

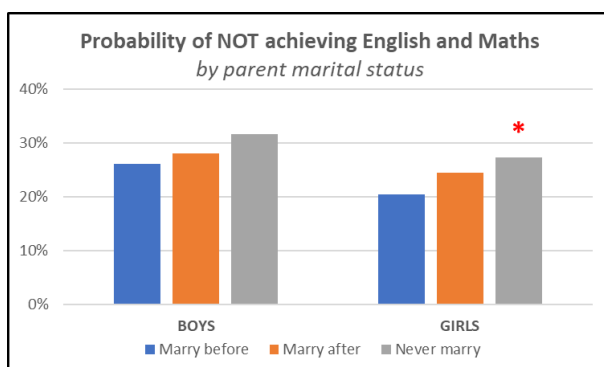


## Marriage and GCSE results

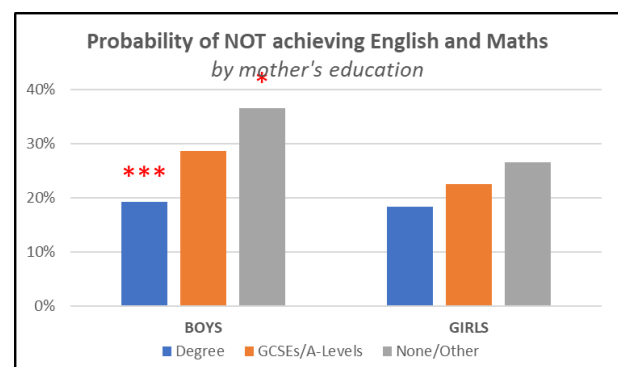
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- The importance of family economics (e.g. incomes) is well known and well represented in research and government policy on education. What is frequently overlooked in both research and policy discussions is the importance of marriage and family relationships.
- Using new GCSE data from the Millennium Cohort Study, we analysed the probability that 17-year-old children did not achieve Maths and English GCSE to nationally accepted pass levels.
- In our sample of 6,346 children born between 2000 and 2002, we found that 30% of boys and 24% of girls did not achieve that level in both Maths and English GCSEs.
- Among the 5,145 children born to couples, the probability of passing both Maths and English GCSE at grade C/4 or above was influenced uniquely *for boys* by his mother's education level and his closeness to his mother at age 14; and *for girls* by whether her mother was married when she was born, her mother's housing tenure soon after she was born, and whether her parents were still together when she was aged 17.
- In summary, family economics has a unique influence on exam results for both boys and girls. For boys only, family *relationships* also matter. For girls only, family *structure* matters. What had no effect were factors related to family 'culture' (ethnicity, religion, grandparent status), mother's relationship choices (ante-natal classes, planned pregnancy, other partners), and parent relationship timing (age, time co-resident, birth order).
- In a separate analysis that included children born to single mothers, we found their weaker results were related to family economics and not to being a single mother *per se*.
- This robust analysis shows the importance of both family economics and family relationships on subsequent GCSE results. In particular, these findings emphasise the central role of marriage on educational outcomes for girls.



After taking into account factors that included mother's ethnicity, age, income and happiness, girls whose parents never married were significantly less likely to pass both Maths and English GCSEs.



On the other hand, boys were significantly less likely to pass both Maths and English GCSEs if his mother had not passed her own GCSEs/O-levels and more likely if she had a university degree.

## The influence of family on education

GCSEs are the standard qualifications taken by most children in England & Wales at about the age of 15 or 16, at the end of year 11 of secondary school. Most children take exams in around nine subjects, of which Maths and English are compulsory. From an employer's point of view, a pass at GCSE is either grade C and above using the old system or grade 4 and above using the new system.

GCSE results matter because they are related to subsequent participation in higher education and the labour market (Payne 2000, Murray 2011). The factors that predict GCSE results are therefore of great policy importance.

It is well-established that children's GCSE results are linked to socio-economic class, whether by parents' occupation, education or housing tenure (Stopforth et al 2021). The educational background of both mothers and fathers is important (Korupp et al 2002).

