# The Long-Run Effects of Childhood Fostering: Evidence from Benin

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#### Abstract

Child fostering is a widespread, yet controversial, practice in Sub-Saharan Africa. This paper provides the first long-run assessment of childhood fostering. Our analysis is based on a unique survey of more than 5,500 biological siblings that we conducted in Benin in 2022. We leverage these data with a family fixed effects regression design to study the effects of fostering on contemporaneous and later-life outcomes. We find that childhood fostering is associated with large and significant decreases in school attendance. Nevertheless, along a range of socioeconomic outcomes, we find no evidence that childhood fostering had lasting negative impacts into adulthood. Indeed, we find some evidence that fostered siblings enjoyed slightly better labor market outcomes than their non-fostered siblings. The non-negative long-run effects of childhood fostering hold even among subpopulations that have been identified as particularly vulnerable to the practice. We also find evidence that non-fostered siblings maintain strong social to their fostered siblings into adulthood, despite greater physical distance. Taken together, our results suggest that the long-term costs of childhood fostering may be substantially mitigated through compensating transfers.

## 1 Introduction

Child fostering is widely practiced in Sub-Saharan Africa. Across countries Sub-Saharan Africa, more than one quarter of households send a child out to be fostered (Roby, 2011). The practice has been linked to longstanding norms of communal responsibility for raising children, and is typically an informal arrangement, with children usually sent out to live with extended family members or family friends. Nevertheless, many policymakers have voiced concerns about the potential harmful consequences of this practice, and there is considerable debate regarding the impacts on fostered children.<sup>1</sup> This debate is largely due to the fact that, despite its ubiquity, we know almost nothing about the long-term consequences of childhood fostering.

This paper provides the first long-run assessment of childhood fostering on later-life outcomes. Our analysis is based on a unique survey of 5,533 adults from 1,299 biological families that we conducted in Benin in 2022. The survey provides detailed information on childhood fostering status along with a range of later-life socioeconomic outcomes. To the best of our knowledge, this is the first dataset that tracks outcomes for *all* biological siblings – both fostered and non-fostered – into adulthood. We combine these data with a family fixed effects regression framework to compare differences in later-life outcomes across adopted versus non-adopted siblings.

We find that childhood fostering is associated with significant decreases in education. In comparison to their biological siblings, fostered children are significantly less likely to report having attended school. Our preferred estimates imply that fostering led to a relative decrease of 6 percent in school attendance. The estimates are robust to various alternative specifications, including models that control for flexibly for gender and birth order effects. The negative relationship between childhood fostering and school attendance is also stable across cohorts, despite major changes to the educational system.<sup>2</sup>

<sup>&</sup>lt;sup>1</sup>See UNICEF (1999); Fafchamps and Wahba (2006); Zimmerman (2003); Akresh (2006).

<sup>&</sup>lt;sup>2</sup>In 1993, the government of Benin enacted a series of educational reforms aimed at expanded access to school. Despite these reforms, we find similar estimates among cohorts that were or were not exposed to these

Despite the large contemporaneous impacts on schooling, we find *no* evidence that child-hood fostering had negative effects on later-life socioeconomic outcomes. We find no negative relationship between childhood fostering status and subsequent employment outcomes in adult-hood. The point estimates from these regressions are small and statistically insignificant. If anything, we find some evidence that fostered individuals enjoyed slightly better occupational outcomes than their non-fostered siblings. Similarly, we find no significant relationship between childhood fostering and subsequent fertility.

The insignificant effects found for the overall population may mask long-term economic costs of childhood fostering among particularly vulnerable subpopulations.<sup>3</sup> To explore this possibility, we estimate the effects of childhood fostering among two groups that have been identified as particularly vulnerable to the practice: daughters and children from farm households.<sup>4</sup> For both subsamples, we estimate significant decreases in contemporaneous school attendance. Nevertheless, we find no negative impact of childhood fostering on any later-life socioeconomic outcomes. Indeed, we find *larger* economic gains associated with fostering for children from farm households. Thus, even among these vulnerable subpopulations, we find no long-run economic costs associated with childhood fostering.

The estimated effects of childhood fostering on later-life outcomes cannot be explained by selection effects related to unobservable within-family ability differences or cross-sibling spillover effects. We demonstrate that a standard within-family selection bias, in which fostering status is correlated with child ability, cannot simultaneously account for the negative relationship between fostering and education, and the non-negative effects of fostering on later-life economic outcomes. Similarly, we show that cross-sibling spillover effects cannot account for the slightly positive relationship between childhood fostering and later-life economic outcomes. In particular, if the decision to foster a child expands the resources available for non-fostered siblings, then

reforms.

<sup>&</sup>lt;sup>3</sup>Such a scenario could arise due to heterogeneous treatment effects, in which the long-run costs of fostering among one subpopulation are counteracted by the long-run benefits among a different subpopulation.

<sup>&</sup>lt;sup>4</sup>Policymakers and academics have voiced concern that child fostering is form of child labor, with daughters disproportionately affected (Ainsworth, 1996; Roby, Shaw and George, 2014). Meanwhile, farm households are particularly vulnerable to income uncertainty, a major driver of unplanned childhood fostering (Akresh, 2009).

our relative effects capture a lower-bound estimate of the economic gains from being fostered.

The non-negative effects of childhood fostering on subsequent labor market opportunities are striking, given that we also document a strong link between schooling and labor market outcomes among non-adopted siblings. Together, these findings suggest that fostered individuals received compensating transfers that allowed them to overcome initial educational deficits and achieve similar labor market outcomes to their non-fostered siblings. These transfers may have included direct financial payments or non-school human capital investments from either biological or adopting family members, as well as differences in the home environment or social networks between the two families.

Finally, we find that non-fostered and fostered siblings maintain strong social ties into adulthood. Indeed, we find that fostering status has no impact on the frequency of sibling-to-sibling interactions, even though fostered children are significantly less likely to live near their biological siblings.<sup>5</sup> These patterns are consistent with a social capital mechanism, in which non-fostered siblings differentially invest in their relationships with their adopted siblings, in part, to compensate for the burden incurred during childhood.

