mortality for child

i. $Post_t^1$, $Post_t^2$, and $FirstbornGirl_j$ are defined as earlier. β_1 and β_2, the coefficients of the two triple interaction terms are our coefficients of interest. This equation is estimated for second- and higher-order births, making pre-ultrasound births and second- and higher-order births to mothers whose firstborn is a boy our control group. The standard errors are clustered by district.

We do not observe large differences in the socioeconomic characteristics of firstborn-boy and firstborn-girl families (Table 2), so selection on the sex of the firstborn is of limited concern. However, we still control for socioeconomic conditions like wealth, education, and location, and consider sensitivity of the estimates to conditioning upon a mother's stated desired fertility and desired sex composition of children.

6 Results

This section presents the effects of abortion legalization on fertility and child investments in Nepal. I first examine fertility outcomes, focusing on son-biased fertility stopping behavior, and then turn to parental investments, including breastfeeding, vaccination, and child survival.

6.1 Quantity Results

In Tables 3 and 4, we present the impacts of the introduction of abortion legalization on son-biased fertility stopping. The results provide clear evidence that abortion legalization significantly reduced son-biased fertility stopping. Prior to legalization, families with a firstborn daughter were substantially more likely to continue childbearing than those with a firstborn son. The coefficient of $FirstbornGirl_i$ is positive and significant, confirming that the women whose first child was a girl were 4 p.p. more likely to give birth in a given year. This behavior reflects the well-documented "fertility-stopping rule" in South Asia, where households pursue additional births until they achieve their desired number of sons (Gupta (1987); Bhat and Zavier (2003)). Consistent with this pattern, our estimates show that mothers with a firstborn daughter were more likely to give birth in any given year and had, on average, more children over their reproductive span compared to firstborn-boy mothers.

After the 2002 reform, these gaps narrowed dramatically. The difference in sibship size between firstborn-girl and firstborn-boy families declined by nearly three-quarters, suggesting that

Table 2: Test of Balance in Samples by the Sex of the Firstborn

	1990-2002		2003-2007		2008-2018		All years
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	FB	FG	FB	FG	FB	FG	FB-FG
Rural	0.11	0.11	0.17	0.16	0.24	0.23	0.0022
Mother's education							
No education	0.63	0.64	0.41	0.41	0.22	0.22	-0.00013
Incomplete secondary	0.31	0.30	0.47	0.47	0.56	0.57	0.00055
Secondary or higher	0.06	0.06	0.12	0.12	0.22	0.21	-0.00039
Father's education							
No education	0.23	0.24	0.15	0.15	0.09	0.09	0.0010
Incomplete secondary	0.30	0.30	0.32	0.31	0.31	0.32	0.0016
Secondary or higher	0.47	0.46	0.54	0.54	0.59	0.59	-0.0026
Mother's birth cohort							
1960-1975	0.35	0.37	0.01	0.01	0.00	0.00	-0.0061
1975-1990	0.50	0.48	0.95	0.95	0.37	0.39	0.0030
1990-2005	0.00	0.00	0.02	0.02	0.63	0.61	0.0059
Mother's age at birth							
12-15	0.04	0.03	0.03	0.03	0.02	0.02	0.0022
16-18	0.33	0.33	0.28	0.30	0.26	0.25	-0.0087
19-24	0.56	0.56	0.59	0.59	0.59	0.60	-0.0028
25-30	0.07	0.07	0.09	0.08	0.11	0.11	0.0025
31-49	0.01	0.01	0.01	0.01	0.02	0.02	-0.0011
Household wealth							
Second quintile	0.19	0.20	0.20	0.19	0.20	0.20	-0.0034
Third quintile	0.20	0.19	0.19	0.19	0.21	0.20	0.0061
Fourth quintile	0.20	0.18	0.18	0.19	0.20	0.20	0.0077^{*}
Richest quintile	0.20	0.20	0.18	0.18	0.14	0.15	-0.0026

Notes: This table compares the socioeconomic characteristics of firstborn-boy (FB) and firstborn-girl (FG) families during the pre-legalization period and the two post-legalization periods in the DHS sample. The sample is restricted to first births, as only these are quasi-random. Column (7) shows the difference in sample means for the entire sample. $p < 0.1^{*} p < 0.05^{**} p < 0.01^{***}$

families no longer needed to rely as heavily on continued childbearing to achieve desired composition. The results are robust across specifications and persist when we restrict the sample to mothers whose entire fertility occurred within the same policy regime, addressing concerns about inconsistent exposure. The effects are already noticeable in the early legalization period and become more pronounced in the late legalization period.

