

The Long-Term Impact of Child Fostering in Senegal: Adults Fostered in their Childhood

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Executive Summary

Child fostering is a widespread practice in West Africa, whereby children are sent temporarily to another household to be raised by foster parents, while links with biological parents are not severed. In Senegal, the country we examine, 14% of adults have been fostered in their childhood.

Yet, despite its widespread nature, there are very few studies of child fostering. Besides, the few studies that have examined fostering have focused on examining the situation of children while they are fostered. While having a snapshot of fostering patterns and outcomes is necessary to understand how fostering impacts individuals, in the end what matters is whether fostering impacts the final level of education of an individual or, more importantly, his/her insertion on the labour market for example. This paper sheds light on these questions, through examining the outcomes of adults who have been fostered in their childhood. Besides understanding the final outcomes that result from fostering, examining adults is also the only way to understand the impact of fostering to Koranic schools. By definition, a household survey does not include Koranic schools in its sample and thus cannot inform on children fostered to a marabout.

*Hence, using a dataset with unique information on whether adults have been fostered in their childhood, the survey *Pauvreté et Structure Familiale* that was conducted in 2006/2007, this paper examines the impact of fostering on education, first employment and current employment as well as on marriage. Indeed, marriage, and its characteristics, is a sign of economic success, in particular for males, and the family and social network are likely to be key to marriage prospects. Beyond the direct impact of fostering on schooling, this paper aims to see whether fostering strengthens network ties that are then used to improve marriage or labour outcomes.*

In the case of education, while fostering seems to have a positive impact on school enrolment, the impact of fostering is no longer significant when we examine the probability to complete primary school. In terms of outcomes such as status in employment, fostering only has a limited

impact. Nevertheless, in the study of intermediary outcomes, fostering increases the likelihood to find the first job through personal relations, which hints at the fact that fostering is used to expand one's family and social network. This type of investment is very different from directly investing in human capital but can prove to be a valuable investment in the long run. In terms of marriage outcomes, for men, fostering seems to have a positive impact. Men who have been fostered marry earlier and they are more likely to be in a polygamous marriage. For women, the impact of fostering is more ambiguous: women fostered in their childhood marry younger and have more children, which are not clearly favourable outcomes. However, fostered women are also less likely to end up in a polygamous marriage. The latter result may show that fostering improves the quality of the marriage match.

As could be expected, being fostered in a Koranic school has a negative impact on enrolment in a formal school. Furthermore, being fostered in a Koranic school does not seem to have any positive outcome on marriage or in the labour market. Hence, if anything can be concluded, it goes rather against Koranic schools, at least when they come at the expense of formal schooling.

Besides Koranic schools and besides the earlier age at marriage of fostered women, fostering seems to have a rather positive impact, both in terms of improving human capital and in terms of marriage. Being fostered seems to expand the social network, which is put to good use for enrolment in school, the first job and marriage. However, this positive impact of fostering does not go as far as to increase the likelihood to complete primary education and seems to have only a limited impact on labour outcomes beyond the first job. Hence, in terms of policy conclusions, while fostering does not seem to have a negative impact and actually has positive impacts for some groups, it is only a second best to policies that would help children complete primary education or that would help individuals achieve good outcomes on the labour market.

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Abstract

Child fostering is a widespread social institution in Africa, whereby parents send their biological children to live temporarily in another household. This paper studies the long-term effects of fostering, using original data from Senegal. Ranging from no difference to clear improvement compared to non-fostered individuals, men always seem to gain from fostering through better education, better job market outcomes, and the possibility of marrying earlier. Women's trajectories are more diverse: those fostered in more *traditional* ways (fostered to the mother's kin group, to grandparents or at a young age) are likely to marry earlier and more often in a polygamous union than non-fostered women, but in less traditional cases (fostered to the father's kin group, to uncles and aunts, or older), women may gain (better education, less polygamy). The long-term impacts of fostering are therefore heterogenous, and depend on the reasons, locations of fostering, host parents, fostering age and gender.

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Introduction

Child fostering is a widespread practice in West Africa, whereby children are sent temporarily to another household to be raised by foster parents, while links with biological parents are not severed. Figures ranging from 15 to 26% of households hosting a foster child are found in Burkina Faso, Cote d'Ivoire, Ghana, Niger and Mali (Akresh (2009) and Vandermeersch (2002)). Senegal, the country we study in this paper, is a country where child fostering is among the highest in the region, with 32% of the households either sending or receiving foster children. Nearly 10% of Senegalese children aged less than 15 years are currently fostered and 14% of adults have been fostered in their childhood.

Among development practitioners and NGOs, child fostering is usually viewed as a harmful tradition (UNICEF (1999)) and a straightforward policy question is whether child fostering should be forbidden or prevented.

Yet, despite its widespread nature, there are very few studies of child fostering. The question of the impact of this practice has already been studied by a number of authors (including some of the authors of the present paper (Beck, De Vreyer, Lambert, Marazyan, and Safir (2011))) using data on children. In these papers, the short term impact of fostering can be assessed by comparing fostered children to their biological siblings and/or their hosts siblings. Examining children allows to shed light on the mechanisms through which fostering affects children: is it because they work excessively? Is it because they are at a disadvantage compared to children in host households? Or do they already come from households with specific characteristics? However, this snapshot of their situation taken while they are fostered cannot give a full account of the impact the fostering episode will have on their life trajectory. Indeed, beyond the fact that while fostered those children go to school or on the contrary spend a lot of time at household chores, what matters is whether this will have impacted their final level of education or their insertion on the labour market for example, and more generally their possibilities of economic or social mobility. This paper sheds light on these questions, through examining adults, 14% of whom have been fostered in their childhood (before age 15). For those adults, it is possible to examine various outcomes correlated with their life achievement (such as completed education, marital life or employment) and see whether they are impacted by their fostering in the past. Besides, examining adults also allows to better understand the impact of fostering to Koranic schools. By definition, in a household survey, Koranic

schools are not part of the sample and it is then very difficult to examine the outcomes at the time of fostering for children sent to live with a marabout. Studying the impact of fostering in the long run can be done due to the use of a unique data set which was assembled in Senegal in 2006/2007 (Survey “Pauvreté et Structure Familiale”, henceforth PSF, described below).

The impact of fostering on the fostered child is likely to be fairly heterogeneous among individuals, reflecting the variety of patterns for fostering. Indeed, parents may decide to foster a child for several reasons, and these motivations, if the fostering is successful in reaching those objectives, will be mirrored in its observed impact.

Three sets of motivations can be invoked. The two main motivations most present in the literature are linked to the use of children’s time: education or child labour. Authors like Pilon (2003), Zimmerman (2003) or Akresh (2004) underline the fact that fostering is often a way to bring children near enough to a school so as to allow them to pursue their education. In such a case, fostering can clearly be expected to be positive for children. At the other extreme of the spectrum of motivations, child fostering is sometimes described as a disguised form of child labour, whereby children are sent to a family in need for labour force and perform domestic chores or straight child labour for this host household. Ainsworth (1992) in particular, claims this to be the main explanation for child fostering in Côte d’Ivoire. This pattern of child fostering is likely to be associated with lower school attendance for those fostered children, although it is not necessarily so. For example, the host family could be located nearer to a school than the biological parents, so that the net effect on schooling is *a priori* unclear.

Child fostering could also be a risk-coping strategy: when lacking access to an insurance market, a household facing a shock might choose to adjust its dependency ratio by sending some members away, through fostering in the case of children. In that case fostering might shield the child himself from the direct impact of the shock, as well as helping his/her family by reducing the pressure on resources. Past research gives support to the relevance of this explanation in West Africa (Akresh (2009), Safir (2009) or Beck et al. (2011) for example).

Finally, child fostering might also be a way to strengthen links within a network. It is probably the case for some traditional form of fostering such as the fostering of very young children (just after weaning) to a childless sister or the fostering of girls foreseeing their future marriage to a boy of the

host family. Informal interviews indeed supported the idea that some women prefer to raise their future daughters-in-law, hoping to insure harmony in their household in the future.

Hence, depending on the parents' motives when they foster out their child, different impacts can be expected. In general, most of the expected impact following directly from those motivations should be positive (more education either due to direct investment or to the fact that the child was shielded from an economic shock). The only case when fostering might be directly detrimental to children is when they are sent in a family specifically to undertake a number of domestic chores. In all situations, being fostered might result in an access to an extended and/or to a network of *better quality*, which might impact various aspects of their adult life (employment and marriage). The total impact for each child will depend on how those various components are at play, whether they complement or counter each other.

The objective of this paper is to identify the long term global impact of experiencing fostering. It is also to identify which type of individuals benefited or suffered most from the various dimensions of fostering. *In fine*, understanding such long term impacts is necessary to identify if some children are affected negatively by fostering, including in their outcomes as adults, and to define targeted policies in this domain.

1 Data

The data used here come from an original survey entitled *Pauvreté et Structure Familiale* (Poverty and Family Structure, henceforth PSF) conducted in Senegal in 2006/2007. The PSF survey stems from the cooperation between a team of French researchers and the National Statistical Agency of Senegal.²The survey is described in detail in De Vreyer, Lambert, Safir, and Sylla (2008). The PSF survey is nationally representative and covers a sample of 1800 households spread over 150 clusters drawn randomly from the census districts. 1,781 household records can be exploited, covering 14,450 individuals. The survey describes a population of which the majority (57%) lives in rural areas, 48% is male and 95% is Muslim - statistics that accord well with other sources (WorldBank (2009)).

