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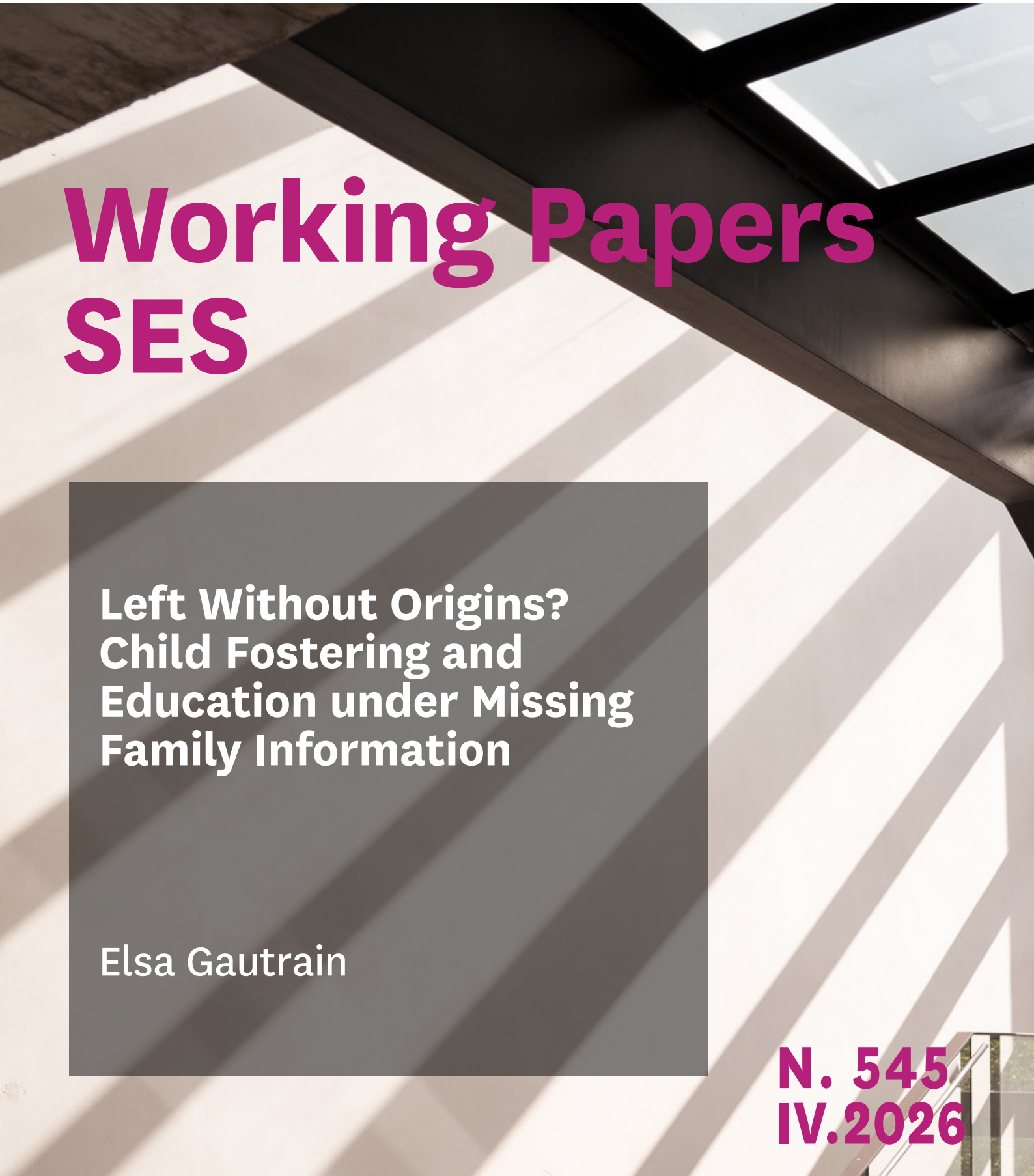

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Left Without Origins? Child Fostering and Education under Missing Family Information

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Left Without Origins? Child Fostering and Education under Missing Family Information *

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Abstract

Child fostering is widespread in sub-Saharan Africa, yet its effects on children's education remain debated. This paper examines educational outcomes across different living arrangements in Ghana, distinguishing fostered children, biological siblings remaining with their mothers, host siblings, and children in non-fostering households. A key challenge is that fostered children observed in host households lack information on their family background in standard surveys. I address this limitation by exploiting information from foster-out children declared by mothers and implementing a donor-based multiple random imputation strategy to recover missing family background for foster-in children. Once mothers and sibship characteristics are accounted for, the initial educational disadvantage of fostered children largely disappears. The results suggest that observed educational gaps mainly reflect selection into fostering arrangements rather than fostering itself.

Keywords: Child fostering; Educational outcomes; Family background; Multiple imputation; Extended family; Ghana

JEL classification codes: I24; J13; O15; D10; J12.

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1 Introduction

Changes in children's living arrangements play a central role in shaping their educational trajectories and intergenerational mobility within families (Alesina et al., 2021). Many of these arrangements arise from parental decisions such as migration, changes in child caregiving arrangements, marriage, or divorce. Among them, child fostering, i.e. a situation in which a child lives outside the parental household, remains widespread in many parts of sub-Saharan Africa. Despite its prevalence and potential implications for children's human capital accumulation, child fostering has received relatively limited attention in the economic literature. This paper asks whether fostered children experience different educational outcomes than non-fostered children once differences in family background are taken into account.

A key difficulty in studying the consequences of this practice is that fostering decisions are often intertwined with other family changes, e.g. the arrival of a new child (Cotton, 2024) or the mother's remarriage (Grant and Yeatman, 2014). Moreover, family background influences children's educational outcomes independently of fostering, which complicates the identification of its causal impact. An additional empirical challenge arises from the structure of most available datasets. Fostered children are typically observed only in their receiving households, where information on their family of origin, e.g. maternal education and fertility history, or sibling composition, is missing. As a result, differences in educational outcomes between fostered and non-fostered children may reflect both the consequences of fostering and pre-existing differences between families.

In this paper, I develop a strategy to explicitly account for family background, e.g. characteristics related to the mother and the sibling group, in order to compare the educational outcomes of fostered children with those of non-fostered children. My empirical approach relies on large-scale cross-sectional household surveys from the Demographic and Health Surveys (DHS). I show how such data can be used to recover rich information on family background and to study child fostering in a consistent and replicable framework. Using mothers' declarations, I identify children who have been fostered out and reconstruct detailed information on sending households and sibling composition. At the same time, fostered children can be observed in their host households. However, as is typical with cross-sectional data, detailed information on fostered children's family of origin is not available once the child resides outside the parental household. To address this limitation, I exploit information from sending households and implement a donor-based multiple imputation strategy to recover the missing family background characteristics of fostered children observed in receiving households. Although sending and receiving households cannot be directly matched in the DHS, I provide descriptive evidence showing that children identified as fostered out share similar observable characteristics with fostered children observed in receiving households. This strategy makes it possible to incorporate family background into the analysis and to study fostering and education using widely available cross-sectional survey data. Because DHS surveys are available for many countries, this approach also provides a scalable framework to study child fostering across a wide range of contexts.

Based on this framework, I define a comparison group consisting of children who live with their biological mother but have at least one sibling who has been fostered out. Fostered children observed in receiving households are compared to this group of biological

siblings remaining in the sending household. Although this group does not constitute a perfect counterfactual for what fostered children's outcomes would have been in the absence of fostering, it provides a close proxy in the absence of pre-fostering information. In this respect, the paper is closely related to Akresh (2004), who relies on a specific survey in Burkina Faso that makes it possible to link sending and receiving households and to estimate the impact of fostering using household fixed effects. My approach is also related to Beck et al. (2015), who compare foster children to their biological siblings using cross-sectional data without directly matching sending and receiving households. The key difference lies in the data and empirical strategy. While existing studies rely on dedicated and often country-specific surveys, I show how widely available cross-sectional data, such as the DHS, can be used to recover family background and implement a sibling-based comparison framework.

More broadly, the existing literature relies mainly on two types of comparison groups. Many studies compare fostered children with non-fostered children in cross-sectional samples or with their host siblings (see for instance, Badaoui and Mangiavacchi, 2022; Eloundou-Enyegue and Shapiro, 2004; Gage, 2005; Lachaud et al., 2016). The first approach suffers from substantial heterogeneity in the control group, as it combines children from sending households, host households, and children not involved in fostering. While the second approach compares children within the same household environment, it may be affected by selection into receiving households, as foster children may be requested by caregivers (Hampshire et al., 2015), and also placed in households with greater educational resources or better living conditions. Moreover, the presence of a foster child may affect intra-household resource allocation, e.g. through a redistribution of domestic tasks, thereby influencing the outcomes of host siblings (Marazyan, 2015). Following Akresh (2004), I also report comparisons between foster children and these alternative groups to benchmark my results against the existing cross-sectional literature and assess how accounting for family background alters the estimated relationship between fostering and educational outcomes.

The paper contributes to the literature in three ways. First, it proposes a methodological contribution by showing how cross-sectional household surveys can be used to recover information on the family background of fostered children, even when this information is structurally missing from the data. Second, the paper contributes to the empirical literature on child fostering and education by documenting the extent to which educational differences between fostered and non-fostered children reflect selection into fostering arrangements rather than the consequences of fostering itself. Third, by jointly considering several comparison groups, i.e., biological siblings, host siblings, and children living in non-fostering households, the analysis helps disentangle the respective roles of family background, receiving household environment, and fostering status itself.

The empirical analysis focuses on Ghana, a context in which child fostering remains widespread despite significant economic and social transformations. While fostering is a long-standing practice and prevalence rates are comparable to those observed elsewhere in sub-Saharan Africa (Isiugo-Abanihe, 1985; Cotton, 2021), Ghana offers a particularly informative setting due to the coexistence of multiple forms of family restructuring. Relatively high rates of premarital births, union dissolution, and remarriage contribute to a large number of single-mother households (Ayebeng et al., 2022). In such contexts, extended kinship networks play an important role in organizing childcare arrangements,

including through fostering.

The empirical results highlight the central role of selection into fostering arrangements. Simple comparisons suggest that fostered children exhibit different educational outcomes compared to other groups, particularly when compared to host siblings or to children living in non-fostering households (Lachaud et al., 2016; Hampshire et al., 2015). However, once maternal and family background characteristics are taken into account, these differences become substantially smaller, suggesting that a significant share of the observed educational gap reflects pre-existing differences between families. Moreover, when characteristics of the receiving household environment are considered, fostered children appear more educated than other groups of non-fostered children. These findings highlight the importance of accounting for both selection into fostering and selection into receiving households when interpreting educational differences across children.