This paper contributes to the literature on child fostering in Sub-Saharan Africa. There is a large literature in anthropology and sociology that seeks to understand the causes and consequences of child fostering (see Ariyo, Mortelmans and Wouters, 2019, for a review). Most of this research is qualitative analysis, or assessments based on cross-household comparisons.<sup>6</sup> Most closely related to our paper is work by Akresh (2006) and Beck et al. (2015) who use a similar within-biological family approach to study the effects of fostering on contemporaneous child outcomes in Burkina Faso and Senegal. We build on this research by providing the first assessment of the long-run effects of childhood fostering on adult outcomes.<sup>7</sup> Our results

<sup>&</sup>lt;sup>5</sup>Specifically, we find that fostered individuals are significant less likely to reside in Benin in adulthood.

<sup>&</sup>lt;sup>6</sup>For example, a number of researchers have relied on comparisons of outcomes between fostered children and children in the receiving family (e.g., Case, Lin and McLanahan, 2000; Zimmerman, 2003). Nevertheless, these comparisons are hampered by unobservable differences in genetic or health endowments that may differ across the two groups of children.

<sup>&</sup>lt;sup>7</sup>Given the often temporary nature of kinship arrangements, which may last for periods of several months to multiple years (Isiugo-Abanihe, 1985), contemporaneous effects of fostering on school attendance may not reflect differences in completed schooling.

suggest that compensatory behavior may mitigate some of the short-run harms that have been documented in the literature. Moreover, our dataset spans an extended fifty year time horizon, allows us to assess the evolution of this practice and its interaction with evolving educational policy.

More broadly, this paper contributes to the literature on intra-household inequality. A number of researchers have studied the allocation of assets within households, and explored how within-household inequality can influence population-level measures of inequality and poverty (see, Dercon and Pramila, 2000; Dunbar, Lewbel and Pendakur, 2015; Brown, Ravallion and van de Walle, 2019, for example). This research has been based exclusively on intact family units, which may not reflect the realities of kinship arrangements in many developing countries. Our findings highlight how widespread use of fostering can alter assessments of within-family inequality, with potentially important implications for policy evaluation.

## 2 Fostering in Sub-Saharan Africa

In Sub-Saharan Africa, the practice of fostering, in which parents send biological children out to live in another household is widespread. Rates of childhood fostering vary, but in most countries more than one in four households send a child out to be fostered (Roby, 2011). Early work by anthropologists found that in west and southern Africa, between 16 and 25 percent of children were fostered away from their biological family at any particular time (Page, 1989). The prevalence of fostering in Sub-Saharan Africa coincides with a longstanding tradition of communal responsibility for raising children (Bachan, 2014; Lachaud, LeGrand and Kobiané, 2016). Fostering is usually arranged informally, with children typically sent out to extended family members or family friends without intervention from state authorities (Assim, 2013; Zimmerman, 2003). In some cases, when a child is fostered, a formal contract may be written that may specify whether the child will work or not, go to school, or learn a job, and whether there will be any form of monetary transfer between the biological and the fostering families.

The duration of childhood fostering varies widely from a period of several months to many years (Isiugo-Abanihe, 1985).

Researchers have identified a number of motivations for fostering. Fostering may be used as a coping mechanism, and parents may send a child to be fostered in response to a negative economic shock, conflict, or family breakdown (Goody, 1982; Beck et al., 2015; Akresh, 2009). Many scholars view child fostering as a form of child domestic labor, and that remitting families send out children in an implicit exchange with the recipient family, or to obtain greater social prestige or cement social ties (Ainsworth, 1996; Roby, Shaw and George, 2014). Relatedly, Akresh (2009) shows that the gender composition of children among the biological family is linked to the practice of fostering.

Other research has emphasized the benefits of being fostered. Scholars have argued that fostering enables children to benefit from both formal and informal job training, and to access networks that may ultimately improve upward mobility (Goody, 1982; Isiugo-Abanihe, 1985). Relatedly, when school access is limited, biological families may foster children to promote educational opportunities (Isiugo-Abanihe, 1985; Zimmerman, 2003; Akresh, 2009). This last mechanism suggests public policy that promote more widespread educational access would be expected to diminish the demand for fostering.

In Benin, child fosterage in Benin is a common practice. In our dataset, 35 percent of families fostered at least one children, and roughly 16 percent adults report having been fostered during childhood. These numbers are consistent with the shares of young children who are reported not to live with their biological parents in successive waves of the Demographic and Health Surveys for Benin (Dohouin and Gbeholo 2023).

Despite the widespread practice, relative few families foster *all* their children. Indeed, among families that fostered a child, just 12 percent send out all their children (in our sample of observations, in most cases, families in which all siblings were fostered lost one or both parents in childhood).

#### 3 Data

We use an original dataset that derives from a survey that we designed, and that was conducted in Benin in 2022. Survey respondents are a random sample of 1,299 individuals who were between 16 to 85 years old at the time of the survey, and lived in one of three main cities in Benin. To identify information on all biological family members, respondents were asked a series of questions about themselves and all their biological siblings (who shared the same mother and father), regardless of whether they co-resided during childhood.<sup>8</sup> Importantly, given the strong kinship ties in these societies, and the fact that fostering primarily occurs among extended family or friends, respondents are typically well-informed about their biological siblings, regardless of fostering status.<sup>9</sup> We have information on 5,533 individuals, from 1,299 families. Appendix XXX provides detailed information about the questionnaire and survey methodology.

The survey provides detailed information on childhood and adult outcomes for all biological siblings. For each child of the biological family, we have information on whether they were sent out to be fostered by age 15.<sup>10</sup> We also have information on whether each child attended school and their years of completed schooling. There is also information on various socioeconomic outcomes in adulthood including the main occupation of employment, marital status, and number of children. For respondents who themselves were fostered, there is additional information including the age at which they were fostered, the duration of foster care, and the reason for fostering. Finally, we observe socioeconomic variables during childhood including education levels of both (biological) parents and ethnic group. We restrict the sample to observations comprises individuals who are 15 or older and alive at the time of the survey.

<sup>&</sup>lt;sup>8</sup>Unless otherwise mentioned, we refer to all members of a family, i.e. a respondent and his or her biological sisters and brothers, as the 'siblings' of the family, regardless of whether they were fostered. The data do not allow us to link children from polygynous families who share the same father but have different mothers.

<sup>&</sup>lt;sup>9</sup>Non-response rates for sibling outcomes are consistently below 10 percent, and response rates do not differ systematic by fostering status.

<sup>&</sup>lt;sup>10</sup>This age was selected to avoid issues related to teenage marriage. In our sample, nearly all fostered children are sent out by age 10.