Table 3: Probability of Birth

	(1)	(2)	(3)	(4)	(5)
FirstbornGirl	0.0440***	0.0463***			
	(0.0021)	(0.0022)			
FirstbornGirl X Post 1	-0.0234***	-0.0275***	-0.0274***	-0.0272***	-0.0271***
	(0.0027)	(0.0029)	(0.0029)	(0.0029)	(0.0030)
FirstbornGirl X Post 2	-0.0292***	-0.0353***	-0.0358***	-0.0353***	-0.0351***
	(0.0027)	(0.0028)	(0.0029)	(0.0029)	(0.0030)
FirstbornGirl X Ideal fraction of sons					0.0587***
					(0.0080)
FirstbornGirl X Ideal number of children					-0.0036*
					(0.0019)
N	566,868	566,867	566,867	560,993	560,993
X_i	×	×	×	×	×
$Year\,FEs$	×	×	×	×	×
$District\,FEs$	×	×	×	×	×
$Age\,FEs$	×	×	×	×	×
$Parity\,FEs$	×	×	×	×	×
$District \times year\,FEs$	×	×	×	×	×
$Years\,since\,last\,birth\,FEs$	×	×	×	×	×
$FirstbornGirl \times district\,FEs$			×	×	×

Notes: Coefficients from specification 1 estimated using OLS regression on the mother-year sample from the year of their marriage to the year of interview. The dependent variable is an indicator for whether a mother gave birth in a given year. The sample includes all mothers who have ever given birth. SEs in parentheses are clustered by district. Data: NDHS. $p < 0.1^{*} p < 0.05^{**} p < 0.01^{***}$

The findings of Table 4 confirm the results of Table 3, and we see that the coefficient of $FirstbornGirl_j$ is positive and significant. This indicates that the women with a firstborn girl child had 0.187 more births than women with a firstborn son. Column (3) of the table shows that the pre-ultrasound gap in the number of births declined by 0.051 to 0.147, or by 30% to 80%.

These findings resonate with prior work on the fertility consequences of abortion reforms in other contexts mentioned in Section 2. Our results extend this literature by showing that in a setting with strong son preference, legalization specifically attenuated son-biased stopping behavior, aligning with the predictions of the quantity–quality trade-off model (Becker and Lewis (1973); Becker and Tomes (1976)). By enabling families to achieve smaller, desired families, legalization reduced the costs borne disproportionately by daughters in larger sibships.

Table 4: Fertility

	Number of Births			Excess Fertility	
	(1)	(2)	(3)	(4)	(5)
FirstbornGirl	0.2004***	0.1735***	0.1871**	0.1234***	0.0160
	(0.0190)	(0.0192)	(0.0817)	(0.0214)	(0.0609)
FirstbornGirl X Post 1	-0.1790***	-0.1464***	-0.1472***	-0.1017**	-0.0886**
	(0.0281)	(0.0334)	(0.0363)	(0.0392)	(0.0415)
FirstbornGirl X Post 2	-0.0512*	-0.0501*	-0.0508*	-0.0223	-0.0077
	(0.0259)	(0.0268)	(0.0281)	(0.0295)	(0.0318)
Ideal number of children		0.1970***	0.2068***		
		(0.0207)	(0.0334)		
Ideal fraction of sons		0.0775***	0.0661*	-0.5383***	-0.5774***
		(0.0250)	(0.0349)	(0.0201)	(0.0269)
FirstbornGirl X Ideal fraction of sons			0.0187		0.0825**
			(0.0421)		(0.0406)
FirstbornGirl X Ideal number of children			-0.0155		
			(0.0405)		
N	21,822	15,492	15,492	15,492	15,492