What is much less clear is the relationship between what children experience in their home life and how well they do at school. One theory assumes that children do better in families that accumulate cultural capital, through experience of reading or the arts or theatre, and where reading activities are more common. However a recent UK study showed that these factors contribute little that is not already accounted for by social class (Stopforth & Gayle 2022).

Although type of school attended appears to matter, in that those who attend selective grammar schools tend to do better, some studies suggest it is the selection that matters rather than the school (Early et al 2023, Gorard & Siddiqui 2018).

An indication of how little attention is paid by researchers or policy makers to family relationships comes in a 2014 review paper for the Department for Education (Sammons et al 2014). The review 'focuses on the relationships between a range of individual student, family, home, pre-school, primary and secondary school characteristics and students' attainment at age 16, the end of compulsory education. It outlines the main findings about the factors that influence students' GCSE results and their academic progress across five years of secondary schooling from Year 6 to Year 11.'

Within the 264-page document, there is no mention at all of any possible influence of family structure, parent-parent relationship, or parent-child relationship. The influence of family is limited to parent economics, education level and ethnicity.

Despite this, there are studies that look at the impact of family structure on children's education. For example, children raised in 'intact' two parent families do better than children raised at least partly by a lone parent (Jeynes 2005).

This study also found that active parental involvement in discussing school and homework, rather than simply attending school functions or checking homework was done, had a further independent impact on children's education.

Few studies have compared mother and father involvement to test their relative contribution. One study that did find that although mothers tend to be more involved on average, the influence of fathers was just as strong as that of mothers (Kim & Hill 2015).

Surprisingly, the role of parental marriage in subsequent child educational outcomes has received little to no attention in the academic literature. There are two possible mechanisms by which having parents who are married might make a difference.

The first is through stability. Married parents are more likely to stay together and therefore avoid becoming lone parents with associated lower resources (Benson & McKay 2018).

The second is through behaviour. A recent analysis of Millennium Cohort Study data found that the children of stable married parents showed fewer externalising behaviour problems compared to other family types (Jarvis et al 2023). Early childhood problems are in turn linked to subsequent lower educational achievement (Owens 2016).

Our study uses recently released data from the Millennium Cohort Study to look at the relative influence of both family economics and family relationships on GCSE results, including whether the parents married and stayed together as well as the closeness of the parent-teen relationship.

Whereas most studies use a pass at five or more GCSEs as their benchmark, we look more specifically at whether teens pass Maths and English, the two most important GCSEs.

## Method and results

For this analysis, we used data from the Millennium Cohort Study (University of London, 2023), an ongoing longitudinal study of 18,827 children born in the UK between September 2000 and January 2002 (Connelly & Platt, 2014; Joshi & Fitzsimons, 2016). The panel of families was first surveyed at around 9 months of age (Wave 1), and then age 3 (Wave 2), age 5 (Wave 3), age 7 (Wave 4), age 11 (Wave 5), age 14 (Wave 6), and age 17 (Wave 7) where GCSE results were recorded. All our analyses were weighted to represent the UK population as a whole.

Although we ran analyses that included lone parents, most of our analysis looked only at couple parents who were married or cohabiting when their child was aged 9 months. The purpose of this was to include variables that apply only to couples, e.g. marital status, relationship happiness and union stability.

Our dependent variable was whether children passed both Maths and English GCSEs at grade C or 4 or above. Our independent variables were combined as control variables within our logistic regression analyses. These variables comprised mother's ethnicity, religion, education, employment status, age at child's birth, length of time coresident at child's birth, relationship happiness soon after child's birth, whether the pregnancy was planned, whether the mother attended ante-natal classes, number of previous partners, whether the maternal grandparents were intact as a couple, housing tenure and household income soon after the baby was born, birth order of the child, how close the child was to either parent as a teenager, whether the parents married before or after the child was born or not at all, and whether the union remained intact or dissolved.

Our initial sample size adjusted for population weightings was 3,028 boys and 3,318 girls (including single parents) and 2,460 boys and 2,685 girls (couples only). After applying control variables and imputing missing data our working sample was 2,929 boys and 3,207 girls (including single parents) and 2,393 boys and 2,614 girls (couples only).