A large literature documents the strong intergenerational transmission of education, showing that increases in mothers' schooling lead to substantial gains in children's educational outcomes (Tansel, 1997; Behrman and Rosenzweig, 2002; Black et al., 2005). Conversely, children growing up in disrupted or complex family environments, e.g. blended families or households affected by union dissolution, often experience lower educational attainment (Ginther and Pollak, 2004). While some forms of marital instability may be associated with greater female autonomy and no difference in children education (Crespin-Boucaud and Hotte, 2021), they also reflect economic or social shocks that can affect children's schooling trajectories. In this respect, the findings complement studies emphasizing the importance of pre-existing differences between children and households involved in fostering, while calling for a more cautious interpretation of the negative associations commonly reported in the cross-sectional literature (Ariyo et al., 2019). I also document heterogeneous patterns by gender, indicating that the relationship between fostering and educational outcomes differs for boys and girls.

The remainder of the paper is structured as follows. Section 2 presents the data and describes the different groups of children according to their living arrangements. Section 3 discusses selection into child fostering. Section 4 presents the empirical approach and the donor-based imputation procedure. Section 5 reports the main results and heterogeneity by gender. Section 6 discusses patterns of household selection and their implications. Section 7 concludes.

2 Data and sample description

2.1 Standard large-scale survey

Th data used in this paper comes from the 2022 Ghana Demographic and Health Survey (GDHS), which relies on a two-stage sampling design based on the 2021 Ghana Population and Housing Census. A total of 18,450 households were interviewed, yielding a sample that is representative at the national, regional, and urban–rural levels.

I combine information from two core DHS questionnaires: the household questionnaire, which provides a complete roster of all household members, and the women's questionnaire, administered to all women aged 15 to 49. From the household questionnaire basic socio-demographic characteristics can be build for all individuals, and co-residence with the biological parents is identified for all children. However, for children who do

not live with their parents, the information available is limited by the survey design and typically restricted to age, gender, and educational outcomes.

Thus, I also exploit the rich information contained in the women's questionnaire providing details on marital histories, e.g., the timing of first and last unions and relationship status, as well as complete birth histories. Mothers report all births, regardless of whether their children are co-residing in the household. By combining the timing of births with the timing of unions, I define key dimensions of family background at the child level: birth order and exposure to family restructuring events such as union dissolution or remarriage. For children co-residing with their mother, these characteristics can be directly matched. For surveyed children who do not co-reside with their mother, this information is missing by survey design. To retrieve this information, I will therefore implement a suitable empirical strategy, which I will describe in more detail below.

The analysis focuses on children aged 6 to 14 at the time of the survey, corresponding to the ages of compulsory schooling in Ghana.[1] This age range captures children who are expected to attend school, are young enough to remain dependent on their household,[2] and may already contribute to household production (children under five are typically only consumers, Vandermeersch and Chimere-Dan, 2002), while not yet being legally allowed to engage in paid employment. Since family background information is constructed from mothers' reports, the sample is restricted to children whose mother is alive at the time of the survey.

2.2 Defining children's living arrangements

In this section, I describe how children's living arrangements are defined and introduce different comparison groups used in the analysis. Children are grouped into four categories: *(i)* fostered children; *(ii)* biological siblings of fostered children remaining with the mother; *(iii)* host siblings living in households that receive a fostered child; and *(iv)* children living in non-fostering households (hereafter referred to as unaffected children).

2.2.1 Fostered children

The data allow to identify fostered children in two complementary ways. First, I observe them directly in their host households after the fostering decision. Second, using information collected in the women's questionnaire, I identify children who have been fostered out of the parental household. Although these two groups cannot be matched at the individual level, they should be comparable on average, as they represent the same underlying population of fostered children observed from two different perspectives. I provide descriptive evidence to support this assumption.

[1] In Ghana, children typically enter primary school at age six (1992 Constitution of Ghana), and basic education is free and compulsory following the 2002 Free Compulsory Universal Basic Education reform. The 2008 Education Act mandates completion of at least six years of primary education and three years of lower secondary education. From age 15 onward, individuals are legally allowed to work (Labour Decree 1967, NLCD 157).

[2] Below age 15, individuals do not report their marital status. In practice, children in this age group are very unlikely to be married, as none are identified as spouses of the household head.

Observed in host households: foster-in In cross-sectional data, fostered children are typically identified as children who live apart from both biological parents. By construction, these children are observed only after the fostering decision has occurred. I rely on reported parent–child co-residence rather than on the relationship to the household head.[3] Using this approach, I identify 3,139 fostered children aged 6–14 in receiving households, representing 19 percent of children in this age group with a living mother.[4] In the remainder of the paper, I refer to those children as foster-in children.

Declared by their mother: foster-out To recover information on the family background of fostered children, which is unobserved by design for foster-in children, I rely on information reported in the women's questionnaire. Women aged 15–49 report information on each of their biological children, including whether the child currently co-resides with them. I define as fostered-out children those aged 6–14 who are alive but do not live with their mother at the time of the survey. This approach allows to observe the sending side of fostering, although the data do not provide precise information on the child's living arrangement outside the maternal household.[5] As a result, this definition may be subject to some measurement error, which I discuss below. Using this indirect definition, I identify 2,521 children, hereafter referred to as foster-out children.

Comparison of foster-in and foster-out samples Foster-in and foster-out children can be viewed as two complementary representations of the same underlying population of fostered children, observed from the receiving and sending sides, respectively. While this assumption is plausible, these groups overlap with some errors. I therefore discuss the main sources of potential discrepancies between the two samples.

First, some foster-in children may have mothers living abroad or outside the age range of the women's questionnaire (15–49), leading to exclusion errors in the foster-out sample. The 2022 GDHS does not provide information on maternal emigration, but according to Smeets and Cebotari (2025) this pattern is relatively uncommon in Ghana concerning between 2.5% of girls and 3% of boys aged 12-21 in the primary urban centers with out-migration in Ghana. Regarding the age restriction, fewer than 4 percent of women aged 36 and over are currently pregnant and would have a child aged 6–14 after age 49. Moreover, among children aged 6–14 living with their mothers, 88 percent have a mother aged 15–49 who answered the questionnaire. This suggests that exclusion errors due to the age restriction are likely to be limited. The larger number of foster-in children relative to foster-out children may also reflect the over-representation of receiving households in

[3]Although the 2022 GDHS includes a specific category for "adopted/foster child," only 4 percent of foster-in children as defined in this study are classified under this label. This category is rarely used in practice, as respondents more often report the foster child's relationship to the household head using alternative categories, such as "grandchild".

[4]This share is similar when removing the restriction on mother survival. The age range considered covers the majority of foster-in children, as 79 percent of them are aged between 6 and 14.

[5]Children who are fostered might have not move from this specific household. The foster-out child might have been left behind by their mother in another household where they where residing together. It could also be that the household of origin of the foster-out child dissolved and while the child was fostered the mother change place of residence. But we cannot distinguish between these cases with cross sectional data.

the survey. When sampling weights are applied the number of foster-in children decreases to 2,873.

Inclusion errors in the foster-out sample may arise if the child is living with the father, or if the child has migrated abroad with a relative.[6] However, only 6 percent of children aged 6–14 with both parents alive reside exclusively with their father, suggesting that this source of misclassification is limited. Moreover, the high financial and social costs of international migration reduce the likelihood that Ghanaian children migrate abroad with their parents (Cebotari and Mazzucato, 2016).

To further assess the comparability of the two samples, I compare their observable characteristics. Although the set of comparable variables is limited, age and sex are observed in both samples. Figure 1 shows the distribution of children by age and sex for foster-in and foster-out groups. Both groups exhibit a slightly higher proportion of girls, and their age distributions are remarkably similar, with a maximum difference of three percentage points for girls aged 11.

Kolmogorov–Smirnov tests confirm that the age distributions do not differ significantly overall or among boys, with only weak evidence of differences for girls at the 10 percent level. In addition, no significant difference in gender composition is observed between the two groups. Taken together, these results suggest that potential inclusion and exclusion errors are limited and support the assumption that foster-in and foster-out children belong to comparable populations.

2.2.2 Biological siblings

I define a sending household as a household with at least one foster-out child according to the definition above. Several mothers may reside in the same household; some may live with all of their children aged 6–14, while others may not. The sample of biological siblings is restricted to those whose own biological mother has at least one foster-out child. Thus, children living in households where another woman has fostered out a child, but whose own mother has not, are excluded, resulting in the removal of 79 children from the sample.

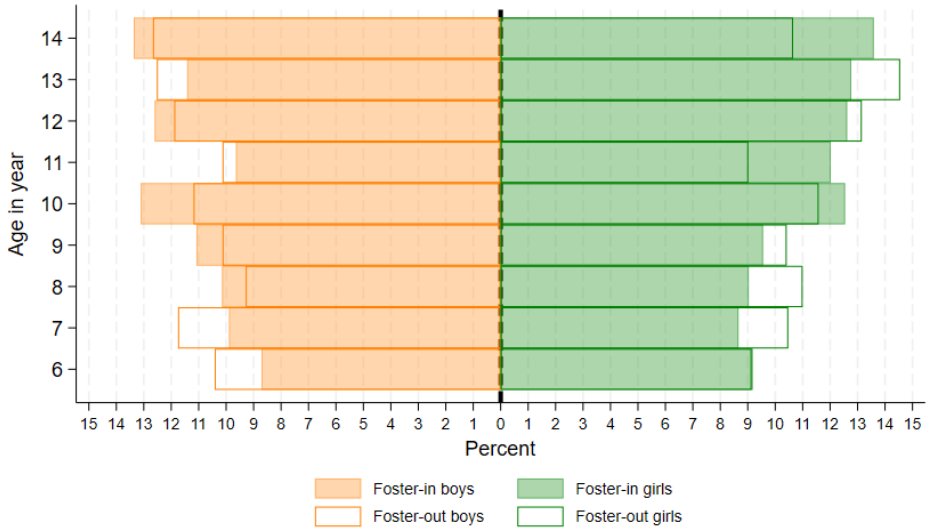
With cross-sectional data, the biological siblings provide the closest counterfactual of what would have been fostered children if they were remaining with the mother. Both groups were exposed to similar environments before fostering that jointly influence fostering decisions and children's educational outcomes. However, biological siblings might also be impacted by fostering in an indirect way (change in household structure and resources allocation for instance). Comparing both groups also allows me to examine selection into fostering between siblings of a same mother.