Notes: Coefficients from specification 2 estimated using OLS regression. The dependent variable in columns (1) to (3) is the number of births at the time of interview, and the dependent variable in columns (4) to (5) is the excess fertility, which equals the number of births minus the self-reported ideal number of children. Sample includes all mothers who had both their first birth and last birth within the Pre, Post1, and Post2 periods. SEs in parentheses are clustered by district. Data: NDHS. $p < 0.1^{*} p < 0.05^{**} p < 0.01^{***}$

6.2 Quality Results

We present the estimates of the impact of abortion legalization on parental health investments in Tables 5 to 7, presented in specification (3).

6.2.1 Breastfeeding Results

Turning to parental investments, I find strong evidence that abortion legalization narrowed gender gaps in breastfeeding duration. Table 5 reports the estimated impact of legalization on breastfeeding behavior. Additional control variables are sequentially incorporated across columns from left to right. The coefficient on $FirstbornGirl \times Female$ for breastfeeding in the table confirms that before the reform, daughters in firstborn-girl families were breastfed for shorter durations than their brothers, reflecting a behavioral pattern documented elsewhere in South Asia (Jayachandran and Kuziemko (2011)). This is consistent with the notion that breastfeeding doubles as a form of birth spacing: families eager to conceive again may shorten breastfeeding for daughters to accelerate the next pregnancy, particularly if they have not yet had a son.

The triple interaction coefficients, $FirstbornGirl_j \times Female_i \times Post_t^1$ and $FirstbornGirl_j \times Female_i \times Post_t^2$ show that this difference was significantly reduced in the post-legalization period. In the late post-reform period, daughters in firstborn-girl families experienced significant increases in breastfeeding duration, closing much of the pre-existing disadvantage. These results suggest that with abortion available as an alternative fertility-control mechanism, families no longer needed to manipulate breastfeeding practices to pursue son-biased fertility goals.

To document the underlying variation and highlight behavioral differences between families with firstborn boys and girls, Table 6 decomposes the triple-difference estimates. It reports a double-difference version of specification 3 separately for firstborn-girl and firstborn-boy families. At baseline, girls in firstborn-boy families were breastfed for a shorter duration than boys; however, the breastfeeding gap was substantially larger for girls in firstborn-girl families. Following legalization, breastfeeding duration for girls in firstborn-girl families increased significantly.

This finding complements evidence from India, where access to sex selection has been shown to improve postnatal investments in surviving daughters by reducing their "unwantedness" (Anukriti et al. (2016); Hu and Schlosser (2015)). At the same time, it contrasts with studies showing that access to sex determination technology sometimes worsened female survival in contexts where postnatal discrimination persisted (Almond et al. (2010)). The Nepal case thus highlights how legalization can ease constraints on fertility while also shifting intrahousehold allocation toward more equitable treatment, at least in domains closely tied to fertility timing.

6.2.2 Vaccination and Mortality Results

For other child health investments, the evidence is more muted. Table 7 shows that vaccination rates, while higher for boys in firstborn-girl families before legalization, do not exhibit significant convergence after the reform. These null results suggest that while legalization reduced fertility pressures and improved breastfeeding practices, it did not translate into broad-based equalization across all health inputs. One interpretation is that investments like vaccination are less directly tied to fertility decisions than breastfeeding, and thus less responsive to changes in reproductive autonomy.

