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Household Structure and Gendered Outcomes for Children in South Africa: A Conceptual and Methodological Examination of an Understudied Issue

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Abstract

Demographers have long been interested in explaining gendered outcomes for children in sub-Saharan Africa. In this chapter, we focus on the co-residential household as a site for gendered processes in rural South Africa. Conceptually, we consider how household structure and the presence of key adults channel gendered values and differential resource allocation to boys and girls, which results in gendered outcomes. We present empirical analyses on gendered effects in educational progress using data from a longitudinal demographic surveillance system in rural South Africa. The results suggest that non-nuclear structures are associated with similar negative effects for both boys and girls compared to children growing up in nuclear households. However, while the presence of both parents ensures equal treatment of boys and girls, the presence of other kin in the absence of one or both parents results in gendered effects favoring boys.

Keywords: co-residence, extended kin, children, South Africa, education

Introduction

Demographers have long been interested in the relationship between gender and children's well-being in sub-Saharan Africa. In this chapter, we focus on the co-residential household as a locus of both gendered processes and outcomes. The people who children live with are conduits of physical and social capital and, therefore, key actors influencing the well-being of children. For starters, parental presence, particularly mothers, has been critically linked to outcomes such as educational attainment (Lloyd and Blanc 1996; Townsend et al. 2002). Extended kin have also long been recognized as critical players in the lives of children (Desai 1992; Lloyd and Desai 1992; Sear et al. 2002) though studies that have examined the effects of extended family arrangements on well-being have arrived at inconsistent findings (Buchmann 2000; Doan and Misharat 1990: Gage et al. 1996). More recently, a number of studies have focused on the presence of specific kin such as grandparents, finding that grandmothers have a positive influence on educational outcomes (Parker and Short 2009) and birthweight (Cunningham et al. 2010). Recent studies of societies affected by HIV/AIDS have postulated the importance of kin in the care of children (Ankrah 1993; Bicego, Rustein, and Johnson 2003; Goldberg and Short 2012; Hill, Hosegood, and Newell 2008; Hosegood et al. 2007).

Nearly all of this work examines the effects of the presence of certain family members on child outcomes. But the effects of *kin presence* is conceptually different from the effects *of family structure* which pertains to the configuration of parents and kin in households. Moreover, the effects of kin presence often depends on parental presence. Further, despite the growing knowledge gained from this body of scholarship, we have yet to clearly understand the role of gender in the pathways through which co-residential living arrangements influence children's

well-being. In particular, we have not paid adequate attention to the ways in which structure and kin presence reflect attitudes about gender roles and cultural norms and are sensitive to economic exigencies. We have three objectives in this chapter: 1) provide a focused overview of the current state of demographic scholarship on gender and households in sub-Saharan Africa; 2) offer our conceptual approach which attempts to identify possible pathways that link structure and kin presence to gendered outcomes; and 3) present empirical analyses drawing on data from rural South Africa. The value of this research can be appreciated in three ways. First, it strengthens our conceptual and methodological grounding in capturing how co-residential living arrangements correspond with gendered processes that, in turn, impact children's welfare. Second, as a result of apartheid era policies, high levels of unemployment and cultural preference, Black family organization defies simplistic, conventional categorization including gender roles. Third, Black African[1] children in rural South Africa continue to face large disadvantages in educational attainment compared to other racial groups underscoring the need to better understand which aspects of household arrangements matter for educational outcomes and the extent of persistent gender differences.

Living Arrangements and Gender Differences in Outcomes

A number of scholars have examined differential effects of living arrangements on outcomes for boys and girls in Africa. Educational outcomes, in particular, have received notable attention. Lloyd and Blanc (1996), in their oft-cited, cross-national study using Demographic and Health Surveys (DHS) data from seven sub-Saharan African countries claimed that they found "no evidence that family support systems operate systematically to the benefit of boys relative to

[1] We retain the term "Black African" to be consistent with current day usage in both academic and policy arenas.

girls" (p. 267). In the two decades since, researchers have tested this claim using different measures of households' compositions, and have arrived at equivocal findings. Driven in large part by the HIV/AIDS epidemic, living without biological parents—maternal, paternal, or double orphanhood—has often been employed as an indicator of children's vulnerability. Reports from the World Bank (2002) and UNAIDS (2002) suggested that orphaned girls faced disadvantages in schooling enrollment compared to orphaned boys. Similar to Lloyd and Blanc (1996)—although with more countries and DHS waves—Case, Paxon, and Ableidinger (2004) found that at least among orphans, the chances of school enrollment were "equally severe" for boys and girls (p. 500). Subsequent analyses found a more-nuanced relationship though. For instance, in Uganda, orphaned girls were less likely to receive any secondary schooling and were slower at progressing through the educational system than non-orphaned girls, whereas there were no differences in educational attainment by orphan-status among boys (Yamano, Shimamura, and Sserunkuuma 2006). But, in a study based in rural Kenya, girls and boys, on average, did not significantly differ in terms of school participation following a parent's death—rather *young* girls were more likely than any other group to attend school less frequently if orphaned (Evans and Miguel 2007).

Headship and presence of siblings have also been used to examine gendered differences in educational achievement. Young girls in Kinshasa were found to have lower levels of education if they lived in a household headed by a woman while older aged boys enjoyed educational advantages (Shapiro and Tambashe 2001). However, orphaned girls in female-headed households in rural Zimbabwe actually had better chances of completing primary compared to boys and non-orphaned girls (Nyamukapa and Gregson 2005). Girls living with mothers with

some education and older sisters appear to enjoy some educational advantages in Nigeria (Kazeem, Jensen, and Stokes 2010)—likely due to the presence of female role-models. The presence of a male pensioner, a critical source of financial support, has also been linked to higher educational achievement for girls but not for boys (Hamoudi and Thomas 2005). At the same time, girls in very large households (Mabika and Shapiro 2012), or in households with a lots of young children (Lindskog 2013), have lower educational achievement and school attendance than boys possibly due to resource constraints and son preference. Finally, work done in rural South Africa suggests even greater nuance when unpacking the effects of household composition on education. Townsend et al. (2002) found that boys' and girls' educational achievement respond differently to factors such as female headship, multi-generational household, and the presence of both parents.

Other outcomes such as nutritional status, the onset of sexual activity and early childbearing, and labor force entry are also related to household composition and have a gendered dimension. For example, a girl living with a female pensioner in South Africa has a higher chance of overcoming nutritional deficits, but no such effect is evident for boys (Duflo 2000). The presence of a father is linked to a delay in sexual debut for girls, but not boys, in Ivorian households (Babalola, Tambashe, and Vondrasek 2005). It is possible that social control and vigilance by fathers discourages early sexual activity for daughters which also lowers the risk of unwanted pregnancies (Ngom, Magadi, and Owuor 2003). Finally, recent work has focused on family dynamism and found that family instability—measured through marital dissolutions—has mixed gendered benefits. Whereas it has no notable gendered effects on the timing of sexual debut in

western Kenya (Goldberg 2013a), family instability was associated with differential effects by gender on multiple outcomes in urban South Africa (Goldberg 2013b).

Unpacking Household Structure

Our approach builds on the extant research by unpacking how household structure is a correlate of underlying power dynamics and decision making power. Specifically, we are interested in considering how structural features and the individuals who comprise that structure, i.e. kin presence, channel culturally informed gender norms and resources which, combined, determine investment in girls and boys. Structure, as we use it, refers to the generational contours and extent of nucleation in the household. Nuclear arrangements, i.e. only parents and children, are often identified with lower fertility and changing values about family obligations (Bongaarts 2001; Mberu 2007). The shift from quantity to quality accompanied by increasing education of the parents should result in more gender egalitarian values about the treatment of boys and girls, even if this process is a consequence of intra-household gendered-bargaining in child investments. In other words, women and men with more education will advocate equally for their daughters and sons (Glick and Sahn 2000; Thomas 1990). Exceptions are of course present such as Das Gupta's (1987) finding that, with smaller family size, son preference actually intensifies in Northern India.

Conversely, extended households are often seen as having more patriarchal norms that results in gendered outcomes favoring boys. This may, however, be indicative of lower education and higher fertility which usually characterizes these households (for a review, see Dodoo and Frost 2008). Large extended households also expose fault lines in the household particularly along

lines of gender (Folbre 1986; Sen 1990) and age (Meillasoux 1981). Resources are not equitably distributed amongst household members with some—elder males—members benefiting more than others. It would also mean that decision making power about resource allocation is concentrated amongst elder males who may, in turn, favor investment in boys. Within extended arrangements, however, there is likely to be variation in the extent to which gender inequity is practiced. For example, contiguous vertical arrangements may be more likely to favor boys over girls because they are more likely to be headed by an older male (Stucki 1995). However, such arrangements may be economically more stable which might result in more equitable treatment of boys and girls. Moreover, the increasing value of older persons as active participants in income generation through pensions (Case and Deaton 1998) may further alter gender based decision-making. Skipped generation arrangements in which parents are absent often have considerable financial and caregiving pressures which could either reinforce or relax conservative gender norms favoring boys. Lateral households that include adult siblings of parents might be more inclined to be gender neutral because of the absence of elders but competition for limited resources may work against girls. Structures that encompass both vertical and lateral features may be selective in the application of gendered norms. For example, members may accord equal treatment to boys and girls on health related issues but may resort to gender based practices for decisions around education. Finally, structures absent of vertical or horizontal adult kin, i.e. “lone mother” households, while free of patriarchy or gerontocratic control, do not offer the safety net in terms of financial and practical support found in multigenerational households (Casper and Bianchi 2002; Haider and McGarry 2006) though even amongst this group, variation has been noted along class, education, racial/ethnic, and lines (Brady and Burroway 2012; Edin and Lein 1997).

By using these conceptual anchors, we are better positioned to address the following three questions:

1) Does type of household structure influence boys' and girls' schooling differently?

2) Does the presence of kin influence boys' and girls' schooling differently?

3) Does the presence of parents moderate the effect of kin on boys' and girls' schooling differently?

Site, Data and Methods

Site Description

The Agincourt sub-district in Mpumalanga Province in northeastern South Africa is typical of much of southern Africa in three important respects: 1) the land is insufficient to support the population through subsistence agriculture or other local activities; 2) there are very few local employment opportunities; and 3) the population has high levels of migration and mobility. Formerly part of the apartheid era homeland system, the area encompasses a population of about 90,000 dispersed in 28 villages established through forced resettlement between 1920 and 1970. All villages have water provided through neighborhood taps and at least one primary school and most have electricity and a secondary school. The main languages spoken in the area are Shangaan, sePedi and seSotho. Traditionally, most families have lived in multigenerational, extended family arrangements in which adult siblings live close to one another (Junod 1962; Niehaus 2001) though these patterns are undergoing change as a result of increased female migration and alteration in the labor market.

Previous work on living arrangements in Agincourt has shown that between 1996 and 2003, there was considerable change in household types. Projections of long-run household change has pointed to an increase in the proportion of three generation linear households, and the decline of "simpler" household types such as single person households and nuclear households (Wittenberg and Collinson 2007). Related work on changes in household composition between 1993 and 2003 has shown an increase in the proportion of female headed households (Madhavan and Schatz 2007). In examining the influence of living arrangements on outcomes, previous work using data from 1997 found that the presence of parents benefited educational attainment for all children but having a migrant father had a positive effect only for older children and female headship had no effect (Townsend et al. 2002). More recent analysis examining the correlates of children's mobility found that the presence of women who can act as maternal substitutes lowers the likelihood of children moving when the mother is a labour migrant or when she is deceased (Madhavan et al. 2012). While providing important findings, these studies have measured extended living arrangements based only on headship, age-sex composition of the household and generational structure, making it difficult to identify the critical dimensions and the pathways through which effects are felt. Yet the richness of the data from Agincourt also enable the explicit linkage of children to specific co-resident kin.

Data and Methods

The data for this analysis come from the Agincourt Health and Demographic Surveillance System (AHDSS) conducted in 21 villages. The baseline census was conducted in 1992 followed by annual visits to each household in the site to update births, deaths, and migration and individual status such as residence, union, relationship to household head, and education of every

household member. Migration has been classified into two categories. A permanent migrant is defined as a person moving into or out of a household with a permanent intention. Someone who left the household permanently since the last update will not appear on the subsequent household roster. A temporary migrant, on the other hand, is someone who is identified as a member of the household but has spent six or more months of the previous year out of the household for employment or other reasons. This categorization results in much more expansive definition of co-residence than that which is normally used in censuses and surveys because members who are not physically present are still counted as co-residents.

Our data on kin relationships come from two sources: 1) household rosters that collect conventional data on sex, age and relationship to household head and 2) the social connections database (SCDB) that uses all waves of the AHDSS to derive robust indicators of both intra and inter household connectivity from the child's perspective. Collection of data using household rosters almost always begin with the identification of the "household head," who tends to be the oldest male (Posel 2001). All other household members are assigned a relationship code in reference to the head. If we wanted to identify relationships from the perspective of children, we would need to transform the household head based relationships. While this is relatively straightforward in nuclear and/or small households, it becomes increasingly difficult to do so in large households extended along both vertical and lateral dimensions. Fortunately, we can draw on data that offers direct, robust kinship relationship data from the child's perspective.

We use data from the 2002 update which covered a population of approximately 70,000 people living in 11,900 households. We chose 2002 because it offered high quality data on kin

relationships and provides a robust baseline for future work that will examine change over time. Our analytical sample includes 22,997 children aged 6 - 18 years old who were neither parents themselves nor lived with a partner or partner's family. The last restriction was imposed to avoid combining caregiving received by children and caregiving given to children in the case of young parents, both of which are very different contexts.[2] For each child, we constructed an "egocentric" list relating all co-resident adult household members (known as alters) to the child (ego). This produced a total of 87,199 adult co-resident alters and 3.79 alters per child. We include only alters age 19+ because they are most critical for channeling resources to children. However, because children are an indicator for the competition for resources, our regression models control for total number of children under age 18 living in the household. We then used the SCDB to confirm 96.2% of the relationships of co-resident alters to the child with high confidence. To create the structural typology, we relied on age and relationship. For the kin presence models, we aggregated counts of co-resident alters according to kinship type and created dichotomous indicators for the presence of any kin of that type. The data were then collapsed to a single observation for each child.

We employ ordinary least squares (OLS) regression models to examine the relationship between children's living arrangements as specified in each of the approaches and educational outcome. The outcome measure for the OLS models is pace of education which is modeled as a continuous variable that captures the difference between years of schooling attained and age and standardizes it by adding a constant for normal age of entry into school which is 6 in this

[2] As a more robust approach to excluding teen parents, we instead restricted the sample to children age 6-15, to focus on children who were before childbearing age. For both males and females, all coefficients were of the same sign and significance level as in the age 6-18 year old models.

community (Kuhn 2006). A pace of 0 would mean that the child is meeting grade for age expectations. A pace less than 0 would mean that the child is falling behind and a pace greater than 0 means that the child is moving faster than expected. The mean pace for boys is .7 and for girls, .3. We control for age of child, educational attainment of the household head, whether the house is headed by a refugee, whether there are labor migrants in the household, and number of children under the age of 19 in the household (not including focal child) and the number of adults in the household. All analyses are stratified by sex of the child. To control for correlated standard errors arising from having multiple children from the same household, we use the cluster command in STATA at the household level.

Results

Who do Children Live With in Agincourt?

We begin by exploring the unique co-residence conditions of the Agincourt area. Figure 1 shows the distribution of children living with mothers, fathers, siblings and different types of extended kin in 2002.

Insert Figure 1 here.

Consistent with expectations, we find that most children (82%) live with their mothers and about 55% with their fathers. Not shown but notable is that just over 50% of boys and girls live with both parents. These high proportions are partly attributable to the inclusion of temporary migrants as household members described in the data section. However, it should be noted that about 14% of girls and boys live with neither parent. Thirty percent live with a brother and 25%

live with a sister. Interestingly, while half of children live with some kind of extended kin, less than 20% live with any particular type of maternal extended kin, namely, grandmothers (mm), uncles (mb) and aunts(mz) and less that 10% live with paternal extended kin (fm or fb). There are no significant gender differences in these patterns.

Does Structure Matter for Gendered Educational Outcomes?

Table 1 shows the results of regressions using a structural typology based on the literature and what we know from fieldwork at the site. This typology is an attempt to develop a parsimonious, mutually exclusive categorization that is meaningful and analytically useful. The seven categories are: 1) exclusive nuclear defined as having only both parents and no other kin; 2) exclusive continuous vertical (one or both parents, grandparents); 3) exclusively lateral (one or both parents, aunts, uncles); 4) both vertical and lateral (one or both parent and having at least one member from vertical and lateral arrangements); 5) no parents/any kin; 6) lone mother (no kin) and 7) other. Other includes “lone father” “only adult siblings and/or spouses” “only adults with unknown relationships” or “no adults” and “other rare combinations.” Generational divisions are determined by age and relationship.

Insert Table 1 here.

Being in an exclusively continuous vertical arrangement is no different from being in a nuclear arrangement for both boys and girls for maintaining pace of education. This suggests that multigenerational households in which parents are present not only provide a similar support structure for educational progress as nuclear households but that it is done equitably for girls and boys. This may not be particularly surprising if we see these arrangements as both normative in

this context and also exhibiting social and economic stability which ensures that both boys and girls receive equal treatment. Interestingly, being in an exclusively lateral arrangement in which elders are absent has a negative effect for boys but not for girls. This suggests that competing interests on the part of adult siblings inhibits the ability of boys to maintain educational pace. All the other arrangements have a highly significant negative effect for both boys and girls suggesting that economic pressures are so great in these cases that educational progress of both boys and girls is put at risk.

The independent effects of the control variables are as expected with age of child decreasing the pace of education. Total number of adults has an independent positive effect and total number of children which has a negative effect. Educational status of the head has the expected positive impact whereas being in a refugee headed household has a negative effect. Interestingly, number of labour migrants has no impact on educational pace. These effects are similar for boys and girls. Taken together, these results suggest that structural variation has little impact on gendered outcomes in education. We now turn to a more focused examination of the individual members who make up the structure.

Do Kin Matter?

We tested numerous model specifications for various types of kin, including counts and dichotomous indicators of kin presence for specific types of kin, for kin classified as lateral/vertical, and for kin classified as maternal or paternal. Because we found that only grandparents and adult siblings have any association with child schooling, the results presented in Table 2 show the more parsimonious categorization. Model 1 is the basic model with only

type of parental presence included; model 2 includes grandparents and model 3 includes all other kin.

Insert Table 2 here.

Boys and girls who live with only one parent or neither parent fare worse compared to those who live with both parents suggesting that parents, for the most part, do not exhibit noticeable gender based investment. The number of parents present in the household has similar effects on boys and girls. The presence of grandparents (model 2) is marginally beneficial for both boys and girls suggesting that economic benefits of pensions may benefit both sexes equally. While the presence of other kin makes no difference for either sex, the presence of adult siblings exerts a strong positive effect for boys only. This may be because resources are limited when older siblings are present and channeled towards boys. It could also be that role modeling effects are more pronounced for boys. All the control variables behave the same way as in the structural models. All models control for the total number of adults living in the household, which is positively associated with child schooling. Coefficients could therefore be interpreted as indicating the benefit of a particular kin type above and beyond the benefit of just having additional adults. But we note that the significance of kin type coefficients does not change if we drop the control for number of adults.

When do Kin Matter?

Given the importance of parental status over other factors, we next explore the possibility that the significance of extended kin will vary by parent status by disaggregating models according to parent status, as shown in Table 3.

Insert Table 3 here.

Confirming the previous results, boys and girls who live with both parents appear to have no added benefit from the presence of other types of kin. However, the story changes in one parent households where the presence of grandparents has a significant positive impact for boys but not for girls. Boys also benefit from having older siblings in such circumstances whereas the advantages for girls are marginal. In households with no parents, grandparents have a strong and positive effect on educational pace for boys and only a weak effect for girls. The effects of adult siblings are not significantly associated with boys' or girls' schooling in no-parent households. As in the earlier models, the presence of aunts and uncles bears no relationship on child schooling progress regardless of parental status. Interestingly, the positive effect of total number of adults is only apparent for girls in no-parent households and the negative effect of number of children under the age of 19 is only apparent for boys in one parent households and in no-parent households. Taken together, these findings suggest that gender differences play out in times of social and economic stress when resources rationing is necessary. In such cases, boys appear to win out.

Discussion and Conclusion

Despite the wealth of literature on household structure and children's outcomes in sub-Saharan Africa, a relatively small number of studies have examined the role of structure and the individuals who comprise that structure in understanding gendered outcomes. In this analysis, we have attempted to push this literature by unpacking how structure is associated with gender norms, decision making and allocation of resources which, taken together, can have a profound influence on outcomes for boys and girls. We used data from a rural community in South Africa

to provide empirical backing for our claims. Perhaps the most surprising finding is the relatively limited role of extended kin in the lives of both boys and girls, a departure from the dominant narrative that emphasizes extended kin. It is also notable that more than 50% of boys and girls live with both parents, challenging the commonly heard "absent father" picture of households in South Africa. When examining the effects of structure and kin presence on educational attainment, we found that extended kin bear relatively little influence compared to parents on the pace of educational attainment and this is no different for boys and girls. As shown in the structural model (Table 1), nuclear structures are the best arrangement for children's education. The kin presence models (Tables 2 and 3) support this finding by showing that the presence of two parents offers a significant benefit for children and is independent of any effects of other kin. In other words, if both parents are there, very little else matters except for the presence of adult siblings which appears to offer some additional benefit particularly for boys. However, in situations without either parents or even with only one parent, the presence of grandparents and adult siblings benefits boys but not girls. Put simply, if there is a substitution effect in play, it is a gendered one.

The most important theoretical contribution of this analysis to the literature on gender and demography is its explicit focus on how household structure and kin presence reflect gender norms and gendered resource allocations in Africa. Most extant literature tends to conflate structure and composition and none that we are aware of has tried to address the gendered processes that accompanies each. The absence of any gendered effects when using a household structure typology suggests that secular changes to attitudes about gender equity trump any specific gendered processes stemming from particular configurations. Moreover, the benefits offered from either a nuclear or exclusively vertical structure underscores the critical role of

parents as decision-makers, a point consistent with other works that suggests that the transfer of power from consanguinal to conjugal relationships is underway in Africa (Clark, Kabiru and Mathur 2010; Smith 2001). Put simply, when parents are present, very little else matters. On the other hand, the *presence* of specific kin in the *absence* of one or both parents does have gendered effects favoring boys. This reveals two important dimensions: 1) under conditions of financial and social duress—which is what usually characterizes arrangements without parents—adult caregivers perceive boys to be the better investment and 2) the absence of parents opens up space for other caregivers to revert to more traditional gender norms favoring boys. Adult siblings, who appear to be as significant as grandparents in their capacity as substitute caregivers or role models, are often neglected in the literature though has been noted for other contexts (Kuhn 2006). More puzzling, however, is their influence which appears to benefit only boys when only one parent—most likely the mother –is present. This suggests that boys more than girls may need more guidance in the form of role modeling when fathers are absent. The role of siblings may be especially important in light of the bimodal pattern of childbearing among Black South African women in which women often have two children separated by long birth spacing (Garenne, Tollman, and Kahn 2000; Timaeus and Moultrie 2008). In this context, first born children, and particularly, boys, may merit special attention not merely because their mothers are often young and lacking spousal support, but because they lack an older sibling.

In assessing the value of this work, it is important to consider some limitations. First, using a cross sectional indicator of residential arrangements to examine a cumulative process such as schooling tends to result in low explanatory power in general. We cannot, for instance, rule out that the association or lack of association between current extended living arrangements and cumulative schooling outcomes is not a reverse causation. As just one example, children who

now live with aunts and uncles may have been previously exposed to far more disadvantaged living arrangements prior to the current one. Second, AHDSS data and the social connections database allow us to measure the effects of non-co-resident kin who do not live with a child but may nonetheless play a critical role in providing material support. Numerous studies have questioned the limitations of the household as an organizing concept for measuring kinship support, and so future work ought to address whether kin outside the household increase explanatory power in similar modelling strategies. Third, further refinements of the analysis presented here are possible. For example, it might be informative to cluster on sibling sets within the household to identify more robustly the effect of birth order. Finally, due to data limitations, we did not include potentially important co-variates such as access to pensions and other social grants, employment status, or temporary migration status.

Despite these limitations, we believe that this analysis makes a worthwhile contribution to the ongoing discussion of family structure and gendered outcomes in the African context. We are hopeful that this line of research will be pursued so that findings can be better compared to those stemming from research in high income contexts, like the US, where researchers are interested in not only how the residential presence of fathers and unstable living arrangements might impact boys' and girls' lives (Brown 2010; Hawkins, Amato, and King 2007; Hofferth 2006) and how birth order (Conley 2005) and time spent rearing children (Casper and Bianchi 2002) within stable and unstable family environments predict children's outcomes. Having a global perspective on gender and households would not only enrich theory but present opportunities to develop effective strategies to ensure healthy lives for all children.

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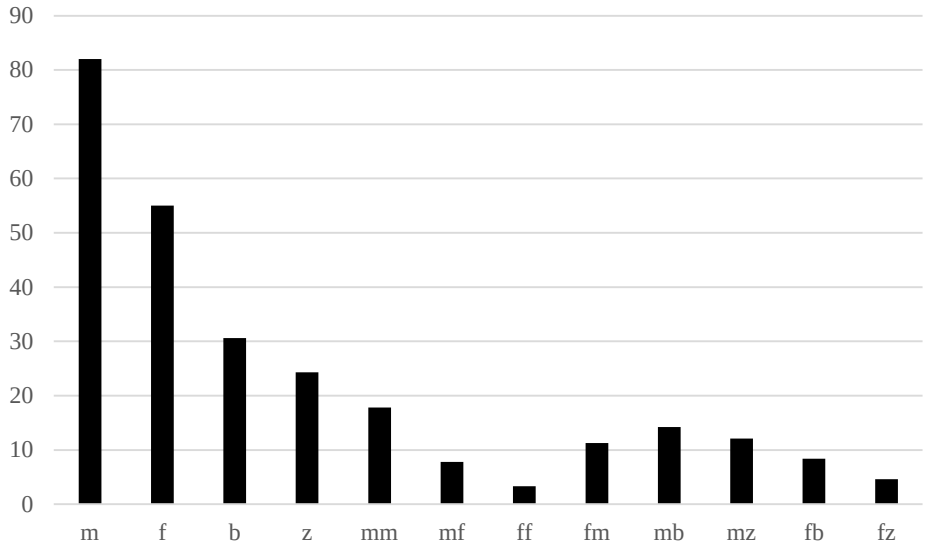
Figure 1: Distribution of co-residence with parents, siblings and extended kin for children aged 6-18, Agincourt 2002



Note: Kinship relationship codes are derived from the eight elemental relationships, (M)other, (F)ather, (B)rother, (Z)sister, (S)on, (D)aughter, (H)usband and (W)ife;

Table 1: OLS regression results for effects of structural typology on pace of education for children aged 6-18, Agincourt 2002

	Boys		Girls	
Structural Type	Coef.	SE	Coef.	SE
Exclusively nuclear (both parents)	Ref.		Ref.	
Exclusively continuous vertical (both or one parent)	0.030	(0.07)	-0.026	(0.07)
Exclusively lateral (both or one parent)	-0.183*	(0.08)	-0.128	(0.08)
Lateral and vertical (both or one parent)	-0.222***	(0.06)	-0.198***	(0.06)
No parent/any kin present	-0.186***	(0.05)	-0.236***	(0.05)
Lone mother	-0.239***	(0.07)	-0.243***	(0.06)
Other	-0.237**	(0.07)	-0.239**	(0.06)
Controls				
Age of child	-0.294***	(0.00)	-0.237***	(0.00)
# children < 19	-0.028**	(0.01)	-0.023**	(0.01)
# adults > 19	0.053***	(0.01)	0.064***	(0.01)
# labor migrants	0.027	(0.02)	0.020	(0.02)
Educational status of head	0.048***	(0.00)	0.047***	(0.00)
Refugee headed	-0.215***	(0.04)	-0.324***	(0.04)
R^2	0.307		0.243	
Observations	10557		10223	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; Robust standard errors estimated (in parentheses). Results are clustered by household ID.

Table 2: OLS regression results for effects of kin presence on pace of education for children aged 6-18, Agincourt 2002

	Parental Model		Add Grandparents		Add Other Kin	
	Boys	Girls	Boys	Girls	Boys	Girls
Parental Status						
Both parents	Ref	ref.	ref.	ref.	ref.	ref.
One parent	-0.159*** (0.04)	-0.244*** (0.04)	-0.182*** (0.04)	-0.265*** (0.04)	-0.175*** (0.04)	-0.257*** (0.04)
No parents	-0.299*** (0.06)	-0.298*** (0.05)	-0.348*** (0.06)	-0.339*** (0.06)	-0.284*** (0.07)	-0.285*** (0.07)
Kin Presence						
Any grandparent			0.108* (0.05)	0.092* (0.05)	0.186*** (0.05)	0.134*** (0.05)
Any other kin					-0.052 (0.06)	-0.032 (0.05)
Any sibling 19+					0.143** (0.05)	0.088 (0.05)
Controls						
Age of child	-0.292*** (0.00)	-0.237*** (0.00)	-0.290*** (0.00)	-0.235*** (0.00)	-0.295*** (0.00)	-0.238*** (0.00)
# children	-0.030*** (0.01)	-0.026** (0.01)	-0.029*** (0.01)	-0.025** (0.01)	-0.028** (0.01)	-0.025** (0.01)
# adults	0.046*** (0.01)	0.044*** (0.01)	0.037*** (0.01)	0.052*** (0.01)	0.027** (0.01)	0.047*** (0.01)
# labor migrants	0.022 (0.02)	0.016 (0.02)	0.023 (0.02)	0.019 (0.02)	0.030 (0.02)	0.024 (0.02)
Education of Head	0.046*** (0.00)	0.044*** (0.00)	0.047*** (0.00)	0.046*** (0.00)	0.050*** (0.00)	0.047*** (0.00)
Refugee Headed	-0.233*** (0.04)	-0.350** (0.04)	-0.225*** (0.04)	-0.343*** (0.04)	-0.218*** (0.04)	-0.339*** (0.04)
R^2	0.307	0.245	0.308	0.245	0.309	0.246
Observations	10557	10223	10557	10223	10557	10223

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; Robust standard errors in parentheses. Results clustered by household ID.

Table 3: OLS regression results for effects of kin presence on pace of education, by number of parents for children aged 6-18, Agincourt, 2002

	Two Parents				One Parent				No Parents			
	Boys		Girls		Boys		Girls		Boys		Girls	
Kin Presence												
Any grandparent	-0.011	(0.08)	0.056	(0.08)	0.271**	(0.09)	0.134	(0.09)	0.446**	(0.14)	0.228	(0.12)
Any other kin	-0.084	(0.09)	-0.025	(0.09)	-0.107	(0.09)	-0.014	(0.09)	0.074	(0.15)	-0.093	(0.12)
Any sibling 19+	0.098	(0.06)	0.059	(0.06)	0.228**	(0.08)	0.175*	(0.08)	-0.026	(0.19)	-0.143	(0.19)
Controls												
Age of child	-0.282***	(0.01)	-0.213***	(0.01)	-0.299***	(0.01)	-0.260***	(0.01)	-0.332***	(0.01)	-0.272***	(0.01)
# children	-0.015	(0.01)	-0.017	(0.01)	-0.032*	(0.02)	-0.033	(0.02)	-0.076**	(0.03)	-0.084***	(0.02)
# adults	0.029	(0.02)	0.036	(0.02)	0.007	(0.02)	0.035	(0.02)	0.087	(0.03)	0.105**	(0.03)
# labor migrants	0.071*	(0.03)	0.071**	(0.03)	0.027	(0.03)	0.016	(0.03)	-0.078	(0.05)	-0.068	(0.06)
Education of Head	0.057***	(0.01)	0.049***	(0.01)	0.048***	(0.01)	0.055***	(0.01)	0.058***	(0.02)	0.045**	(0.01)
Refugee Headed	-0.160**	(0.06)	-0.294***	(0.06)	-0.244***	(0.07)	-0.351***	(0.08)	-0.244	(0.14)	-0.461***	(0.11)
R^2	0.293		0.217		0.328		0.273		0.327		0.272	
Observations	5456		5262		3616		3467		1485		1494	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; Robust standard errors in parentheses. Results clustered by household ID.