PART-TIME, FULL-TIME, NO-TIME? COUPLES' EMPLOYMENT, EDUCATION, AND FIRST BIRTH TRANSITIONS IN THE UK

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Abstract

In low-fertility countries, couples' employment patterns may influence the transition to parenthood, potentially moderated by educational attainment. Using data from the UK Household Longitudinal Study (2009–2023), this study investigates how couples' employment status and education relate to the likelihood of having a first child. Results show that among most dual-earner couples, the probability of first birth is similarly high whether both partners work full-time or women work part-time. Conversely, men's part-time work and single-earner couples are associated with a lower likelihood of becoming parents. No strong evidence supports differences in parenthood transition based on couples' educational attainment. While couples with secondary education exhibit a trend where women's part-time work corresponds with higher first birth probabilities, wide confidence intervals indicate substantial variability, limiting firm conclusions about education's moderating role.

Keywords: First Birth, Part-time work, Couples' employment, Understanding Society, Labour force participation
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INTRODUCTION

The Total Fertility Rate (TFR) in the United Kingdom (UK) has declined over the last decade from 1.89 in 2009 to 1.48 in 2022 (*Human Fertility Database*, 2026a). This is fuelled by a delay in first birth, from 29.4 years in 2009 to 30.9 years in 2022 (*Human Fertility Database*, 2026b), and an increase in childlessness (*Ermisch*, 2021). A large strand of literature links the continued decline in TFR, the rising age at first birth, and increased childlessness to changes in the relationship between women's employment and parenthood. The longstanding association where women's unemployment presents an opportunity for motherhood has become less pronounced or disappeared (*Doepke et al.*, 2022). Rather, recent empirical work has observed that being employed has become a precondition to motherhood (*Miettinen – Jalovaara*, 2020), and the effect has become stronger throughout Europe (*Alderotti et al.*, 2021).

Part-time employment may offer a solution to balancing work and family obligations, allowing individuals to maintain ties to the labour force and sustain career opportunities, stability, and income. However, the decrease in working hours comes with the trade-off of lower wages, which is, in turn, negatively associated with parenthood (*Jalovaara – Miettinen*, 2013; *van Wijk et al.*, 2021). Nevertheless, fertility decisions are made within the context

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of the couple's employment situation. If one partner maintains stable, well-remunerated employment, the wage penalty may diminish, fostering specialisation in family roles, usually by women. Despite this, recent studies indicate within couples, women's absence from employment exhibits the most adverse correlation with the transition to parenthood (*Di Nallo – Lipps*, 2023; *Scherer – Brini*, 2023) and that one partner in part-time work decreases the likelihood of parenthood compared to both working full-time (*Comolli*, 2021).

Like many countries, the UK has seen a notable increase in the number of people continuing their education beyond the secondary level (*Champion*, 2022), driven by the rising educational achievements of women. Consequently, the educational dynamics within couples have undergone notable changes, marked by a growing prevalence of both homogamy and hypogamy, where women are the same or more educated than men (*Esteve et al.*, 2016). However, evidence linking couples' educational attainment to childbirth is mixed and country-context dependent (*Nitsche et al.*, 2018; *Osiewalska*, 2018). While variation in the relationship between employment, education, and first birth has been observed on an individual level (*Kreyenfeld – Andersson*, 2014; *Miettinen – Jalovaara*, 2020), previous studies have not found a relationship between couples' employment status and first birth by educational attainment (*Bueno – García-Román*, 2021; *Comolli*, 2021).

This article aims to explore gendered and socio-economic patterns of paid employment and the transition to parenthood within couples. I ask, *how are couples' employment statuses, when also considering working hours, associated with entry to parenthood?* Additionally, this study examines whether the relationship between couples' employment statuses and parenthood varies by the educational attainment of the couple. I employ the United Kingdom Household Longitudinal Study (UKHLS) years 2009–2023. The UK serves as an apt case study to assess the influence of couples' employment statuses on the transition to parenthood due to its relatively liberalised employment regulations (*Harkness et al.*, 2023). This flexibility enables workers to transition swiftly between jobs, although transferring significant financial risk onto the household. Additionally, stringent work-related criteria for social welfare assistance in the UK, especially for individuals without children, act as an incentive for active labour force participation (*Vegeris et al.*, 2010). Moreover, economic pressure stemming from real wage stagnation adds additional stress to wage earners (*OECD Statistics*, 2024). Recent research on couples' employment and childbirth in the UK has primarily centred around job loss (*Di Nallo – Lipps*, 2023). This article, in contrast, delves into the impact of both men's and women's part-time employment and explores the potential moderating influence of educational alignment within couples.

2. BACKGROUND

2.1 Couples' Employment and Parenthood

Across European contexts, a negative relationship between women's unemployment and childbirth has increased over time (*Alderotti et al.*, 2021). Research rooted in New Home Economics (*Becker*, 1960) primarily examines women's labour force participation through the lens of an economic trade-off between income and time allocated for childrearing. Nevertheless, there are other factors motivating women with partners in paid employment to actively participate in the labour force that might strengthen the positive relationship between women's employment and family formation. This includes having a second income as insurance, work requirements for social welfare benefits, and self-interest: financial independence, career aspiration, professional identity, or personal fulfilment (*Oppenheimer*, 1994).

The prevalence of dual full-time working couples has also increased, surpassing the number of couples where men work full-time and women work part-time, making it the most common arrangement in 2019 (*ONS*, 2022). By 2021, 50.4% of couples were dual full-time employed, compared to 44.1% of dual-employed couples where the women worked part-time. This indicates a national trend towards dual full-time employment, which varies based on family composition.