²Momar Sylla and Matar Gueye of the Agence Nationale de la Statistique et de la Démographie of Senegal (ANSD) on the one hand and Philippe De Vreyer (University of Paris-Dauphine and IRD-DIAL) Sylvie Lambert (PSE) and Abba Safir (now with the World Bank) designed the survey. The data collection was conducted by the ANSD thanks to the funding of the IDRC (International Development Research Center), INRA Paris and CEPREMAP.

Besides the usual variables on household demographics and members' education, health, employment, income and consumption, the PSF survey provides detailed information on the fostering experience of each household member.

Definitions of fostering vary slightly in the literature. The words *foster children* always refer to children placed temporarily in host households without their parents. Orphans are usually not considered as foster children. In this paper, excluding orphans is not really possible, though. In fact, in our sample, while 130 adults (11% of fostered adults) answer that they were fostered because of *the death of one or both parents*, only 12 of them (1%) were orphans of both parents at the beginning of fostering. This information was obtained by comparing their age at fostering with the year of death of their parents. However, given that the date of parental death is missing for 127 observations, excluding these 12 observations does not guaranty that all orphans are excluded. For this work, we therefore prefer to consider as fostered during childhood all the adults who self-report having been fostered before age 15, without taking into account any additional consideration.³

Self-reporting of the fostering status and fostering motive is clearly likely to induce measurement error in a non random way. For example, if fostering lead to a perfect integration of the child in his host family, once an adult, s/he might not think of him/herself as having been fostered, and this integration might be correlated with some of the outcomes we want to study. There is nothing we can do about this, but it should be kept in mind when analysing the results of the analysis.

The sample is composed of 8,290 adults, defined as individuals aged more than 15. 15% of them declare to have been fostered in their childhood.⁴

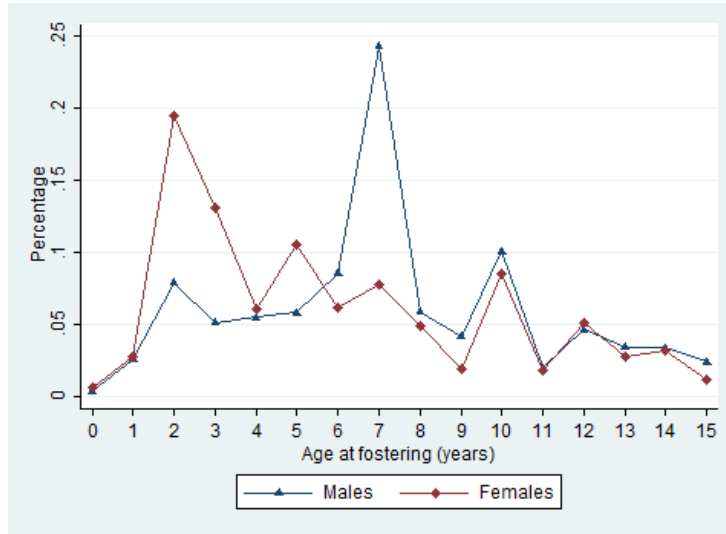
2 Descriptive statistics

We present in this section basic sample characteristics as well as first hints to the fostering motivations and outcomes.

³Dropping these 12 observations from the sample does not change the results significantly.

⁴Using sampling weights, we find that 14.4% of Senegalese adults have been fostered.

Figure 1: Age at fostering, by gender



2.1 Fostering motives and basic characteristics of adults fostered in their childhood

The proportion of fostered children is almost the same among males and among females: men having a slightly higher probability (14.9%) than women (13.6%) of having been fostered in their childhood. The sample studied contains 619 women and 578 men fostered in their childhood.

On average, girls are fostered at the age of 6 vs 7.3 for boys, the difference being significant at the 1% level. In addition to this difference in mean, the distribution of age at fostering is very different between genders, as shown in figure 1: for girls, there is a clear mode at age 2, while for boys, the mode appears to be at 7.

In the survey, adults fostered in their childhood report the reason for their fostering and the relation between them and the host parent or relative. Note that the declaration about the fostering motive could well differ from what parents really had in mind at the time the fostering took place. Table 1 shows the motives for fostering (upper part) and the links to the care-giver in the host household (bottom part) for the sample as a whole (column 1), then split by gender (column 2 and 3) and finally split by gender and age groups (columns 4 to 7). Looking first at the motivations we can see that for men (column 2), the reason for fostering that is reported the most frequently is to be sent to Koranic school: 35.7% of them report that reason, which is more than twice the proportion of men fostered for schooling reasons (16.4%). The death of one parent comes third, with 11.9%. Although Koranic school might not be

Table 1: **Fostering motive and link with host parent**

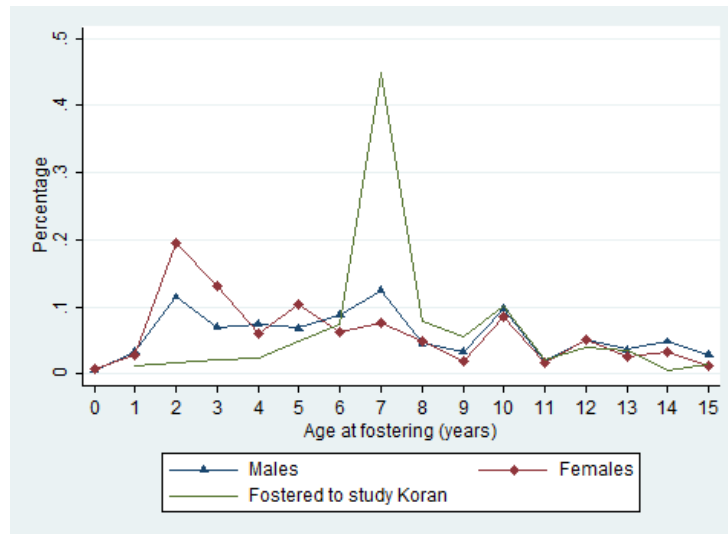
	Total	Males	Females	Males		Females	
				0-3 y.	4-14	0-3 y.	4-14
				o.	y. o.	o.	y. o.
Fostering motive (%):							
Help host household	19.8	7.6	31.1	10.8	7.1	18.9	38.1
Illness of parents	1.4	1.2	1.7	3.7	0.7	2.1	1.5
Death of parents	12.3	11.9	12.7	17.3	10.3	11.9	13.1
Parent's divorce	3.3	3.2	3.5	5.9	2.7	0.9	5.0
To go to school	12.3	16.4	8.4	6.0	18.4	2.4	12.0
To study Koran	17.9	35.7	1.3	7.0	41.7	1.1	1.4
Difficulties in origin hh.	6.8	5.0	8.4	10.6	3.7	8.1	8.7
Host parents childless	7.8	3.7	11.7	9.2	2.6	17.5	8.2
Let mother work	3.9	2.1	5.6	10.3	0.5	13.3	1.1
Let mother migrate	1.5	0.8	2.1	2.8	0.4	2.0	2.2
Other reasons	13.1	12.5	13.7	16.6	11.9	21.8	8.8
Fostered to (%):							
Grand-parent	18.8	16.7	20.7	50.1	10.9	33.3	14.2
Uncle or aunt	39.7	31.2	47.7	32.2	32.5	48.3	49.7
Brother or sister	7.1	4.1	9.9	0.0	4.6	4.9	13.5
Other related	10.7	11.1	10.3	2.1	12.9	10.0	11.1
Religious guide	12.2	24.4	0.8	6.9	29.1	0.0	1.3
Non related	6.6	7.4	5.9	5.6	8.1	2.2	8.1
Missing	5.0	5.2	4.8	3.1	2.0	1.3	2.1

Note: All statistics weighted by sampling weights.

regarded as equivalent to formal education, it is clearly the case that a form of investment in human capital seems to dominate the motivation for fostering, in the case of men. In contrast, for women (column 3), the main reason is to provide help to the host household (31.1%), followed by the death of a parent (12.7%) and by the traditional “gift” of a child to a childless relative (11.7%). Fostering for education is only mentioned by 8.4% of adult women. Overall, the motives for fostering exhibit more heterogeneity among women than among men.

The bottom part of the table shows the link between the fostered adult and the host parent (the care-giver in the host household). Similarly to fostering motives, large differences can be observed when comparing males with females. About 48% of adult females have been fostered to an uncle or an aunt and 20.7% to a grand-parent. For males the dominant link is also uncle or aunt, but it concerns only 31.2% of those fostered and religious guide comes second with 24.4%.

Figure 2: Age at fostering, by gender - fostered to study Koran or not



These differences in the motives for fostering and in the links with the host household help explain the observed variation in the age at fostering pattern that we have seen in figure 1. The large proportion of men that have been fostered to study Koran, and the fact that this kind of fostering is likely to occur around the age of seven, invite to examine the age pattern of fostering putting aside children fostered for religious reasons.⁵ This is what we do in figure 2, where it can be observed that the mode at age seven seen in figure 1 for males is almost entirely due to fostering to Koranic school. Indeed, when putting aside what could be termed *Koranic fostering* almost no difference remains between the age pattern of fostering of males and females.