We will first describe the apparent links between children's education and mother's education, mother's marital status or union dissolution before applying controls. We will then use a

statistical model called logistic regression to look at which factors make a unique contribution after applying controls.

## Raw results by mother's education

**Table 1** and **Figure 1** below show the apparent link between mother's and children's education, before applying controls.

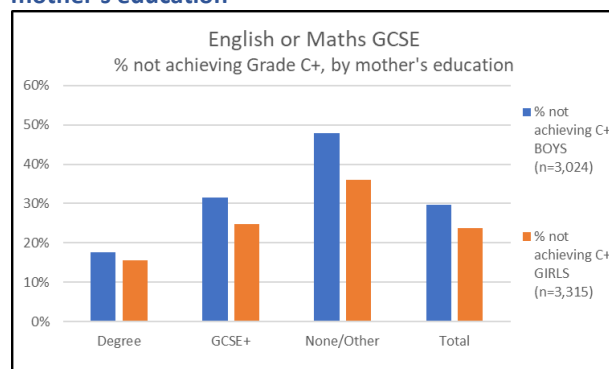
Children born to mothers with a degree were *least* likely *not* to achieve English and Maths GCSEs (18% of boys and 16% of girls). Children born to mothers with less than GCSE level education were *most* likely (48% of boys and 36% of girls).

Across all groups boys were *more* likely *not* to achieve English and Maths. Overall, 30% of boys and 24% of girls did not achieve passes in both Maths and English GCSE.

**Table 1: % not achieving English or Maths, by mother's education**

MOTHER'S EDUCATION	% not achieving C+		n=	
	BOYS	GIRLS	BOYS	GIRLS
Degree	18%	16%	745	825
GCSE+	31%	25%	1990	2138
None/Other	48%	36%	289	352
Total	30%	24%	3024	3315

**Figure 1: % not achieving English or Maths, by mother's education**



## Raw results by parent marital status

**Table 2** and **Figure 2** below show the apparent link between parent marital status and children's education before applying controls.

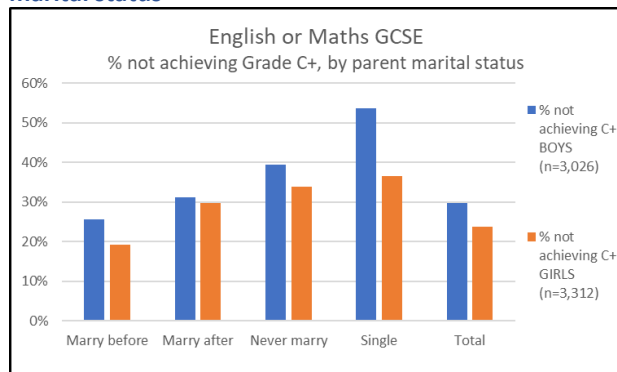
Children born to parents who were already married were *least* likely *not* to achieve English and Maths GCSEs (26% of boys and 19% of girls). Children born to single parents were *most* likely (54% of boys and 37% of girls).

Once again, across all groups boys were *more* likely *not* to achieve English and Maths.

**Table 2: % not achieving English or Maths, by parent marital status**

PARENT MARITAL STATUS	% not achieving C+		n=	
	BOYS	GIRLS	BOYS	GIRLS
Marry before	26%	19%	2,055	2,215
Marry after	31%	30%	442	484
Never marry	39%	34%	335	385
Single	54%	37%	193	227
Total	30%	24%	3,026	3,312

**Figure 2: % not achieving English or Maths, by parent marital status**



### Raw results by union stability

Table 3 and Figure 3 below show the apparent link between parent union stability and children’s education, before applying controls.