2.2.3 Host siblings

Host siblings are defined as non-fostered children living in receiving households, i.e., households hosting at least one foster child. I classify as host siblings all children aged

[6]Children enrolled in boarding schools may still be considered members of their mother's household if they return home regularly, according to DHS guidelines. Using the 2014 Ghana DHS, I find that among women with a foster-out child aged 6–14, only 0.48 percent report having a child at boarding school at the time of the survey. This suggests that such measurement error is unlikely to significantly affect the definition of the sample.

Figure 1: Foster-in VS foster-out children



Notes: shares and standard errors are computed without individual sampling weights; foster-out children are not directly surveyed in the household questionnaire but identified through mothers' declarations, so sampling weights cannot be meaningfully assigned to them; Kolmogorov–Smirnov tests are also computed without weights, as the standard implementation of the test does not accommodate survey weights.

Source: author's elaboration on the 2022 GDHS.

6–14 who live with their mother aged 15–49 in a receiving household. These children may or may not be biologically related to the foster-in child, e.g., cousins.

This groups is likely to not be directly comparable to fostered children due to household selection into fostering: the characteristics of receiving households and children members can influence fostering decisions. For instance, if fostering is motivated by educational considerations, households with better access to schooling and more educated children may be more likely to receive fostered children. Moreover the education of host siblings could also be impacted by hosting another child of the same age group.

83 households characterized by a double fostering arrangement are excluded from the analysis, leading to drop 135 children who are defined as host and biological siblings at survey time.[7]

2.2.4 Unaffected children

The final group consists of children living in non-fostering households at the time of the survey, whom I refer to as unaffected children. These children are not directly or indirectly exposed to fostering arrangements within their household at the survey time. Even if the education of those children should not be impacted by fostering they may be subject to selection issue: households not involved in fostering may differ systematically from

[7]Double fostering arrangements are complex, as the decisions to send and to host a child are likely to be interdependent. For instance, such arrangements may reflect reciprocal exchanges of children to reallocate labor or skills across households. Given the small number of such cases, this living arrangement is relatively uncommon in Ghana and is not analyzed further in this paper.

those that are. In particular, differences in socio-economic conditions, family structure, or access to kinship networks may influence both the likelihood of fostering and children's educational outcomes.

Although these children may have been exposed to fostering in the past, either directly as fostered children or indirectly as biological or host siblings, this information is not observed in the data. In the remainder of the paper, households in which these children live with their parents are referred to as non-fostering households.

2.3 Description of observed children

Table 1 presents observed differences between fostered children and counterfactual groups used in the literature. Foster-in children are more likely to be girls and are, on average, older than children in the other groups. 60.8 percent of them live in the household of their grandparents, a living arrangement that is relatively uncommon among non-fostered children. Such arrangements may be favorable to children's access to resources, as older household members often receive transfers that could benefit co-resident children (Duflo, 2003; Dumas et al., 2025).

Table 1: Descriptive statistics of children by living arrangement

	(1)	(2)	(3)	(4)
	Foster-in children	Host siblings	Biological siblings	Unaffected children
Girl	0.543	0.500	0.487	0.499
	(0.012)	(0.024)	(0.019)	(0.007)
	ref.	*[-0.042]*	*[-0.055]***	*[-0.043]****
Age	10.187	9.669	9.139	9.647
	(0.062)	(0.126)	(0.092)	(0.036)
	ref.	*[-0.518]****	*[-1.048]****	*[-0.540]****
Grandchild of the head	0.608	0.160	0.046	0.046
	(0.011)	(0.017)	(0.008)	(0.003)
	ref.	*[-0.448]****	*[-0.563]****	*[-0.562]****
Child of the head	0.000	0.766	0.898	0.918
	(0.000)	(0.020)	(0.011)	(0.004)
	ref.	*[0.766]****	*[0.898]****	*[0.918]****
Dead father	0.097	0.054	0.063	0.052
	(0.007)	(0.011)	(0.010)	(0.003)
	ref.	*[-0.043]****	*[-0.034]****	*[-0.045]****
Co-resident father	0.000	0.597	0.658	0.650
	(0.000)	(0.024)	(0.018)	(0.007)
	ref.	*[0.597]****	*[0.658]****	*[0.650]****
School attendance	0.926	0.951	0.873	0.924
	(0.005)	(0.007)	(0.011)	(0.003)
	ref.	*[0.025]****	*[-0.054]****	*[-0.002]*
Schooling years	2.586	2.422	1.682	2.377
	(0.055)	(0.110)	(0.074)	(0.033)
	ref.	*[-0.163]*	*[-0.904]****	*[-0.209]****
Obervations	3,139	739	1,216	8,071

Notes: averages and standard errors (in parentheses) and p-values of the differences between the groups of children (in brackets) have been computed using sampling weights; the sample includes children aged 6-14, who are foster-in children or have a biological mother aged 15-49; double orphans, biological siblings in receiving households, and children in sending households without any foster-out siblings are excluded from the sample; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.
Source: author's elaboration on the 2022 GDHS.

Foster-in children are also more likely to have a deceased father than other groups of children. Parental death is known to have long-term consequences for children's outcomes (Beegle et al., 2006). The death of a father may represent a negative shock for the household, both in terms of income and domestic organization, and may trigger the need to foster a child. However, since this information is observed after the fostering decision, it can be that the death occurred after the child was fostered. Moreover, a substantial

share of non-fostered children do not co-reside with their father, ranging from 35 to 40 percent depending on the living arrangement, suggesting that single motherhood is relatively common in Ghana.

Host siblings display the highest school enrolment rates, with 95 percent currently attending school. Their probability of attending school is about 2.5 percentage points higher than that of foster-in children, while they have completed a similar number of years of schooling. In contrast, biological siblings, are significantly less likely to attend school and have completed fewer years of schooling than other children. These differences may partly reflect age composition and selection processes within families, as fostering decisions may involve choosing which child within the sibling group is sent to another household based on educational outcomes.

When examining outcomes by sex, the enrolment gap between foster-in children and biological siblings is more pronounced for boys (Appendix Table A.1). Foster-in boys are more likely to attend school than foster-in girls, whereas among biological siblings the pattern is reversed: a larger share of girls attend school than boys. Another noticeable feature is that girls are less likely than boys to be hosted in their grandparents' households, although this living arrangement remains far more common for foster-in children than for other groups.

3 Family background and fostering

By identifying fostered children both in receiving households and through mothers' declarations, I can observe a set of characteristics that shed light on the mechanisms driving selection into child fostering. I examine these selection patterns at two levels: within sibling groups and across mothers.

3.1 Intra-sibling group selection

Table 2: Differences between siblings

	(1)	(2)	(1)-(2)	(1)-(2)
	Foster-out children	Biological siblings		
Age	11.460	9.138	2.322***	2.441***
	(0.073)	(0.070)	(0.102)	(0.115)
Girl	0.563	0.488	0.075***	0.090***
	(0.016)	(0.014)	(0.022)	(0.023)
Multiple birth	0.015	0.036	-0.021***	-0.016***
	(0.004)	(0.005)	(0.007)	(0.006)
First born	0.258	0.068	0.190***	0.187***
	(0.014)	(0.007)	(0.015)	(0.016)
Born before first union	0.141	0.044	0.097***	0.087***
	(0.011)	(0.006)	(0.012)	(0.009)
Born before current union	0.316	0.136	0.180***	0.143***
	(0.015)	(0.010)	(0.017)	(0.011)
Observations	937	1,216	2,153	2,153
Mother fixed effects:	No	No	No	Yes

Notes: averages and standard errors (in parentheses) have been computed using mother's sampling weights; the sample includes 6-14 foster-out children and their biological siblings; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.
Source: authors' elaboration on the 2022 GDHS.

Table 2 compares foster-out children with their siblings of the same age range who remain in their mother's household. Significant differences emerge between the two groups, even after including mother fixed effects. The first noticeable pattern is that fostered children are more likely to be older girls. Although multiple births are relatively rare, twins or higher-order multiple births appear less likely to be separated from the mother than other siblings.

Birth order also plays an important role in selection into fostering. About 26 percent of foster-out children are first-borns, which is approximately 19 percentage points higher than among their biological siblings. This suggests that birth order is an important determinant of fostering decisions. Part of this pattern reflects age differences, as first-born children are, by definition, older on average.[8] More broadly, this result resonates with findings on birth order and parental investment (de Haan, 2010; Morduch, 2000; Dumas and Lambert, 2011), which show that eldest children often receive specific attention and responsibilities.

I construct a particularly important set of characteristics, in line with the literature on the motivations behind child fostering, related to children born outside of a union. By comparing the timing of each child's birth with the dates of the mother's unions (cohabitation or marriage), two indicators are defined: whether the child was born before the current union and whether the child was born before the first union of their mother (who has been in union at least once). For children whose mother is currently in their first union, the two variables coincide. However, for children whose mother have experienced multiple unions, the "Born before current union" variable captures children born either outside a union or within a previous partnership. A large share of foster-out children fall into these categories, suggesting a strong association between births out of wedlock and fostering decisions. This observation is in line with findings from Grant and Yeatman (2014) in Malawi and may reflect the reluctance of some men to raise children born from a partner's previous relationship.

It should be noted that the majority of foster-out children do not have a biological sibling in the same age range (6–14) in the data. To assess whether the patterns documented above extend beyond the subset of sibling pairs, I replicate the analysis including all foster-out children, regardless of whether they have a biological sibling in the sample. In this case, however, maternal fixed effects cannot be included. Table A.2 in the Appendix reports these results. The main patterns are more pronounced: birth order and the timing of births relative to the mother's unions remain strong predictors of fostering decisions, although the differences related to sex and multiple births are no longer statistically significant.

3.2 Inter-mother selection

In addition to the selection processes operating within sibling groups, fostering decisions may also reflect selection between mothers. I therefore examine whether mothers who have fostered out one of their children differ systematically from those who do not. A total of 1,896 women aged 15–49 in the sample have at least one foster-out child aged

[8]Being first-born refers to the full set of siblings, not only to those in the 6–14 age range.

6–14.[9] Table 3 reports differences between these mothers and the 4,945 mothers who are not fostering any of their children aged 6–14 at the time of the survey. The latter group includes both mothers of host siblings and mothers in non-fostering households.