Considering further children not fostered for religious reasons, those fostered very young are probably not fostered for the same reasons as those fostered later in life. If schooling is the motivation for instance, then there is no reason to expect it to occur before six or seven years of age. Columns 4 to 7 in the upper part of table 1 show the fostering reasons when the sample is split by age groups and gender. Two age groups are considered: those fostered between 0 and 3 years old and those fostered between 4 and 14 years old. Fostering to a childless relative, a fairly *traditional* motive for fostering, appears to concern much more young children than older ones. Among females, this is the case of 17.5% of those fostered between 0 and 3 versus 8.2% of those fostered between 4 and 14. For males, the same pattern can be observed though they appear to be much less concerned by this kind of fostering overall. For females,

⁵That is those fostered to study Koran or to a religious guide

the most cited reason for fostering is to help the host household: 38.1% of those fostered after age 4 were fostered for that motive and this is the case of 18,9% of those fostered between 0 and 3 years old. For men, helping the host household is cited by 7.6% of them with a larger proportion for those fostered before 4.⁶ The relatively large proportion of adults that have been fostered between 0 and 3 to help the host household may sound surprising since very young children are not likely to provide much help. However, this could be explained if one considers that one reason to foster a young child to a childless relative might be for the child to provide help to the relative in the future if need be. In that case the fostering of very young children either to help the host household or to compensate a childless relative have identical motives and are likely to last many years. One could then expect the welfare outcomes of these children not to differ much from those of non fostered children.

Shocks and parents' labour are other important reasons for fostering a child: 11.9% of males and 12.7% of females have been sent away following the death of one parent. Fostering in response to difficulties in the origin household concerns 5% of males and 8.4% of females. In those cases, since fostering occurs in response to exogenous shocks, one should not expect to see much difference between age groups in the proportion of children fostered for that reason. This is apparently true for females but not for males. However, for males this is partly explained by the large proportion of them fostered to study Koran. Excluding this category from the sample, the differences observed in the percentage of children fostered out following a shock between age groups are not that large and much closer to what is expected.

Table 2 shows the principal characteristics of the origin household and parents of fostered and non fostered individuals. For males, we show separately the results obtained with the sub-samples of those that have been fostered to study Koran and those fostered for other reasons.⁷ Women who have been fostered come from households with a larger number of siblings than those not fostered (8.7 versus 7.6). No such difference exists for males. Since fostering a child might be an answer to an excessive family size, one could expect to observe a positive relationship between family size and the probability to foster a child out. Our result suggests that when made, such an adjustment is mostly borne by daughters. However, we also find that when restricting the siblings count to those sharing the same mother and father with

⁶But the proportion is the same when excluding those fostered for religious reasons

⁷For females, the number of those fostered to study Koran is too small to obtain any meaningful statistic on this sub-sample separately.

the interviewed person, female and male individuals fostered for reasons other than studying Koran come from smaller families than non fostered ones. These apparently contradictory results can be reconciled when looking at other parental characteristics. First, apart from those fostered to study Koran, we observe that the parents of fostered individuals have a higher probability of being educated, though the difference is only significant for females. Since educated persons tend to have a lower number of children, this provides a first clue of what is happening. Second, we also observe that fostered individuals have a higher probability of having parents engaged in polygamous unions, which can be linked to the higher average number of siblings that we find when half brothers and sisters are included into the count.

Table 2: **Household and parental characteristics**

	Males			Females		
	Not fostered	Fostered to study Koran	not Fostered to study Koran	Not fostered	Fostered to study Koran	not Fostered to study Koran
Number of siblings	8.0	7.4	8.3	7.6	8.7***	
Number of siblings same father and mother	4.2	3.3***	4.1	4.2	3.9***	
% Mother in polygamous union	53.8	56.9	71.8***	54.5	55.8	
% Father educated	25.6	28.2	7.4***	24.1	26.6	
% Mother educated	14.9	16.9	3.9***	13.2	16.7**	
% Father Farmer	30.4	34.9**	43.2***	35.9	36.3	
% Father inactive	33.1	24.0***	31.0	29.6	18***	
% Mother Farmer	16.6	21.7***	27.3***	21.2	27**	
% Mother inactive	61.7	58.2	53.6	60.2	50.3***	

Note: All statistics computed with sampling weights. *, **, ***: difference with non fostered adults significant at the 10%, 5%, and 1% levels respectively.

Males fostered to study Koran come from families that are radically different from other fostered as well as from non fostered individuals. Their parents are much more likely to be engaged in a polygamous union (71.8%) than those of non fostered males (53.8%) and they are much less likely to have received education in a public school (7.4% and 3.9% versus 25.6% and 14.9% for the father and mother respectively). The positive link with polygamy and the negative one with formal education are to be expected, since Islam allows polygamous marriage and since Koranic studies compete with public schooling. The key question is naturally to determine to what extent this translates in positive or negative outcomes for

the concerned individuals. We come back to this issue later in the paper.

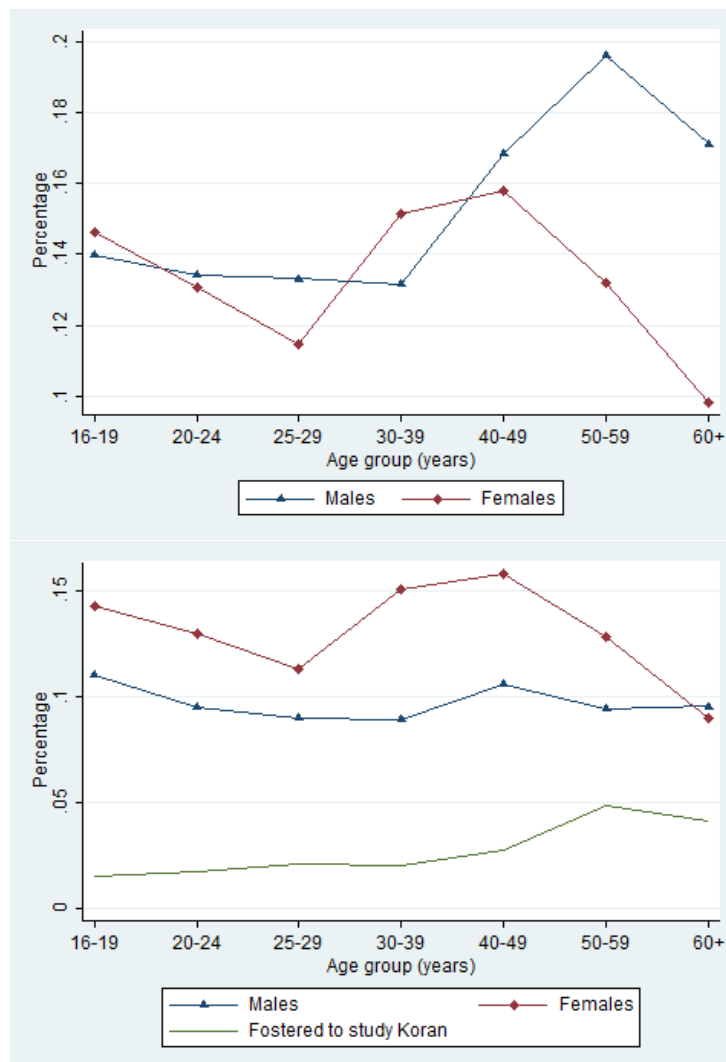
Finally looking at the parents' professional activities, we find that those of fostered individuals are more likely to be farmers or in a rural area and less likely to be inactive.

2.2 Long term variation in the proportion of fostered adults

One advantage of working with a sample of adults when studying fostering is that it allows to get a picture of the modifications in fostering practices over the years. In particular, one can examine how the proportion of children fostered and the motives for fostering have changed over a long period of time.

This is what we do in figure 3.

Figure 3: **Proportion of adults fostered, by age group**



The sample of individuals is split by age groups and by gender, in order to make sure we have enough

observations to get meaningful proportions. In the top part of figure 3, for each age group and each gender, we have drawn the proportions of adults that declare having been fostered before the age of 15. We find that the proportion of adults males that have been fostered before age 15 decreases for younger cohorts: about 19% of adult males aged between 50 and 59 years old have been fostered, whereas this proportion is only about 13% for the 30-39 and 14% for the 16-19. For females, the evolution is more erratic with a maximum obtained for the 40-49 years old group (15.8%), a relative minimum for the 25-29 group (11.5%) and a higher proportion for the 16-19 group (14.6%). For both genders we find a low proportion of fostered adults among those aged more than 60 years old. For males the proportion is still high relative to what is found for the 16 to 39 years old, but for females, that age group has the lowest proportion of adults that have been fostered (less than 10%). Given the relatively low level of life expectancy in Senegal, one cannot exclude that for this age group, our sample suffers from a high rate of attrition due to mortality. However, for that attrition to bias our results it would have to be selective. More precisely, attrition could explain the low proportion of fostered adults among those aged 60 years or older if fostered individuals have a higher probability of dying before 60. Though one cannot exclude that possibility, we do not think it likely. Indeed, as we see below, fostering appears to be associated with positive outcomes, so a higher rate of mortality among those fostered would be at odds with our other results. More convincing is the possibility that the increase in the proportion of children fostered between those born before 1946 (that is aged 60 years or older in 2006) and those born after, is due to an increasing demand for schooling.⁸ Indeed, when looking at the proportion of individuals that went to public schools, we find that this proportion is very low for both males and females aged 60 or older in 2006 and increases for younger cohorts. However for females, the number of sampled individuals educated in public schools for the oldest cohorts is too small to allow any firm conclusion in this direction. In the bottom part of the figure, the proportion of those fostered to study Koran is shown on a separate curve. Both for males and females, the curves exclude those fostered for religious studies. For males, the contrast is interesting with the previous figure, since the drop in fostering observed in figure 3a seems entirely due to the decrease in children fostered to study Koran, from 11.2% of those born between 1945

⁸Another possibility is that this result reflects a change in the perception of fostering over time. If, for example, in the past, fostered children kept less contact with their biological parents than today, they might not report having been fostered in the same way.

and 1956 (the 50-59 years old group) to 3.3% for those born between 1987 and 1990 (the 16-19 years old group). In contrast, the proportions of male children fostered for non religious reasons does not appear to change significantly throughout the period.

