

# Parental Migration, Gender and Child Education in Ghana

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## **Abstract**

This study employs longitudinal data to examine the self-reported grades in Science, English, and Mathematics, of Ghanaian boys and girls whose parents have migrated internally or internationally. Using a fixed-effects modelling approach, the analysis draws on information collected from 755 secondary school students surveyed as a panel in 2013, 2014, and 2015. The results show that boys with one or both parents away internationally tend to achieve grades equal to or higher than boys with non-migrant parents. In contrast, girls from migrant families generally exhibit no significant differences in grades when compared to girls with non-migrant parents. A critical risk factor identified is the negative impact of parental divorce or separation on the measured educational outcomes of children in migrant families.

Keywords: Education; Gender; Ghana; Transnational families; Children left-behind

## 1. INTRODUCTION

Within West Africa, approximately seven million people are migrants, with more than four-fifths of these movements occurring within the region, primarily for employment under the Economic Community of West African States (ECOWAS) free-movement framework (UNESCO, 2018). Specifically in Ghana, migration is deeply rooted in the long-standing West African tradition of population mobility, with many Ghanaian parents migrating to improve living conditions for their children and other family members who remain in the country (Cebotari, 2020; Caarls, 2015). Estimates suggest that approximately 1.5 million Ghanaians reside abroad, while as many as 8 million nationals have migrated internally since the beginning of this century (Government of Ghana, 2016; Molini & Paci, 2015). A significant number of these migrants are parents who frequently leave their children behind in the care of either family or non-family members. It is estimated that almost half of all Ghanaian children live without at least one biological parent, with girls more likely than boys to live without a biological parent due to internal or international migration (Azumah et al., 2018).

Extensive scholarly inquiries into the repercussions of parental migration on children's education have yielded disparate conclusions. While some empirical studies indicate that in some contexts the absence of parents due to migration can adversely associate with children's education (Cortes, 2015; Hu, 2012; McKenzie and Rapoport, 2011), alternative research underscores the potential benefits derived from migration, particularly when considering the influx of monetary, in-kind, and social remittances on enhancing children's educational prospects (Antman, 2012; Cebotari, 2020; Rapoport and Docquier, 2006; Levitt, 1998). The differing results emphasize the intricate consequences of parental migration on child wellbeing. The evidence also underscore the significance of considering context-specific and dynamic impacts on children's education.

Drawing upon existing empirical insights, the present study adds to the scholarly discourse in several ways. Primarily, it leverages panel data to elucidate the dynamic effects of parental migration on the educational performance of children who stay behind. Given the distinctive character of the employed dataset, this investigation stands as one of the first attempts to present longitudinal evidence on the effects of parental migration on children's education in Ghana (although see Cebotari, Mazzucato and Appiah, 2018). Previous research into the effects of parental migration on child education in Ghana has predominantly hinged on snapshot evidence (see for instance, Kyereko, 2020). Nevertheless, both migratory patterns and educational outcomes manifest as evolving constructs, which are inadequately represented by cross-sectional evidence. The data's panel format enables a more nuanced consideration of the effects of migration on child education, addressing the unobserved heterogeneity that might have been missed in prior African-context studies. Furthermore, we differentiate between internal and international parental migration, taking into account other factors that might influence child education, like the quality of the relationship with the caregiver and the marital status of migrating parents. Consequently, this study adds to the existing literature by emphasizing the intricacies of migration and family dynamics in the context of assessing child education. Moreover, by examining the education of boys and girls, this research incorporates a gendered lens into the analysis of child education in the context of migration. Scholarly works from diverse geographical settings underscore the importance of accounting for child gender in assessing educational outcomes (Antman 2012; Cebotari et al., 2018; Cortes 2015; Kyereko, 2020; McKenzie and Rapoport 2011). Presently, there is limited knowledge regarding the educational disparities between boys and girls in the context of internal and international parental migration. Lastly, in this study, the data is derived from child-reported measures concerning migration and educational outcomes. The prevailing body of literature predominantly harnesses adult reports to bolster empirical and theoretical assertions of child

well-being. Research indicates that children's self-reports regarding their educational outcomes often diverge from those of adults (Jordan & Graham, 2012).

This study employs panel data collected in 2013, 2014, and 2015 from junior and senior high school students in two Ghanaian urban areas with high out migration rates—Kumasi and Sunyani. We incorporate objective indicators, specifically the self-reported grades in English, Mathematics, and Science, to quantify educational outcomes. Beyond the characteristics of parental migration, the analysis also delves into factors related to child and caregivers, living conditions, and other measurements that influence school performance.