Table 3: Descriptive statistics of mothers by fostering arrangement

	(1)	(2)	(1)-(2)	
	Fostering-out	Not fostering-out		
Age	35.164	37.027	-1.863***	
	(0.149)	(0.092)	(0.178)	
Muslim	0.213	0.200	0.014	
	(0.009)	(0.006)	(0.011)	
Christian	0.737	0.750	-0.013	
	(0.010)	(0.006)	(0.012)	
Akan	0.408	0.450	-0.041***	
	(0.011)	(0.007)	(0.014)	
Age at first birth	19.591	21.102	-1.512***	
	(0.081)	(0.061)	(0.113)	
Schooling years	5.714	6.509	-0.794***	
	(0.102)	(0.070)	(0.131)	
Nb of births	4.203	3.964	0.239***	0.223***
	(0.048)	(0.026)	(0.053)	(0.038)
Nb of girls 0-15	1.503	1.313	0.190***	0.162***
	(0.025)	(0.014)	(0.028)	(0.028)
Nb of boys 0-15	1.479	1.331	0.147***	0.109***
	(0.024)	(0.015)	(0.028)	(0.028)
Share of girl among children	0.499	0.501	-0.002	0.001
	(0.009)	(0.006)	(0.011)	(0.011)
Nb of children above the ideal nb	0.009	0.007	0.002	0.003
	(0.002)	(0.001)	(0.002)	(0.002)
In monogamous union	0.597	0.681	-0.084***	-0.075***
	(0.011)	(0.007)	(0.013)	(0.013)
In polygamous union	0.172	0.134	0.039***	0.031***
	(0.009)	(0.005)	(0.010)	(0.009)
Has been in union more than once	0.377	0.211	0.167***	0.167***
	(0.011)	(0.006)	(0.012)	(0.012)
In union without co-resident partner	0.183	0.175	0.008	0.018*
	(0.009)	(0.005)	(0.010)	(0.011)
Never been in union	0.057	0.046	0.011*	0.002
	(0.005)	(0.003)	(0.006)	(0.006)
Divorced/separated/widow	0.173	0.139	0.034***	0.042***
	(0.009)	(0.005)	(0.010)	(0.010)
Gave birth before current union	0.419	0.158	0.262***	0.247***
	(0.011)	(0.005)	(0.011)	(0.011)
Gave birth before first union	0.191	0.091	0.100***	0.091***
	(0.009)	(0.004)	(0.009)	(0.009)
Observations	1,896	4,945	6,841	6,841
Control variables	No	No	No	Yes

Notes: average and standard errors (in parentheses) have been computed using sampling weights; the sample includes women who have a child aged 6-14 at survey time; control variables include age, religion, ethnicity, age at first birth and schooling years; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.
Source: authors' elaboration on the 2022 GDHS.

Several significant differences emerge between mothers who have fostered out a child and those who have not. Fostering mothers tend to be younger, less educated on average, and to have had their first child at an earlier age. In contrast, religion does not appear to be a strong determinant of fostering decisions. Women belonging to the Akan ethnic group, however, are less likely to foster out a child. Given the matrilineal inheritance norms prevailing among this group, the motivations for fostering, the selection of fostered children, and the choice of host households are likely to be shaped by these kinship institutions (La Ferrara, 2007).

[9]These women are the biological mothers of foster-out children, regardless of whether they have another co-resident child in the same age range.

The remaining variables in Table 3 relate to women's reproductive and marital histories. Because the analysis relies on cross-sectional data, these characteristics are measured after the fostering decision and should therefore be interpreted with caution. In the last column of Table 3, I report differences between groups of mothers while controlling for basic socio-demographic characteristics that are supposed to be determined before fostering.

On average, mothers fostering-out have more children in total, with the difference being particularly pronounced for the number of girls under age 15. This pattern is consistent with Akresh (2009), who documents a positive association between the number of girls and the likelihood of fostering in Burkina Faso. However, the share of girls among children does not appear to significantly influence fostering behavior. Overall, these results suggest that fostering is primarily associated with the size of the sibling group rather than its gender composition. This finding is consistent with Cotton (2024), who shows that fostering responds to family size constraints in Malawi. In contrast to that approach, which emphasizes deviations from mothers' reported ideal number of children, the patterns observed here point instead to the role of the realized number of children in the household.

Regarding women's marital status and union histories, 77 percent of fostering mothers are currently in a union, compared with 82 percent among non-fostering mothers. Polygamy appears to be positively correlated with fostering, a pattern also observed by Beck et al. (2015) in Senegal. Mothers who have fostered out a child are also more likely to be divorced and slightly more likely to report having never been in a union. The dissolution of a parental union constitutes a negative shock for children, with lasting effects on their consumption and educational outcomes (Keith and Finlay, 1988; Amato and Keith, 1991). More broadly, women who experience, or have experienced, single motherhood, particularly through births outside of a union, appear more likely to foster out one of their children. Evidence from Tanzania similarly shows that children experiencing single motherhood are more likely to live away from their mother at some point during childhood (Gaydosh, 2015).

4 Empirical approach

4.1 Donor-based imputation

A central empirical challenge when studying the educational outcomes of fostered children using standard cross-sectional household surveys is that information on their family background is systematically missing. Fostered children observed in receiving households are not interviewed together with their biological mothers, which implies that key determinants of educational outcomes, e.g., maternal education, age at birth, or marital history, are not observed for them. In the 2022 GDHS, this feature arises mechanically from the survey design. Consequently, these variables are structurally missing for fostered children observed in host households, which makes it impossible to directly include them as control variables in standard regression models. This limitation is particularly problematic because fostering decisions are themselves closely related to family characteristics. If fostered children originate from families that differ systematically from those of non-fostered children, simple comparisons of educational outcomes will conflate the

effect of fostering with pre-existing differences in family background. In other words, the absence of information on the sending household prevents the researcher from adequately controlling for selection into fostering.

To overcome this limitation, I reconstruct the family background of foster-in children by exploiting information from the sending side of fostering (mother declaring a fostered child). I use foster-out children as donors to infer the family background of foster-in children observed in receiving households. The intuition is that foster-out children provide observable information on the family environments of children who are foster-in. Specifically, I implement a donor-based multiple imputation procedure, also known as hot-deck imputation. In details, foster-in children are matched to comparable foster-out children based on age and sex. Within each age–sex cell, the full vector of family background characteristics is randomly drawn from the donor pool. In practice, this means that each foster-in child is assigned the entire set of family background characteristics observed for a randomly selected foster-out child of the same age and sex. This strategy allows the recovery of realistic family profiles for fostered children while preserving the joint distribution of covariates observed in the data. The imputation procedure is repeated multiple times, and estimates are combined using Rubin's rules (Rubin, 1987) so that the additional uncertainty induced by missing data is reflected in the standard errors.

The validity of this approach relies on the assumption that foster-out children observed through mothers' declarations are representative of the family environments from which fostered children originate, conditional on age and sex. In other words, conditional on these characteristics, the distribution of family background variables among foster-out children is assumed to approximate the distribution that would be observed for foster-in children if their mothers were interviewed. While this assumption cannot be tested directly, the descriptive comparisons between foster-in and foster-out children presented in the Section 2.2.1 provide supportive evidence that the two groups share similar observable characteristics.

Beyond addressing a data limitation, this approach provides a way to approximate the counterfactual family background of fostered children, information that is typically unavailable in cross-sectional surveys. While imputation methods are widely used in statistics and public health to handle missing data (Little and Rubin, 2002; Andridge and Little, 2010; van Buuren, 2018), they have rarely been used as a central identification strategy in applied economics. In the context of child fostering, this approach makes it possible to incorporate family background into the analysis and to examine how much of the observed educational gap between fostered and non-fostered children reflects selection rather than the causal effect of fostering.

4.2 Specification

I estimate the association between fostering status and children's educational outcomes using the following specification:

$$y_i = \alpha_1 F_i + \alpha_2 H_i + \alpha_3 S_i + \sum_j \beta_j X_i^j + d_i^{\text{age}} + d_i^{\text{sex}} + (d_i^{\text{age}} \times d_i^{\text{sex}}) + \varepsilon_i, \tag{1}$$

where y_i denotes the educational outcome of child i, and F_i, H_i, and S_i are mutually

exclusive indicators for fostered children, host siblings, and biological siblings, respectively, as defined in Section 2.2. The omitted category corresponds to children living in non-fostering households. All specifications include a flexible set of age and sex fixed effects, namely age dummies d_i^{age}, the sex dummy d_i^{sex}, and their interactions, to allow for non-linear and sex-specific age profiles in educational outcomes.

The set of covariates X_i^j is progressively enriched across specifications. It includes family background characteristics that are observed for children living with their biological mother but are structurally missing for foster-in children. These variables are recovered using the donor-based imputation procedure described above. As a result, family background characteristics are observed for unaffected children, host siblings, and biological siblings, and imputed for foster-in children. Incorporating these variables aims to control for differences in family background that may jointly influence fostering decisions and children's educational outcomes, thereby reducing bias due to selection into fostering while approaching the causal effect of the practice.

The coefficients α_1, α_2, and α_3 capture differences in educational outcomes between children exposed to fostering in different ways and children living in non-fostering households. However, these comparisons should be interpreted with cautious since they can still reflect unobserved selection process into the practice even when accounting for family background (such as availability of the kinship network to care for children). To move closer to a causal interpretation, the empirical strategy relies on contrasts across groups that are exposed to fostering but differ in the dimension of interest. First, the difference $\alpha_1 - \alpha_2$ compares fostered children to host siblings living in the same receiving households. This comparison contrasts fostered children with host siblings living in the same households, allowing differences associated with fostering status to be assessed within receiving households. However, it may still reflect *(i)* selection into receiving households if fostered children are placed with systematically better (or lower) educated children of their age, and *(ii)* indirect effect of fostering on host siblings education. Second, the difference $\alpha_1 - \alpha_3$ compares fostered children to the biological siblings who remain with the mother. Because these children originate from similar environments prior to fostering, it helps account for unobserved factors that jointly influence fostering decisions and educational outcomes. As such, it provides a comparison that is closer to the counterfactual situation in which fostered children had remained in their family of origin. But it doesn't disentangle between the direct and indirect effect of fostering on biological siblings.

Taken together, these multiple comparisons and the imputation strategy assess the extent to which observed differences in educational outcomes are driven by fostering itself, by the characteristics of selection of the receiving households, or by selection related to family background. The estimation is repeated over $M = 200$ imputed datasets. Reported coefficients correspond to the average estimates across imputations, and standard errors are computed using Rubin's combination rules.[10]

[10]Standard errors combine within-imputation and between-imputation variance following Rubin (1987): $T = \bar{W} + \left(1 + \frac{1}{M}\right) B$, where $\bar{W}$ denotes the average within-imputation variance and B the between-imputation variance across the M estimates.

5 Results

In this section, I discuss the relevance of the comparison groups and examine differences in educational outcomes associated with fostering. I also explore the extent to which family background contributes to these differences.