Table 5: Breastfeeding as a Function of Abortion Legalization and the Sex of the Firstborn

	(1)	(2)	(3)	(4)	(5)
Firstborn girl * Female	-1.8333***	-1.7203***	-1.6596**	-1.6613**	-1.6127**
	(0.6479)	(0.6444)	(0.6672)	(0.6401)	(0.6646)
Firstborn girl * Female * Post1	1.5867	1.5775	1.7243*	1.5009	1.6557*
	(0.9679)	(0.9489)	(0.9528)	(0.9424)	(0.9473)
Firstborn girl * Female * Post2	1.7968***	1.7067**	1.6563**	1.5683**	1.5320**
	(0.6472)	(0.6485)	(0.6714)	(0.6541)	(0.6789)
N	5,992	5,990	5,944	5,990	5,944
X_{ijt}	×	×	×	×	×
$District\,FEs$	×	×	×	×	×
$Year\,FEs$	×	×	×	×	×
$Age\,FEs$	×	×	×	×	×
$FirstbornGirl \times birthyearFEs$			×		×
$Female \times birthorderFEs$			×		×
$Birthorder \times birthyearFEs$			×		×
$Birthorder \times regionFEs$			×		×
$FirstbornGirl \times regionFEs$			×		×
$FirstbornGirl \times birthorderFEs$			×		×
$Additional\,X_{ijt}$				×	×

Notes: This table reports breastfeeding effects (in months) for children of second- and higher-order birth order. Results are based on the last two surviving births of a mother, and we restrict the sample to children above age two. Coefficients are from the specification 3 estimated using OLS regression. SEs in parentheses are clustered by district. Data: NDHS. $p < 0.1^{*} p < 0.05^{**} p < 0.01^{***}$

Table 6: Breastfeeding by Firstborn Sex

	Firstborn girl family			Firstborn boy family		
	(1)	(2)	(3)	(4)	(5)	(6)
Female	-2.0394***	-2.0438***	-2.0193***	-0.1869	-0.2501	-0.2858
	(0.5121)	(0.5015)	(0.5021)	(0.4435)	(0.4421)	(0.4409)
Female * Post1	0.6168	0.6274	0.6163	-0.9412	-1.0304	-0.9962
	(0.7342)	(0.7116)	(0.7161)	(0.6706)	(0.6833)	(0.6821)
Female * Post2	2.0201***	2.0324***	1.9495***	0.2478	0.3030	0.3674
	(0.5149)	(0.5078)	(0.5153)	(0.4404)	(0.4389)	(0.4485)
N	3,136	3,133	3,133	2,850	2,849	2,849

Notes: This table reports breastfeeding effects (in months) for children of second- and higher-order birth order. Results are based on the last two surviving births of a mother, and we restrict the sample to children above age two. Each column is a separate OLS regression. SEs in parentheses are clustered by district. Data: NDHS. $p < 0.1^{*} p < 0.05^{**} p < 0.01^{***}$

Table 7: Vaccination as a Function of Abortion Legalization and the Sex of the Firstborn

	(1)	(2)	(3)	(4)	(5)
Firstborn girl * Female	-0.1636	-0.1634	-0.1731*	-0.1577	-0.1663*
	(0.1015)	(0.1014)	(0.1002)	(0.0992)	(0.0984)
Firstborn girl * Female * Post1	0.1468	0.1457	0.1109	0.1711	0.1359
	(0.2135)	(0.2104)	(0.1929)	(0.2049)	(0.1888)
Firstborn girl * Female * Post2	0.1730	0.1723	0.1463	0.1850	0.1577
	(0.1816)	(0.1781)	(0.1723)	(0.1793)	(0.1725)
N	13,629	13,629	13,606	13,629	13,606
X_{ijt}	×	×	×	×	×
$District\,FEs$	×	×	×	×	×
$Year\,FEs$	×	×	×	×	×
$Age\,FEs$	×	×	×	×	×
$FirstbornGirl \times birthyearFEs$			×		×
$Female \times birthorderFEs$			×		×
$Birthorder \times birthyearFEs$			×		×
$Birthorder \times regionFEs$			×		×
$FirstbornGirl \times regionFEs$			×		×
$FirstbornGirl \times birthorderFEs$			×		×
$Additional\,X_{ijt}$				×	×

Notes: This table reports vaccination effects for children of second- and higher-order birth order. Coefficients are from the specification 3 estimated using OLS regression. SEs in parentheses are clustered by district. Data: NDHS. $p < 0.1^{*} p < 0.05^{**} p < 0.01^{***}$

In line with the preceding results, Table 8 indicates that, during the pre-legalization period, the probability of dying before age five was significantly higher for girls with a firstborn sister compared to those with a firstborn brother. This gap narrowed significantly in the early-legalization period, though this effect does not persist in the long run. This echoes findings from Taiwan (Lin et al. (2014)) and parts of India (Hu and Schlosser (2015)), where access to abortion or prenatal sex detection improved relative female survival in some periods but not consistently across all settings. In Nepal, legalization may have reduced the most extreme cases of postnatal discrimination in the immediate aftermath, but the cultural norms appear to have limited sustained gains.