Overall these results point out the heterogeneous features of fostering in Senegal. Obviously fostering a male child for him to study Koran stands out as a completely different decision from other kinds of fostering. In particular parents of these children are more likely to be farmers, engaged in polygamous unions and less educated than parents of non fostered children or of those fostered for other reasons. The motives for fostering are also narrowly linked with age at fostering. Fostering to help the host household is clearly the dominant motive for girls fostered after 4. Between 0 and 3 years old this motive is mentioned as often as fostering to a childless relative, but since very young children are not likely to provide any efficient help, we suspect those two motives to be similar for that age. By contrast, and as could be expected, fostering following a shock that impacts the origin household is not linked with age at fostering.

2.3 Some insights on fostering outcomes: education, labour market status and marital life

Given the large heterogeneity in the motives for fostering one can expect them to modify the impact of fostering on various outcomes such as education, employment or marital life. The last part of this section looks at the correlations that can be observed between the fostering motivations and these outcomes.

2.3.1 Public school enrolment

We first look at education. In table 3, we report the proportion of adults that have been enrolled in public school depending on whether they have been fostered or not and, if fostered, on the motives for fostering. Declared motives have been grouped in order to have, as much as possible, enough observations in each category to compute meaningful percentages: the “Help to host household” and “Host parent childless” have been grouped together in the “Traditional/help” category ; “Difficulties in origin household” regroups “Illness of parents”, “Death of parents”, “Parents divorce” and the previous “Difficulties in origin household” category ; “Other” regroups the former “Other” category together with “Let mother work” and “Let mother migrate” ; Fostering “to go to school” and “to study Koran” have not been grouped.

Table 3: Percentage of adults that have been enroled in public school

	Total			Males		Females	
		Males	Females	0-3 y.o.	4-14 y.o.	0-3 y.o.	4-14 y.o.
Non fostered	38.1	46.6	31.0	-	-	-	-
Fostered	42.6*	43.0**	42.1***	62.3	39.0	38.8	44.1
Fostering motive:							
Traditional/help	35.7	42.7	34.0	53.6	38.2	39.2	31.9
Difficulties in origin household	47.5*	55.0*	42.7**	66.8	47.6	38.3	45.4
Schooling	89.0***	86.4***	93.5***	85.0	86.5	70.1	96.1
Study Koran	14.2***	13.0***	44.9	0.0	13.3	76.3	29.9
Other	41.0	48.2	34.7	72.8	41.8	33.7	34.2

Note: All statistics weighted by sampling weights. Statistics in **bold** are computed with samples with less than 30 observations. *, **, ***: difference with non fostered adults significant at the 10%, 5%, and 1% levels respectively. Tests are not performed when splitting the sample by age at fostering, since this variable is not defined for non fostered individuals.

In column 1 of the table we report the proportion of enroled individuals in the entire sample, then for males and females in columns 2 and 3. Columns 4 to 7 show the statistics obtained when the males and females samples are split by age groups. In bold appear the statistics that have been computed on less than 30 observations. Results for these sub-samples should not be considered as robust and we do not comment on them.

The first result is that fostering is linked with a higher probability to being enroled in public school: 42.6% of the fostered adults versus 38.1% of the non fostered went to school. This average hides a large difference between males and females. For females, fostering is linked with an 11 percentage points increase in the probability of going to school, whereas for males, a 3 percentage point decrease can be observed, largely due to the relatively large proportion of males that have been fostered to study Koran and that have a much lower probability of having been enroled in public school (13%). As could be expected, those fostered to go to school have a much higher probability of being enroled than any other group: 86.4% of males and 93.5% of females that declare to have been fostered for that reason went to school.⁹ Most remarkable is the fact that, except Koranic studies, none of the mentioned motives

⁹Remember that our information on the motives for fostering come from the adults that have been fostered, not from their parents, so that part of those that have been fostered for other reasons than schooling might declare that they have been fostered to go to school if they finally ended up being enroled. In the same vein, it is probably the case that some of

for fostering are associated with a lower probability of going to school. Even the girls that have been fostered to help the host household or to compensate a childless relative have a higher probability of going to school than non fostered girls, though the difference is not found to be significant. However, the results are modified when one splits the samples by age groups. For girls, in particular, having been fostered after 4 and to help the host household, or for traditional reasons, is associated with a reduced probability of going to school (31.9%), when compared with other motives for fostering (44.1% for all fostered female children), but not with non fostered girls (31%). As we suspected, we note that this is not the case for girls fostered between 0 and 3. For them, the probability of having been enrolled in public school (39.2%) is equivalent to what is found on average in the sub-sample of females fostered between 0 and 3. Then, when it occurs at a very young age, fostering to help the host household or to compensate a childless relative have the same, apparently positive, impact on the fostered child, at least for what concerns school enrolment. Finally, we observe that those that have been fostered following difficulties in their origin household seem to have been protected by fostering: the proportion of them that have been at school is indeed found significantly higher than that of non fostered individuals (47.5% versus 38.1%).

2.3.2 Inactivity

Tables 4, 5 and 6 show descriptive statistics for other key outcomes we are analysing in this paper: the probability of being inactive (table 4), the proportion of those adults that were family workers in their first job (table 5) and the proportion that were married at the time of interview (table 6). These three variables are chosen to detect potential impacts of fostering on labour market and social outcomes beyond the educational period. Interesting features emerge with these simple cross-tabulations. In the next section, where we go further and evaluate the impact of fostering holding constant other observable characteristics of the interviewed adults, we add other variables to complete the picture.

In table 4 the proportions of inactive individuals are shown following the same presentation as that of school enrolment in table 3. We observe that adults that have been fostered in their childhood have a lower probability of being inactive (40.6%) than non fostered adults (47.3%), and the difference is very those that were fostered to go to school, now declare they have been fostered for other reasons if they did not go to school. Unfortunately this source of bias cannot be corrected.

Table 4: **Percentage of inactive adults**

	Total			Males		Females	
		Males	Females	0-3 y.o.	4-14 y.o.	0-3 y.o.	4-14 y.o.
Non fostered	47.3	31.3	60.1	-	-	-	-
Fostered	40.6***	27.7	51.2***	30.5	27.8	50.5	52.4
Fostering motive:							
Traditional/help	46.0	27.0	50.6**	29.6	26.0	51.0	51.2
Difficulties in origin household	39.5**	26.8	47.3***	15.7	32.1	39.9	52.2
Schooling	51.3	47.2***	58.9	63.9	45.6	86.7	55.2
Study Koran	20.3***	18.8***	64.1	20.0	18.7	65.9	62.9
Other	44.2	28.6	57.4	59.3	20.9	62.9	51.3

Note: All statistics weighted by sampling weights. Statistics in **bold** are computed with samples with less than 30 observations. *, **, ***: difference with non fostered adults significant at the 10%, 5%, and 1% levels respectively. Tests are not performed when splitting the sample by age at fostering, since this variable is not defined for non fostered individuals.

significant. However the results are contrasted depending on the motives for fostering and the sex of the individual. Interestingly, we find that those that have been fostered to go to school have a higher probability to be inactive on the labour market, though the difference is only significant for the male sample (47.2% versus 31.3%, difference significant at the 1% level). We have seen that being fostered to go to school increases the probability to be enrolled in school. The lower probability to participate in the labour market of those individuals can then probably be explained by the choice made by educated individuals who prefer to stay at home, rather than holding a under-qualified job. By contrast we observe that those that have been fostered to attend Koranic schools have a much lower probability of being inactive than any other category of individuals (20.3%). This might result from the fact that being (often) deprived of formal schooling, those individuals have lower expectations than other, more educated, workers and accept low qualified jobs more easily. Another possibility is that attending Koranic school increases the extent of the individual's social network that eases access to employment. Finally looking at the female sample, we observe that those that have been fostered following difficulties in their household or for traditional reasons or to help the host household have a significantly lower probability of being inactive. As for males, this could result from an improvement in the social network favoured

Table 5: Percentage of adults that were family workers in their first job

	Total			Males		Females	
		Males	Females	0-3 y.o.	4-14 y.o.	0-3 y.o.	4-14 y.o.
Non fostered	49.6	46.9	52.8				
Fostered	43.8***	49.7	37.3***	45.5	50.5	41.1	34.4
Fostering motive:							
Traditional/help	37.4***	45.4	35.2***	52.8	42.7	26.5	39.3
Difficulties in origin household	44.6*	48.6	41.3***	57.1	44.9	47.6	36.6
Schooling	21.9***	29.3***	3.5***	0.0	30.7	0.0	3.8
Study Koran	57.9***	57.8***	63.2	20.0	59.0	59.0	64.6
Other	50.1	53.3	46.0	22.7	60.0	60.5	25.9

Note: All statistics weighted by sampling weights. Sample is reduced to all adults that are working or have worked in the past. Statistics in **bold** are computed with samples with less than 30 observations. *, **, ***: difference with non fostered adults significant at the 10%, 5%, and 1% levels respectively. Tests are not performed when splitting the sample by age at fostering, since this variable is not defined for non fostered individuals.

by fostering or from the fact that they were required earlier than other children to contribute to their upkeep.