5.1 Family background and education

Table 4 reports the results of the empirical strategy described above. The omitted group consists of unaffected children. In the baseline specification, the estimates control only for age and sex fixed effects and their interactions. Column (1) reveals sizeable differences in educational outcomes across child groups. Foster-in children have school enrolment rates similar to those of unaffected children but have completed on average 0.143 fewer years of schooling. Given that enrolment rates are comparable at a given age and sex, this gap likely reflects earlier educational delays prior to fostering. Host siblings display higher enrolment rates than unaffected children but do not accumulate more years of schooling. This pattern suggests that these children are not necessarily positively selected in terms of educational attainment, but rather that receiving households may have a greater capacity to enrol children in school (in line with the findings of Zimmerman, 2003). In contrast, biological siblings exhibit the lowest educational outcomes, with both significantly lower enrolment rates and fewer completed years of schooling than children in non-fostering households. This pattern is consistent with the idea that sending households face greater constraints in investing in children's education. This assertion is also supported by the fact that foster-in children are more likely to be enrolled in school and to attend for longer than their biological siblings.

However, foster children may be selected for education over their siblings, with the intention of providing a better environment for the most talented children. Column (2) partially addresses the selection effect by accounting for key dimensions of intra-sibling group selection. While I cannot properly account for education prior to fostering, birth rank and the timing of birth in relation to the mother's marital history are likely to correlate with investment in education (see for instance, Dayioğlu et al., 2009). Introducing these control variables only decreases slightly the educational gap between foster children and biological siblings. Thus at this stage fostering is likely to have a positive impact on education, and it is likely underestimated since biological siblings may benefit from the absence of the fostered child by decreasing intra-household competition over resources.

Column (3) to (5) shows the educational differences partially accounting for maternal background. Once basic mothers' characteristics, i.e, age, age at first birth, ethnicity, and education, are incorporated, the estimated differences across child groups become substantially smaller. Fostered children become more likely to be enrolled than unaffected children, and the gap in years of schooling relative to this group declines markedly (by 39%). Similarly, the educational attainment gap between foster children and host siblings narrows. These results suggest that many of the initial differences in educational outcomes are due to variations in maternal background rather than fostering status itself. This is especially true of mothers' education, which is a crucial determinant of school investment in terms of ability and preferences.

Including indicators of the mother's current marital status and the number of living

children also attenuates the differences across groups. The difference in years of schooling between foster-in children and biological siblings disappears, and host siblings become comparable to unaffected children in terms of school enrolment. These patterns suggest that fertility and marital trajectories play an important role in shaping both fostering decisions and children's educational outcomes. However, the number of unions and the indicator of having an absent husband induce fewer variations in the estimates when adding as control variable.

In the most saturated specification (Column 6), which includes the full set of partially imputed family background variables, foster-in children are as likely to attend school as host siblings and slightly more likely than unaffected children. However, these differences do not translate into substantial differences in completed years of schooling. Relative to biological siblings, the difference in enrolment probability is roughly halved compared to the baseline specification, and the difference in years of schooling is no longer statistically significant.

Taken together, these results indicate that a substantial share of the educational gaps initially observed between fostered and non-fostered children is explained by differences in underlying family background characteristics rather than by fostering itself. Comparing fostered children to the biological siblings allows me to consider children originating from similar environments and avoid some unobserved selection effects at the family level, while the imputation procedure further accounts for selection processes operating within sibling groups. Thus relative to this most credible counterfactual, the evidence suggests that fostering may increase the probability that a child is enrolled in school, but that this advantage does not translate into substantial differences in accumulated years of schooling. The initial educational gaps appear to be largely related to differences in mothers' fertility and marital trajectories rather than to the fostering arrangement itself. But, the cross-sectional nature of the data prevents a full identification of the causal effect. In particular, fostering may generate indirect effects on both biological siblings and host siblings through changes in intra-household resource allocation. The estimated differences should therefore be interpreted as capturing a combination of the direct impact of fostering and these indirect adjustments. For biological siblings, if the departure of a child alters the allocation of resources within the household, biological siblings may benefit from the absence of the fostered child, implying that the observed gap may underestimate the educational disadvantage associated with fostering.

Repeating the same procedure with 500 imputations for the missing characteristics of foster-in children leads to highly similar conclusions (Appendix Table A.4), suggesting that the results are stable with respect to the number of imputations.

5.2 Heterogeneity

Tables A.5 and A.6 in Appendix report the results separately for boys and girls. Several differences emerge across the two groups, both in terms of baseline gaps and in the way these gaps evolve once family background characteristics are taken into account.

For boys, the baseline specification shows that foster-in children are slightly more likely to attend school than unaffected children, although the difference is small and not always significant across specifications. More strikingly, biological siblings remaining with their mother are substantially less likely to be enrolled and complete fewer years of schooling

Table 4: Relative educational outcomes, accounting for family background

	(1)	(2)	(3)	(4)	(5)	(6)
	Dep. var.: School attendance					
Foster-in children	0.008	0.005	0.016**	0.010	0.002	0.015*
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Host sibling	0.032**	0.031**	0.031**	0.019	0.028**	0.021*
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)
Biological sibling	-0.053***	-0.052***	-0.032***	-0.020**	-0.055***	-0.016
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Foster-in children - Host sibling	-0.023*	-0.027**	-0.016	-0.009	-0.027**	-0.007
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)
Foster-in children - Biological sibling	0.062***	0.056***	0.048***	0.029***	0.057***	0.031***
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
Average outcome (Unaffected children)	0.924	0.924	0.924	0.924	0.924	0.924
Mean adjusted R^2	0.004	0.004	0.047	0.032	0.008	0.062
SD of adjusted R^2	0.000	0.000	0.002	0.001	0.001	0.002
	Dep. var.: Schooling years					
Foster-in children	-0.143***	-0.161***	-0.087***	-0.136***	-0.161***	-0.081**
	(0.030)	(0.032)	(0.030)	(0.030)	(0.031)	(0.032)
Host sibling	0.064	0.061	0.065	0.006	0.055	0.032
	(0.055)	(0.055)	(0.053)	(0.054)	(0.055)	(0.053)
Biological sibling	-0.325***	-0.312***	-0.204***	-0.168***	-0.330***	-0.130***
	(0.044)	(0.044)	(0.043)	(0.044)	(0.044)	(0.044)
Foster-in children - Host sibling	-0.206***	-0.221***	-0.152***	-0.141**	-0.216***	-0.114*
	(0.058)	(0.059)	(0.057)	(0.058)	(0.058)	(0.058)
Foster-in children - Biological sibling	0.182***	0.151***	0.117**	0.033	0.169***	0.049
	(0.048)	(0.050)	(0.048)	(0.049)	(0.048)	(0.049)
Average outcome (Unaffected children)	2.377	2.377	2.377	2.377	2.377	2.377
Mean adjusted R^2	0.584	0.584	0.614	0.595	0.585	0.617
SD of adjusted R^2	0.000	0.000	0.001	0.001	0.000	0.001
Observations	13,165	13,165	13,165	13,165	13,165	13,165
Multiple birth	No	Yes	No	No	No	Yes
First born	No	Yes	No	No	No	Yes
Born before first union	No	Yes	No	No	No	Yes
Born before current union	No	Yes	No	No	No	Yes
Mother: age	No	No	Yes	No	No	Yes
Mother: age at first birth	No	No	Yes	No	No	Yes
Mother: akan	No	No	Yes	No	No	Yes
Mother: schooling years	No	No	Yes	No	No	Yes
Mother: current marital status (dummies)	No	No	No	Yes	No	Yes
Mother: nb of boys and girls 0-15	No	No	No	Yes	No	Yes
Mother: in union more than once	No	No	No	No	Yes	Yes
Mother: in union without co-resident partner	No	No	No	No	Yes	Yes

Notes: estimations have been produced using sampling weights; the sample includes children aged 6–14, who are foster-in children or have a biological mother aged 15–49; double orphans, biological siblings in receiving households, and children in sending households without any foster-out siblings are excluded from the sample; all estimations include age dummies interacted with sex. Background characteristics for foster-in children are imputed using a donor-based multiple imputation procedure (200 imputations); coefficients and standard errors account for imputation uncertainty following Rubin's rules. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Source: author's elaboration on the 2022 GDHS.

than all other groups. Fostered boys consistently outperform their biological siblings, and this gap remains statistically significant except when controlling for the mother's number of children and current marital status. By contrast, differences between fostered boys and host siblings are generally small and not statistically significant across specifications. Overall, the main pattern for boys is the persistent disadvantage of biological siblings, while foster-in boys appear relatively similar to host children.

However, girls have different comparison patterns. In the baseline specification, foster-in girls are less likely to attend school than host siblings, and they also completed fewer years of schooling, even when partially imputed variables were included. However, once accounting for mother's basic characteristics, number of dependent children and current marital status, these differences become smaller and disappear for school attendance. Relative to biological siblings, fostered girls initially display higher enrolment rates and more years of schooling. Yet, as additional maternal background controls are included, these advantages diminish and become statistically insignificant. This suggests that a non-negligible share of the initial differences across groups for girls reflects underlying family characteristics rather than fostering status alone.

Comparing boys and girls, two main differences emerge. First, the disadvantage experienced by biological siblings is more pronounced and persistent among boys than among girls. This pattern is consistent with the findings of Badaoui and Mangiavacchi (2022), who show that child fostering tends to be more beneficial for boys' educational outcomes. Second, the initial schooling disadvantage of fostered children relative to host siblings is larger for girls, but it also becomes more sensitive to the inclusion of family background characteristics.

Taken together, these results indicate that children's sex plays an important role in shaping the association between fostering arrangements and educational outcomes. This highlights the importance of accounting for sex-specific dynamics when analysing the educational consequences of fostering arrangements.

6 Household selection and implications for education

Because fostering involves a change in living arrangement, children's educational outcomes may reflect both the characteristics of the family of origin and those of the receiving household. In other words, the observed educational outcomes of fostered children combine the influence of the environment in which they grew up prior to fostering and the influence of the household in which they currently reside. As a result, part of the observed effect of fostering may be driven by differences in household characteristics across sending and receiving households. This section examines these selection patterns and discusses their implications for the interpretation of the educational gaps documented above.

6.1 Inter-household selection

Table 5 puts the characteristics of households into perspective according to their fostering status. I compare three types of households: sending households, in which mothers report having fostered out a child aged 6–14; households in which foster-in children reside; and households with only unaffected children, referred to as non-fostering households.

While we cannot ensure that sending households correspond exactly to the previous residence of fostered children, e.g., due to maternal migration or complex residential trajectories (Cotton, 2025), I can unambiguously identify the households that host fostered children, referred to here as receiving households.