6.3 Robustness Checks

The baseline results establish that abortion legalization reduced son-biased fertility stopping and narrowed certain gender gaps in parental investments, particularly breastfeeding. In this section, I present a series of robustness checks to address potential concerns about exposure, measurement, and alternative mechanisms.

Table 8: Excess Female Under-Five Mortality

	(1)	(2)	(3)	(4)	(5)
Firstborn girl * Female	0.0220**	0.0216**	0.0195**	0.0211**	0.0190**
	(0.0083)	(0.0084)	(0.0080)	(0.0083)	(0.0078)
Firstborn girl * Female * Post1	-0.0442**	-0.0437**	-0.0383**	-0.0429**	-0.0374**
	(0.0177)	(0.0177)	(0.0174)	(0.0177)	(0.0174)
Firstborn girl * Female * Post2	-0.0007	0.0004	-0.0003	0.0014	0.0008
	(0.0145)	(0.0146)	(0.0146)	(0.0144)	(0.0145)
N	38,698	38,698	38,666	38,697	38,665
X_{ijt}	×	×	×	×	×
$District\,FEs$	×	×	×	×	×
$Year\,FEs$	×	×	×	×	×
$Age\,FEs$	×	×	×	×	×
$FirstbornGirl \times birthyearFEs$			×		×
$Female \times birthorderFEs$			×		×
$Birthorder \times birthyearFEs$			×		×
$Birthorder \times regionFEs$			×		×
$FirstbornGirl \times regionFEs$			×		×
$FirstbornGirl \times birthorderFEs$			×		×
$Additional\,X_{ijt}$				×	×

Notes: Sample of second- and higher-order births. Each column is a separate OLS regression. The outcome is an indicator of death before age five. We drop children who are less than five years old to allow each child in the sample full exposure to the risk of under-five mortality. SEs in parentheses are clustered by district. Data: NDHS. $p < 0.1^{*} p < 0.05^{**} p < 0.01^{***}$

Consistent exposure to legalization

A first concern is that women whose reproductive spans straddled different policy regimes may introduce bias if part of their fertility occurred before legalization and part after. To address this, I restrict the sample to mothers whose entire fertility occurred within a single period, either pre-legalization, early post-legalization (2003–2007), or late post-legalization (2008–2018). As shown in Table 9, the results remain qualitatively similar: firstborn-girl mothers had higher fertility than firstborn-boy mothers in the pre-legalization period, but this gap narrowed substantially after legalization. This strengthens confidence that the main results are not driven by inconsistent exposure across cohorts.

Birth Spacing

A second check considers whether legalization influenced not only the number of children but also the timing of births. Table 10 shows that before legalization, firstborn-girl mothers had shorter birth intervals between their first and second children, about three months sooner on average,

Table 9: Probability of Birth (Fertility Sample)

	(1)	(2)	(3)	(4)	(5)
FirstbornGirl	0.0302***	0.0334***			
	(0.0022)	(0.0023)			
FirstbornGirl X Post 1	-0.0282***	-0.0404***	-0.0389***	-0.0389***	-0.0343***
	(0.0051)	(0.0053)	(0.0054)	(0.0054)	(0.0054)
FirstbornGirl X Post 2	-0.0064	-0.0135***	-0.0152***	-0.0152***	-0.0113**
	(0.0043)	(0.0046)	(0.0045)	(0.0045)	(0.0045)
FirstbornGirl X Ideal fraction of sons					0.0849***
					(0.0140)
FirstbornGirl X Ideal number of children					0.0115***
					(0.0027)
N	214,070	214,070	214,070	214,070	211,970
X_i	×	×	×	×	×
$Year\,FEs$	×	×	×	×	×
$District\,FEs$	×	×	×	×	×
$Age\,FEs$	×	×	×	×	×
$Parity\,FEs$	×	×	×	×	×
$District \times year\,FEs$	×	×	×	×	×
$Years\,since\,last\,birth\,FEs$	×	×	×	×	×
$FirstbornGirl \times district\,FEs$			×	×	×