Paid employment is not a binary state, and individuals may be in paid work but with reduced hours. In the UK, approximately 43.0% of women work part-time (compared to 12.0% of men) (*Warren*, 2022). Childless individuals may choose part-time work for

reasons such as work-life balance, personal interests, career exploration, health, or time for education and hobbies (*Warren*, 2004). Others may be pushed into part-time roles due to limited job availability, economic downturns, or occupational segregation (*Cam*, 2012). Part-time employment can support the transition to parenthood by offering flexibility and lower opportunity costs, but it may also hinder it through reduced income and increased uncertainty. Empirical studies have generally found a negative association between part-time work and first births in France, the Netherlands, and the UK (*Dupray – Pailhé*, 2018; *Begall*, 2013; *Schmitt*, 2012), mixed results in Australia (*Laß*, 2020), and no clear pattern in Germany (*Laß*, 2020; *Schmitt*, 2012). These inconsistencies may reflect the individual-level focus of previous research, overlooking the influence of partners' earnings on part-time work choices.

It may be more insightful to examine employment within the couple context. Partners often adopt compensatory patterns, where one partner's reduced or lost employment is balanced by the other's stable, full-time work (*Blossfeld – Drobnic*, 2001). Dyadic research finds that dual-earner couples have the highest likelihood of a first birth (*Jalovaara – Miettinen*, 2013; *Vignoli et al*., 2012). However, when accounting for working hours, couples where one partner works part-time are less likely to become parents than dual full-time couples in Spain and the US (*Bueno – García-Román*, 2021; *Comolli*, 2021). It remains unclear, though, whether the gender of the part-time worker matters.

Informed by the theoretical framework and prior empirical research, I hypothesise that couples in which both partners work full-time will be more likely to transition to parenthood than those in other employment arrangements (H1a). Given the gendered nature of part-time work in the UK, I expect that within dual-earner couples, men's part-time employment will be more negatively associated with the likelihood of having a first child than women's part-time employment (H1b). Finally, drawing on recent findings highlighting the negative association between women's unemployment and parenthood, I hypothesise that being out of the labour force will be equally detrimental for both men and women when transitioning to parenthood (H1c).

2.2 Couples' Education

In England and Wales, the proportion of individuals over age 16 with a tertiary degree rose by 6.6% between the 2011 and 2021 censuses, driven largely by women's educational gains (*Office for National Statistics*, 2023). This shift has altered the educational alignment of couples: hypergamy (men more educated than women) is declining, while hypogamy (women more educated than men) has become increasingly common (*Clark – Cummins*, 2023). Still, educational homogamy remains the most prevalent pattern among co-residential couples (*Grow – Van Bavel*, 2015). Research suggests that less educated couples tend to transition to parenthood earlier (*Mikolai et al*., 2018), while highly educated homogamous couples often delay childbearing (*Nitsche et al*., 2018). Hypergamous couples also tend to have earlier births than hypogamous ones (*Osiewalska*, 2018), indicating that couples with less educated women generally become parents sooner. However, this pattern is not consistently observed in studies focusing on couples' employment (*Bueno – García-Román*, 2021; *Comolli*, 2021). Based on this, I hypothesise that couples in which both partners hold a secondary degree or lower will show a more positive association with the transition to parenthood compared to other educational groups (H2).

2.3 Educational Heterogeneity in the Relationship Between Couples' Employment and Parenthood

Highly educated couples benefit from greater economic resources, job security, and the ability to outsource domestic tasks, all of which can support the transition to parenthood. However, their pathway to parenthood differs qualitatively. A later school-leaving age delays entry into parenthood (*Ní Bhrolcháin – Beaujouan*, 2012), and the time required to establish a stable career may further postpone childbearing. Additionally, they may face higher career penalties for taking parental leave (*Budig et al.,* 2012) and are often more career-oriented (*Gerber et al*., 2009), making them less willing to interrupt employment for parenthood (*Savelieva et al*., 2023).

Among the childless in the UK, part-time work is more prevalent among low-educated women than their higher-educated counterparts (*Manning*

– *Petrongolo*, 2008), while it remains uncommon among men (*Warren*, 2022). Part-time roles are often involuntary (*Pech et al.*, 2021) and linked to limited career prospects and lower job quality (*Warren – Lyonette*, 2018). The associated income reduction also varies by educational background.

Unlike individual-level studies that find a negative association between women's unemployment and first birth (*Alderotti et al.*, 2021), dyadic research has not identified significant variation in the relationship between couples' employment and parenthood by educational attainment (*Bueno – García-Román*, 2021; *Comolli*, 2021). However, drawing on individual-level evidence, I hypothesise that among couples where both partners hold tertiary degrees, the negative association between single-earner arrangements with women not employed and the likelihood of a first birth will be stronger than among less educated couples (H3a). Although there is a lack of empirical research on how part-time employment interacts with education to influence parenthood, I theorise that highly educated couples will experience a more negative association between women's part-time employment and first birth, compared to dual full-time couples, than those with lower educational attainment (H3b).

3. METHODOLGY

3.1 Data and Sample

Starting in 2009, the UKHLS (colloquially known as Understanding Society) is a yearly panel survey focusing on households and family issues (*University of Essex*, 2023). This includes three sample groups (Great Britain, Northern Ireland, and an ethnic minority boost), collected using a clustered and stratified probability approach (*Lynn*, 2009). The second wave adds households that continued from the previous British Household Panel Survey, and the sixth wave includes an additional immigrant and ethnic minority boost. Employment, partnership, and education histories can be quickly created using retrospective and prospective data (*Wright*, 2020). All household members above the age of 16 complete the individual questionnaire, and individuals enumerated in wave 1 are followed if they leave the household. The individual response rate in the first wave was 81.8%, with attrition of about 15.0% after the first wave and an average of less than 2.0% for subsequent waves. Understanding Society is generally representative of British society (*Benzeval et al.*, 2020), and post-stratification weights are provided for dealing with survey design, non-response, and attrition (*Platt et al.*, 2020).