## **2. BACKGROUND**

Temporal and financial investments represent two primary channels through which parents allocate resources for their children (Thomson, Hanson, & McLanahan, 1994). In this context, the implications of parental migration for children encompass both potential advantages and challenges. As posited by the household strategy theory, parental migration serves as a tactical approach to optimize the well-being of children and other kin who remain in the country of origin (Stark & Bloom, 1985). Migrating parents bolster their family's economic standing through remittance transfers. These monetary and material contributions elevate the socioeconomic standing of children, fostering investments that facilitate their education. In the context of the Philippines, research by Clemens and Tiongson (2013) elucidated the beneficial ramifications of parental migration on children's educational outcomes, evidenced by an increased propensity to enrol in private school and win educational awards. In the context of Ghana, research by Cebotari (2020) indicated that children's educational outcomes are enhanced when they are recipients of both in-kind and monetary remittances, particularly when such remittances are invested in children's educational needs. Conversely, studies focusing on Mexican children have posited that the school performance of children in migrant households

tends to be adversely impacted (Lahaie et al., 2009; McKenzie and Rapoport, 2011). In Zimbabwe, a study by Manyeruke et al. (2021) revealed that children of dual-migrant parents exhibited diminished educational performance in comparison to their counterparts residing with both parents. Notably, the same study discerned no significant disparities between children whose mother or the father had embarked on migration (Manyeruke et al., 2021). An empirical analysis in China found that children's school performance is negatively affected when both parents migrate, when the child is under the guardianship of a non-parental caregiver, or when parents and children are separated for longer periods of time (Zhou et al., 2014).

The absence of family members, potentially leading to reduced oversight, guidance, and control, can be detrimental to a child's education. Attachment theory (Bowlby 1958), which emphasizes the importance of proximity, stability, and long-term care from primary caregivers for meaningful child development, highlights the heightened vulnerability of children to parental absence. This theoretical underpinning suggests that the extent of a child's vulnerability largely depends on which parent has migrated. For instance, in societies where mothers are the primary caregivers, maternal migration may adversely affect a child's school attainment (Lu 2014), school engagement (Wen and Lin 2012), and educational performance (Dreby 2010). However, Battistella and Conaco (1998) observed that if the father migrated and the mother remained at home, the children's school performance was not necessarily affected. Various studies also suggest that a child's education might not suffer due to parental migration if appropriate care arrangements are established or if one parent stays behind as the primary caregiver (Cebotari, 2018; Jordan and Graham 2012). Furthermore, findings by Henderson and Mapp (2002) indicate that when one parent is actively involved in a child's education, the child tends to have better grades, social skills, and classroom participation. More comprehensive research is required to fully understand the impact of parental migration on children's educational outcomes in specific national contexts.

Much of the current research delves into international migration, while a significant number of studies, especially within the context of China, focus on internal migration. The comparative impact of internal versus international migration on children's education remains relatively unexplored. Among the limited studies addressing this, one research comparing the effects of both types of migration in Mexico and Indonesia discovered that international migration tends to be more harmful to children's school attendance than internal migration (Lu, 2014). In Ghana, studies revealed a similar trend: children with international migrant parents generally show lower educational performance and school enjoyment compared to those with parents who migrated within the country (Cebotari, 2020; Cebotari and Mazzucato 2016). Internal migration, being geographically closer, often entails fewer administrative and financial challenges, making regular visits between parents and children more feasible. However, the potential for higher earnings in international migration can directly impact the resources allocated for a child's education.

A limited number of studies have examined the educational outcomes of children based on whether their migrating parents remain together or divorce. The human ecology model (Bronfenbrenner, 1979), a prominent theoretical framework for studying child development, highlights the importance of considering the family environment and familial interactions in understanding child well-being outcomes. Research on migration in Ghana indicates that the absence of a parent can strain marital relationships, particularly when women migrate alone or when both parents migrate simultaneously (Caarls, 2015). When comparing the effects of migration in a divorce-driven context with migration in a stable relationship setting, researchers found that migrant fathers who are divorced frequently enter new relationships and are more unwilling to provide financial support for their children who stay behind (Dreby, 2010; Nobles, 2011). Similarly, Abrego (2009) compared divorced mothers and fathers who were away due to migration and found that fathers were more likely to reduce the amount of remittances, or even

stopped sending money to their children. Younger children, boys, or those from wealthier households tend to receive more support from their divorced fathers than older children, those from lower-income families, or girls (Landale and Oropesa, 2001). Moreover, Dreby (2010) found that Mexican children keep in touch significantly more with fathers who have migrated than with fathers who are divorced. Another study highlighted that children in single-parent households are typically left behind for more extended periods than those in two-parent households (Eremenko and González-Ferrer, 2018). In Ghana, no effect on school performance was observed for children whose parents migrated and divorced, when only one parent had migrated, when children were in a stable care arrangement, or when children received remittances (Cebotari and Mazzucato 2016). This evidence suggests that divorce can significantly influence investments in children, potentially impacting their educational outcomes.

The impact of gender on educational outcomes among children is a significant consideration within the context of parental migration. The prevailing discourse often suggests that girls are disproportionately disadvantaged by such migration. In Ghana, it is more common for girls to change residences or fill labor gaps within the household when family members migrate (Caarls et al., 2021; Poeze, 2018; Whitehead et al., 2007). A study conducted by Cebotari (2020) found that a lack of remittances from internally migrating parents adversely affected Ghanaian girls' enjoyment of school and academic ranking, an impact not observed among boys.