Table 5: Differences between households including foster-out, foster-in and unaffected children

	(1)	(2)	(3)	(1)-(2)	(1)-(3)	(2)-(3)
	Sending	Receiving	Non-fostering			
Rural	0.174	0.465	0.436	-0.299***	-0.263***	0.029**
	(0.009)	(0.011)	(0.008)	(0.014)	(0.013)	(0.013)
Region: Greater Accra	0.022	0.103	0.165	-0.088***	-0.144***	-0.062***
	(0.003)	(0.007)	(0.006)	(0.008)	(0.009)	(0.009)
Wealth index	0.474	0.489	0.516	-0.017***	-0.042***	-0.027***
	(0.004)	(0.004)	(0.003)	(0.006)	(0.005)	(0.005)
Headed by a female	0.376	0.522	0.364	-0.156***	0.011	0.158***
	(0.011)	(0.011)	(0.007)	(0.016)	(0.014)	(0.013)
Head's age	42.221	55.162	42.857	-13.357***	-0.626**	12.305***
	(0.282)	(0.335)	(0.158)	(0.455)	(0.307)	(0.327)
Head's schooling year	6.497	6.270	7.429	0.224	-0.942***	-1.159***
	(0.113)	(0.112)	(0.077)	(0.163)	(0.142)	(0.136)
Household size	4.451	5.185	5.452	-0.626***	-0.988***	-0.267***
	(0.059)	(0.053)	(0.033)	(0.079)	(0.064)	(0.060)
Nb of children 0-14	2.052	2.597	2.885	-0.473***	-0.827***	-0.288***
	(0.041)	(0.034)	(0.022)	(0.053)	(0.044)	(0.040)
Vertically extended household	0.150	0.643	0.148	-0.505***	0.005	0.495***
	(0.008)	(0.010)	(0.005)	(0.014)	(0.010)	(0.011)
Horizontally extended household	0.050	0.099	0.039	-0.051***	0.011**	0.060***
	(0.005)	(0.006)	(0.003)	(0.009)	(0.006)	(0.006)
Observations	1,848	2,181	4,320	3,860	6,132	6,501

Notes: average and standard errors (in parentheses) have been computed using sampling weights; Sending refers to households with a mother fostering a child aged 6-14; Receiving refers to households with a foster-in child; Non-fostering refers to households with an unaffected child; *** p <0.01, ** p <0.05, * p <0.1.
Source: authors' elaboration on the 2022 GDHS.

Relative to non-fostering households, receiving households appear more rural, less likely to be located in the richest region of Ghana (Greater Accra), and display a lower average wealth index. Living farther from urban centers may be detrimental to children's education, as it is often associated with greater involvement in child labor (Fafchamps and Wahba, 2006).[11] They are also 15.8 percentage points more likely to be headed by a woman, the household heads are older and are less educated on average. According to Fafchamps and Quisumbing (2007), female headship is often associated with poverty and exposure to negative shocks. Taken together, these characteristics suggest that fostered children tend to live in households with more limited resources. Such environments may also be associated with a higher reliance on child labor (Cockburn and Dostie, 2007).

Table A.7 in Appendix repeats the same comparison but with a restrictive definition of sending and receiving households depending on the presence of biological and host siblings respectively. Households with host siblings represent only 19 percent of all receiving households. Once restricting the definition of receiving households, some of the differences with non-fostering households disappear. In particular, the wealth index, the sex of the household head, and the head's years of schooling become comparable across the two groups. This suggests that in the majority of cases, fostered children are hosted in relatively poorer households, but host siblings tend to live in households that are closer, in socio-economic terms, to non-fostering households. This pattern is consistent with the results in the previous section, where host siblings often display educational attainment similar to those of unaffected children.

[11]The location of sending and receiving households has changed significantly since the last GDHS in 2014; the pattern was previously reversed (Gautrain, 2023).

However, receiving households with host siblings are larger by one or two members on average, most of whom are likely to be children. As a result, even when host children live in relatively better-off households, they also face greater competition for household resources, which may partly offset these advantages (Morduch, 2000). Nonetheless, results in the previous section indicate that this resource dilution effect seems to translate more strongly into educational disadvantages for fostered children than for host siblings. On the other hand, there is little evidence on inequalities in resource access between fostered and non-fostered children in the literature (Penglase, 2021).

Turning to the situation of biological siblings who remain with their mother, these children tend to live in more urban households, although they are less likely to reside in the capital region of Greater Accra. Their households are headed by individuals with approximately 1.7 fewer years of schooling than those in other household types. At the same time, these children face less competition for resources, as they are more likely to live in smaller, nuclear households. However, this structure may limit the availability of intra-household support. Educational outcomes may therefore depend more strongly on the household head (Kazianga and Wahhaj, 2017).

Ruggles and Heggeness (2008) documents a decline in intergenerational co-residence in developing countries. The widespread fostering of children to grandparents' households may represent an alternative to traditional multi-generational living arrangements. Conversely, from the perspective of older household members, hosting a foster child can provide a form of old-age support (Alber, 2004). Overall, these patterns of inter-household selection highlight that fostering often involves substantial changes in household environments for foster children.

6.2 Household characteristics and education

Table A.8 in Appendix further explores the role of the current environment by progressively introducing characteristics of children's household in the educational gaps estimates. This approach allows to assess how much of the observed differences across child groups can be attributed to their socio-economic environment driving adult investment into education.

In the baseline specification, which includes only region and rural dummies, the advantage of fostered children over their biological siblings in school enrolment becomes smaller than in the first specification of Table 4, while the difference in years of schooling disappears. This suggests that differences in location partly explain the educational gap between these two groups. When characteristics of the current household are progressively introduced, the relative position of foster-in children changes substantially. Columns (2) and (3) add information on the sex, age, and education of the household head, as well as the household's demographic composition, which are closely linked with intra-household allocation of resources. These controls tend to increase the enrolment gap between fostered children and host siblings, but the difference in schooling years vanishes. Foster-in children are often identified as grandchildren of the household head in Ghana, a living arrangement that is not necessarily detrimental to schooling (Darko and Carmichael, 2020).[12] These findings suggest that, conditional on the characteristics of the household

[12]Marazyan (2011) shows that extending the sibship to include fostered grandchildren can even increase school enrollment, whereas (Case et al., 2004) provide evidence that more distant caregiver–child

head, fostered children are not systematically less educated than non-fostered children in their household, and that household composition and the child's relationship to the head are key to understanding the effects of fostering.

Introducing the household wealth index in Column (4), the gap in school attendance between foster-in children and host siblings disappeared and fostering is associated with higher educational attainment. This indicates that part of the earlier difference was driven by the economic conditions of the receiving households themselves. Households that host fostered children are, on average, poorer, as shown in Table 5. Controlling for these characteristics reduces the apparent disadvantage of fostered children relative to other groups.

The most saturated specification, presented in Column (5), combines the full set of current household characteristics with the imputed family background variables. In this specification, differences in school attendance between fostered children and any group of non-fostered children become small and statistically insignificant. However, foster-in children out perform any comparison group accounting for current household characteristics and family background. This result suggests that the initial gaps largely reflect a combination of selection into particular types of households and differences in the family background of the children which are pre-existent to fostering. More broadly, fostered children tend to come from families that may not offer much opportunity for educational advancement, and they then move into households that may also struggle to support schooling. However, once these environmental factors are taken into account, the relative position of fostered children improves.

7 Conclusion

Child fostering remains a central feature of family organization in many parts of sub-Saharan Africa, yet its implications for children's education remain debated. This paper contributes to this discussion by examining the educational outcomes of fostered children in Ghana while explicitly accounting for family background. Using nationally representative survey data, I construct several comparison groups of children and implement a donor-based multiple imputation strategy to recover the unobserved family background of foster-in children. This approach addresses an important limitation of cross-sectional surveys and brings the analysis closer to the causal effect of fostering by reducing biases related to selection into fostering arrangements.

The results highlight substantial differences in educational outcomes across children's living arrangements. Fostered children initially appear disadvantaged relative to host siblings and, in some cases, to children living in non-fostering households. However, these differences become substantially smaller, and in some cases disappear, once family background characteristics are taken into account. At the same time, biological siblings remaining with their mother appear initially disadvantaged relative to fostered children, but this difference also vanishes once family background is controlled for.

The analysis also reveals important selection processes operating at multiple levels. At the child level, fostering decisions are associated with birth order, sex, and indicators of the mother's marital and reproductive history. At the household level, fostered children

relationships are associated with worse outcomes.

tend to originate from households with fewer resources and to be placed in receiving households with specific demographic and socio-economic characteristics. These patterns suggest that observed educational differences between fostered and non-fostered children largely reflect underlying family conditions and the environments in which children grow up rather than the fostering arrangement itself. More broadly, the results illustrate how ignoring family background in cross-sectional data can lead to misleading conclusions about the consequences of fostering.

I also document heterogeneous patterns by sex. The disadvantage of biological siblings is more pronounced among boys, while the schooling gap between foster-in children and host siblings is larger for girls but more sensitive to the inclusion of family background characteristics. These results highlight the importance of considering sex-specific dynamics when analysing fostering decisions and their consequences.

Methodologically, this paper shows that it is possible to account for family background using standard large-scale surveys by exploiting information on foster-out children and implementing a donor-based imputation strategy. This approach allows the use of large, nationally representative samples and can be replicated in other contexts where similar data structures are available.

From a policy perspective, these findings suggest that educational policies should take into account the informal arrangements through which children move across households within extended family networks, as such movements may disrupt children's educational trajectories. Supporting fostered children therefore requires looking beyond their current household environment and considering their family background and the conditions of their household of origin. More broadly, the results underscore the role of extended family systems in shaping children's educational outcomes and intergenerational mobility, and highlight the need for further research on the factors driving children's movements across households.