These data provide a unique opportunity to assess the consequences of fostering in later-life. Nevertheless, two caveats should be emphasized. First, the information on sibling outcomes are reported by the respondent (not the sibling), and some particular outcomes may be subject to measurement error or omitted values. The main outcomes of interest: schooling, primary occupation, and fertility, are generally well measured, with non-response rates below 5 percent. Nevertheless, information on siblings age is generally less well measured. Given this issue, our preferred empirical specifications rely on controls for sibling birth order (as opposed to age), although we also present estimates based on age controls as a robustness test. Second, the value for most variables are unknown for siblings who are deceased. Thus, the sample is based on comparisons across living siblings only. Nevertheless, the influence of selective mortality should be modest, given that the share of deceased siblings in less than 4 percent in the sample (see Table 1).

Our main analysis is based on all biological siblings from 1,299 families, who were aged 15 years or older and alive at the time of the survey. Table 1 reports descriptive statistics of the variables used in this paper. Table 2 provides summary statistics for respondents, who provided additional information on fostering practices.

## 4 Empirical Framework

Our empirical strategy is based on within-family fixed effects regressions, that compares outcomes of adopted children to their non-adopted biological siblings. Crucially, given that our dataset reports information for all siblings in adulthood, we are able to estimate these models both for contemporaneous childhood outcomes, as well as for later-life outcomes.

For any outcome of interest  $y_i$ , observed for adult i, the specification for the estimations is a variant of:

<sup>&</sup>lt;sup>11</sup>We have higher non-response rates for siblings ages, and also uncover evidence of 'heaping' of sibling ages at round numbers. This issue is not unique to our survey, and has been identified in other surveys conducted in low-income countries (Lyons-Amos and Stones, 2017; Fayehun et al., 2020).

$$y_i = \alpha + c_f + \beta Fostered_i + \gamma z_i + e_i \tag{1}$$

where  $Fostered_i$  is a dummy variable equal to 1 if and only if individual i was fostered by age 15, and where  $c_f$  are family fixed effects. Variable  $y_i$  is an outcome of interest for individual i, and  $z_i$  denotes a vector of control variables which include gender and either age fixed effects or birth order fixed effects. All estimations are in OLS, with robust standard errors. The coefficient of interest is  $\beta$ , which identifies within-family differences in outcomes across fostered and non-fostered siblings.

The relative outcome differences captured by  $\beta$  may not reflect causal effects of fostering due either to cross-sibling spillover or selective fostering. For example, if fostering a child enables families to increase investments in non-fostered children, the coefficient  $\beta$  would overstate the negative educational impact of fostering, relative to a counterfactual scenario in which no child were sent out. Relatedly, if unobservable child-specific attributes simultaneous affect parental decisions over which child to foster and their subsequent outcomes, our estimates of  $\beta$  will not reflect the causal impact of fostering on later-life outcomes. In principle, these two issues limit our ability to assign a causal interpretation to the estimates of  $\beta$ . In practice, however, it is unlikely that either issue can account for the empirical pattern that we document in the data. We discuss these issues at length in Section 5.2.2.

## 5 Results

### 5.1 Contemporaneous Impacts of Fostering on Schooling

Table 3 reports the results of the OLS estimation of equation 1 where the dependent variable,  $Went\ to\ school$ , is a binary equal to 1 if and only if sibling i ever attended school. Columns 1 and 2 report results from models that do not control for family fixed effects, while columns 3 and 4 include family fixed effects.

Across the various specifications, we find a negative and statistically significant relationship between having been been fostered and education. Column 1 reports the raw relationship between fostering and school attendance without any family-level controls. The estimate decreases by roughly one third when we include family-level controls for parental education and ethnicity and an indicator for polygynous marriage (col. 2). Our preferred specification that rely on within-family variation show similar negative impacts of fostering on school attendance (cols. 3, 4). Notably, the inclusion of family fixed effects leads to a significant decrease in the point estimates, consistent with unobservable cross-family drivers of schooling that are systematically related to fostering practices.

The effect sizes on fostering in Table 3 are large in magnitude. Our preferred estimates (col. 4), imply that children who were fostered were 6 percent = (0.046/0.77) less likely to attend school than their non-fostered siblings. In comparison, the within-family gender-gap in school attendance is 16.6 percent = (0.128/0.77). Thus, fostered children experience a little less than half the education penalty of daughters.

Next, we use additional information on fostering that was reported by respondents to explore the sources of these educational disparities and to explore heterogeneity in the main effects. <sup>12</sup> We estimate versions of equation 1, where the treatment is equal to one if the respondent was a) fostered, b) fostered for educational purposes, c) fostered for other reasons, d) fostered at after age 7, or e) fostered by a close relative. Since respondents were interviewed in one of three major urban areas, they do not reflect a randomly selected individual from the population. As a result, these results should be interpreted with caution. <sup>13</sup> Nevertheless, the relative magnitude across different practices of fostering provides some insights into treatment heterogeneity.

Table 4 reports the results for the various treatments. Among the subset of respondents, we find slightly negative but insignificant impacts of fostering on school attendance. Nevertheless,

<sup>&</sup>lt;sup>12</sup>Information on fostering status is available for all biological siblings. Among respondents who were fostered, we obtained additional information on the reason for fostering, the age of fostering, and to whom they were sent.

<sup>&</sup>lt;sup>13</sup>For example, the estimates based on respondents are likely to understate the negative impacts of fostering on education, given the strong urban-rural differences in schooling in Benin.

these average estimates mask considerable treatment heterogeneity. In particular, individuals who were fostered for educational purposes enjoyed significantly higher levels of schooling than their non-fostered siblings (cols. 3-4), while those fostered for other reasons experienced a significant educational penalty (cols 5-6). Indeed the magnitude of the estimates in col. 6 are nearly twice the size of the overall fostering impacts reported in Table 3, col. 4.<sup>14</sup> Conditional on being fostered for non-educational purposes, we find similar negative effects for siblings fostered later in childhood (cols. 7-8). Similarly, we find no evidence that being fostered by a close family member mitigated the educational costs associated with childhood fostering (cols. 9-10).

Finally, we take advantage of our extended time horizon to assess assess the evolving impact of childhood fostering on schooling. In particular, we explore whether expansions in school access, following a series of educational reforms in the early 1990s, reduced the negative effects of fostering on school attendance.<sup>15</sup> Given the timing of these reforms, which began to take effect in 1994 (Gaye, 2003), we split the sample into individuals who were born before or after 1988, who were either young enough or too old to have benefited from the expansion in access. We then estimate versions of equation 1 for the two separate samples.