Conversely, studies in other regions present a more nuanced picture. Research from Vietnam by Behrman and Knowles (1999) highlighted deteriorating academic outcomes for girls, attributed to resource allocation favoring boys, particularly when financial support from abroad is limited. However, studies focused on Mexico and China indicate a divergent trend: female children were more likely to complete more years of education when family members migrated (Hanson and Woodruff, 2003; Lu, 2012). Antman's study (2012) supported this view, positing

that international remittances from migrating fathers positively influenced the educational trajectories of girls. This perspective is corroborated by additional findings from Nobles (2011) in Mexico and Bouoiyour and Miftah (2016) in Morocco. This varied landscape of research underscores the complexities involved in assessing the gender-specific impacts of parental migration on educational outcomes of children, suggesting that contextual factors play a crucial role.

In this study, the normative context of social parenthood and child fostering warrants consideration. In Ghana, it is not uncommon for children to reside with caregivers who are not their biological parents, irrespective of parental migration status. Nationally representative data indicate that 17% of Ghanaian children lived in households without a biological parent in 2022 (Ghana Statistical Service, Ghana Health Service, & ICF International, 2022). When parents migrate, entrusting children to family or non-family caregivers is often a preferred strategy to ensure child well-being during the transitional period as migrating parents settle into their new environment (Cebotari, Mazzucato, & Appiah, 2018; Poeze, 2018; Osei, 2023). Indeed, fostering has been identified as the primary form of migration specifically motivated by children's educational needs in West Africa, with parents playing a central role in their children's placement (UNESCO, 2018). In a comparative study across 37 Sub-Saharan African countries, Cotton (2021) identifies maternal education as a significant factor influencing child fostering, demonstrating that higher maternal education correlates with a greater likelihood of placing a child into quality foster care. Children are frequently fostered into households offering better educational resources or closer proximity to schools (Zimmerman, 2003), particularly when mothers or both parents migrate (Poeze, 2018). Given that parental co-presence is not universally expected and kin-based fostering is commonplace, placement in foster care may not necessarily result in distress for children (Osei, 2023).

Building upon existing scholarly works, the present research examines the gendered effects of parental migration patterns on children's school performance. Using longitudinal data allows for a more nuanced understanding of the time varying effects of migration on child education.

### **3. METHOD**

#### **3.1. Data**

This study draws on longitudinal data collected over three waves (2013, 2014, and 2015) from children and youths aged 12-21 in Kumasi and Sunyani—two Ghanaian urban centers with high out-migration rates (Cebotari et al., 2018). Given the uneven spatial concentration of migration patterns in the country, a national sampling strategy was eschewed in favor of an urban focus. Employing a stratified sampling method, eight schools—varying in quality and type (public vs. private, junior vs. senior high schools)—were chosen based on the Ministry of Education's annual rankings, which follow indicators such as enrolment levels, infrastructural capacity, and students' performance in final exams. Both junior and senior high school levels in Ghana span three years, with junior high school preceding the senior high school. Typically, students transition to a different school between junior and senior high school, although some schools offer both levels.

In the first round of data collection (2013), one random class from each of the first two grades in every selected school was surveyed. All students in these randomly chosen classes were invited to participate. To ensure adequate representation of children with migrant backgrounds, additional students who had at least one migrant parent were purposively sampled from other classes in the first two grades. This approach was intended to capture a sufficient number of participants with parental migration experiences, while also ensuring that each cohort could be followed for at least two rounds of the survey before completing junior or senior high school.

In total, 985 unique respondents participated in the initial wave. Of these, 405 respondents completed two waves of data collection, while 350 completed all three waves. For analytical purposes, the study retains only those respondents who took part in at least two waves of the survey. During all rounds of data collection, children were (re)informed of the study's objectives and the voluntary nature of their participation. They filled out the self-administered questionnaire in English under the supervision of a research team comprising five trained quantitative data collection specialists. The same team remained in place throughout the three waves of data collection. To mitigate attrition in the panel of respondents, each school was visited twice per wave during the same data collection period, typically within a week. However, some children could not be included in subsequent waves of data collection as they had changed schools, dropped out, or otherwise could not be traced. For instance, the attrition rates for junior high school participants were 83% and 96% in the second and third rounds, respectively, while those in senior high school were 82% and 85%. Of the children absent from the panel, roughly half were those living with both parents, while the other half had at least one migrant parent at the time they were last observed in the survey. A small number of cases involving children orphaned of both parents were excluded from the analyses to avoid ambiguity regarding the reason for parental absence.

Auxiliary analyses were conducted to assess variation in key characteristics, such as gender, age, and migration indicators in relation to the dependent variables, in order to evaluate any potential bias introduced by attrition. The correlations did not reveal any statistically significant differences between panel participants and those absent from the panel across the tested characteristics.