At the time of enumeration of households into the panel, each household member aged 16 and above completes a retrospective life history, detailing significant events such as completing school, cohabitation, or changes in main activity status. These life histories are subsequently updated in each follow-up interview, enabling researchers to reconstruct monthly employment and partnership histories for each respondent. However, in cases where household members do not participate in the initial interview at the time of the household's enumeration, their retrospective life histories are unavailable. This makes using retrospective life histories particularly difficult for studying couples, as many partners enter the panel after enumeration. Nonetheless, this study leverages the life histories as they are constructed in each interview to create monthly employment and partnership observations, beginning from the inception of the UKHLS in January 2009 until January 2023.

The sample for this paper comprises all enumerated coresidential childless couples. All women are childless. Some men may have children from previous relationships, which can be difficult to track due to the underreporting of male fertility (*Joyner et al.*, 2011). Couples enter the sample at the month of enumeration into the panel, the formation of their coresidential partnership, or the woman's sixteenth birthday. Couples stay in the sample until twelve months before the first live birth, they separate from their partner, the month of their forty-fifth birthday, or the month of the last interview. The analytical sample does not include same-sex couples, as the aim is to observe gendered aspects of couples' employment.

Information about employment, partnership, and other sociodemographic characteristics is collected in the individual questionnaire. The household grid can be used to match coresidential partners' individual questionnaire responses and life histories. I started by selecting women with valid information about activity status and education because women have more reliable fertility and parity data. However, missing

partner data may occur for various reasons, such as the partner not being coresidential, not being present on the day of the interview, declining to participate, or the respondent opting not to disclose information about their partner. To address this, I exclude monthly observations with no provided partner identification number (7,391 monthly observations), cases where the woman's activity status is missing (575 monthly observations), the male partner's activity status is missing (69,274 monthly observations), or either partner's educational information is missing (1,940 monthly observations)[2]. The final sample comprises 87,481 monthly observations, representing 2,701 unique couples. On average, couples are observed for a mean duration of 65 months.

3.2 Measures

Dependent Variable. This study focuses on the transition to parenthood, measuring couples' characteristics 12 months prior to the birth to minimize reverse causality. The dependent variable is binary, coded as 1 if a live first birth occurs within the following 12 months, and 0 otherwise. The dataset includes 1,044 first birth events, representing 38.7% of the couples. The average age of women at first birth in the sample is 30.7 years, slightly higher than the UK average of 30.4 years during the same period (Human Fertility Database, 2023), likely due to the exclusion of births by single mothers.

Couples Employment. I created a categorical variable for couples' employment status with six groups: (1) *Both full-time*; (2) *Woman part-time, Man full-time*; (3) *Woman employed, Man part-time*; (4) *Woman employed, Man not employed*; (5) *Woman not employed, Man employed*; and (6) *Both not employed*. Employment status is based on self-reported main activity and usual weekly working hours (including overtime). Individuals are considered employed if their main status is "Self-employed" or "Paid employment." Full-time work is defined as 30 or more hours per week. Couples fall into the *Both full-time* group if both work full-time. The *Woman part-time, Man full-time* group includes women working part-time and men full-time. Since men's part-time work is less common (4.6%) and dual part-time couples are rare (1.2%), the *Woman employed, Man part-time* group includes all men working part-time paired with women employed either full- or part-time. The remaining categories cover couples where one or both partners are not employed, regardless of hours worked.

Sensitivity analyses (Table A1), based on logistic regression models, indicate that couples in which women engage in carework or homemaking have a higher likelihood of becoming parents than dual full-time employed couples. However, this group represents only a small share of the sample (2.7% of observations). The main analysis therefore excludes inactive employment statuses, as missing information on men's employment disproportionately reduces these cases. Moreover, including interaction terms for these small groups results in insufficient observations within some educational categories, limiting the robustness and reliability of the estimates. The sensitivity analyses are used to assess whether excluding inactive employment statuses affects the substantive conclusions; results indicate that the main patterns observed in the primary models remain unchanged.

Couples' Education. Educational attainment is recorded at the first interview and retrospectively updated in subsequent waves. Given differences in education systems across England, Northern Ireland, Scotland, and Wales (*Schneider,* 2008), and the separate reporting of education attained outside the UK from wave 6 onwards (which I imputed retrospectively), I harmonised these data using the International Standard Classification of Education (ISCED-97). Education was categorised into tertiary (ISCED-97 levels 5–6) and secondary (levels 1–4). Couples were then grouped by highest attainment into: (1) *Both*

2) A significant number of observations were dropped, particularly those with missing male partners' characteristics, potentially biasing the sample. Generally, the women in the removed observations are more likely to be low educated (22.9% compared to 15.2%), more likely to be unemployed (5.1% compared to 3.6%), inactive (12.9% compared to 5.3%), and between the ages of 16-24 (17.0% compared to 13.9%). This indicates that any evaluation of results from couples with non-employed women and low-educated couples must consider the potential bias when interpreting the findings.

tertiary, (2) *Heterogamous*, and (3) *Both secondary*. Sensitivity analysis (Table A1) shows that hypogamous couples (women more educated) are more likely to transition to parenthood than hypergamous couples (men more educated). However, to ensure sufficient first birth events for interaction analyses, heterogamous couples were combined into a single category. Additionally, a binary variable for enrollment in education was included to account for couples where one or both partners are currently studying.

Other controls. All models control for woman's age, partnership status, and couples' country of birth, as these factors are strongly associated with the timing of first births and may also correlate with couples' employment arrangements. Woman's age captures biological constraints and well-established life-course patterns in fertility, with first births concentrated in the late twenties and early thirties. Partnership status (married versus cohabiting) reflects differences in relationship stability, legal protection, and social norms surrounding childbearing in the UK, where marriage remains strongly associated with entry into parenthood. Couples' country of birth (both UK-born, mixed, or both foreign-born) is included to account for heterogeneity in fertility norms, migration-related timing effects, and labour market integration that may influence both employment patterns and fertility behavior. Including these variables helps isolate the association between couples' employment, education, and the transition to first birth.

Table 1 summarizes the sample's descriptive statistics. Most couples have both partners working full-time, though part-time or non-employment is more common among women. Nearly half of couples have both partners with a tertiary education. Educational distribution closely aligns with first birth events. Around 10% of couples include at least one partner enrolled in education, with most being single-enrollee couples. Married and cohabiting couples are equally represented, but married couples are nearly three times more likely to have children. Most couples consist of UK-born partners, and the majority of observations involve women aged 25–34, a group often partnered but childless. The summary statistics by couples' education are presented in Table A2 in the appendix.

Table 1 Sample summary statistics by the occurrence of a first birth event. Monthly observations

	Full Sample N = 87,481		First Birth Events N = 1,044	
	N	%	N	%
Live First Birth				
Yes	1,044	1.2%	1,044	100%
No	86,437	98.8%	-	-
Couples' Employment				
Both full-time	61,787	70.6%	780	74.7%
Woman part-time, Man full-time	7,936	9.1%	108	10.3%
Woman employed, Man part-time	3,369	3.9%	26	2.5%
Woman employed, Man not employed	3,482	4.0%	26	2.5%
Woman not employed, Man employed	8,317	9.5%	85	8.1%
Both not employed	2,590	3.0%	19	1.8%
Couples' Education				
Both tertiary	39,749	45.4%	485	46.5%
Heterogamous	28,937	33.1%	340	32.6%
Men higher	18,973	21.6%	246	23.5%
Women higher	9,964	11.3%	94	9.0%
Both secondary	18,795	21.5%	219	21.0%

Table 1 (continuation)

	Full Sample N = 87,481		First Birth Events N = 1,044	
	N	%	N	%
Enrolled in Education				
Not enrolled	78,705	89.6%	925	88.6%
Enrolled	9,098	10.4%	119	11.4%
Marriage Status				
Cohabitating	42,812	48.9%	267	25.6%
Married	44,669	51.1%	777	74.4%
Woman's Age				
16–24	12,163	13.9%	111	10.6%
25–29	28,773	32.9%	354	33.9%
30–34	22,859	26.1%	391	37.5%
35–39	13,229	15.1%	165	15.8%
40–45	10,457	12.0%	23	2.2%
Couples' Birth Origin				
Both UK-born	69,372	79.3%	819	78.4%
Mixed	12,163	13.9%	127	12.2%
Both foreign-born	5,946	6.8%	94	9.4%

Note: Counts represent the number of monthly observations by category.
Source: United Kingdom Household Longitudinal Study (2009–2023).

3.3 Analytical Strategy

The likelihood of the first birth was modelled using logistic regression, with standard errors clustered at the couple level, using the cross-sectional weights provided by the data managers, calculated using the *fixest* package in R (*Bergé*, 2024). Logistic regression models are considered well suited to modeling transitions to first birth in panel data (*Van Hook – Altman*, 2013). In Model 2, I introduced an interaction term between couples' employment and couples' education. The results are presented as average marginal probabilities (AMP) in Table 2. The AMPs were calculated with 95.0% confidence intervals using the *marginaleffects* package in R (*Arel-Bundock*, 2024). The AMPs of the interaction term are presented graphically for ease of interpretation following the advice of *Mize* (2019). The statistical significance of the individual predictor variables and the interaction term was evaluated through an Analysis of Deviance Type III test in Table 3.

AMPs are derived from the logistic regression models. Predicted probabilities of a first birth are calculated for each observation based on the estimated model coefficients, holding observed covariate values constant, and then averaged across the sample or relevant subgroups. AMPs therefore represent the predicted likelihood of experiencing a first birth in a given month.

While logistic regression models are estimated in odds ratios, odds ratios are difficult to interpret substantively and are not directly comparable across groups or model specifications, particularly in the presence of interaction terms. Presenting results on the probability scale facilitates interpretation and allows clearer comparison of differences in first birth likelihood across couples' employment arrangements and educational groups. Following recommended best practices for presenting nonlinear interaction effects (e.g., *Mize*, 2019), AMPs are reported in the main text, while odds ratios are provided in the Appendix for

completeness (Table A3). The same set of regression models underlies all reported results; differences between tables reflect alternative presentations of identical model estimates rather than differences in model specification.

4. RESULTS

This section presents results from logistic regression models predicting the transition to first birth. It focuses on differences in average marginal probabilities across couples' employment arrangements and educational groups. All results are adjusted for woman's age, partnership status, and country of birth.

I begin by examining baseline differences in first birth probabilities across couples' employment arrangements, net of sociodemographic controls. Table 2, Model 1 presents logistic regression results for the monthly probability of first births. Couples with both partners in full-time work (AMP = 0.013, 95% CI [0.012, 0.014]) are as likely to become parents as those with full-time men and part-time women (AMP = 0.013, 95% CI [0.011, 0.016]), providing no support for H1a. In contrast, when men work part-time and women are employed, the probability is significantly lower (AMP = 0.008, 95% CI [0.005, 0.010]). The regression coefficients indicate that men's part-time employment is associated with a larger reduction in the probability of parenthood than women's part-time employment, consistent with H1b. Confidence intervals are reported to show the precision of the estimates, but they are not used to directly compare the magnitude of the effects.

Table 2 Results of logistic regression models of the monthly probability of first birth. Average marginal probabilities

First Birth Event	Model 1		Model 2	
	Estimate	CI 95%	Estimate	CI 95%
Couples' Employment				
Both full-time	0.013	(0.012, 0.014)		
Woman part-time, Man full-time	0.013	(0.011, 0.016)		
Woman employed, Man part-time	0.008	(0.005, 0.010)		
Woman employed, Man not employed	0.008	(0.005, 0.012)		
Woman not employed, Man employed	0.010	(0.008, 0.012)		
Both not employed	0.007	(0.004, 0.010)		
Couples' Education				
Both tertiary	0.012	(0.010, 0.013)		
Heterogamy	0.012	(0.011, 0.013)		
Both secondary	0.013	(0.011, 0.015)		
Enrolled in Further Education				
Not enrolled	0.012	(0.011, 0.012)	0.012	(0.011, 0.012)
Enrolled	0.013	(0.011, 0.015)	0.013	(0.011, 0.015)
Marriage Status				
Cohabitating	0.006	(0.005, 0.007)	0.006	(0.005, 0.007)
Married	0.018	(0.017, 0.020)	0.018	(0.017, 0.020)
Woman's Age				
16–24	0.014	(0.011, 0.016)	0.013	(0.011, 0.016)
25–29	0.013	(0.012, 0.015)	0.013	(0.012, 0.015)
30–34	0.016	(0.014, 0.017)	0.016	(0.014, 0.017)
35–39	0.011	(0.009, 0.012)	0.011	(0.009, 0.012)
40–45	0.002	(0.001, 0.003)	0.002	(0.001, 0.003)

Table 2 (continuation)

First Birth Event	Model 1		Model 2	
	Estimate	CI 95%	Estimate	CI 95%
Couples' Birth Origin				
Both UK-born	0.012	(0.011, 0.013)	0.012	(0.011, 0.013)
Mixed	0.009	(0.008, 0.011)	0.009	(0.008, 0.011)
Both foreign-born	0.014	(0.011, 0.017)	0.014	(0.011, 0.017)
Interaction Terms				
Both full-time x Both tertiary			0.013	(0.011, 0.014)
Woman part-time, Man full-time x Both tertiary			0.011	(0.007, 0.014)
Woman employed, Man part-time x Both tertiary			0.008	(0.004, 0.013)
Woman employed, Man not employed x Both tertiary			0.006	(0.002, 0.010)
Woman not employed, Man employed x Both tertiary			0.009	(0.006, 0.012)
Both not employed x Both tertiary			0.000	(0.000, 0.011)
Both full-time x Heterogamy			0.013	(0.011, 0.014)
Woman part-time, Man full-time × Heterogamy			0.014	(0.009, 0.019)
Woman employed, Man part-time × Heterogamy			0.007	(0.002, 0.012)
Woman employed, Man not employed × Heterogamy			0.008	(0.003, 0.014)
Woman not employed, Man employed × Heterogamy			0.008	(0.005, 0.011)
Both not employed × Heterogamy			0.007	(–0.001, 0.016)
Both full-time x Both secondary			0.012	(0.010, 0.014)
Woman part-time, Man full-time × Both secondary			0.017	(0.012, 0.023)
Woman employed, Man part-time × Both secondary			0.007	(0.002, 0.012)
Woman employed, Man not employed × Both secondary			0.014	(0.005, 0.022)
Woman not employed, Man employed × Both secondary			0.015	(0.009, 0.020)
Both not employed × Both secondary			0.008	(0.004, 0.013)
Observations	87,481		87,481	
AIC	10,882.4		10,889.7	
BIC	11,032.4		11,133.5	

Note: Standard errors clustered at the couple level in parentheses. Observations are measured as one observation per couple-month. Couples' characteristics are measured 12 months before the birth event. Results are average marginal probabilities derived from the same logistic regression models reported in Table A3.
Source: United Kingdom Household Longitudinal Study (2009–2023).

Table 2, Model 1 indicates that not being employed is associated with lower predicted probabilities of transitioning to parenthood: AMP = 0.008 (95% CI [0.005, 0.012]) when the man is unemployed, AMP = 0.010 (95% CI [0.008, 0.012]) when the woman is unemployed, and AMP = 0.007 (95% CI [0.004, 0.010]) when both partners are unemployed. These patterns are consistent with H1c, though the confidence intervals are provided to illustrate the precision of the estimates rather than to directly confirm the direction of the effect. This is likely due the small number of women reporting as "inactive" biasing the estimate for non-employed women downward.

In Model 1 (Table 2), couples' education shows no significant differences in first birth likelihood. Heterogamous couples and those where both have tertiary degrees have similar probabilities (AMP = 0.012) with overlapping CIs. Couples with secondary or lower education are also comparable (AMP = 0.013, 95% CI [0.011, 0.015]), supporting H2. This is reinforced by global significance tests (Table 3). However, sensitivity analysis (Table A1)

Table 3 Analysis of Deviance (Type III tests)

Analysis of Deviance	Chi-square	Df	Pr(>Chisq)
Couples' Employment	14.784	5	0.011*
Couples' Education	0.346	2	0.841
Enrolled in Further Education	3.108	1	< 0.001***
Marriage Status	254.526	1	0.078+
Woman's Age	191.165	4	< 0.001***
Couples' Birth Origin	10.847	2	0.004**
Couples' Employment x Couples' Education	12.711	10	0.240

+ p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001

Note: Chi-square values represent likelihood ratio statistics. Df = degrees of freedom.

suggests potential differences within heterogamous couples. Those where women are higher educated show a higher likelihood of parenthood (OR = 1.169, p = 0.050) than when men are higher educated (OR = 0.809, p = 0.064), though results are marginally significant.

I next assess whether the association between couples' employment arrangements and first birth transitions differs by educational attainment by introducing interaction terms between employment status and education. Model 2 (Table 2) includes an interaction between couples' employment and education. Analysis of deviance tests (Table 3) show the interaction is not statistically significant, indicating no meaningful difference in the employment–first birth relationship across education groups.

Figure 1 visualizes the average marginal probabili ties for the interaction term with 95% confidence intervals, showing how the relationship between first birth and couples' employment varies by education. In all education groups, dual full-time and dual-earner couples with part-time working women generally show higher parenthood probabilities. Notably, the positive association between women's part-time work and parenthood appears stronger at lower education levels. However, wide confidence intervals limit broad conclusions, making within-group patterns more informative.

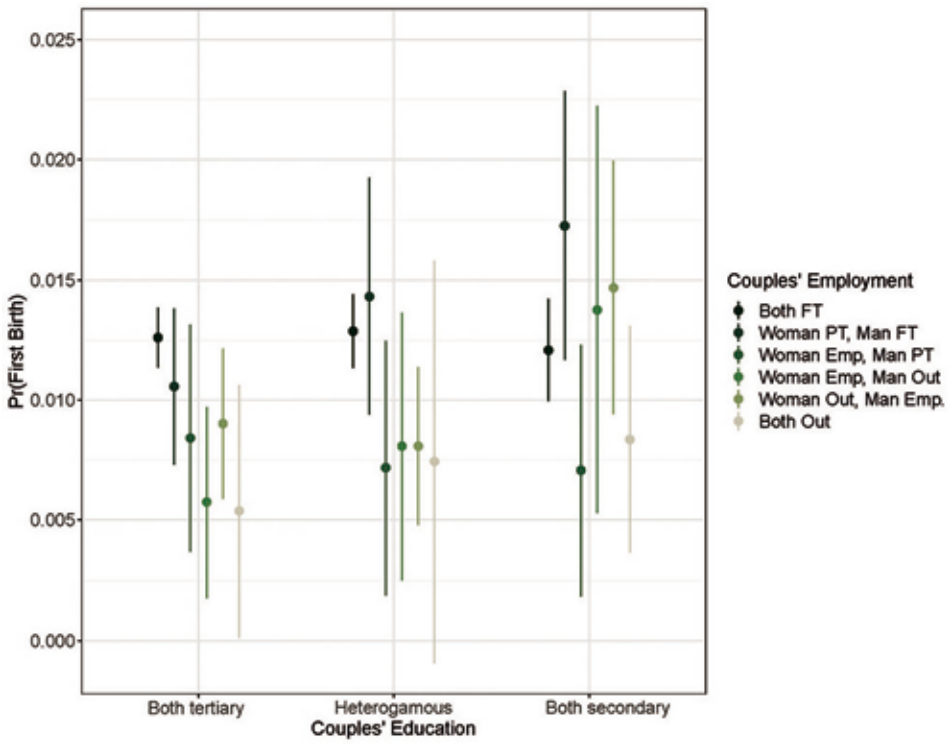
Exploring within-group variation, the relationship between employment and first birth is similar for both tertiary and heterogamous couples. In both groups, dual-earner couples with part-time working women have probabilities comparable to dual full-time earners. This probability is slightly higher for heterogamous couples (AMP = 0.014, 95% CI [0.009, 0.019]) than for couples with both partners tertiary educated (AMP = 0.011, 95% CI [0.007, 0.014], Table 2). Dual-earner couples with men in part-time work show lower probabilities, with wide confidence intervals. Single-earner couples consistently have lower probabilities, especially among heterogamous couples, where CIs are broader than in both-tertiary couples. While there's a tendency for dual employment to support parenthood among the highly educated, wide CIs limit strong conclusions, offering no clear support for H3a.

Among couples with secondary education, employment status shows a distinct pattern. Dual-earner couples with women working part-time have the highest probability of first birth—higher than dual full-time couples (AMP = 0.017, 95% CI [0.012, 0.023], Table 2)—providing tentative support for H3b. In contrast, dual-earner couples with men working part-time have the lowest probability (AMP = 0.007, 95% CI [0.002, 0.012], Table 2).

Finally, single-earner couples with non-employed women have slightly lower probabilities of first birth than dual full-time couples. However, broader confidence intervals for low-educated single-earner couples limit clear conclusions about full-time work's effect on parenthood in this group. Many missing observations from women reporting inactivity likely contribute to these wide intervals.

To conclude, although education is associated with overall levels of first birth probability, the interaction terms indicate that differences between employment arrangements are broadly similar across educational groups, suggesting limited educational moderation.

Figure 1 Predicted monthly probability of first birth by the interaction of couples' employment and couples' education



Note: This figure corresponds to Table 2, Model 2. FT = full-time employment, PT = part-time employment, Emp. = employed (full- or part-time), Out = Not employed. The model controls for enrollment in education, marriage status, couples' birth origin, and the woman's age.
Source: United Kingdom Household Longitudinal Study (2009–2023).

5. DISCUSSION

The findings align with studies from other countries showing that dual-earner couples tend to have an advantage in the transition to parenthood (*Bueno – García-Román*, 2021; *Comolli*, 2021), though this varies by working hours. While previous research suggests higher parenthood rates when both partners work full-time, this study finds similar probabilities when women work part-time and men work full-time. This may reflect the appeal of part-time work for women seeking to balance employment and caregiving or broader gendered patterns in work and family roles (*Lyonette*, 2015), though financial pressures may also play a role. This study finds some evidence that women's part-time work might be a strategy for family formation among the less educated.

Dual-earner couples with men in part-time work are less likely to become parents than those where both partners work full-time or where women work part-time and men work full-time. Their probabilities resemble those of single-earner households, suggesting that which partner holds part-time status matters. This study contributes to prior findings on part-time work by highlighting the importance of partner roles.

Unlike prior research (*Comolli*, 2021), this study does not find that single-earner couples with non-employed women are less likely to become parents than those with non-employed men. However, the interaction between employment and education reveals a complex pattern. Wide confidence intervals limit conclusions about whether women's or men's non-employment is more negatively associated with parenthood. Overall, dual-earner couples appear to have an advantage among the highly educated, but

this advantage diminishes with lower educational attainment.

These findings align with broader debates on the persistence of the male breadwinner norm, highlighting that part-time work continues to be more strongly associated with delayed parenthood for men than for women. The results also underscore the value of a couple-level perspective, showing that employment arrangements cannot be fully understood in isolation but interact within partnerships to shape fertility behavior. While this study focuses on empirical patterns, these patterns suggest that gendered labor roles and social expectations continue to influence first-birth transitions in contemporary Britain.

This study has limitations. Its findings are not causal, and the logistic regression does not control for time-constant unobserved heterogeneity. The progression of education, partnership, employment, and parenthood is often nonlinear, and limited data on the type of education hinders deeper analysis. Unobserved time-varying factors like unpaid domestic labor or gender attitudes may influence outcomes, but were unavailable for monthly observations due to data limitations.

Finally, focusing on couples, while essential for understanding partners' employment dynamics, overlooks the earlier stage of partnership formation. Delays in parenthood are often linked to delays and instability in forming partnerships (*Jalovaara*, 2012). Poor labor market outcomes, especially for men, can reduce marriage prospects and thus the likelihood of parenthood (*Kalmijn*, 2011). Consequently, this study reflects a subset of the population already successful in forming partnerships.

Despite limitations, this study suggests a shift in the relationship between women's employment and parenthood in the UK since the 2008–09 financial crisis. Dual employment may be associated with facilitating parenthood, especially given rising living, childcare, and housing costs that challenge single-earner households. Among lower socioeconomic couples, women's part-time work might support parenthood, while among higher socioeconomic couples, women tend to become mothers regardless of working hours within dual-earner couples. The study finds little evidence that high-earning men encourage highly educated women to leave the workforce. Instead, for highly educated women, factors beyond economics, such as further education and career goals, may be linked to parenthood. As women's education rises, this trend will likely continue.

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APPENDIX

Table A1 Sensitivity analysis of explanatory variables couples' employment and couples' education. Monthly probability of first birth. Model 1 disaggregates women's non-employment between not employed and carework/homemaker. Model 2 disaggregates heterogamous education by which partner has a higher level of education. Odds ratios.

First Birth Event	Model (1)	Model (2)
Couples' Employment		
Ref. Both full-time	*Ref.*	–
Woman part-time, Man employed	0.983 (0.100)	–
Woman employed, Man not employed	0.661* (0.133)	–
Woman not employed, Man employed	0.620** (0.097)	–
Woman carework/homemaker, Man employed	1.167 (0.193)	–
Both not employed	0.566* (0.134)	–
Couples' Education		
Ref. Both tertiary	*Ref.*	–
Heterogamy	1.033 (0.074)	–
Both secondary	1.104 (0.095)	–
Couples' Employment		
Ref. Both full-time	–	Ref.
Woman part-time, Man full-time	–	1.042 (0.109)
Woman employed, Man part-time	–	0.599* (0.120)
Woman employed, Man not employed	–	0.646* (0.130)
Woman not employed, Man employed	–	0.802+ (0.094)
Both not employed	–	0.553* (0.131)
Couples' Education (4 categories)		
Ref. Both tertiary	–	Ref.
Woman tertiary, Man secondary	–	1.169+ (0.093)
Woman secondary, Man tertiary	–	0.809+ (0.092)
Both secondary	–	1.126 (0.096)
Enrolled in Further Education		
Ref. Not enrolled	*Ref.*	*Ref.*
Enrolled	1.134+ (0.078)	1.130+ (0.077)
Marriage Status		
Ref. Cohabitating	*Ref.*	*Ref.*
Married	3.109*** (0.237)	3.159*** (0.241)
Woman's Age		
Ref. 25–29	*Ref.*	*Ref.*
16–24	1.027 (0.117)	1.024 (0.117)
30–34	1.161* (0.087)	1.156+ (0.087)
35–39	0.780** (0.075)	0.788* (0.076)
40–45	0.140*** (0.030)	0.139*** (0.030)

Table A1 (contunuation)

First Birth Event	Model (1)	Model (2)
Couples' Birth Origin		
Ref. Both UK-born	*Ref.*	*Ref.*
Mixed	0.763** (0.075)	0.764** (0.075)
Both foreign-born	1.109 (0.124)	1.148 (0.128)
Intercept	0.007*** (0.001)	0.007*** (0.001)
Observations	87,481	87,481
AIC	10,882.6	10,874.9
BIC	11,032.6	11,034.4

+ p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001

Note: Standard errors clustered at the couple level in parentheses. Observations are measured as one observation per couple-month. Couples' characteristics are measured 12 months before the birth event. Results are based on logistic regression models predicting the transition to first birth. Standard errors clustered at the couple level in parentheses. Observations are measured as one observation per couple-month. Couples' characteristics are measured 12 months before the birth event. Results are based on logistic regression models predicting the transition to first birth.
Source: United Kingdom Household Longitudinal Study (2009–2023).

Model 1 shows that couples with women engaged in care work or homemaking tend to have higher – but not statistically significant – likelihoods of becoming parents, consistent with prior UK research (*Inanc, 2015; Schmitt, 2012*). However, many "inactive" women were excluded, limiting conclusions about inactivity and parenthood.

Model 2 reveals that accounting for couples' education changes the likelihood of parenthood for heterogamous couples; specifically, couples where women are more educated than their partners show a positive association with first birth.

Table A2 Summary Statistics for the Sample by Couples' Education. Monthly Observations

	Both tertiary N=39,749	Heterogamous N=28,937	Both secondary N=18,795
Live first birth			
Yes	1.2%	1.2%	1.2%
No	98.8%	98.8%	98.8%
Couples' employment status			
Both full-time	73.1%	74.7%	59.1%
Woman part-time, Man full-time	9.3%	7.2%	11.6%
Woman employed, Man part-time	3.8%	3.5%	5.1%
Woman employed, Man not employed	3.8%	3.5%	4.6%
Woman not employed, Man employed	8.2%	9.4%	12.5%
Both not employed	2.0%	1.7%	7.1%
Enrolled in Education			
Not enrolled	90.9%	85.4%	91.9%
Enrolled	9.1%	14.6%	8.9%
Marriage status			
Cohabitating	44.8%	50.7%	55.0%
Married	55.2%	49.3%	45.0%
Woman's age			
16–24	8.2%	12.7%	27.9%
25–29	35.1%	32.5%	28.8%
30–34	28.6%	26.4%	20.4%
35–39	16.3%	15.8%	11.7%
40–45	11.9%	12.5%	11.2%
Couples' birth origin			
Both UK-born	74.5%	82.0%	85.2%
Mixed	16.1%	12.8%	10.9%
Both foreign-born	9.4%	5.2%	3.9%

Note: Counts represent the number of monthly observations by category.
Source: United Kingdom Household Longitudinal Study (2009–2023).

Table A3 Results of logistic regression models of the monthly probability of first birth. Odds ratio

First Birth Event	Model (1)	Model (2)
Couples' Employment		
Ref. Both full-time	*Ref.*	*Ref.*
Woman part-time, Man full-time	1.043 (0.109)	0.831 (0.139)
Woman employed, Man part-time	0.593** (0.119)	0.666 (0.196)
Woman employed, Man not employed	0.701* (0.130)	0.448* (0.161)
Woman not employed, Man employed	0.779* (0.091)	0.708+ (0.132)
Both not employed	0.547* (0.130)	0.423+ (0.214)
Couples' Education		
Ref. Both tertiary	*Ref.*	*Ref.*
Heterogamy	1.042 (0.075)	1.023 (0.083)
Both secondary	1.115 (0.096)	0.949 (0.101)
Enrolled in Further Education		
Ref. Not enrolled	*Ref.*	*Ref.*
Enrolled	1.128+ (0.077)	1.134+ (0.078)
Marriage Status		
Ref. Cohabitating	*Ref.*	*Ref.*
Married	3.190*** (0.244)	3.193*** (0.244)
Woman's Age		
Ref. 25–29	*Ref.*	*Ref.*
16–24	0.855 (0.115)	0.840 (0.114)
30–34	1.442** (0.168)	1.441** (0.168)
35–39	1.290 (0.292)	1.295 (0.292)
40–45	0.321** (0.130)	0.322** (0.130)
Couples' Birth Origin		
Ref. Both UK-born	*Ref.*	*Ref.*
Mixed	0.772** (0.075)	0.773** (0.076)
Both foreign-born	1.152 (0.128)	1.160 (0.129)
Interaction Terms		
Ref. Both full-time x Both tertiary		*Ref.*
Woman part-time, Man full-time × Heterogamy		1.330 (0.336)
Woman employed, Man part-time × Heterogamy		0.83 (0.403)
Woman employed, Man not employed × Heterogamy		1.377 (0.701)
Woman not employed, Man employed × Heterogamy		0.866 (0.248)
Both not employed × Heterogamy		1.349 (1.041)
Woman part-time, Man full-time × Both secondary		1.734* (0.441)
Woman employed, Man part-time × Both secondary		0.858 (0.421)
Woman employed, Man not employed × Both secondary		2.522+ (1.232)

Table A3 (continuation)

First Birth Event	Model (1)	Model (2)
Woman not employed, Man employed × Both secondary		1.697+ (0.471)
Both not employed × Both secondary		1.588 (0.936)
Intercept	0.012*** (0.003)	0.013*** (0.003)
Observations	87,481	87,481
AIC	10,878.4	10,885.7
BIC	11,037.9	11,138.9

+ p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001

Note: Standard errors clustered at the couple level in parentheses. Observations are measured as one observation per couple-month. Couples' characteristics are measured 12 months before the birth event. Odds ratios are based on the same regression models as Table 2 and are presented for completeness.
Source: United Kingdom Household Longitudinal Study (2009–2023).