Table 5 reports the effects of fostering on school attendance separately for subsample of respondents born before or after 1988. The within-family estimates show systematic differences in the effects of fostering across the two cohorts, with *larger* negative estimates among post-1988 birth cohorts. These findings suggest that the expansion in educational access did not diminish the gap in school attendance between fostered and non-fostered siblings. If anything, these reforms may have reinforced the educational disparities.

<sup>&</sup>lt;sup>14</sup>Comparing these estimates, it is clear that the non-significant average effects of fostering (cols. 1-2) likely reflect the fact that fostered respondents (who lived in cities in adulthood), were more likely to have been fostered for educational purposes, than the average fostered individual in the country.

<sup>&</sup>lt;sup>15</sup>In 1993, the government of Benin undertook a series of reforms aimed at expanding access to education. The state sought to increase school access through a large-scale project of school building and teacher training. The focus of these investments was on primary school, and following the reforms, the number of primary classrooms increase by 58 percent from 1992 to 2000 (Gaye, 2003).

### 5.2 Impacts of Childhood on Later-Life Socioeconomic Outcomes

#### 5.2.1 Effects on Employment, Fertility, and Migration

In Table 6, we report the results for the effects of childhood fostering on later-life socioe-conomic outcomes. We report the estimates from equation 1 for three outcomes: whether the individual is employed in a salaried job, whether the individual currently resides outside of Benin, and the number of children. We report the estimates separately for models without family fixed effects (cols. 1-2, 5-6, 9-10) and with family fixed effects (3-4, 7-8, 11-12).

We find no evidence that childhood fostering reduced the likelihood of obtaining a salaried job in adulthood. Although the baseline cross-family estimates are negative and significant, once we control for family fixed effects the sign of the estimates become statistically insignificant. Indeed, the results from our preferred specifications (cols. 2-3) and moderately positive, suggesting that individuals fostered during childhood were slightly *more* likely to work in a salaried job than their non-fostered siblings. Similarly, we find no significant differences in fertility across fostered and non-fostered siblings (cols. 11-12).

We find evidence that individuals who were fostered during childhood were more likely to reside outside of Benin in adulthood (cols. 7-8). The point estimates from these regressions are large in magnitude and highly significant, suggesting that individuals fostered in childhood were more than 75 percent more likely to emigrate by adulthood. Since we lack information on the destination country, it is impossible to assess whether this emigration improved or harmed future economic opportunities. Nevertheless, these findings suggest that individuals who were fostered in childhood remained less likely to live near their biological siblings in adulthood.

The absence of persistent effects of fostering on later-life employment outcomes or fertility is striking, given that there is a strong empirical link between school attendance and both outcomes. Tables 7 (cols. 1-4) shows a strong positive relationship between school attendance and the probability of employment in a salaried job. Notably, we document significant positive

 $<sup>^{16}</sup>$ The sample is based on individuals aged 21 and older.

estimates, even in models that control for family fixed effects. Similarly, we find a significant negative relationship between school attendance and subsequent fertility rates, even in within-family regressions (cols. 5-8).

Together, these findings suggest that fostered individuals were able to overcome the initial educational deficits and achieve similar labor market outcomes to their non-fostered siblings. In part, these pattern may reflect differences in the home environment or the labor market opportunity afforded by fostering families. Indeed, researchers have argued that fostering families provide improved household health and better access to employment opportunities (Goody, 1982; Isiugo-Abanihe, 1985). Alternatively, the improved labor market outcomes may reflect transfers or investments from biological family members to compensate for the burden incurred by the fostered sibling. We assess this possibility in more detail in Section 5.2.3.

#### 5.2.2 Selection Effects and Cross-Sibling Spillover Effects

In this section, we explore the extent to which the previous estimates identify the causal impacts of fostering on later-life outcomes. Specifically, we explore whether the *relative* withinfamily outcome differences may reflect either a) selection effects or b) cross-sibling spillover effects.

The estimates of  $\beta$  may be biased due to within-family selection effects. In particular, if decisions regarding which child to foster are correlated with unobservable child attributes that are relevant to future schooling or labor market outcomes, then the estimated effects will not be causal.

To assess the role of selection in driving the main estimates, we consider a simplified version of the within-family estimator for both the contemporaneous schooling effects,  $S_i$ , and the

long-run labor market effects,  $Y_i$  according to the following expressions: <sup>17</sup>

$$S_i = \alpha_0 + \alpha_1 Fostered_i + u_i$$

$$Y_i = \beta_0 + \beta_1 Fostered_i + \epsilon_i$$

where decisions over which child to be fostered may be correlated with unobservable child attributes,  $cov(Fostered_i, u_i) \neq 0$  and  $cov(Fostered_i, \epsilon_i) \neq 0$ , which are positively correlated,  $cov(u_i, \epsilon_i) > 0$ .<sup>18</sup>

Negative selection into fostering cannot account for the *relative* within-family differences in long-run outcomes. In particular, if families disproportionately send lower ability children to be fostered,  $cov(Fostered_i, u_i) < 0$ , then the estimates of both  $\alpha_1$  and  $\beta_1$  would be downward biased. In this scenario, our negative contemporaneous estimates may overestimate the schooling costs associated with fostering, but our modestly positive estimates of  $\beta_1$  capture a lower bound for the *positive* returns to being fostered in childhood.

Positively selected into fostering,  $cov(Fostered_i, u_i) > 0$ , would cause the estimates of  $\alpha_1$  and  $\beta_1$  would be upward biased. In this scenario, the true long-run employment impacts of fostering may be negative, even though the estimates are modestly positively. Even if this were the case, we can rule out the potential that fostering exacerbates within-family inequality. Given that the insignificant (and modestly positive) estimates show that, on average, fostered children enjoyed slightly better labor market outcomes than their non-fostered siblings. Thus the results imply that the practice of fostering compensated for underlying differences in labor market opportunities across siblings, equalizing outcomes in later-life.

The main long-run effects also cannot be attributed to cross-sibling spillover effects. In particular, if the decision to foster a child expands the resources available for non-fostered siblings, then our estimates would reflect a lower-bound estimate for the economic benefits

<sup>&</sup>lt;sup>17</sup>To simplify notation, we exclude family fixed effects and other covariates from the regressions.