Although the data employed in this study are not nationally representative, detailed sampling and data collection protocols have been established to allow for potential replication in the future. Throughout the study, the term "children" is used to acknowledge the dependent

relationship participants have with their migrant parents, even in cases where they are 18 years and older.

### **3.2. Indicators**

The three dependent variables in this study comprise the *grades in Science, English, and Mathematics*. These grades, ranging from 1 to 100 with 100 being the highest attainable score, serve as indicators of school performance.

The primary variable of interest in this research identifies the parent who has engaged in *migration*—specifically categorizing instances where the child lives with both parents or where the mother, the father, or both parents are absent due to internal or international migration.

Several control variables are incorporated to refine the analysis. The child's *age* is recorded in complete years, while various family characteristics are operationalized as binary variables. For instance, the *caregiver's educational level* is denoted as 1 if they have at least a secondary education (defined as having graduated from high school, completed vocational training, or obtained a higher education degree). Parental *marital status* is coded as 1 if the parents are divorced or separated, and the *stability of the child's care arrangement* is marked as 1 if the child has changed caregivers one or more times subsequent to parental migration. Additionally, the *duration of separation* between child and parent is classified into three categories: no separation, separation within the last 12 months, and separation extending beyond 13 months.

Furthermore, a binary variable representing socioeconomic status serves as an indicator of the child's relative *living conditions* (coded as 1 for better conditions compared to peers). Additional measures account for the household composition, specifically the *total number of children* and the *number of younger siblings* living with the child; these numbers include both biological and non-biological siblings. A binary family process variable has also been

introduced to gauge the *quality of the relationship* between the child and the primary caregiver, with a score of 1 indicating a distant relationship.

Interaction terms have been integrated into the analysis to explore the interplay between parental marital status and various categories of migration, allowing for a nuanced understanding of marital-specific variations in the context of migration over time.

### **3.3. Analysis**

In the current research, a fixed-effects modeling approach is deployed to mitigate selection bias while estimating causal relationships, effectively controlling for unobserved heterogeneity by eliminating between-unit variations (Allison, 2009). This analytical strategy allows for the examination of how temporal shifts in parental migration status and associated characteristics correlate with variations in children's performance in main school subjects. Given the focus on the time-varying aspect of the fixed-effects model, only variables that exhibit changes over the study period are included.

The modeling procedure introduces sets of variables incrementally to scrutinize their cumulative impact on children's grades in Science, English, and Mathematics. Although full models are exclusively presented and discussed in this paper for the sake of conciseness, stepwise regressions can be made available upon request. Separate models are included for each of the three school subjects, who are further disaggregated by the child's gender. The division of regressions by child gender and school subjects is informed by existing literature that points to gender-specific educational disparities in Ghana, including in the context of parental migration (Government of Ghana, 2019; Karpati et al., 2021; Cebotari and Mazzucato, 2016).

Each regression model estimates interaction terms between parental marital status and migration categories. In the resulting tables, only statistically significant interactions are reported. All models employ robust standard errors, which are corrected for clustering at the

individual level. Additionally, collinearity tests were conducted for all included indicators, with no evidence of multicollinearity discovered.

#### **4. RESULTS**

Table 1 provides an overview of the descriptive results, categorized by gender. The average age of children in the sample slightly varies between boys and girls: girls have an average age of 15, whereas boys have an average age of 16. Regarding school performance, boys have mean grades of 68 in Science, 65 in Math, and 67 in English. Comparatively, the girls' mean grades in Science, Math, and English are 62, 60, and 66, respectively.

Approximately half of the children in the dataset live with both parents—51% for boys and 47% for girls. It is relatively uncommon for children in the dataset to have a mother who has migrated internationally; only 2.5% of girls and 3% of boys reported that their mother lives abroad. In contrast, a somewhat higher percentage of mothers have migrated within Ghana—7% for boys and 5% for girls. Fathers, however, are more likely to have migrated either internally or internationally. Around 28% of boys and 32% of girls reported that their father has migrated in either of the two settings. Girls experience internal migration of both parents more frequently (11%) than boys (7.5%). The proportion of boys and girls with both parents migrating internationally is 4% and 3%, respectively.

However, it is important to note that Table 1 presents the overall data on parental migration during the three-year period as a pooled measure. Additional analysis (not shown) on the transitions across different parental migration statuses over this period reveal considerable mobility in parents' migration trajectories. For instance, 12% of children with non-migrant parents in 2013 moved to a migrant-parent status by 2015, with half of these transitions involving a father migrating internally. Among those whose father was away internationally, 21% changed their migration status, whereas in the father-away-internally category, the figure rose to 29%. Likewise, 19% of children with a mother away internationally, and 35% of those

with a mother away internally, no longer occupied the same category in 2015. This latter figure is the highest, indicating relatively greater fluidity over time in the status involving mothers migrating internally. Furthermore, 30% of children whose parents were both away internationally, and 31% of those whose parents were both away internally, experienced changes in parental migration status over time. Notably, among children whose father, mother, or both parents were away but changed their migration status over time, the majority transitioned to the non-migrant parent category, suggesting that returning to—or becoming—a non-migrant is the most common path for those whose original migration status shifted during the observed period. These patterns align with scholarly work indicating that children themselves can play a significant role in shaping parental migration trajectories, including influencing return migration (Dreby, 2010). In various migration-sending contexts, mothers are found to be more likely to migrate when children are older and tend to return regularly, especially when children reach schooling age and require guidance in their educational pathways (Caarls, 2015; Cebotari, 2020; Olimova and Bosc, 2003). Overall, this evidence highlights that parental migration and their trajectories are dynamic processes that evolve over time, underscoring the necessity of conducting a longitudinal analysis to capture these changes comprehensively.