2.3.3 Status in first job

Table 5 shows the proportion of interviewed individuals that were family workers in their first job, for all those that work or have been working in the past. As family workers are among the less qualified ones and are often with no or very low wages, any impact of fostering on the probability to hold such a job would be very informative on the interaction between fostering and labour market status. The results we obtain suggest that fostering is associated with a reduction in the probability to hold such an unqualified job in the first employment: in the population at large, 49.6% of the non fostered and 43.8% of the fostered hold or did hold such a job.

Unsurprisingly, we find that having been fostered to go to school has a strong negative impact, particularly for females where the proportion drops to 3.5%. By contrast, for males Koranic studies are associated with a much higher probability of being a family worker (57.8% versus 46.9% for non fostered males). For females, the negative association between fostering and the probability of being a family

worker is particularly strong: while 52.8% of the non fostered did hold such a job during their first employment, this is the case of only 41.3% of those fostered following difficulties in their household and, even more surprisingly, 37.3% of those fostered for traditional motives or to help the host household. This could result partly from the higher proportion of adult females that went to public school among the fostered, even for those that left their household of origin for traditional motives or to help the host household.

2.3.4 Marital status

Finally in table 6, we examine the proportion of married individuals. Once again our results point in the direction of a positive outcome associated with child fostering. For males in particular, the proportion of those who are married is much higher among the fostered than among the non fostered (58.3% versus 50.9%) and the advantage of those who have been fostered to study Koran is particularly strong with more than seventy percent of them married at the time of interview.

Table 6: **Percentage of married adults**

	Total			Males		Females	
		Males	Females	0-3 y.o.	4-14 y.o.	0-3 y.o.	4-14 y.o.
Non fostered	56.2	50.9	60.6				
Fostered	60.0***	58.3***	61.7	44.7	61.4	69.1	57.0
Fostering motive:							
Traditional/help	66.9***	63.7**	67.6***	60.3	65.0	74.9	63.6
Difficulties in origin household	54.9	51.9	56.9	43.3	58.0	64.9	51.7
Schooling	43.7***	44.1	43.1**	15.7	46.4	55.9	41.5
Study Koran	69.7***	70.4***	50.4	54.1	70.9	65.9	43.0
Other	59.3	50.1	67.1**	36.5	53.7	68.2	64.7

Note: All statistics weighted by sampling weights. Statistics in **bold** are computed with samples with less than 30 observations. *, **, ***: difference with non fostered adults significant at the 10%, 5%, and 1% levels respectively. Tests are not performed when splitting the sample by age at fostering, since this variable is not defined for non fostered individuals.

For both sexes, having been fostered to a childless relative or to help the host household is also associated with a higher probability of being married. Thus, fostering at large, and particularly for males fostered to study Koran, seems to facilitate access to the marriage market. This could be due to

an improved social network allowed by fostering or result from the fact that some children, particularly girls, are fostered foreseeing their future marriage to a member of the host family. Informal interviews indeed supported the idea that some women prefer to raise their future daughters-in-law hoping to insure harmony in their household in the future. This is consistent with our finding that females that have been fostered before 4 have the highest probability of being married (74.9%).

To sum up, simple correlations between fostering status and basic outcomes such as school enrolment, labour market participation, first employment or marital status suggest a positive impact of fostering on the long-term well being of those fostered. But correlation and causality are two different things, because confounding factors could explain these relationships. For instance, fostered children might be more educated not because of fostering *per se*, but rather because more educated parents are more likely to foster their child and, at the same time, to provide them with an environment favourable to human capital accumulation.

3 Estimation results

In this section we present results of an econometric analysis aiming at identifying the causal impact of fostering on outcomes in adulthood. We first look at the probability of having been fostered before 15, as a function of individual's, parents' and household of origin characteristics. We then turn to the impact of fostering on education and labour market outcomes. The section ends with results on marital status. In this section, we interpret the results as causal effects. Nevertheless, some cautionary words are in order. In fact, the causal interpretation is valid only if the hypothesis that the determinants of having been fostered during infancy and declaring it during the interview are not explained by unobservable characteristics that would also be correlated to the outcomes we measure. If reporting is correct and not affected by the degree of integration of the individual in his/her host household, which is already a strong hypothesis, and relying on the fact that we observe outcomes that are not concomitant to the fostering itself and therefore that parental unobservable characteristics that affected the fostering decisions do not affect directly the outcomes observed today, the effect observed is causal. Such hypotheses are nevertheless very strong.

In terms of estimation, unless otherwise mentioned all the models are estimated by probit and results

are presented as marginal effects: that is the impact of a one unit change in the independent variable on the probability of interest.

3.1 Probability of being fostered

Broadly speaking, the results for the probability of being fostered, shown in table 7, confirm the results of the descriptive statistics. For adult females, the number of half brothers or sisters has a significant and positive effect on the probability of having been fostered, while the number of siblings with the same mother and same father has a negative effect of equal size. This effect holds when we control for the marital status of parents (polygamous mother) and for their education level. Some of the variables that we found to be individually associated with fostering, however, are not significant in the regression when controlling for other covariates: parents' education and labour market participation are in this category. On the other hand, the ethnic group has a significant impact: for males being Serere or Poular has a significant and negative impact on the probability of being fostered. Poular females are also less likely to be fostered. Besides, for them, belonging to non Serere and non Poular ethnic groups increases a lot the probability to be fostered (+14%), when compared to Wolof women. Finally living in a rural area reduces the probability to have been fostered before age 15, but this reflects the fact that those who have been fostered are today more likely to live in urban areas than those that have not, and therefore should not be interpreted as a causal relationship. On the contrary: for males, there is a negative having a father currently living in an urban area has a negative impact, suggesting that the probability of being fostered is likely to be higher when born in rural areas.

Table 7: Probability of being fostered regressed on the control variables

VARIABLES	(1)		(2)	
	Males		Females	
Age	0.00	(0.002)	0.00	(0.002)
Age ²	-0.00	(0.000)	-0.00	(0.000)
Orphan	0.03	(0.019)	0.06***	(0.018)
Nb half brothers	0.00	(0.003)	0.01**	(0.003)
Nb half sisters	-0.00	(0.003)	0.01***	(0.003)
Nb brothers same parents	-0.01***	(0.004)	-0.01***	(0.004)
Nb sisters same parents	-0.01	(0.005)	0.00	(0.003)
Birth rank	-0.00	(0.003)	0.01**	(0.003)
Mother polygamous	0.02	(0.014)	-0.02	(0.012)
Ethnic group:				
Serere	-0.07***	(0.016)	-0.01	(0.017)
Poular	-0.02*	(0.015)	-0.03**	(0.013)
Other ethnic group	0.02	(0.032)	0.14***	(0.041)
Religion:				
Mourid Muslim	0.03	(0.016)	0.00	(0.013)
Other Muslim	-0.02	(0.020)	-0.03*	(0.016)
Other Religion	-0.00	(0.028)	-0.01	(0.022)
Parental characteristics:				
Father educated	0.01	(0.018)	-0.02	(0.014)
Mother educated	-0.03	(0.018)	0.01	(0.019)
Father farmer	0.02	(0.015)	0.01	(0.014)
Mother farmer	0.04*	(0.024)	0.04*	(0.021)
Mother inactive	0.02	(0.016)	-0.01	(0.014)
Father urban	-0.04**	(0.018)	0.01	(0.017)
Parents' variables missing	-0.01	(0.014)	-0.02**	(0.011)
Rural	-0.04*	(0.022)	-0.04**	(0.018)
Region dummies	YES		YES	
Observations	3,441		4,019	
Pseudo R-square	0.06		0.08	

Note: Robust standard errors in parentheses. *, ** and ***: different from 0 at the 10%, 5% and 1% levels respectively. Wolof is the reference category for ethnic group and Tidjane Muslim the reference category for religion.

3.2 Education

We now examine the causal impact of fostering on measurable outcomes: namely education, labour market and marital status. Regarding education, we focus on two outcomes: having ever been to public school (table 8) and having completed primary school (table 9).¹⁰ Column 1 in each table shows the

¹⁰For the sake of brevity, we only show the coefficients of the variables measuring the fostering status. Complete results are available upon request.

results when the fostering status is entered the regression as a single dummy that equals 1 if the individual declares having been fostered before age 15 and 0 otherwise. In column 2, age at fostering is taken into account with two dummies that are built by interacting the fostering status with age at fostering if fostered. In column 3 we distinguish between the possible links of the fostered child with his/her host parent. Finally in column 4, host parents are differentiated according to their membership to the mother or father kin group, or none. For non fostered individuals all these variables equal 0. Looking first at the school enrolment regressions, we find that fostering tends to have a positive effect, except for males fostered to a religious guide, that are found to have a much lower probability to have been to public school. Interestingly, we find that males fostered between 0 and 3 have a higher probability to ever go to public school than those not fostered. The negative impact of being fostered after 4 results from the fact that most of those fostered at this age left their household to study Koran.

For females, fostering appears to have a significant and positive impact on the probability to be enrolled in school. Marginal effects in column 1 indicate that adult females that have been fostered before age 15 have a 6 percentage points higher probability of having been enrolled in school than non fostered female adults. Given the low average enrolment rate of females, this is a very large effect. The impact of fostering is even stronger for females that have been fostered in their father's kin group (+12%) or to another relative (+13%). In this latter case, it is possible that precisely fostering to another relative is made with the purpose of schooling.

As underlined, an advantage of examining adults it to look at the probability of having completed primary school (table 9). In this case the picture is less positive for fostering: fostering no longer has any significant effect, except for males fostered to religious guides, for whom the probability is lower. Note however that although non significant, the marginal effects of fostering is still found positive.

3.3 Labour market

We now turn on to labour market outcomes. Tables 10 to 16 present regression results for various outcomes regarding labour market status either at first employment or at the time of the survey. We focus on first employment because it is primarily at this stage that fostering is likely to have much impact. For instance, if fostered children are sent out to help their host household, one might expect them to have a higher probability to be family workers in their first job, or they could hold their first

Table 8: **Education: probability to have been enrolled in public school -**

VARIABLES	Males				Females			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Fostered	-0.02 (0.030)				0.06** (0.027)			
F. before 3 y.o.		0.14** (0.069)				0.06 (0.043)		
F. after 3 y.o.		-0.06* (0.033)				0.05 (0.033)		
F. to grd-parents			0.05 (0.073)				0.08 (0.055)	
F. to uncle/aunt			0.09* (0.049)				0.05 (0.038)	
F. to rel. guide			-0.32*** (0.049)					
F. to others			0.05 (0.056)					
F. to rel.guide/other							0.05 (0.048)	
F. to mother kin				0.08 (0.056)				0.01 (0.032)
F. to father kin				0.08 (0.050)				0.12** (0.053)
F. to non related				-0.18*** (0.043)				0.13* (0.076)
Observations	3,408	3,414	3,382	3,390	3,893	3,896	3,872	3,879
Pseudo R-squared	0.314	0.315	0.325	0.314	0.363	0.363	0.362	0.356

Note: Robust standard errors in parentheses. Regression includes controls for age, birth rank, siblings composition, ethnicity, religion, parental education and profession, region, urban/rural dummies. *, ** and ***: different from 0 at the 10%, 5% and 1% levels respectively

Table 9: Education: probability to have completed primary school – probit regression

VARIABLES	Males				Females			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Fostered	0.01 (0.024)				0.02 (0.016)			
F. before 3 y.o.		0.06 (0.060)				0.01 (0.029)		
F. after 3 y.o.		-0.00 (0.026)				0.02 (0.019)		
F. to grd-parents			0.03 (0.055)				0.02 (0.034)	
F. to uncle/aunt			0.08* (0.040)				0.02 (0.024)	
F. to rel. guide			-0.18*** (0.038)					
F. to others			0.06 (0.051)					
F. to rel.guide/other							0.02 (0.027)	
F. to mother kin				0.07 (0.047)				0.02 (0.022)
F. to father kin				0.05 (0.041)				0.03 (0.029)
F. to non related				-0.07** (0.035)				0.02 (0.039)
Observations	3,443	3,449	3,417	3,425	3,979	3,982	3,958	3,965
Pseudo R-squared	0.214	0.214	0.220	0.209	0.289	0.289	0.288	0.281

Note: Robust standard errors in parentheses. Regression includes controls for age, birth rank, siblings composition, ethnicity, religion, parental education and profession, region, urban/rural dummies. *, ** and ***: different from 0 at the 10%, 5% and 1% levels respectively

job earlier than non fostered children. On the other hand, since building a social network might be a motivation to fostering, fostered children could have more job opportunities thanks to such a network.

Table 10 shows regression results for the probability to have ever worked. Results indicate that adults that have been fostered before age 15 have a higher probability to work or to have worked in the past. This is true for males as well as for females. Being active on the labour market can be a positive or a negative outcome, depending upon the conditions of employment. We investigate this further in the next tables. As can be seen in table 11, females that have been fostered did not start working earlier. In contrast to them, males that have been fostered started working 0.85 years earlier than those that have not been. In some cases, the difference is as much as 1.75 years earlier. Note that individuals who were fostered to a religious guide work earlier but roughly by as much as the sample average, while we could expect work to start earlier for them. It is possible that work for the marabout is not considered as economic activity. One could interpret these results in two different ways. First, it could be that fostered individuals are put to work earlier because their host household needs to increase its resources. In such a case, early labour market participation might be at the expense of the fostered individual. But it could also happen that fostered males start working earlier because they benefit from a larger social network than those not fostered. In table 12, we show the estimates obtained when regressing the probability that an individual found his first job using his family or social network. Results confirm the second hypothesis: males that have been fostered before age 15 have a higher probability to have found their first job with the help of the social/family network. For females, the estimates point in the same direction but are less precise. Interestingly we do not find that males fostered to a religious guide have a higher probability to have found their first job by this mean. This is unexpected, since one likely benefit of Koranic studies is an enhanced social network.

Table 10: Labour market status: probability to have ever worked – probit regression

VARIABLES	Males				Females			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Fostered	0.02** (0.008)				0.10*** (0.024)			
F. before 3 y.o.		0.02** (0.010)				0.04 (0.040)		
F. after 3 y.o.		0.01 (0.009)				0.14*** (0.027)		
F. to grd-parents			-0.01 (0.025)				0.11** (0.048)	
F. to uncle/aunt			0.01 (0.012)				0.09*** (0.033)	
F. to rel. guide			0.03** (0.013)					
F. to others			0.03*** (0.008)					
F. to rel.guide/other							0.12*** (0.037)	
F. to mother kin				0.01 (0.015)				0.10*** (0.031)
F. to father kin				0.01 (0.014)				0.07 (0.043)
F. to non related				0.03*** (0.008)				0.15*** (0.046)
Observations	2,561	2,563	2,548	2,550	3,151	3,152	3,137	3,138
Pseudo R-squared	0.249	0.249	0.250	0.248	0.186	0.187	0.186	0.187

Note: Robust standard errors in parentheses. Regression includes controls for age, birth rank, siblings composition, ethnicity, religion, parental education and profession, region, urban/rural dummies. *, ** and ***: different from 0 at the 10%, 5% and 1% levels respectively

Table 11: Labour market status: age at first employment – OLS regression

VARIABLES	Males				Females			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Fostered	-0.85*** (0.302)				0.07 (0.449)			
F. before 3 y.o.		-0.58 (0.673)				0.58 (0.775)		
F. after 3 y.o.		-0.91*** (0.328)				-0.02 (0.519)		
F. to grd-parents			0.64 (0.688)				0.41 (0.894)	
F. to uncle/aunt			-0.75 (0.487)				0.33 (0.655)	
F. to rel. guide			-0.95* (0.529)					
F. to others			-1.74*** (0.634)					
F. to rel.guide/other							-0.60 (0.665)	
F. to mother kin				0.26 (0.568)				0.67 (0.556)
F. to father kin				-1.54*** (0.466)				-0.68 (0.943)
F. to non related				-1.05** (0.447)				-0.98 (0.910)
Observations	2,871	2,875	2,852	2,856	2,408	2,408	2,394	2,394
Pseudo R-squared	0.39	0.39	0.39	0.39	0.40	0.40	0.40	0.40

Note: Robust standard errors in parentheses. Regression includes controls for age, birth rank, siblings composition, ethnicity, religion, parental education and profession, region, urban/rural dummies. *, ** and ***: different from 0 at the 10%, 5% and 1% levels respectively

Table 12: **Labour market status: first job found using family or social network – probit regression**

VARIABLES	Males				Females			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Fostered	0.08*** (0.024)				0.05 (0.028)			
F. before 3 y.o.		0.13*** (0.049)				0.00 (0.045)		
F. after 3 y.o.		0.08*** (0.027)				0.08** (0.034)		
F. to grd-parents			0.14*** (0.047)				0.06 (0.052)	
F. to uncle/aunt			0.08** (0.039)				0.02 (0.040)	
F. to rel. guide			0.06 (0.044)					
F. to others			0.08* (0.046)					
F. to rel.guide/other							0.08 (0.048)	
F. to mother kin				0.09** (0.043)				0.03 (0.035)
F. to father kin				0.10*** (0.038)				0.08 (0.053)
F. to non related				0.07* (0.036)				0.04 (0.067)
Observations	2,766	2,770	2,749	2,753	2,325	2,325	2,311	2,311
Pseudo R-squared	0.0813	0.0814	0.0818	0.0812	0.0793	0.0801	0.0794	0.0792

Note: Robust standard errors in parentheses. Regression includes controls for age, birth rank, siblings composition, ethnicity, religion, parental education and profession, region, urban/rural dummies. *, ** and ***: different from 0 at the 10%, 5% and 1% levels respectively

While finding one's job through family/social network may be seen as a positive outcome, we need to make sure that this effect does not only come from the fact that individuals simply work as unpaid family workers. We do this in table 13, where we examine the impact of fostering on status in the first employment. For males, fostering seems have a positive but only marginally significant impact on the probability to be a family worker. Hence, the impact that we find in table 12 does not seem to be driven by employment directly for the host family. Fostering seems to expand opportunities for work. It is only in the case of fostering in the father's family that it may be strongly correlated to working as a family

helper. For females, the estimates clearly indicate a strong and negative effect that depends neither on the age at fostering nor on the identity of the host.

Table 13: **Labour market status: probability to be a family worker in first employment - probit regression**

VARIABLES	Males				Females			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Fostered	0.05 (0.033)				-0.12*** (0.040)			
F. before 3 y.o.		-0.10 (0.075)				-0.12** (0.057)		
F. after 3 y.o.		0.07** (0.036)				-0.11** (0.051)		
F. to grd-parents			-0.05 (0.077)				-0.15** (0.076)	
F. to uncle/aunt			0.07 (0.049)				-0.09 (0.055)	
F. to rel. guide			0.04 (0.065)					
F. to others			0.05 (0.067)					
F. to rel.guide/other							-0.12* (0.071)	
F. to mother kin				-0.00 (0.058)				-0.13*** (0.049)
F. to father kin				0.09* (0.052)				-0.05 (0.074)
F. to non related				0.02 (0.053)				-0.15 (0.105)
Observations	2,805	2,809	2,787	2,791	2,353	2,353	2,339	2,339
Pseudo R-squared	0.345	0.346	0.345	0.345	0.431	0.430	0.431	0.431

Note: Robust standard errors in parentheses. Regression includes controls for age, birth rank, siblings composition, ethnicity, religion, parental education and profession, region, urban/rural dummies. *, ** and ***: different from 0 at the 10%, 5% and 1% levels respectively

Finally, we examine the probability to be working, for individuals aged between 15 and 20 years old at the time of the interview. Regression estimates are shown in table 14. The results are again contrasted. Overall, fostering seems to increase the probability to be at work for fostered individuals, but the estimated marginal effects lack precision. For males, results appear to depend on the host identity: while boys fostered to their grandparents have a much lower probability to work, the exact

opposite is true for those fostered to other relatives. Note that being fostered to a religious guide does not increase the probability to be currently working among young adults. Hence, work that children may do for the marabout to finance their religious education does not seem to translate into them necessarily keeping working after they have left the Daara. For females, the results seems stronger for those fostered after the age of 3, which corresponds to what we have seen in descriptive statistics, namely one of the strong motives for their fostering is to help the host household.

Table 14: **Labour market status: Is currently working – Individuals 15 to 20 years old – probit regression**

VARIABLES	Males				Females			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Fostered	0.12 (0.091)				0.07 (0.065)			
F. before 3 y.o.		0.06 (0.160)				-0.01 (0.105)		
F. after 3 y.o.		0.14 (0.107)				0.14* (0.076)		
F. to grd-parents			-0.28* (0.145)				0.14 (0.148)	
F. to uncle/aunt			0.15 (0.141)				0.02 (0.086)	
F. to rel. guide			0.11 (0.292)					
F. to others			0.27** (0.111)					
F. to rel.guide/other							0.06 (0.109)	
F. to mother kin				0.01 (0.147)				0.04 (0.093)
F. to father kin				-0.08 (0.149)				0.11 (0.108)
F. to non related				0.30** (0.122)				0.07 (0.136)
Observations	580	584	571	575	682	684	675	677
Pseudo R-squared	0.355	0.351	0.364	0.359	0.315	0.318	0.320	0.321

Note: Robust standard errors in parentheses. Regression includes controls for age, birth rank, siblings composition, ethnicity, religion, parental education and profession, region, urban/rural dummies. *, ** and ***: different from 0 at the 10%, 5% and 1% levels respectively

Overall, these results suggest that fostering might benefit fostered individuals in helping to find their

first job. This is true for males, much less for females, for whom our estimates are less precise, but point in the same direction. We do not find evidence that though working earlier, fostered individuals hold less qualified jobs. On the contrary, results show that fostered adult females have a lower probability to work as a family worker in their first job, which confirms what we observed in the descriptive statistics section and might not have been expected, given that a large proportion of fostered females left their parents' household to provide help to their host.

Looking at the first job helps understanding the *immediate* impact of fostering. Current status informs about the longer term impact. Tables 15 and 16 show estimates of the impact of fostering on the probability to work, or to have worked in the formal sector (table 15) and on that of being a farmer, for those people that currently live in rural areas (table 16). The results point to a zero impact of fostering on the probability to work or to have worked in the formal sector. However, when looking at the identity of the host, we find that those fostered to a member of their father's kin group have a higher probability to work in the formal sector. The opposite seems to be true for females and males fostered to other relatives. More telling are the results found on the probability to be a farmer: though fostered individuals are more likely to come from households located in rural areas and to have parents that are or were farmers, fostering has negative impact on the probability of being a farmer for those individuals that live in rural areas today. This could be seen in two different ways. First, one might consider this as a positive outcome of fostering, since poverty rates among peasants are higher than among other parts of the population. On the other hand, it could be that the fostered children of peasants households do not become farmers because they lose their right on their parents' land.

Table 15: **Labour market status: probability to hold a formal job now or as a first job – probit regression**

VARIABLES	Males				Females			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Fostered	0.00 (0.016)				-0.01 (0.007)			
F. before 3 y.o.		0.02 (0.044)				-0.01 (0.010)		
F. after 3 y.o.		-0.01 (0.016)				-0.00 (0.009)		
F. to grd-parents			0.07 (0.048)				-0.00 (0.016)	
F. to uncle/aunt			0.01 (0.024)				-0.02** (0.007)	
F. to rel. guide			-0.03 (0.029)					
F. to others			-0.03 (0.022)					
F. to rel.guide/other							0.00 (0.017)	
F. to mother kin				-0.01 (0.023)				-0.00 (0.009)
F. to father kin				0.07** (0.034)				-0.02*** (0.007)
F. to non related				-0.04** (0.020)				0.01 (0.026)
Observations	2,459	2,449	2,447	2,449	2,015	2,002	2,001	2,004
Pseudo R-squared	0.262	0.261	0.263	0.265	0.357	0.356	0.357	0.359

Note: Robust standard errors in parentheses. Regression includes controls for age, birth rank, siblings composition, ethnicity, religion, parental education and profession, region, urban/rural dummies. *, ** and ***: different from 0 at the 10%, 5% and 1% levels respectively

Table 16: **Labour market status: Probability to be a farmer – Rural areas only – probit regression**

VARIABLES	Males				Females			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Fostered	-0.06 (0.041)				-0.03 (0.028)			
F. before 3 y.o.		-0.11 (0.101)				-0.04 (0.038)		
F. after 3 y.o.		-0.06 (0.043)				-0.01 (0.040)		
F. to grd-parents			-0.21*** (0.063)				-0.09*** (0.029)	
F. to uncle/aunt			-0.02 (0.073)				-0.00 (0.045)	
F. to rel. guide			0.01 (0.072)					
F. to others			-0.15** (0.066)					
F. to rel.guide/other							0.02 (0.068)	
F. to mother kin				-0.04 (0.077)				-0.02 (0.037)
F. to father kin				-0.13** (0.061)				-0.10*** (0.031)
F. to non related				-0.03 (0.060)				0.13 (0.112)
Observations	1,233	1,234	1,226	1,227	1,651	1,652	1,641	1,644
Pseudo R-squared	0.162	0.163	0.166	0.163	0.213	0.213	0.216	0.217

Note: Robust standard errors in parentheses. Regression includes controls for age, birth rank, siblings composition, ethnicity, religion, parental education and profession, region, urban/rural dummies. *, ** and ***: different from 0 at the 10%, 5% and 1% levels respectively

3.4 Marital status

In this section, we show various marriage outcomes. Table 17 shows the estimated impact of fostering on the probability of being married for adults aged 16 or over. We do not find any strong impact of fostering on this probability. Yet, for males our estimates suggest a positive, though not very significant impact of fostering, hinting, similarly to labour market status, to the fact that fostering enhances the social network of fostered individuals. More evidence of this positive impact is provided by the results presented in table 18. We find that, among married adults, those fostered in their childhood marry

Table 17: Marital status: probability of being married – probit regression

VARIABLES	Males				Females			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Fostered	0.04 (0.035)				0.02 (0.026)			
F. before 3 y.o.		0.08 (0.075)				0.06 (0.040)		
F. after 3 y.o.		0.03 (0.039)				-0.01 (0.032)		
F. to grd-parents			0.03 (0.075)				-0.00 (0.052)	
F. to uncle/aunt			0.09* (0.048)				0.06 (0.036)	
F. to rel. guide			0.08 (0.068)					
F. to others			-0.02 (0.083)					
F. to rel.guide/other							-0.03 (0.045)	
F. to mother kin				0.01 (0.062)				0.03 (0.033)
F. to father kin				0.10* (0.051)				0.03 (0.046)
F. to non related				0.04 (0.058)				-0.04 (0.062)
Observations	3,195	3,201	3,169	3,175	3,704	3,707	3,683	3,686
Pseudo R-squared	0.505	0.506	0.504	0.504	0.212	0.212	0.211	0.211

Note: Robust standard errors in parentheses. Regression includes controls for age, birth rank, siblings composition, ethnicity, religion, parental marital status, education and profession, region, urban/rural dummies. *, ** and ***: different from 0 at the 10%, 5% and 1% levels respectively

earlier than those not fostered. This is the case for both sexes, but the impact is found particularly strong for females, and for males if they have been fostered in the kin group of their mother (which fits well with the idea that marriages of cross-cousins are a good thing).

A last insight on the impact of fostering on marital status is given by table 19, where the results of the regression of the probability of being engaged in a polygamous union are presented for all married adults. Interestingly, opposite results are found for males and females. For males, the coefficients indicate that fostering tends to increase the probability to have more than one spouse. Given that for men, the ability to be polygamous is likely to result from a relatively high position in the social and economic

Table 18: Marital status: age at first marriage – OLS regression

VARIABLES	Males over 35				Females over 25			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Fostered	-0.78*				-0.99**			
	(0.440)				(0.444)			
F. before 3 y.o.		-1.30				-0.12		
		(1.242)				(0.579)		
F. after 3 y.o.		-0.74				-1.64***		
		(0.465)				(0.597)		
F. to grd-parents			-0.27				0.27	
			(1.257)				(0.739)	
F. to uncle/aunt			-1.28*				-1.14*	
			(0.730)				(0.614)	
F. to rel. guide			-0.46					
			(0.698)					
F. to others			-0.52					
			(0.767)					
F. to rel.guide/other							-1.79**	
							(0.850)	
F. to mother kin				-1.74**				-0.28
				(0.796)				(0.510)
F. to father kin				0.16				-2.12**
				(0.814)				(0.909)
F. to non related				-0.68				-1.99
				(0.567)				(1.229)
Observations	1,305	1,305	1,299	1,299	2,508	2,508	2,499	2,499
Pseudo R-squared	0.09	0.09	0.09	0.09	0.06	0.06	0.06	0.06

Note: Robust standard errors in parentheses. Regression includes controls for age, birth rank, siblings composition, ethnicity, religion, parental marital status, education and profession, region, urban/rural dummies. *, ** and ***: different from 0 at the 10%, 5% and 1% levels respectively

ladder, we interpret our result as a positive impact of fostering. This result is reinforced by our finding that for females, we find opposite signs: with the exception of those that have been sent to their grand parents, females that have been fostered have either a similar or a lower probability of being engaged in a polygamous marriage.

Table 19: **Marital status: Probability of being engaged in a polygamous union – probit regression**

VARIABLES	Males over 35				Females over 25			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Fostered	0.07*				-0.06			
	(0.039)				(0.039)			
F. before 3 y.o.		0.03				-0.08		
		(0.106)				(0.055)		
F. after 3 y.o.		0.08*				-0.03		
		(0.041)				(0.051)		
F. to grd-parents			0.06				0.13*	
			(0.097)				(0.071)	
F. to uncle/aunt			0.06				-0.10**	
			(0.061)				(0.050)	
F. to rel. guide			0.04					
			(0.069)					
F. to others			0.14*					
			(0.079)					
F. to rel.guide/other							-0.13*	
							(0.071)	
F. to mother kin				0.08				0.00
				(0.069)				(0.049)
F. to father kin				0.05				-0.21***
				(0.066)				(0.064)
F. to non related				0.08				-0.08
				(0.059)				(0.100)
Observations	1,230	1,230	1,224	1,224	1,620	1,620	1,614	1,614
Pseudo R-squared	0.117	0.117	0.117	0.116	0.126	0.126	0.132	0.132

Note: Robust standard errors in parentheses. Regression includes controls for age, birth rank, siblings composition, ethnicity, religion, parental marital status, education and profession, region, urban/rural dummies. *, ** and ***: different from 0 at the 10%, 5% and 1% levels respectively

Finally, in table 20 we examine the impact of fostering on the fertility of women. We find that fostered women have a higher number of children, particularly if they have been fostered before age 3, to their grand parents and in their mother's family. Since more than 66% of these women are less than 40 years

old, many of them will have more children in the future. Hence, the estimated impact of fostering is likely to be underestimated, if at all ages fostered women tend to have more children. Indeed, when we restrict the sample to women over 40, we find much stronger effects. Since we control for age at marriage, this result is not driven by the fact that women fostered in childhood marry earlier.

Table 20: **Marital status: Number of children – women aged 16 or over – OLS regression**

VARIABLES	(1)	(2)	(3)	(4)
Fostered	0.21*			
	(0.122)			
F. before 3 y.o.		0.58***		
		(0.210)		
F. after 3 y.o.		-0.01		
		(0.142)		
F. to grd-parents			0.75***	
			(0.268)	
F. to uncle/aunt			0.03	
			(0.174)	
F. to rel.guide/other			0.08	
			(0.187)	
F. to mother kin				0.41***
				(0.156)
F. to father kin				-0.02
				(0.246)
F. to non related				-0.23
				(0.279)
Observations	3,935	3,938	3,916	3,919
R-squared	0.54	0.54	0.54	0.54

Note: Robust standard errors in parentheses. Regression includes controls for age, ethnicity, religion, age at marriage if married, parental marital status, education and profession, region, urban/rural dummies. *, ** and ***: different from 0 at the 10%, 5% and 1% levels respectively

4 Conclusion

In examining adults, this paper has allowed to shed new light on the impact of fostering, including beyond its mere impact on education.

An advantage of examining adults is to examine outcomes without censoring due to age. Typically, in the case of education, while fostering seems to have a positive impact on school enrolment, which can also be observed when children are examined, the impact of fostering is no longer significant when we

examine the probability to complete primary school. Hence, while fostering may help children enrolling in school, which already is a positive outcome, it is not beneficial so much so as to complete primary school.

Since fostering for purposes of education is a frequent pattern, finding that it is beneficial in terms of education outcomes doesn't give any additional information on the channels through which individuals might benefit from having been fostered in childhood: it only appears as a mean to invest in human capital. Examining other outcomes than education allows to shed light on other channels that might be at play. First, this paper has also examined labour outcomes. Such investigation permits to better understand the impact of fostering in the long run, in particular whether it translates in actual positive outcomes for adults. In terms of outcomes such as status in employment, fostering only has a limited impact. Nevertheless, the study of intermediary outcomes, such as the means through which first employment was secured, it appears clearly that fostering made it more likely to find their first job through personal relations, which hints at the fact that fostering is used to expand one's family and social network. This type of investment is very different from directly investing in human capital but can prove to be highly valuable investment for the long run.

Because marriage, and its characteristics, is a sign of economic and social success, in particular for males, this paper has finally examined the impact of fostering on marital outcomes. Indeed, for men, fostering seems to have a positive impact. Men who have been fostered marry earlier and they are more likely to be in a polygamous marriage. The earlier marriage in particular is likely to result from a better or more active social network that facilitated the finding of an appropriate match. Here again, it is likely that fostering acts through this investment-in-network channel. For women the impact of fostering is more ambiguous, they marry younger and have more children, which are not clearly favorable outcomes. However, fostered women are also less likely to end up in a polygamous marriage. The latter result perhaps shows that they have higher decision-making power in their marriage or that, for those who have been brought up in their fiancé's family as a fostered child, the ensuing marriage is not a source of conflict with the in-laws who therefore have no motivation to find a new bride for their son.

It is also of interest to note that different motives of fostering are associated to a different choice of host household, and that the outcomes reflect those choices. For example, girls fostered to their maternal

grand-parents are less likely to gain from fostering (in terms of education or marital status) than those fostered in their father's kin group, a less traditional pattern.

As could be expected, being fostered in a Koranic school has a negative impact on enrolment in a formal school. Furthermore, being fostered in a Koranic school does not seem to have any positive outcome on marriage or in the labour market. Contrary to what we could expect however, fostering in a Koranic school does not seem to lead to working earlier, compared to other forms of fostering. This could be because working for the marabout is not considered as an economic activity and is under-reported in the survey. Overall however, fostering to a Koranic school seems to have a rather negative impact of formal schooling without any apparent positive impact from an expanded social network. Hence, if anything can be concluded, it goes rather against Koranic schools, at least when they come at the expense of formal schooling.

The study uncovers a lot of heterogeneity in the impact of fostering, in particular depending on the gender of the fostered individual and, within each gender, depending on the person to whom the child was fostered and on the age at fostering. However, besides Koranic schools and besides the earlier age at marriage of fostered women, fostering seems to have a rather positive impact, both in terms of improving human capital and in terms of marriage. Being fostered seems to expand the social network, which is put to good use for enrolment in school, the first job and marriage. However, this positive impact of fostering does not go as far as to increase the likelihood to complete primary education and seems to have only a limited impact on labour outcomes.

Hence, in terms of policy conclusions, while fostering does not seem to have a negative impact and actually has positive impacts for some groups, it is only a second best to policies that would help children complete primary education or that would help individuals achieve good outcomes on the labour market.

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