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A Appendix

Table A.1: Descriptive statistics of children by living arrangement

	(1)	(2)	(3)	(4)
	Foster-in children	Host siblings	Biological siblings	Unaffected children
			Panel A : Girls	
Age	10.246	9.589	9.160	9.706
	(0.082)	(0.179)	(0.134)	(0.050)
	ref.	*[-0.657]****	*[-1.085]****	*[-0.540]****
Grandchild of the head	0.575	0.162	0.052	0.048
	(0.015)	(0.024)	(0.012)	(0.004)
	ref.	*[-0.414]****	*[-0.523]****	*[-0.528]****
Child of the head	0.000	0.763	0.904	0.911
	(0.000)	(0.029)	(0.016)	(0.006)
	ref.	*[0.763]****	*[0.904]****	*[0.911]****
Dead father	0.095	0.051	0.063	0.048
	(0.009)	(0.015)	(0.016)	(0.004)
	ref.	*[-0.044]***	*[-0.032]**	*[-0.047]****
Co-resident father	0.000	0.595	0.643	0.641
	(0.000)	(0.034)	(0.027)	(0.010)
	ref.	*[0.595]****	*[0.643]****	*[0.641]****
School attendance	0.917	0.962	0.890	0.928
	(0.008)	(0.009)	(0.016)	(0.004)
	ref.	*[0.045]****	*[-0.026]*	*[0.011]*
Schooling years	2.643	2.420	1.790	2.507
	(0.072)	(0.151)	(0.106)	(0.048)
	ref.	*[-0.222]*	*[-0.853]****	*[-0.135]*
Observations	1,718	352	582	4,000
			Panel B : Boys	
Age	10.118	9.749	9.120	9.588
	(0.094)	(0.178)	(0.128)	(0.050)
	ref.	*[-0.369]**	*[-0.998]****	*[-0.530]****
Grandchild of the head	0.648	0.158	0.040	0.045
	(0.016)	(0.023)	(0.009)	(0.004)
	ref.	*[-0.490]****	*[-0.608]****	*[-0.603]****
Child of the head	0.000	0.768	0.893	0.925
	(0.000)	(0.027)	(0.015)	(0.005)
	ref.	*[0.768]****	*[0.893]****	*[0.925]****
Dead father	0.099	0.056	0.063	0.056
	(0.010)	(0.016)	(0.013)	(0.005)
	ref.	*[-0.043]***	*[-0.036]***	*[-0.044]****
Co-resident father	0.000	0.599	0.673	0.660
	(0.000)	(0.033)	(0.024)	(0.010)
	ref.	*[0.599]****	*[0.673]****	*[0.660]****
School attendance	0.937	0.940	0.856	0.920
	(0.007)	(0.011)	(0.016)	(0.004)
	ref.	*[0.003]*	*[-0.082]****	*[-0.017]***
Schooling years	2.518	2.424	1.579	2.247
	(0.084)	(0.160)	(0.104)	(0.045)
	ref.	*[-0.094]*	*[-0.939]****	*[-0.271]****
Observations	1,421	387	634	4,071

Notes: averages and standard errors (in parentheses) and p-values of the differences between the groups of children (in brackets) have been computed using sampling weights; the sample includes children aged 6-14, who are foster-in children or have a biological mother aged 15-49; double orphans, biological siblings in receiving households, and children in sending households without any foster-out siblings are excluded from the sample; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.
Source: author's elaboration on the 2022 GDHS.

Table A.2: Differences between foster-out children and biological siblings

	(1)	(2)	(1)-(2)
	Foster-out children	Biological siblings	
Age	10.403	9.112	1.291***
	(0.051)	(0.070)	(0.089)
Girl	0.515	0.488	0.027
	(0.010)	(0.014)	(0.018)
Multiple birth	0.040	0.036	0.005
	(0.004)	(0.005)	(0.007)
First born	0.365	0.068	0.297***
	(0.010)	(0.007)	(0.015)
Born before first union	0.161	0.044	0.118***
	(0.007)	(0.006)	(0.011)
Born before current union	0.407	0.136	0.271***
	(0.010)	(0.010)	(0.016)
Observations	2,521	1,216	3,737
Mother fixed effects:	No	No	Yes

Notes: averages and standard errors (in parentheses) have been computed using mother's sampling weights; the sample includes 6-14 all foster-out children and biological siblings; *** p <0.01, ** p <0.05, * p <0.1.
Source: authors' elaboration on the 2022 GDHS.

Table A.3: Differences among foster-out children

	(1)	(2)	(1)-(2)
	Have biological a sibling 6-14	Do not have biological a sibling 6-14	
Age	11.460	9.827	1.634***
	(0.073)	(0.064)	(0.101)
Girl	0.563	0.489	0.074***
	(0.016)	(0.013)	(0.021)
Multiple birth	0.015	0.054	-0.039***
	(0.004)	(0.006)	(0.008)
First born	0.258	0.424	-0.166***
	(0.014)	(0.012)	(0.020)
Born before first union	0.141	0.173	-0.032**
	(0.011)	(0.010)	(0.015)
Born before current union	0.316	0.456	-0.140***
	(0.015)	(0.013)	(0.020)
Observations	937	1,584	2,521

Notes: averages and standard errors (in parentheses) have been computed using mother's sampling weights; the sample includes 6-14 all foster-out children; *** p <0.01, ** p <0.05, * p <0.1.
Source: authors' elaboration on the 2022 GDHS.

Table A.4: Relative educational outcomes, accounting for family background with 500 imputations

	(1)	(2)	(3)	(4)	(5)	(6)
	Dep. var.: School attendance					
Foster-in children	0.008	0.005	0.016**	0.010	0.002	0.014*
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Host sibling	0.032**	0.031**	0.031***	0.019	0.029**	0.021*
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)
Biological sibling	-0.053***	-0.051***	-0.032***	-0.020**	-0.055***	-0.016
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Foster-in children - Host sibling	-0.023*	-0.027**	-0.015	-0.009	-0.027**	-0.007
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)
Foster-in children - Biological sibling	0.062***	0.056***	0.048***	0.029***	0.057***	0.031***
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
Average outcome (Unaffected children)	0.924	0.924	0.924	0.924	0.924	0.924
Mean adjusted R^2	0.004	0.004	0.047	0.032	0.008	0.062
SD of adjusted R^2	0.000	0.000	0.002	0.001	0.001	0.002
	Dep. var.: Schooling years					
Foster-in children	-0.143***	-0.160***	-0.087***	-0.136***	-0.161***	-0.081**
	(0.030)	(0.032)	(0.030)	(0.030)	(0.031)	(0.033)
Host sibling	0.064	0.061	0.065	0.006	0.055	0.033
	(0.055)	(0.055)	(0.053)	(0.054)	(0.055)	(0.053)
Biological sibling	-0.325***	-0.312***	-0.204***	-0.168***	-0.330***	-0.130***
	(0.044)	(0.044)	(0.043)	(0.044)	(0.044)	(0.044)
Foster-in children - Host sibling	-0.206***	-0.221***	-0.152***	-0.141**	-0.216***	-0.114**
	(0.058)	(0.059)	(0.057)	(0.058)	(0.058)	(0.058)
Foster-in children - Biological sibling	0.182***	0.152***	0.117**	0.032	0.169***	0.049
	(0.048)	(0.050)	(0.048)	(0.049)	(0.048)	(0.049)
Average outcome (Unaffected children)	2.377	2.377	2.377	2.377	2.377	2.377
Mean adjusted R^2	0.584	0.584	0.614	0.596	0.585	0.617
SD of adjusted R^2	0.000	0.000	0.001	0.001	0.000	0.001
Observations	13,165	13,165	13,165	13,165	13,165	13,165
Multiple birth	No	Yes	No	No	No	Yes
First born	No	Yes	No	No	No	Yes
Born before first union	No	Yes	No	No	No	Yes
Born before current union	No	Yes	No	No	No	Yes
Mother: age	No	No	Yes	No	No	Yes
Mother: age at first birth	No	No	Yes	No	No	Yes
Mother: akan	No	No	Yes	No	No	Yes
Mother: schooling years	No	No	Yes	No	No	Yes
Mother: current marital status (dummies)	No	No	No	Yes	No	Yes
Mother: nb of boys and girls 0-15	No	No	No	Yes	No	Yes
Mother: in union more than once	No	No	No	No	Yes	Yes
Mother: in union without co-resident partner	No	No	No	No	Yes	Yes

Notes: estimations have been produced using sampling weights; the sample includes children aged 6–14, who are foster-in children or have a biological mother aged 15–49; double orphans, biological siblings in receiving households, and children in sending households without any foster-out siblings are excluded from the sample; all estimations include age dummies interacted with sex. Background characteristics for foster-in children are imputed using a donor-based multiple imputation procedure (500 imputations); coefficients and standard errors account for imputation uncertainty following Rubin's rules. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Source: author's elaboration on the 2022 GDHS.

Table A.5: Boys' relative educational outcomes, accounting for family background

	(1)	(2)	(3)	(4)	(5)	(6)
	Dep. var.: School attendance					
Foster-in children	0.019*	0.009	0.021**	0.015	0.009	0.010
	(0.010)	(0.011)	(0.010)	(0.010)	(0.010)	(0.011)
Host sibling	0.025	0.024	0.026	0.011	0.021	0.014
	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)
Biological sibling	-0.074***	-0.072***	-0.050***	-0.045***	-0.077***	-0.040***
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)
Foster-in children - Host sibling	-0.006	-0.015	-0.005	0.004	-0.012	-0.004
	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)
Foster-in children - Biological sibling	0.093***	0.081***	0.071***	0.061***	0.085***	0.049***
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)
Average outcome (Unaffected children)	0.920	0.920	0.920	0.920	0.920	0.920
Mean adjusted R^2	0.005	0.007	0.052	0.028	0.010	0.063
SD of adjusted R^2	0.000	0.001	0.002	0.002	0.001	0.003
	Dep. var.: Schooling years					
Foster-in children	-0.077*	-0.095**	-0.040	-0.093**	-0.096**	-0.051
	(0.043)	(0.048)	(0.044)	(0.044)	(0.045)	(0.049)
Host sibling	0.043	0.039	0.051	-0.022	0.033	0.017
	(0.074)	(0.074)	(0.072)	(0.074)	(0.074)	(0.072)
Biological sibling	-0.304***	-0.290***	-0.184***	-0.172***	-0.307***	-0.128**
	(0.060)	(0.060)	(0.058)	(0.061)	(0.060)	(0.060)
Foster-in children - Host sibling	-0.119	-0.134	-0.092	-0.071	-0.129	-0.068
	(0.080)	(0.082)	(0.079)	(0.080)	(0.081)	(0.081)
Foster-in children - Biological sibling	0.227***	0.195***	0.144**	0.079	0.211***	0.077
	(0.067)	(0.071)	(0.067)	(0.068)	(0.067)	(0.070)
Average outcome (Unaffected children)	2.247	2.247	2.247	2.247	2.247	2.247
Mean adjusted R^2	0.582	0.582	0.612	0.592	0.583	0.613
SD of adjusted R^2	0.000	0.000	0.001	0.001	0.000	0.001
Observations	6,513	6,513	6,513	6,513	6,513	6,513
Multiple birth	No	Yes	No	No	No	Yes
First born	No	Yes	No	No	No	Yes
Born before first union	No	Yes	No	No	No	Yes
Born before current union	No	Yes	No	No	No	Yes
Mother: age	No	No	Yes	No	No	Yes
Mother: age at first birth	No	No	Yes	No	No	Yes
Mother: akan	No	No	Yes	No	No	Yes
Mother: schooling years	No	No	Yes	No	No	Yes
Mother: current marital status (dummies)	No	No	No	Yes	No	Yes
Mother: nb of boys and girls 0-15	No	No	No	Yes	No	Yes
Mother: in union more than once	No	No	No	No	Yes	Yes
Mother: in union without co-resident partner	No	No	No	No	Yes	Yes

Notes: estimations have been produced using sampling weights; the sample includes boys aged 6–14, who are foster-in children or have a biological mother aged 15–49; double orphans, biological siblings in receiving households, and children in sending households without any foster-out siblings are excluded from the sample; all estimations include age dummies. Background characteristics for foster-in children are imputed using a donor-based multiple imputation procedure (200 imputations); coefficients and standard errors account for imputation uncertainty following Rubin's rules. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Source: author's elaboration on the 2022 GDHS.