Table 1 shows that in cases of parental migration, approximately 24% of children, irrespective of gender, reported that a parent has departed within the last 12 months. Over an extended period of separation, girls are slightly more likely than boys to have not seen their parent(s) for more than 13 months. Additionally, 11% of girls have changed caregivers more than once due to parental migration, compared to 8% for boys.

One-third of children reported that their parents are divorced or separated, although the percentage is slightly higher for boys (35%) than for girls (31%). Generally, more boys (87%)

reported having a better relationship with their caregivers than girls (74%). Most caregivers, regardless of the child's gender, have not completed secondary education.

Boys and girls typically have three other siblings living with them, half of whom are younger. Almost half of the boys (49%) and girls (48%) believe that their living conditions are better to those of their peers.

[Table 1 about here]

In the subsequent phase of the analysis, we employ multivariate models to examine the time varying effects of parental migration, along with other characteristics, on children's grades in Science, Mathematics, and Science. Tables 2 and 3 present the full fixed-effects models differentiated by gender. In the regression analysis of Table 2, several noteworthy patterns emerge with respect to the role of parental migration status and boys' education. Within the realm of Science, the international maternal migration is associated with a significant uptick in boys' scores ( $\beta = 16.29$ , Model 1). A similar, albeit more pronounced, effect is observed for boys whose parents have both migrated internationally ( $\beta = 23.77$ ), as compared to boys from non-migrant families. In the context of Mathematics (Model 3), similar to Science, boys whose mothers or both parents have migrated internationally are more likely to have higher scores in Mathematics compared to boys living with non-migrant parents ( $\beta = 12.76$ ,  $\beta = 18.60$ , respectively). These findings indicate that the international migration of either the mother or both parents positively influences children's Science and Mathematics outcomes. This may suggest targeted investments in child education made in response to parental absence due to migration.

[Table 2 about here]

Turning to the English proficiency of boys (Model 2), the results indicate fewer significant predictors. This implies that English academic outcomes of boys whose parents migrated

internally or internationally do not differ notably from the grades of boys living with both parents.

Additionally, caregiver education level appears to have a marginal yet significant effect on Mathematics scores. Specifically, boys whose caregivers have at least a secondary education show an improvement in Mathematics scores ( $\beta = 4.84$ ) compared to boys whose caregivers have a lower level of education.

Moreover, the study includes interaction effects between divorce status and parental migration that may affect the school performance of boys. Specifically, the interaction terms revealed that boys were less likely to report better scores in Science and Mathematics when their mothers had migrated internationally and were divorced ( $\beta$  of the interaction term = -46.21, Model 1;  $\beta$  of the interaction term = -28.27, Model 3, respectively). The higher coefficient for the interaction term between having a mother abroad and being divorced, in relation to Science scores, may indicate greater difficulties for boys in this particular setting. Furthermore, boys were less likely to report higher scores in Mathematics when their parents were divorced and either the mother or both parents had migrated internally ( $\beta$  of the interaction term = -17.91, Model 3;  $\beta$  of the interaction term = -14.45, Model 3, respectively). Notably, boys were more likely to report higher scores in English and Mathematics when their parents were divorced and both had migrated internationally ( $\beta$  of the interaction term = 11.71, Model 2;  $\beta$  of the interaction term = 8.43, Model 3, respectively).

Table 3 outlines the results of the regression models that examine the impact of parental migration status on the educational outcomes of girls. After controlling for independent indicators, the study found no statistically significant differences in the Science and English grades of girls whose parents have migrated, when compared to their peers from non-migrant families. The only significant finding is the negative and statistically meaningful effect on the Mathematics scores of girls whose both parents have migrated internationally ( $\beta = -12.71$ ,

Model 6, Table 3), in comparison to girls living with both parents. This suggests potential adverse effects on girls' educational performance under this specific family arrangement.

Moreover, interaction terms in Table 3 shed light on additional nuances. Specifically, the data indicate that girls are less likely to report higher grades in Science and English when their parents are divorced and residing abroad ( $\beta$  of the interaction term = -28.94, Model 4;  $\beta$  of the interaction term = -26.74, Model 5, respectively). Furthermore, girls are less likely to report elevated grades in English when their fathers have migrated internationally and are divorced ( $\beta$  of the interaction term = -11.20, Model 5). The larger coefficients for the interaction terms, specifically when both parents are abroad and divorced, suggest that girls may face heightened difficulties in these particular transnational family settings.