<sup>&</sup>lt;sup>18</sup>This last assumption implies that unobservable child attributes that increase educational attainment are also beneficial in the labor market.

associated with childhood fostering. To the extent that these estimates are slightly positive, we can infer that the long-term economic impacts of childhood fostering are non-negative.

#### 5.2.3 Effects of Childhood Fostering on Vulnerable Subpopulations

The absence of long-run economic effects of childhood fostering in the overall population may mask significant costs among particular subpopulations. This scenario could arise in the presence of heterogeneous treatment effects, in which the benefits among certain fostered children (i.e. those sent out for educational purposes) counteract the harms among others. Indeed, the results in Table 4 show widely differing effects of the practice on education.

To assess whether heterogeneous treatment effects may be masking long-run costs among subpopulations, we focus on two groups that have been identified as particularly to the practice: daughters and children from farm households. There is widespread concern among policymakers and academics that fostering may be used as a source of child domestic labor, in which daughters are disproportionately sent out to work in exchange for financial or non-pecuniary transfers to the biological family (Ainsworth, 1996; Roby, Shaw and George, 2014). Similarly, unplanned fostering in response to negative income shocks is a widespread phenomenon (Goody, 1982; Beck et al., 2015; Akresh, 2009), that may particularly disruptive to the children who are sent out. Given that farm household are disproportionately exposed to these shocks, children from these families may be more likely to suffer the costs associated with unplanned child fostering.

Table 8 reports the estimates for childhood fostering, in which we allow the main effect to differ by gender. We estimates larger negative effects of childhood fostering on school attendance for daughters, although we cannot reject equality in the estimates (cols. 1-2). Meanwhile, we find that childhood fostering had no negative long-run impacts on daughters. The point estimates for salaried work, emigration, and fertility are very similar across the two groups. For both males and females, the estimates imply that childhood fostering led to a modest increase in the probability of salaried work, an increase in the likelihood of emigration, and non impact on fertility.

Table 9 reports the estimates for childhood fostering among farm families. We find significant decreases in school attendance among fostered siblings. Nevertheless, fostered siblings enjoyed a significant *higher* probability of working in a salaried job in adulthood. In fact, these estimates are significantly larger than those found for the overall population. We also find that childhood fostering is associated with a significant increase in emigration, but had no impact on fertility.

Taken together, these results suggest the average non-negative impacts of childhood fostering in the overall population extend even to subpopulations that have been thought to be particularly vulnerable to the practice.

#### 5.2.4 Fostering and Inter-sibling Interactions

To conclude the empirical analysis, we explore the impact of childhood fostering on sibling social ties in adulthood. We construct two binary outcome variables that are defined for the non- respondent sibling only. For any non-respondent sibling i, the variable Talked within a month is equal to 1 if and only if i spoke to the respondent sibling of the family at least once in the month before the interview. Similarly, the variable Met within a month is equal to 1 if and only if i met with the respondent sibling of the family at least once in the month before the interview. To assess the role of childhood fostering status on inter-sibling interactions, we estimate versions of equation 1 for these outcomes variables.  $^{20}$ 

Table 10 reports the results. We find no evidence that childhood fostering decreased sibling-to-sibling interactions in adulthood. Across the various specifications, the estimates for both outcomes are consistently small and statistically insignificant. These patterns are striking, given the higher rates migration among fostered siblings (Table 6, cols 7-8). Thus, despite greater physical distance, on average, it appears that fostered siblings maintained equally strong social ties to their non-fostered siblings.

These results are consistent with a compensatory social capital mechanism. Non-fostered

<sup>&</sup>lt;sup>19</sup>Given the construction of the dataset, which is based solely on information provided by the respondent sibling, we are unable to identify interaction between two non-respondent siblings.

<sup>&</sup>lt;sup>20</sup>To avoid issues related to co-residence, we restrict the sample to individuals 20 years and older.

siblings appear to have differentially sought to maintain ties with their fostered siblings. In part, these social investments may reflect an effort to compensate for the burden that fostered siblings incurred during childhood. These findings align with the non-negative impacts of fostering on later-life labor market, which may also partially reflect compensating investments and transfers from the biological family.

## 6 Conclusion

This paper draws on a novel dataset of biological siblings in Benin to provide the first long-term assessment of consequences of childhood fostering. We find that fostered children experienced significant lower rates of school attendance than their non-fostered siblings. Despite these educational deficits, we find no differences in long-term socioeconomic outcomes between fostered and non-fostered siblings. We also find high levels of social interactions between the two groups, despite greater physical distance. Taken together, our findings suggest that the immediate educational costs associated with childhood fostering may be largely mitigated through within-family transfers and investments.

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# Figures and Tables

Table 1: Summary statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Fostered as a child	5009	.161	.368	0	1
Alive	5533	.962	.192	0	1
Age in years	5151	37.29	12.199	0	85
Individual is 21 or older	5151	.921	.27	0	1
Father went to school	5533	.495	.5	0	1
Mother went to school	5533	.286	.452	0	1
Ethnic group: Fon	5533	.447	.497	0	1
# Siblings (including self)	5533	5.123	1.972	1	14
Birth rank	5532	3.068	1.849	1	14
Female	5533	.502	.5	0	1
Went to school	5320	.777	.417	0	1
Salaried job	5252	.154	.361	0	1
Lives outside Benin	4007	.134	.34	0	1
# Children	5273	2.712	2.22	0	20
Talked with respondent sibling last month	4021	.745	.436	0	1
Met with respondent sibling last month	4021	.439	.496	0	1
Number of families in the sample	5533	.235	.424	0	1
Number of families in the sample	1299				
# Families with one or more fostered siblings	451				
# Families with all siblings fostered	54				

Notes: The dataset derives from a survey of a random sample of 1299 respondents who were asked questions about themselves and all their biological siblings, conducted in Benin in 2022. We count as missing the value of the variable Fostered for individuals under 15, or for whom age is missing or who are deceased. # Siblings counts all children from the same biological parents. Age is not defined for deceased individuals. The variables Lives outside Benin, Talked with respondent sibling last month and Met with respondent sibling last month are not defined for the respondent sibling.