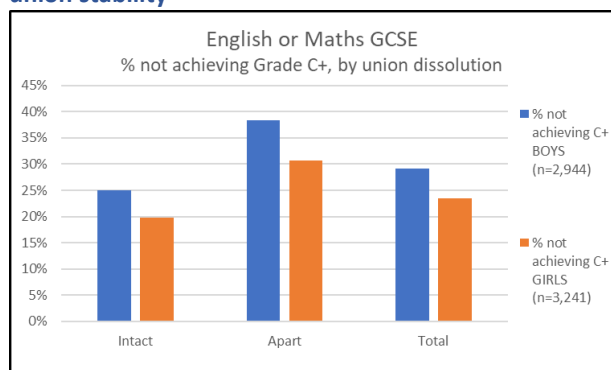
Children born to parents who stay together were *least* likely *not* to achieve English and Maths GCSEs (25% of boys and 20% of girls). Children born to parents who split up were *most* likely (38% of boys and 31% of girls).

Once again, across both groups boys were *more* likely *not* to achieve English and Maths.

**Table 3: % not achieving English or Maths, by parent union stability**

UNION STABILITY	% not achieving C+		n=	
	BOYS	GIRLS	BOYS	GIRLS
Intact	25%	20%	2003	2179
Apart	38%	31%	941	1062
Total	29%	23%	2944	3241

**Figure 3: % not achieving English or Maths, by parent union stability**



### Unique factors in children’s education

The previous tables show the raw percentages appearing to link children’s education with mother’s education, parent marital status and union dissolution. But once all the other variables were taken into account, which factors played a unique role in influencing GCSE results in English and Maths?

Although care must be taken with collinearity between factors which can sometimes make interpretation difficult, logistic regression models are the best way to answer this question. Figure 4 below summarises the results from separate logistic regression models for boys and girls.

For boys, **mother’s education** and **closeness to mother** at age 14 each had a significant unique influence on their subsequent GCSE results in Maths and English.

For girls, parents’ **housing tenure** soon after the child was born, **whether the parents married** before or after the child was born or not at all, and **whether the parents stayed together** each had a significant unique influence on their subsequent GCSE results in Maths and English.

Neither boys’ nor girls’ results were directly influenced by family culture, mother’s relationship choices or parent relationship timing.

**Figure 4: Factors with significant unique influence on children’s education in logistic regression models**

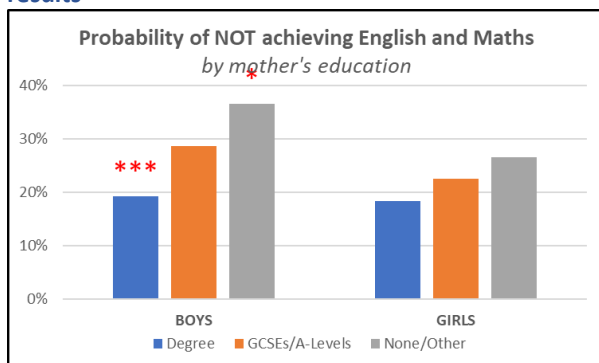
	Boys	Girls
<b>Family culture</b>		
Mother’s ethnicity	No	No
Mother’s religion	No	No
Grandparent status	No	No
<b>Family economics</b>		
Mother’s education	Yes	No
Mother’s employment status	No	No
Household income (log)	No	No
Housing tenure	No	Yes
<b>Mother’s relationship choices</b>		
Ante-natal classes	No	No
Planned pregnancy	No	No
Other partners	No	No
<b>Parent relationship timing</b>		
Mother’s age	No	No
Time coresident (log)	No	No
First child	No	No
<b>Family relationships</b>		
Closeness to mother	Yes	No
Closeness to father	No	No
Mother’s relationship happiness	No	No
<b>Family structure</b>		
Marriage	No	Yes
Union stability	No	Yes

## Mother's education and boys

Mother's education had a unique influence on boys GCSE results, all other factors being equal. This was not the case for girls. See **Figure 5**.

Boys' probability of not achieving passes at Maths and English – net of all other factors – was significantly lower if their mother had a degree rather than GCSEs or A-levels (19% vs 29%,  $p < .001$ ) and significantly higher if their mother had other or no qualifications rather than GCSEs or A-levels (36% vs 29%,  $p < .05$ ).

**Figure 5: Influence of mother's education on GCSE results**

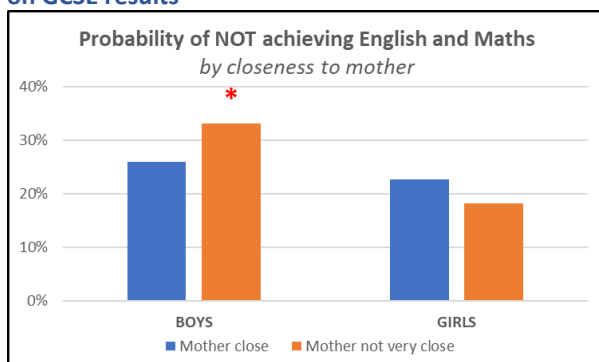


## Closeness to mother and boys

Closeness to mother at age 14 had a unique influence on boys GCSE results, all other factors being equal. This was not the case for girls. See **Figure 6**.

Boys' probability of not achieving passes at Maths and English – net of all other factors – was significantly lower if they were close to their mother at age 14 (26% vs 33%,  $p < .05$ ).

**Figure 6: Influence of closeness to mother at age 14 on GCSE results**

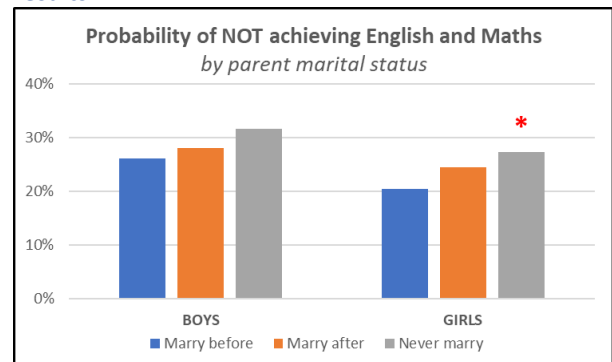


## Parent marital status and girls

Whether and when parents married had a unique influence on girls GCSE results, all other factors being equal. This was not the case for boys. See **Figure 7**.

Girls' probability of not achieving passes at Maths and English – net of all other factors – was significantly higher if their parents never married compared to married before they were born (27% vs 20%,  $p < .05$ ).

**Figure 7: Influence of parent marital status on GCSE results**

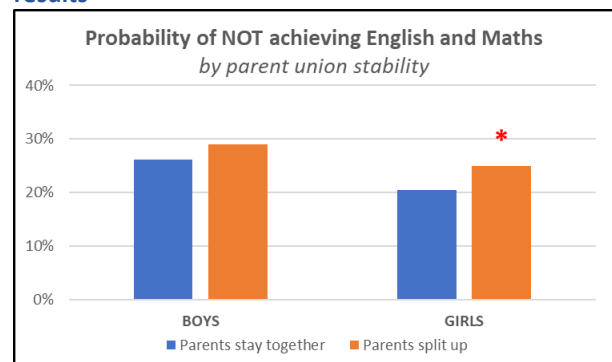


## Union stability and girls

Whether parents stayed together had a unique influence on girls GCSE results, all other factors being equal. This was not the case for boys. See **Figure 8**.

Girls' probability of not achieving passes at Maths and English – net of all other factors – was significantly higher if their parents remained intact compared to split up (25% vs 21%,  $p < .05$ ).

**Figure 8: Influence of parent union stability on GCSE results**



## A note on single parents

Although most of our analyses considered only parents who were couples when their child was born, we also ran separate models that included those mothers who started out as a single parent.

Compared to parents who married before their child was born, starting out as a single parent *per se* had no significant effect on their child's GCSE results. However, household income and housing tenure did have significant influences, suggesting that economics is a key mechanism by which the children of lone parents tend to do less well.

## Discussion and conclusions

Our study makes a fresh contribution to research and policy by highlighting the unique influences of both parental education and family relationships on children's GCSE results. It also highlights some important differences between boys and girls.

Whereas the probability of boys passing both Maths and English GCSE was influenced by their mother's education level and closeness to mother at age 14, the probability for girls was influenced by their parents' marital status and union stability.

In other words, boys tended to do better at school if their mother was well educated and had a close relationship with them. Girls tended to do better if their parents were married and stayed together.

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[More discussion ...](#)

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