Child age, duration of separation, living conditions, and the number of children in the household did not show any significant effects on child education across the models.

Taken together, these findings illuminate the intricate ways in which parental migration status interacts with other variables to affect educational outcomes of girls and boys in Ghana. While migration status alone may not always impact the school performance of children, its interaction with divorce status yields more substantive effects that warrant further investigation. This research contributes to the growing body of literature that seeks to understand the social and economic drivers affecting children's educational outcomes in the context of parental migration.

## **5. DISCUSSION**

This study is among the first to employ panel data to explore the impact of parental migration on children's educational outcomes within an African context. By integrating longitudinal evidence, it refines our understanding of these associations, which have often been studied using qualitative or cross-sectional approaches. The insights gained from the results build on

theoretical frameworks of migration decision-making, attachment, and human ecology models, highlighting both the potential advantages and challenges of parental migration for children's education.

Three key findings emerge from the analysis, offering novel perspectives to the existing literature. First, anchored in the household migration theory (Stark and Bloom, 1985), and attachment theory (Bowlby, 1958), the findings reveal that parental migration, in and of itself, does not inherently lead to diminished school performance among children, challenging some prevailing views in scholarly work. Second, the influence of parental migration on children's education is gender-specific, with boys and girls experiencing disparate educational outcomes when separated from their parents due to either internal or international migration. Third, in alignment with the human ecology model (Bronfenbrenner, 1979), the study identifies marital separation in connection to parental migration as a notable risk factor for children. When parental migration occurs in the context of divorce, it heightens the likelihood of negative educational outcomes for children. A detailed discussion of these findings is presented in the following.

This research includes measurements of both internal and international migration, specifying which parent has migrated, to offer a more nuanced understanding of how parent-child separation due to migration impacts the education of girls and boys in Ghana. The study reveals that for boys, the international migration of either the mother or both parents is positively associated with higher performance in Science and Mathematics, compared to those living with both parents. However, this pattern was not observed for girls; with one exception, the data showed statistically neutral effects, suggesting that parental migration does not necessarily influence girls' educational outcomes. This finding challenges previous research that highlighted the detrimental impact of parental absence, especially that of mothers, on child well-being (Cortes, 2015; Parrenas, 2005; Wen & Lin, 2012). In contrast, our results align with

more recent empirical studies that underscore the resilience of children against negative educational outcomes when parents migrate, either internally or internationally (Caarls et al., 2021; Cebotari, 2018; Manyeruke et al., 2021).

The finding that parental migration does not seem to adversely affect children's education can be understood within the broader African context of social parenthood and child fostering norms. In many African countries, including Ghana, it is common for children to change residency and be raised by caregivers who are not their biological parents. This arrangement, when accompanied by quality foster care, can build resilience among children, ensuring that they do not necessarily feel underprivileged if they do not live with their parents (Poeze, 2018; Osei, 2023). Furthermore, recent research has found a link between improved well-being outcomes among children of migrant parents and advancements in communication technologies in the past decades that have facilitated long-distance parent-child interactions (Marchetti-Mercer & Swartz, 2020; Wilding et al., 2020). This suggests that modern communication tools may play an increased role in enabling migrant parents to remain actively involved in their children's educational decisions and support.

This study incorporates a gender perspective to analyze school performance among children of migrants in Ghana. It operates under the premise that child education in Ghana might exhibit gender-specific patterns (Cebotari et al., 2018). The findings indicate a more pronounced benefit in education for boys, compared to girls, when experiencing parental separation due to migration. Notably, boys demonstrate improved performance in Science and Mathematics when their mothers or both parents engage in international migration. This effect is especially significant in the case of both parents migrating, as evidenced by positive correlations with English and Mathematics scores, even when accounting for factors like parental divorce through interaction effects. Contrastingly, for girls in comparable transnational circumstances, the results are either statistically neutral or indicate poorer performance in Mathematics when

both parents migrate internationally. These gender-specific outcomes may be indicative of prevailing gender norms, previously observed to affect equitable investment in children's education in different contexts (Behrman & Knowles, 1999; Landale & Oropesa, 2001). Additionally, the observed gender disparities could be reflective of an uneven distribution of workload and resources within Ghanaian households, where girls are more likely to engage in household chores and benefit less from remittances compared to boys (Karpati et al., 2021; Whitehead et al., 2007). While the underlying causes warrant further investigation, it is crucial to recognize that in certain migration scenarios, girls' education in Ghana may not benefit as much as boys from parental migration.