Notes: Coefficients from specification 1 estimated using OLS regression on the mother-year sample from the year of their marriage to the year of interview. The sample is restricted to mothers whose entire fertility occurred within a single period, either pre-legalization, early post-legalization (2003–2007), or late post-legalization (2008–2018). The dependent variable is an indicator for whether a mother gave birth in a given year. The sample includes all mothers who have ever given birth. SEs in parentheses are clustered by district. Data: NDHS. $p < 0.1^{*} p < 0.05^{**} p < 0.01^{***}$

relative to firstborn-boy mothers. This is consistent with literature suggesting that early weaning of daughters was used as a strategy to accelerate the next pregnancy in the pursuit of a son (Jayachandran and Kuziemko (2011)). After legalization, this gap narrowed significantly, suggesting that families relied less on manipulating birth spacing once abortion became available as a fertility control tool. This provides additional support for the interpretation that legalization reduced the need for son-biased fertility behavior.

Table 10: Birth spacing: Months between first and second births

	(1) No. of months
Firstborn girl	-2.995***
	(0.2055)
Firstborn girl * Post	1.243*
	(0.5999)
N	27,891

Notes:OLS regression. The sample includes mothers who had at least 2 births at the time of the interview. The dependent variable is the average number of months between births. Standard errors in parentheses are clustered by district. Data: NDHS. $p < 0.1^{*}p < 0.05^{**}p < 0.01^{***}$

Alternative definitions of sex composition

Finally, we examine whether the fertility effects are robust to alternative definitions of household gender composition. Table 11 presents specifications using the gender of the most recent child, the ratio of girls to boys in the family, and a dummy for whether daughters outnumber sons. Across all three measures, families with more daughters exhibited higher fertility in the pre-legalization period, consistent with son-biased stopping behavior. After legalization, these gaps diminished significantly. This robustness exercise shows that the results do not depend solely on defining incentives by the sex of the firstborn but rather reflect a broader pattern of son preference in fertility behavior.

Taken together, these robustness checks reinforce the central conclusion: abortion legalization reduced son-biased fertility behavior, both by lowering overall fertility gaps and by altering the timing and spacing of births. The consistency of the findings across different definitions of exposure and composition further strengthens the interpretation that the reform shifted family formation dynamics in a way consistent with the quantity–quality trade-off model, where constraints on fertility are relaxed and the marginal cost of reducing family size declines.

Table 11: Alternative definitions of children's gender composition

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable: Birth indicator						
	Measurement of G_i					
	Youngest child is female		Ratio of girls to boys		More girls than boys	
G_i	0.025***	0.028***	0.050***	0.070***	0.050***	0.0559***
	(0.002)	(0.002)	(0.001)	(0.002)	(0.002)	(0.003)
$G_i * Post$		-0.007*		-0.037***		-0.012***
		(0.003)		(0.002)		(0.004)
District specific trends	yes	yes	yes	yes	yes	yes
Observations	190,481	190,481	131,588	131,588	206,881	206,881

Notes: Youngest child is female is a dummy variable taking the value 1 if the youngest child born before year t is a girl; Ratio of girls to boys is the total number of girls born by year t divided by the total number of boys; More girls than boys is a dummy variable taking the value 1 if in year t the total number of girls exceeds the total number of boys. SEs in parentheses are clustered by district. Data: NDHS. $p < 0.1^{*} p < 0.05^{**} p < 0.01^{***}$

7 Conclusion

This paper has examined the effects of abortion legalization in Nepal on fertility and gender gaps in child investments, situating the analysis within the broader framework of the quantity–quality trade-off. Consistent with Becker and Lewis (1973), the results demonstrate that expanding women's reproductive autonomy allowed families to reduce fertility, particularly among those with a firstborn daughter, who previously faced stronger incentives to continue childbearing. The narrowing of sibship size gaps between firstborn-girl and firstborn-boy families by as much as three-quarters provides direct evidence that abortion reform mitigated son-biased fertility stopping. By lowering the effective "price" of limiting fertility while maintaining desired composition, legalization shifted households closer to their fertility ideals without the same costs for daughters.

On the quality dimension, we find that abortion legalization narrowed gender gaps in breastfeeding, a domain of investment strongly linked to both fertility timing and survival (Jayachandran and Kuziemko (2011)). In particular, daughters in firstborn-girl families, who were previously disadvantaged, experienced large gains in breastfeeding duration post-legalization. However, effects on other investments like vaccinations and institutional deliveries are muted, and mortality improvements are only modest and present in the short-run. Taken together, these patterns suggest that abortion legalization's main effect operated through the fertility channel, with more selective improvements in child investments.

These findings make three broader contributions. First, they extend the large body of work on reproductive autonomy in high-income countries (Bailey (2006); Goldin and Katz (2002); Levine et al. (1996); Gruber et al. (1999)) to a lower/middle-income context where cultural preferences powerfully shape fertility. Second, they provide new causal evidence from South Asia, complementing work from India (Anukriti et al. (2016); Hu and Schlosser (2015); Almond et al. (2010)) and Taiwan (Lin et al. (2014)) by showing that in Nepal, legalization reduced son-biased fertility stopping while partially narrowing gender gaps in postnatal care. Third, they demonstrate how policy reforms interact with cultural constraints: while legalization reduced the need for discriminatory fertility behavior, entrenched son preference continues to limit equalization in health investments.

From a policy perspective, the results suggest that legal reforms expanding reproductive rights can improve gender equity indirectly by reshaping fertility behavior, but their impact on child investments is contingent on broader social norms. Reproductive autonomy is a necessary but not sufficient condition for closing gender gaps. Complementary policies, including strengthening maternal and child health systems, expanding immunization coverage, and challenging discriminatory norms are needed to ensure that improvements in autonomy translate into lasting gains for girls' well-being.

Finally, the findings speak to ongoing demographic transitions in South Asia and beyond. As fertility declines and access to reproductive technologies expands, the interaction of autonomy and son preference will remain central to shaping child outcomes. Future research should explore the longer-term consequences for education, labor market participation, and gender equity across cohorts. Nepal's experience illustrates both the transformative potential of abortion legalization and the persistence of cultural constraints that temper its effects.

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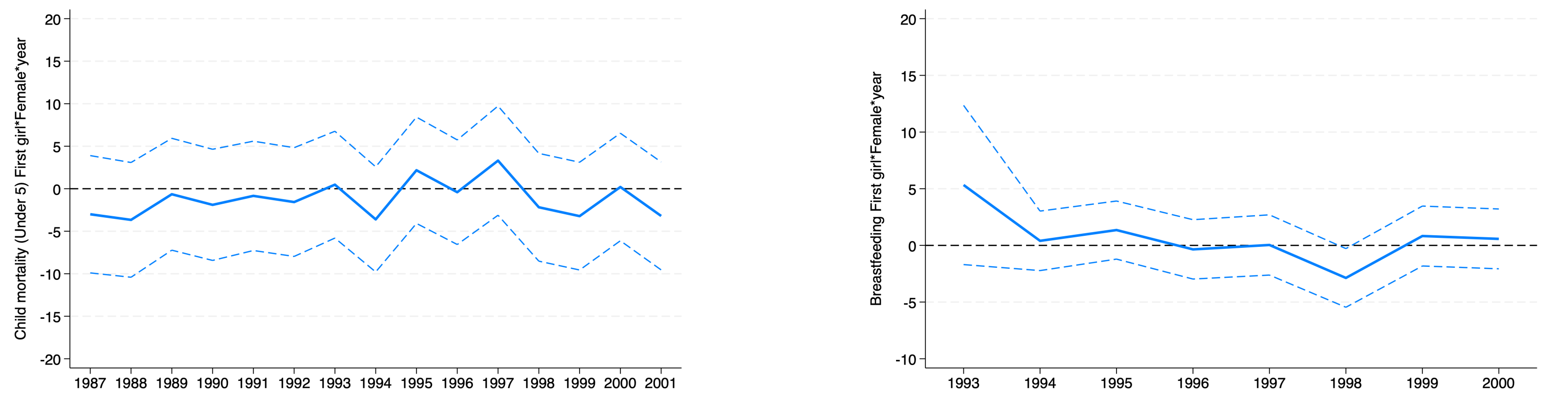
Appendix

Table A1: Timeline of Abortion Services Rollout

Year	Reform
1985	Ultrasound services introduced.
1995	Widespread ultrasound services.
2002	Abortion legalized under specific conditions.
2004	First-trimester surgical abortion services launched.
2007	Second-trimester abortion services introduced.
2009	Medical abortion introduced, rural area expansion.
2009	Supreme Court ruled abortion as a human right.
2018	Free abortion service launched in all govt. hospitals.
2020-Present	Ongoing efforts to expand services and reduce stigma.



(a) Under-five Mortality

(b) Breastfeeding

Figure A1: Test of Differential Pre-Trends in Outcomes by the Sex of the Firstborn

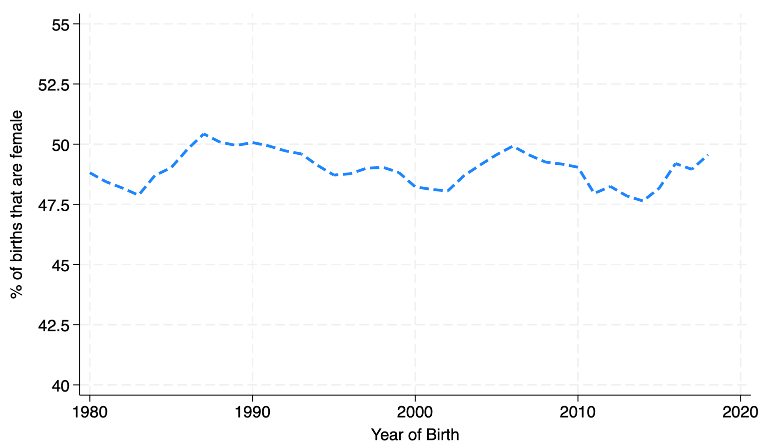
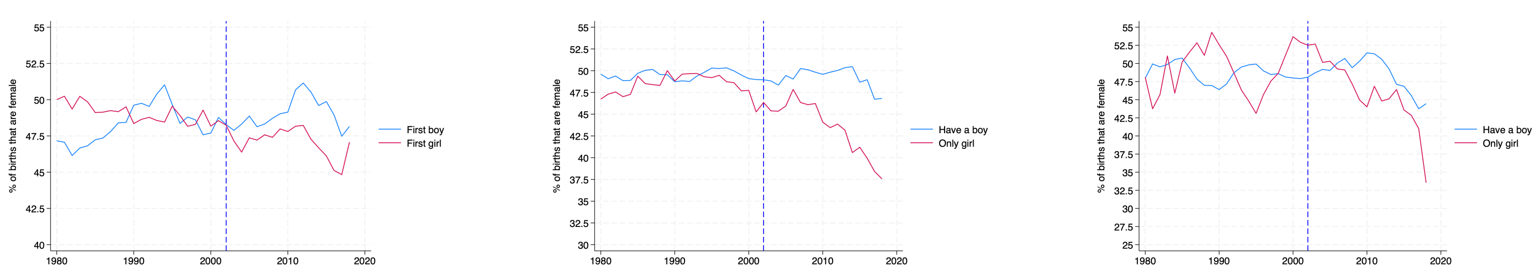


Figure A2: First births



(a) Second births

(b) Third births

(c) Fourth births

Figure A3: Trends in Proportion of Females at Birth by Birth Order and Sex Composition of Older Siblings