Table A.6: Girls' relative educational outcomes, accounting for family background

	(1)	(2)	(3)	(4)	(5)	(6)
	Dep. var.: School attendance					
Foster-in children	-0.001	-0.000	0.011	0.005	-0.004	0.016*
	(0.009)	(0.010)	(0.009)	(0.009)	(0.009)	(0.010)
Host sibling	0.038**	0.039**	0.037**	0.028	0.036**	0.029*
	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)
Biological sibling	-0.031**	-0.030**	-0.012	0.007	-0.032**	0.008
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)
Foster-in children - Host sibling	-0.039**	-0.039**	-0.026	-0.023	-0.041**	-0.013
	(0.018)	(0.019)	(0.018)	(0.018)	(0.018)	(0.018)
Foster-in children - Biological sibling	0.030**	0.030*	0.023	-0.002	0.028*	0.008
	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)
Average outcome (Unaffected children)	0.928	0.928	0.928	0.928	0.928	0.928
Mean adjusted R^2	0.003	0.003	0.043	0.036	0.007	0.062
SD of adjusted R^2	0.000	0.000	0.002	0.002	0.001	0.003
	Dep. var.: Schooling years					
Foster-in children	-0.200***	-0.214***	-0.126***	-0.172***	-0.216***	-0.107**
	(0.042)	(0.044)	(0.042)	(0.042)	(0.043)	(0.045)
Host sibling	0.088	0.086	0.083	0.042	0.081	0.058
	(0.080)	(0.080)	(0.077)	(0.079)	(0.080)	(0.077)
Biological sibling	-0.346***	-0.335***	-0.227***	-0.167**	-0.354***	-0.137**
	(0.064)	(0.065)	(0.062)	(0.065)	(0.064)	(0.064)
Foster-in children - Host sibling	-0.288***	-0.300***	-0.209**	-0.214**	-0.297***	-0.165**
	(0.085)	(0.086)	(0.082)	(0.084)	(0.085)	(0.084)
Foster-in children - Biological sibling	0.147**	0.121*	0.100	-0.006	0.137*	0.030
	(0.070)	(0.072)	(0.068)	(0.070)	(0.070)	(0.070)
Average outcome (Unaffected children)	2.507	2.507	2.507	2.507	2.507	2.507
Mean adjusted R^2	0.584	0.584	0.614	0.597	0.585	0.618
SD of adjusted R^2	0.000	0.000	0.001	0.001	0.000	0.001
Observations	6,652	6,652	6,652	6,652	6,652	6,652
Multiple birth	No	Yes	No	No	No	Yes
First born	No	Yes	No	No	No	Yes
Born before first union	No	Yes	No	No	No	Yes
Born before current union	No	Yes	No	No	No	Yes
Mother: age	No	No	Yes	No	No	Yes
Mother: age at first birth	No	No	Yes	No	No	Yes
Mother: akan	No	No	Yes	No	No	Yes
Mother: schooling years	No	No	Yes	No	No	Yes
Mother: current marital status (dummies)	No	No	No	Yes	No	Yes
Mother: nb of boys and girls 0-15	No	No	No	Yes	No	Yes
Mother: in union more than once	No	No	No	No	Yes	Yes
Mother: in union without co-resident partner	No	No	No	No	Yes	Yes

Notes: estimations have been produced using sampling weights; the sample includes girls aged 6–14, who are foster-in children or have a biological mother aged 15–49; double orphans, biological siblings in receiving households, and children in sending households without any foster-out siblings are excluded from the sample; all estimations include age dummies. Background characteristics for foster-in children are imputed using a donor-based multiple imputation procedure (200 imputations); coefficients and standard errors account for imputation uncertainty following Rubin's rules. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Source: author's elaboration on the 2022 GDHS.

Table A.7: Differences between households including biological siblings, host siblings and unaffected children

	(1)	(2)	(3)	(1)-(2)	(1)-(3)	(2)-(3)
	Sending	Receiving	Non-fostering			
Rural	0.353	0.510	0.437	-0.157***	-0.084***	0.073***
	(0.017)	(0.024)	(0.008)	(0.029)	(0.020)	(0.026)
Region: Greater Accra	0.047	0.089	0.166	-0.042***	-0.119***	-0.077***
	(0.008)	(0.014)	(0.006)	(0.014)	(0.014)	(0.019)
Wealth index	0.428	0.502	0.517	-0.074***	-0.088***	-0.014
	(0.006)	(0.008)	(0.003)	(0.010)	(0.008)	(0.010)
Headed by a female	0.330	0.365	0.364	-0.034	-0.034*	0.000
	(0.017)	(0.024)	(0.007)	(0.028)	(0.019)	(0.025)
Head's age	43.458	47.822	42.846	-4.365***	0.611	4.976***
	(0.377)	(0.664)	(0.158)	(0.705)	(0.420)	(0.563)
Head's schooling year	5.139	7.065	7.439	-1.925***	-2.300***	-0.375
	(0.162)	(0.246)	(0.078)	(0.284)	(0.203)	(0.269)
Household size	5.477	7.218	5.439	-1.741***	0.038	1.779***
	(0.084)	(0.129)	(0.033)	(0.148)	(0.088)	(0.115)
Nb of children 0-14	2.970	4.013	2.880	-1.043***	0.090	1.133***
	(0.058)	(0.078)	(0.022)	(0.097)	(0.060)	(0.077)
Vertically extended household	0.134	0.402	0.146	-0.268***	-0.012	0.256***
	(0.012)	(0.024)	(0.005)	(0.024)	(0.014)	(0.019)
Horizontally extended household	0.038	0.102	0.038	-0.065***	-0.001	0.064***
	(0.007)	(0.015)	(0.003)	(0.014)	(0.008)	(0.011)
Observations	791	419	4,284	1,210	5,075	4,703

Notes: average and standard errors (in parentheses) have been computed using sampling weights; Sending refers to households with a mother fostering a child aged 6-14 and having at least one other child aged 6-14 co-residing with her; Receiving refers to households with a foster-in child and at least one host sibling; Non-fostering refers to households with an unaffected child; *** $p<0.01$, ** $p<0.05$, * $p<0.1$.
Source: authors' elaboration on the 2022 GDHS.

Table A.8: Relative educational outcomes, accounting for family background and current household's characteristics

	(1)	(2)	(3)	(4)	(5)
	Dep. var.: School attendance				
Foster-in children	-0.001	-0.023***	-0.026***	0.006	0.007
	(0.006)	(0.007)	(0.009)	(0.006)	(0.007)
Host sibling	0.033***	0.020*	0.059***	0.022*	0.014
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)
Biological sibling	-0.024**	-0.025***	-0.053***	-0.017*	-0.008
	(0.009)	(0.010)	(0.010)	(0.009)	(0.010)
Foster-in children - Host sibling	-0.034***	-0.043***	-0.085***	-0.016	-0.008
	(0.012)	(0.013)	(0.014)	(0.012)	(0.013)
Foster-in children - Biological sibling	0.023**	0.002	0.026**	0.023**	0.015
	(0.010)	(0.011)	(0.012)	(0.010)	(0.011)
Average outcome (Unaffected children)	0.924	0.924	0.924	0.924	0.924
Mean adjusted R^2	0.109	0.081	0.049	0.110	0.121
SD of adjusted R^2	0.000	0.000	0.000	0.000	0.001
	Dep. var.: Schooling years				
Foster-in children	-0.168***	-0.045	0.303***	0.225***	0.162***
	(0.029)	(0.050)	(0.059)	(0.045)	(0.047)
Host sibling	0.081	-0.059	0.134	0.003	-0.044
	(0.052)	(0.083)	(0.086)	(0.082)	(0.076)
Biological sibling	-0.186***	-0.510***	-0.610***	-0.466***	-0.443***
	(0.042)	(0.066)	(0.067)	(0.066)	(0.063)
Foster-in children - Host sibling	-0.249***	0.014	0.169*	0.221**	0.206**
	(0.055)	(0.089)	(0.095)	(0.087)	(0.084)
Foster-in children - Biological sibling	0.019	0.465***	0.913***	0.691***	0.605***
	(0.046)	(0.076)	(0.083)	(0.072)	(0.071)
Average outcome (Unaffected children)	2.377	2.377	2.377	2.377	2.377
Mean adjusted R^2	0.625	0.059	0.037	0.069	0.199
SD of adjusted R^2	0.000	0.000	0.000	0.000	0.002
Observations	13,165	13,165	13,165	13,165	13,165
Rural and region dummies	Yes	No	No	No	Yes
Head's sex, age and schooling years	No	Yes	No	No	Yes
Household composition	No	No	Yes	No	Yes
Grandchild of the head	No	No	Yes	No	Yes
Wealth index	No	No	No	Yes	Yes
Family background	No	No	No	No	Yes

Notes: estimations have been produced using sampling weights; the sample includes children aged 6–14, who are foster-in children or have a biological mother aged 15–49; double orphans, biological siblings in receiving households, and children in sending households without any foster-out siblings are excluded from the sample; all estimations include age dummies interacted with sex. Background characteristics for foster-in children are imputed using a donor-based multiple imputation procedure (200 imputations); coefficients and standard errors account for imputation uncertainty following Rubin's rules. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Source: author's elaboration on the 2022 GDHS.

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Abstract

Child fostering is widespread in sub-Saharan Africa, yet its effects on children's education remain debated. This paper examines educational outcomes across different living arrangements in Ghana, distinguishing fostered children, biological siblings remaining with their mothers, host siblings, and children in non-fostering households.

A key challenge is that fostered children observed in host households lack information on their family background in standard surveys. I address this limitation by exploiting information from foster-out children declared by mothers and implementing a donor-based multiple random imputation strategy to recover missing family background for foster-in children.

Once mothers and sibship characteristics are accounted for, the initial educational disadvantage of fostered children largely disappears. The results suggest that observed educational gaps mainly reflect selection into fostering arrangements rather than fostering itself.

JEL Classification

I24; J13; O15; D10; J12

Keywords

Child fostering; Educational outcomes; Family background; Multiple imputation; Extended family; Ghana

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