Finally, this study underscores that divorce is a barrier impacting the education of children who stay behind due to migration. It was observed that boys whose mothers were migrants, either internally or internationally, as well as cases where both parents were away internally, exhibited a decline in their academic performance, particularly in Mathematics, in the context of marital divorce or separation. Similarly, girls in families where the father or both parents had migrated internationally, and the parents were divorced or separated, achieved lower grades in Science and English. These findings align with existing research on the intersection of divorce, migration, and child education in Ghana (Cebotari, 2020; Cebotari & Mazzucato, 2016) and in other contexts (Caarls et al., 2021; Nobles, 2011). The evidence from this study leads to a crucial observation: separations involving both internal and international parental migration in connection to marital discord tend to have a more adverse effect on children's educational outcomes. This outcome can likely be attributed to the unique challenges posed by this specific form of parental absence. In Ghana, internal or international parental migration is sometimes driven by strained marital relationships. However, it is also often the case that divorce occurs following migration, particularly when women migrate alone or when both parents migrate simultaneously (Caarls, 2015). In scenarios where divorced parents migrate, their ability to

invest in their children's education might be hindered, particularly if they remarry and have additional children in the new union (Dreby, 2010). Future research should delve deeper into how parental migration and marital strife intertwine and their subsequent effects on child education, enriching this line of inquiry.

This study is not without limitations. Firstly, its sample is not nationally representative, being drawn exclusively from two urban areas with high rates of out-migration in Ghana. Consequently, the findings are not generalizable to all children in the country or to any particular region as a whole. Another inherent limitation is migrant selectivity, a common challenge in studies utilizing quantitative data. Currently, there are no comprehensive empirical methods to fully account for migrant selectivity over time, especially for data involving children. Moreover, the data used in this study span three rounds of observations, capturing only the short- to medium-term effects of migration on child education. Additionally, the data focus on children who are enrolled in school, limiting the generalizability of the results to the broader population of school-age children in Ghana.

Despite these constraints, the study offers a unique longitudinal insight into the effects of internal and international parental migration on child education within an African context. It does so by incorporating a gender perspective and utilizing child-reported data to assess the associations of interest. This approach marks a novel contribution, as existing research on children in migrant families largely relies on holistic evaluations of child populations and on adult assessments of children's outcomes. By centering the voices of girls and boys, this study posits that Ghanaian parental migration does not inherently equate to a vulnerability in children's educational outcomes.

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Table 1

*Means/percentages (standard deviations) of dependent and independent variables split by child's gender*

Variables	Full panel sample			
	Boys		Girls	
	% / Mean (SD)	N/n	% / Mean (SD)	N/n
School performance				
Science	68.3 (14.64)	872	61.7 (16.02)	769
Math	64.5 (17.29)	862	59.7 (17.65)	763
English	67.1 (13.08)	885	65.5 (14.18)	804
Parental migration status		967		881
Both parents resident, non-migrant	50.6%	489	47.1%	415
Father away internationally	14.3%	138	16.7%	147
Father away internally	13.5%	131	14.9%	131
Mother away internationally	3.3%	32	2.5%	22
Mother away internally	6.9%	67	5.1%	45
Both parents away internationally	3.9%	38	3.0%	26
Both parents away internally	7.5%	72	10.8%	95
Parents divorced/separated	34.7%	335	31.2%	273
Child age (years)	16.0 (2.03)	976	15.2 (1.89)	884
Caregiver's education secondary or more	42.0%	406	45.8%	399
Duration of separation: none	53.7%	524	51.5%	455
Duration of separation: ≤ 12 months	24.3%	237	23.8%	210
Duration of separation: 13 ≥ months	22.0%	215	24.8%	219
Living conditions are better when compared to other children	49.2%	480	47.5%	419
Total number of children living with the child	2.9 (2.13)	976	3.1 (2.05)	884
Total number of younger children living with the child	1.4 (1.31)	976	1.4 (1.39)	884
Good quality of relationship with the caregiver	87.0%	846	74.3%	656
Child changed caregiver ≥ 1 due to migration	8.3%	44	11.0%	53

*Notes:* Standard deviations in parentheses. The n indicates the number of observations for categories within each indicator