Table 2: Summary statistics for the subsample of respondent siblings

Variable	Obs	Mean	Std. Dev.	Min	Max
Fostered as a child	1299	.216	.411	0	1
Fostered for education	1299	.072	.258	0	1
Fostered for other reasons	1299	.144	.351	0	1
Fostered at 7 years old or more	1299	.144	.351	0	1
Fostered at aunt, uncle or grandparent's	1299	.129	.335	0	1
Age in years	1299	38.257	10.607	16	85
Individual is 21 or older	1299	.985	.123	0	1
Father went to school	1299	.5	.5	0	1
Mother went to school	1299	.297	.457	0	1
Ethnic group: Fon	1299	.464	.499	0	1
# Siblings (including self)	1299	4.259	1.919	1	14
Birth rank	1299	2.457	1.54	1	9
Female	1299	.557	.497	0	1
Went to school	1299	.788	.409	0	1
Salaried job	1299	.115	.32	0	1
# Children	1299	2.988	2.108	0	18

Notes: This table presents summary statistics for the respondent sibling only, which provides details on the justification for fostering, the fostering family and the age at which fostering started. See Table 1 for more information on the other variables.

Table 3: Effect of being fostered on education

		Dependent variable: Went to school	e: Went to school	
	(1)	(2)	(3)	(4)
Fostered	-0.131*** (0.016)	-0.093*** (0.015)	-0.045** (0.018)	-0.046** (0.018)
Female	-0.151*** $(0.012)$		$-0.128^{***}$ (0.011)	
Other covariates Age × Sex FE	o N o N	m Yes	o Z o Z	m No
Birth order $\times$ Sex FE Family FE	No No	m Yes No	No Yes	m Yes
$\begin{array}{l} \text{R2} \\ \# \text{ Observations} \end{array}$	0.048 4723	0.193 4723	0.596 $4723$	0.618 $4723$
Mean Dep.	22.	22.	22.	22.

NOTES. This table reports the OLS estimation of the coefficients of a binary variable equal to 1 if and only if individual i went to school on a binary variable equal to 1 if and only if individual i was fostered as a child, and on control variables indicated at the bottom of each column. Other covariates are: dummy variables for each parents' education level, dummy variables for the family's ethnic group. The sample of observations comprises all siblings of a given family older than 21 at the time of the survey. Standard errors in parentheses. \*\*\*, \*\*, \* denote significance at the 1%, 5%, and 10% level.

Effect of being fostered on education, using information from respondents Table 4:

				Depend	Dependent variable: Went to school	e: Went to	school			
	(1)	(2)	(3)	(4)	(2)	(9)	(7)	(8)	(6)	(10)
Respondent & Fostered	-0.002 $(0.024)$	-0.024 $(0.027)$								
Resp. & Fostered for education			$0.164^{***}$ (0.041)	$0.174^{***}$ (0.043)						
Resp. & Fostered for other reasons					-0.088*** (0.030)	$-0.130^{***}$ (0.032)				
Resp. & Fostered at 7 years old or more							0.018 $(0.029)$	0.002 $(0.031)$		
Resp. & Fostered at aunt, uncle or grandparent's									-0.026 $(0.032)$	-0.034 $(0.034)$
Female	$-0.130^{***}$ (0.011)		$-0.131^{***}$ (0.011)		$-0.128^{***}$ (0.011)		$-0.131^{***}$ (0.011)		$-0.130^{***}$ (0.011)	
Respondent		0.014 $(0.013)$		-0.003 $(0.012)$		0.027** $(0.012)$		0.009 $(0.012)$		0.013 $(0.012)$
Other covariates	No	No	No	No	No	No	No	No	No	No
Age × Sex FE Birth order × Sex FE	No No	$_{ m Yes}$	$_{ m N}^{ m N}$	$_{ m Yes}$	No No	$_{ m Yes}$	N N O	$_{ m Yes}^{ m Yes}$	N N N	$_{ m Yes}$
Family FE	m Yes	Yes	Yes	Yes	Yes	Yes	m Yes	Yes	Yes	Yes
R2 $\#$ Observations	0.594 $4744$	0.617 $4744$	0.596 $4744$	0.619 $4744$	0.595 $4744$	0.619 $4744$	0.594 $4744$	0.617 $4744$	0.595 $4744$	0.617 $4744$
Mean Dep.	22.	22.	22.	22.	77.	22.	22.	22.	22.	22.

NOTES. This table reports the OLS estimation of the coefficients of a binary variable equal to 1 if and only if individual i went to school on a binary variable equal to 1 if and only if individual i is the respondent sibling and i was fostered under various conditions, and on control variables indicated at the bottom of each column. Other covariates are: dummy variables for each parents' education level, dummy variables for the family's ethnic group. The sample of observations comprises all siblings of a given family older than 21 at the time of the survey. Standard errors in parentheses. \*\*\*, \*\*, \* denote significance at the 1%, 5%, and 10% level.

Table 5: Effect of fostering on schooling for cohorts before and after 1987

			Born befor	before 1988				BC	Born in 1988 or later	or later		
					Depende	ent variabl	Dependent variable: Went to school	school				
	(1)	(2)	(3)	(4)	(5)	(9)	(7)	(8)	(6)	(10)	(11)	(12)
Fostered	-0.137*** (0.023)	$-0.091^{***}$ (0.022)	$-0.090^{***}$ (0.022)	-0.045 $(0.030)$	-0.052* $(0.030)$	-0.043 $(0.030)$	$-0.118^{***}$ (0.026)	$-0.084^{***}$ (0.024)	$-0.091^{***}$ (0.024)	-0.078** (0.039)	-0.066* (0.040)	$-0.075^{*}$ (0.039)
Female	-0.179*** (0.016)			-0.156*** (0.016)			$-0.101^{***}$ (0.015)			-0.085*** (0.018)		
Other covariates Age x Sex FF	No N	Yes	m Yes	No ON	$_{ m No}^{ m No}$	No S	No No	m Yes	m Yes	No S	$_{ m No}^{ m No}$	No S
Birth order x Sex FE	No	No	$ m_{Yes}$	No	No	Yes	No	$ m N_{0}$	$ m_{Yes}$	$ m N_{0}$	No	Yes
Family FE	$^{ m No}$	$^{ m No}$	$^{ m No}$	Yes	Yes	Yes	$_{ m ON}$	$_{ m o}$	$N_{\rm o}$	Yes	Yes	Yes
R2	0.056	0.204	0.185	0.656	0.671	0.658	0.035	0.129	0.121	0.595	0.617	0.601
# Observations	2982	2982	2982	2982	2982	2982	2048	2048	2048	2048	2048	2048
Mean Dep. Var.	.74	.74	.74	.74	.74	.74	.84	.84	.84	.84	.84	84

NOTES. This table reports the OLS estimation of the coefficients of the regression of individual i's probability to have attended school, on a binary variable equal to 1 if and only if individual i was fostered as a child, on the interaction of both, and on covariates, separately on two subsamples. The first subsample comprises all individuals born before 1987. The second subsample comprises all individuals born in 1988 or later. Other covariates are: dummy variables for each parents' education level, dummy variables for the family's ethnic group, and a dummy variable indicating whether the individual's father was polygynous. Robust standard errors in parentheses. \*\*\*, \*\*, denote significance at the 1%, 5%, and 10% level.

Table 6: Effect of being fostered on labor and family outcomes

		Salarie	ried job			Lives ou	Lives outside Benin			# Children	ildren	
	(1)	(2)	(3)	(4)	(2)	(9)	(7)	(8)	(6)	(10)	(11)	(12)
Fostered	$-0.061^{***}$ (0.013)	-0.039*** $(0.013)$	0.018 $(0.019)$	0.014 $(0.019)$	0.039** $(0.018)$	0.032* $(0.018)$	$0.093^{***}$ $(0.028)$	0.097*** $(0.028)$	$0.148^*$ $(0.087)$	0.015 $(0.071)$	0.169 $(0.123)$	-0.068 $(0.110)$
Female	$-0.135^{***}$ (0.011)		$-0.142^{***}$ (0.012)		-0.021* (0.012)		-0.002 (0.011)		0.073 $(0.063)$		0.048 $(0.064)$	
Other covariates Age × Sex FE	N N S	Yes	No ON	$_{ m Yes}^{ m No}$	$_{ m o}^{ m N}$	Yes Yes	N N N	$_{ m Yes}^{ m No}$	$_{ m o}^{ m N}$	Yes Yes	No No	$_{ m Yes}^{ m No}$
Birth order × Sex FE Family FE	No No	$_{ m No}^{ m Yes}$	$ m _{Yes}$	Yes	$_{ m o}^{ m No}$		$_{ m Yes}$	$_{ m Yes}$	$_{ m o}^{ m No}$	$_{ m No}$	m Ves	Yes Yes
R2 $\#$ Observations	0.037 4667	0.111 4667	0.399	0.436 4667	0.003 3434	0.047	0.613 $3434$	0.634 $3434$	0.001 4695	0.401 $4695$	0.507 $4695$	0.643 $4695$
Mean Dep.	.16	.16	.16	.16	.13	.13	.13	.13	2.9	2.9	2.9	2.9

NOTES. This table reports the OLS estimation of the coefficients of the regressions of three outcomes on a binary variable equal to 1 if and only if individual i was fostered all siblings of a given family older than 21 at the time of the survey. When the dependent variable is the probability to live outside of Benin, the sample of observations as a child, and on control variables indicated at the bottom of each column. Other covariates are: dummy variables for each parents' education level, dummy variables for the family's ethnic group. When the dependent variable is either the probability to have a salaried job or the number of children, the sample of observations comprises comprises all siblings of a given family older than 21 at the time of the survey, except the sibling who replied to the survey, who lives in Benin by construction. Standard errors in parentheses. \*\*\*, \*\*, \* denote significance at the 1%, 5%, and 10% level.

Table 7: Effect of education on labor and family outcomes

		Salari	Salaried job			Lives outside Benin	ide Benin			# Children	ldren	
	(1)	(2)	(3)	(4)	(5)	(9)	(7)	(8)	(6)	(10)	(11)	(12)
Went to school	$0.171^{***}$ (0.013)	$0.140^{***}$ $(0.014)$	$0.069^{***}$ (0.019)	$0.076^{***}$ (0.019)	-0.027* (0.014)	-0.008	-0.015 $(0.018)$	-0.016 $(0.019)$	$-1.062^{***}$ (0.075)	-0.489*** (0.065)	-0.418*** (0.098)	-0.133 $(0.088)$
Female	$-0.110^{***}$ (0.011)		$-0.132^{***}$ (0.012)		$-0.024^{**}$ (0.012)		-0.002 $(0.011)$		-0.088 $(0.062)$		-0.003 $(0.062)$	
Other covariates $Age \times Sex FE$	No No	$\frac{\text{Yes}}{\text{Yes}}$	No No		$_{ m o}^{ m N}$	Yes Yes	$_{ m o}^{ m N}$	$_{ m Yes}^{ m No}$	$_{ m o}^{ m N}$	Yes Yes	No No	$_{ m Yes}^{ m No}$
Birth order $\times$ Sex FE Family FE	No No	$rac{ m Yes}{ m No}$	$_{ m Yes}^{ m No}$	Yes	$_{ m o}^{ m No}$	$_{ m No}^{ m Yes}$	$_{ m Yes}^{ m No}$	$_{ m Yes}$	$_{ m o}^{ m No}$	m Yes $ m No$	$_{ m Yes}^{ m No}$	Yes Yes
$\begin{array}{l} R2 \\ \# \ \text{Observations} \end{array}$	0.068	0.129 4688	0.402	0.439	0.002 3453	0.046 3453	0.609 $3453$	0.630 $3453$	0.041	0.406	0.507 $4716$	0.641
Mean Dep.	.16	.16	.16	.16	.13	.13	.13	.13	2.9	2.9	2.9	2.9

NOTES. This table reports the OLS estimation of the coefficients of the regressions of three outcomes on a binary variable equal to 1 if and only if individual i went to all siblings of a given family older than 21 at the time of the survey. When the dependent variable is the probability to live outside of Benin, the sample of observations school, and on control variables indicated at the bottom of each column. Other covariates are: dummy variables for each parents' education level, dummy variables for the family's ethnic group. When the dependent variable is either the probability to have a salaried job or the number of children, the sample of observations comprises comprises all siblings of a given family older than 21 at the time of the survey, except the sibling who replied to the survey, who lives in Benin by construction. Standard errors in parentheses. \*\*\*, \*\*, \* denote significance at the 1%, 5%, and 10% level.

Table 8: Effect of being fostered by sex

	Went to school	school	Salaried	ried	Lives out:	Lives outside Benin	# Children	ldren
	(1)	(2)	(3)	(4)	(2)	(9)	(7)	(8)
Fostered	-0.068** $(0.026)$	-0.066** (0.027)	0.011 $(0.023)$	0.020 $(0.024)$	$0.079** \\ (0.031)$	0.077** (0.031)	$0.164 \\ (0.129)$	-0.093 (0.117)
Male	$0.120^{***}$ $(0.012)$		0.187*** (0.015)		-0.002 (0.012)		-0.050 $(0.069)$	
Male & Fostered	0.050 $(0.032)$	0.044 $(0.033)$	0.025 $(0.035)$	0.021 $(0.036)$	0.030 $(0.035)$	0.042 $(0.036)$	0.011 $(0.182)$	0.057 $(0.167)$
Other covariates Age × Sex FE	N O No	m No	No No	m No	No No	$_{ m Yes}$	$_{ m o}^{ m N}$	$_{ m Ves}$
Birth order $\times$ Sex FE Family FE	m No	m Yes	m No	Yes	$_{ m Yes}$	m Yes	$_{ m Yes}$	Yes
$\begin{array}{l} \mathrm{R2} \\ \# \ \mathrm{Observations} \end{array}$	0.596 $4723$	0.618 $4723$	0.414 $4723$	0.443 4723	0.613 $3434$	0.634 $3434$	0.507 4695	0.643 $4695$
Mean Dep.	22.	22.	.23	.23	.13	.13	2.9	2.9
	) ) ) )		200					

NOTES. Standard errors in parentheses. \*\*\*, \*\*, \* denote significance at the 1%, 5%, and 10% level.

Table 9: Effect of education for individuals whose parents were farmers

	M	Went to school	loc		Salaried		Lives	Lives outside Benin	enin	#	# Children	
	(1)	(2)	(3)	(4)	(5)	(9)	(7)	(8)	(6)	(10)	(11)	(12)
Fostered	-0.072** (0.036)	$-0.064^{*}$ (0.038)	$-0.094^{**}$ (0.042)	0.063** $(0.031)$	0.085*** $(0.033)$	0.052 $(0.035)$	$0.115^{***}$ $(0.043)$	0.119** $(0.046)$	0.119** $(0.051)$	0.204 $(0.214)$	-0.055 $(0.173)$	-0.076 $(0.189)$
Male	$0.151^{***}$ $(0.022)$			$0.176^{***}$ $(0.022)$			-0.002 $(0.020)$			-0.088 $(0.119)$		
Male & Fostered			0.075 $(0.054)$			0.082 $(0.057)$			-0.001 $(0.057)$			0.053 $(0.267)$
Other covariates	No	$N_{\rm o}$	No	No	No	No	$_{ m O}$	No	No	$N_{\rm o}$	$N_{\rm o}$	$N_{\rm o}$
$Age \times Sex FE$	$N_{\rm o}$	Yes	Yes	$N_{\rm o}$	Yes	Yes	$N_{\rm o}$	Yes	Yes	No	Yes	Yes
Birth order $\times$ Sex FE	$N_{\rm o}$	Yes	Yes	$N_{\rm o}$	Yes	Yes	$N_{\rm o}$	Yes	Yes	No	Yes	Yes
Family FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R2	0.621	0.666	0.667	0.403	0.475	0.476	0.642	0.689	0.689	0.474	0.657	0.657
# Observations	1500	1500	1500	1500	1500	1500	1102	1102	1102	1486	1486	1486
Mean Dep.	99.	99.	99.	.18	.18	.18	.15	.15	.15	3.0	3.0	3.0
		the shorter of states			3							

NOTES. Standard errors in parentheses. \*\*\*, \*\*, \* denote significance at the 1%, 5%, and 10% level.

Table 10: Effect of being fostered on siblings interactions

		Talked w	with resp.	ith resp. sibling last month	t month			Met u	Met with resp. sibling last month	bling last r	nonth	
	(1)	(2)	(3)	(4)	(2)	(9)	(7)	(8)	(6)	(10)	(11)	(12)
Fostered	0.044** $(0.020)$	$0.055^{***}$ $(0.021)$	$0.074^{***}$ $(0.021)$	0.008 $(0.032)$	0.008 $(0.033)$	0.040 $(0.043)$	0.018 $(0.024)$	0.020 $(0.025)$	0.041 $(0.025)$	-0.015 $(0.034)$	-0.019 $(0.036)$	0.003 $(0.046)$
Female	-0.012 (0.015)			-0.009 $(0.015)$			0.001 $(0.017)$			0.012 $(0.016)$		
Same-sex siblings		$0.050^{***}$ $(0.015)$	$0.050^{***}$ (0.015)		0.059*** $(0.016)$	0.069*** (0.018)		0.048*** (0.018)	$0.048^{***}$ (0.018)		0.048*** (0.017)	0.046** $(0.019)$
Respondent was fostered			$-0.091^{***}$ (0.020)						$-0.100^{***}$ (0.022)			
Other covariates Apple × Sev FF.	No	$Y_{es}$	$Y_{\Theta S}$	No S	$_{ m No}^{ m No}$	$_{ m No}^{ m No}$	No ON	$Y_{es}$	$Y_{\Theta S}$	No	$_{ m No}^{ m No}$	$_{ m No}^{ m No}$
Birth order × Sex FE Family FE	$_{ m No}^{ m No}$	m Yes No	m Yes No	$_{ m No}^{ m No}$	m Yes	Yes	$_{ m o}^{ m N}$	Yes	m Yes	m No	Yes Yes	Yes
$\begin{array}{l} R2 \\ \# \ \text{Observations} \end{array}$	0.001	0.059 3444	0.065	0.573 $3444$	0.600 $3444$	0.575 $2755$	0.000	0.053 3444	0.059 3444	0.642 3444	0.665 3444	0.665 $2755$
Mean Dep.	.74	.74	.74	.74	.74	.74	.43	.43	.43	.43	.43	.43

NOTES. This table reports the OLS estimation of the coefficients of the regressions of two outcomes on a binary variable equal to 1 if and only if individual i was fostered as a child, and on control variables indicated at the bottom of each column. Other covariates are: dummy variables for each parents' education level, dummy variables for the family's ethnic group. The dependent variables are the probability to have met or talked with the sibling who replied to the survey in the month preceding the survey. The sample of observations comprises all siblings of a given family older than 21 at the time of the survey, except the sibling who replied to the survey. Standard errors in parentheses. \*\*\*, \*\*, \* denote significance at the 1%, 5%, and 10% level.