Table 2

*Parental Migration and Boys' School Performance – Fully Adjusted Models*

	Science		English		Mathematics	
	Model 1		Model 2		Model 3	
	$\beta$	SE	$\beta$	SE	$\beta$	SE
Parental migration status						
Both parents resident, non-migrant	.	.	.	.	.	.
Father away internationally	4.64	(3.91)	-3.30	(4.80)	3.25	(5.49)
Father away internally	1.89	(2.93)	-2.16	(3.78)	-2.56	(4.35)
Mother away internationally	16.29***	(4.86)	-4.06	(6.06)	12.76*	(6.51)
Mother away internally	-3.37	(6.97)	-8.06	(6.57)	12.32	(7.90)
Both parents away internationally	23.77***	(5.96)	1.74	(4.44)	18.60*	(9.23)
Both parents away internally	4.15	(5.38)	0.06	(4.85)	9.31	(7.40)
Parents divorced/separated	1.08	(3.27)	2.25	(2.42)	4.85	(3.16)
Child age (years)	0.44	(0.72)	0.54	(1.00)	0.05	(1.10)
Caregiver's education secondary or more	2.46	(1.75)	0.90	(1.42)	4.84*	(2.10)
Duration of separation: none	.	.	.	.	.	.
Duration of separation: $\leq 12$ months	-0.84	(2.69)	3.04	(3.59)	(1.26)	(4.70)
Duration of separation: $13 \geq$ months	-2.06	(3.02)	1.07	(3.98)	(3.74)	(4.71)
Living conditions are better when compared to other children	1.94	(2.69)	1.47	(1.12)	0.74	(1.56)
Total number of children living with the child	0.20	(0.50)	0.18	(0.35)	-0.05	(0.49)
Total number of younger children living with the child	0.20	(0.90)	0.036	(0.80)	0.18	(0.81)
Good quality of relationship with the caregiver	-2.95	(1.91)	-2.80	(1.66)	-1.24	(2.48)
Child changed caregiver $\geq 1$	1.93	(1.73)	1.44	(1.73)	1.71	(2.01)
Interactions						
Divorced & father away internationally	-1.77	5.60	-5.61	(6.65)	-8.17	(8.04)
Divorced & father away internally	-2.08	4.72	-0.68	(4.16)	-6.74	(4.27)
Divorced & mother away internationally	-46.21***	6.65	-6.59	(7.84)	-28.27***	(6.83)
Divorced & mother away internally	-6.47	7.98	4.6	(7.15)	-17.91**	(7.22)
Divorced & both parents away internationally	3.11	3.76	11.71***	(3.27)	8.43*	(4.13)
Divorced & both parents away internally	-4.89	5.85	-4.99	(4.60)	-14.45*	(7.16)
Wave-fixed effects	Yes		Yes		Yes	
Child-fixed effects	Yes		Yes		Yes	
Unique number of children	379		379		379	
Total number of observations	841		841		841	
R-squared	0.01		0.00		0.01	

Note. Standard errors in parentheses (adjusted to account for clustering within individuals). \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

Table 3

*Parental Migration and Girls' School Performance – Fully Adjusted Models*

	Science		English		Mathematics	
	Model 4		Model 5		Model 6	
	$\beta$	SE	$\beta$	SE	$\beta$	SE
Parental migration status						
Both parents resident, non-migrant	.	.	.	.	.	.
Father away internationally	-0.01	(3.77)	4.09	(4.13)	-4.31	(4.28)
Father away internally	-5.55	(4.06)	3.78	(4.71)	0.94	(5.44)
Mother away internationally	-7.42	(8.63)	2.61	(6.43)	-8.12	(5.42)
Mother away internally	-6.08	(5.58)	3.37	(6.74)	-1.89	(7.29)
Both parents away internationally	4.61	(7.53)	2.65	(4.58)	-12.71*	(6.43)
Both parents away internally	-0.38	(4.84)	0.95	(5.23)	5.87	(7.50)
Parents divorced	-0.17	(4.38)	4.33	(3.60)	-4.66	(4.76)
Child age (years)	-2.03	(1.27)	-1.64	(1.06)	-2.60	(1.47)
Caregiver's education secondary or more	-1.55	(1.85)	-1.37	(1.30)	-0.35	(1.82)
Duration of separation: none	.	.	.	.	.	.
Duration of separation: $\leq 12$ months	0.87	(3.13)	0.92	(3.04)	4.49	(3.83)
Duration of separation: $13 \geq$ months	1.75	(3.00)	3.54	(2.98)	2.14	(3.96)
Living conditions are better when compared to other children	1.69	(1.35)	0.05	(1.50)	-1.56	(1.60)
Total number of children living with the child	0.04	(0.43)	0.14	(0.44)	0.55	(0.51)
Total number of younger children living with the child	-0.79	(0.69)	0.13	(0.67)	-0.26	(0.79)
Good quality of relationship with the caregiver	2.33	(1.69)	1.59	(1.38)	4.79	(1.84)
Child changed caregiver $\geq 1$	-3.19	(2.22)	1.81	(1.74)	1.60	(2.29)
Interactions						
Divorced & father away internationally	0.13	(5.33)	-11.20*	(4.70)	4.62	(5.50)
Divorced & father away internally	0.11	(5.43)	-7.63	(5.07)	1.57	(6.51)
Divorced & mother away internationally	8.06	(12.15)	-8.16	(7.69)	4.28	(5.03)
Divorced & mother away internally	12.04	(7.29)	-3.32	(6.86)	0.80	(7.73)
Divorced & both parents away internationally	-28.94**	(9.19)	-26.74***	(6.13)	3.77	(8.17)
Divorced & both parents away internally	3.00	(5.90)	-7.50	(5.65)	-5.00	(9.12)
Wave-fixed effects	Yes		Yes		Yes	
Child-fixed effects	Yes		Yes		Yes	
Unique number of children	347		353		379	
Total number of observations	748		783		841	
R-squared	0.04		0.06		0.01	

Note. Standard errors in parentheses (adjusted to account for clustering within individuals). \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .