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Research Article

Why does fertility remain high among certain UK-born ethnic minority women?

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Abstract

BACKGROUND
Previous research has shown high total fertility among certain UK-born ethnic minorities, but the reasons behind their high fertility have remained far from clear. Some researchers attribute their elevated fertility levels to cultural factors, whereas others argue that high fertility is the consequence of their poor education and labour market prospects.

OBJECTIVE
This study investigates fertility among the descendants of immigrants in the UK and examines the determinants of high fertility among certain ethnic minority groups.

METHODS
We use data from the Understanding Society study and apply multivariate event history analysis.

RESULTS
The analysis shows, first, that relatively high second-, third-, and fourth-birth rates are responsible for the elevated total fertility among certain UK-born minorities, especially women of Pakistani and Bangladeshi origin. There is little variation in the first-birth rates among natives and immigrant descendants. Second, although fertility differences between ethnic minorities and native British women slightly decrease once religiosity and number of siblings are controlled for, significant differences persist. We conclude that cultural factors account for some elevated fertility among ethnic groups in the UK, whereas the role of education and employment seem to be only minor.

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1. Background

European populations are characterised by a growing share of immigrants and ethnic minority populations (Castles and Miller 2009; Raymer, de Beer, and van der Erf 2011). A large body of literature investigates various aspects of immigrants' lives: their employment and education (Adsera and Chiswick 2007; Rendall et al. 2010), residential and housing patterns (Arbaci 2008; Musterd 2005), health and mortality (Hannemann 2012; Solé-Auró and Crimmins 2008; Wengler 2011), and legal status and citizenship (Bauböck 2003; Howard 2005; Seifert 1997). There has also been a growing interest in family and fertility dynamics among immigrants and ethnic minorities (Berrington 1994; Coleman 1994). While the childbearing dynamics of immigrants have received considerable attention (Andersson 2004; Andersson and Scott 2007; Milewski 2010; Mussino and Strozza 2012; Sobotka 2008; Tromans, Natamba, and Jefferies 2009), only a few studies have examined the fertility patterns of the descendants of immigrants. In the UK, these studies show that the fertility levels of the descendants of immigrants from high-fertility countries are usually lower than those of their parents, but for some ethnic groups, e.g., Bangladeshi and Pakistani, fertility remains relatively high (Coleman and Dubuc 2010; Sobotka 2008). The reasons for high fertility levels among particular ethnic minority women are far from clear. Some researchers attribute high fertility to cultural factors and religion, arguing that large families continue to be a norm (Penn and Lambert 2002). Others argue that early childbearing and high fertility are the consequences of poor education and labour market prospects among ethnic minorities (Coleman and Dubuc 2010).

The aim of this study is to investigate fertility patterns among the descendants of immigrants in the UK (also referred to as 'ethnic minorities' in this paper, as this is common practice in the UK context and literature), and examine the determinants of the relatively high fertility among certain ethnic minority groups. This study extends previous research in the following ways. First, fertility measures are disaggregated, and childbearing patterns are analysed by birth order to gain a better understanding of the underlying fertility behaviour of descendants of immigrants in comparison to natives. Although studies have provided information on the aggregate fertility levels of ethnic minorities in the UK (e.g., Coleman and Dubuc 2010), no study has investigated the fertility dynamics among ethnic groups by parity, to the best knowledge of the authors. Second, this study uses multivariate analysis to investigate the role of various factors in explaining fertility patterns among the descendants of immigrants. Various causes of high fertility among descendants of immigrants have been discussed in the literature (Coleman and Dubuc 2010; Hampshire, Blell, and Simpson 2012), but no study has explicitly analysed the role of different factors. Third, this study uses large-scale individual-level longitudinal data, which allows for the calculation of reliable fertility

estimates for ethnic minorities and makes it possible to examine the role of various factors in explaining fertility differences between the descendants of immigrants and the native British population. Finally, this is one of the few studies to calculate both aggregated and disaggregated fertility measures by ethnic group using the same dataset. This strategy allows us to simultaneously highlight the main fertility differences across ethnic minorities and investigate their underlying childbearing behaviour. Previous research on the fertility of immigrants and their descendants in Europe and other industrialised countries has either analysed aggregate fertility measures (e.g., Sobotka 2008) or investigated one or two parity transitions (see below).

We focus on ethnic minorities with high fertility for the following reason. The largest ethnic minority groups in the UK are of high-fertility origin (i.e., immigrants coming from high-fertility countries who also had large families themselves). Given the initially large differences in fertility levels between immigrants from high-fertility countries and UK natives, it is interesting to determine what has happened to the descendants of these immigrants. In particular, is their childbearing behaviour similar to that of UK natives or to that of their parents? Some ethnic minorities in the UK (e.g., immigrants and their descendants from Southern European countries) have low fertility levels (Coleman and Dubuc 2010). Although their average family size is not that different from that of UK natives, they still may have different parity distribution and timing of fertility. However, their numbers in the surveys are relatively small, and insufficient to conduct a detailed analysis. We have included them in the analysis as one aggregated group (European and Western countries).

1.1 Research on childbearing patterns among the descendants of immigrants in Europe

Previous research on European countries has shown that the descendants of certain immigrants have fertility levels and patterns similar to those of the native population, while other ethnic minorities, mostly of non-Western origin, display relatively early childbearing and high fertility levels (Sobotka 2008). Scott and Stanfors (2011) investigated the childbearing patterns of ethnic minorities in Sweden. Their analysis showed that the descendants of immigrants from high-fertility countries (Turkey, Lebanon, and Syria) had significantly higher first-birth levels than native Swedes, whereas descendants of immigrants from other European countries showed fertility levels either lower or similar to native Swedes. The analysis also revealed that in most cases, fertility levels were lower among the 'second generation' than for those who arrived in Sweden as children.

Milewski (2010) arrived at similar conclusions in her study on the fertility of the 'second generation' in Germany. The analysis showed that the fertility behaviour of immigrants from Southern European countries was similar to that of native Germans, whereas the descendants of immigrants from Turkey showed distinct fertility patterns in that they had an earlier transition to parenthood than native Germans. Further, the propensity to have a first child was high among women of Turkish origin, leaving only a small percentage of women who remained childless. They also showed a high propensity to have three children, indicating a preference for larger families. In a subsequent paper, Milewski (2011) compared the first-birth rates of the descendants of immigrants from Turkey in seven European countries. The women of Turkish descent had relatively high first-birth rates in all seven countries, although there were significant differences across countries. The descendants of Turkish immigrants had somewhat lower first-birth rates in Germany and Switzerland than in France, the Netherlands, and Sweden. The author concluded that the study provided evidence for both a socialisation into a 'Turkish subculture' and an adaptation to mainstream European societies. Garssen and Nicolaas (2008) investigated the childbearing of women of Turkish and Moroccan origin in the Netherlands and concluded that the immigrants had significantly higher completed fertility than native Dutch women, whereas the descendants of immigrants held a clear middle position between immigrants and native Dutch in their fertility behaviour.

Coleman and Dubuc (2010) studied the fertility patterns among UK ethnic minority women using pooled data from two national surveys and aggregate fertility measures. The study showed that the total fertility significantly declined among UK ethnic minority populations from the 1970s to the early 2000s. Furthermore, in each ethnic group the total fertility of the descendants of immigrants was lower than that of immigrant women born outside the UK. However, while fertility levels were low among women of Indian and Black Caribbean descent, fertility was relatively high among women of Pakistani and Bangladeshi origin, despite a continued fertility decline. The recent studies on various European countries thus show that the fertility levels of the descendants of immigrants from high-fertility countries are usually lower than those of their parents, but for some non-Western groups, fertility levels remain relatively high in comparison to the native population. However, the reasons for their high fertility are less clear, although many studies attribute it to the incomplete cultural and economic assimilation of the 'second generation'.

1.2 Explanations of high fertility among certain descendants of immigrants in the UK

Previous research has identified four possible explanations of the continued high fertility among certain minority groups in the UK (for similar discussions in the US context see Forste and Tienda 1996). First, cultural factors may be responsible. Pakistani and Bangladeshi immigrants, for example, arrived in Britain from high-fertility countries. Although they experienced lower fertility after moving to the UK than individuals in their country of origin, their fertility levels remained higher than those of native British and other population subgroups (Coleman and Dubuc 2010). Several factors may support a desire among ethnic minorities for large families. They come from large families, they grew up in 'high-fertility' environments, and extended family has played an important role in their lives (Penn and Lambert 2002; Robson and Berthoud 2006). The latter may also have a direct effect on the childbearing decisions of ethnic Pakistani and Bangladeshi women. Members of the extended family (particularly the mother-in-law) often influence the fertility decisions of young women; they encourage them to become pregnant soon after marriage and to have many children (Hampshire, Blell, and Simpson 2012). A strong preference for sons may also promote high fertility. Hampshire, Blell, and Simpson (2012) find, for example, that many Pakistani couples continue childbearing until they have at least one son, with two sons being the desired fertility outcome. Cultural and normative factors may thus explain a desire for large families among high-fertility migrant populations in the UK, but various sociocultural practises also ensure that the actual fertility remains high among these populations. Additionally, the share of intra-group marriages is high among ethnic Pakistani and Bangladeshi populations in Britain (Kulu and Hannemann 2015; Voas 2009), which may be explained by the factors discussed above and may promote high fertility further.

Second, it is possible that early childbearing and high fertility among ethnic minority women are the consequence of their poor education and labour market prospects. Research shows that the majority of ethnic Pakistani and Bangladeshi women in the UK have poor or no educational qualifications, and their labour market participation rates are low compared to native British and other ethnic minority women (Dale, Lindley, and Dex 2006; Dustmann and Fabbri 2005; Salway 2007). Poor human capital may explain low economic activity rates, but hidden discrimination in the labour market is also considered to be an important factor (e.g., Brown 2000). The number of women pursuing higher education has increased among the younger cohorts, but many of them still remain inactive or become unemployed after attempts to establish themselves in the labour market (Dale 2002). Consequently, young ethnic minority women may decide to choose the 'motherhood track' to find meaning for their lives and justify their lives to others (cf. Neyer and Andersson 2008). Studies show that women

of Pakistani and Bangladeshi ethnic origin commonly equate 'housewife' with high status (Salway 2007). This may not be surprising at first glance, as this view is consistent with the dominance of traditional gender roles in South Asian communities (Hennink, Diamond, and Cooper 1999). However, it is in contrast to the high aspirations of younger generations in terms of educational qualifications and occupational status (Dale et al. 2002). Poor employment options therefore could reinforce the high status attached to housewives by British Pakistani and Bangladeshi women.

Third, research shows that residential segregation of ethnic minority populations, particularly Pakistani and Bangladeshi, is high (Musterd 2005), although the debate on the role of 'choice' versus 'constraint' continues in UK residential segregation literature (see Peach 1998, 2009; Finney and Simpson 2009; Raymer and Giulietti 2009). High residential segregation of immigrants and their descendants may promote high fertility both indirectly and directly. Daily interaction with people of the same origin and ethnic background outside the home helps to sustain a cultural and normative environment, which may be responsible for high fertility. Alternatively, it can be argued that high ethnic residential segregation may hinder young ethnic minority women's achievement of educational and occupational aspirations. While the UK educational system is egalitarian in general (non-selective comprehensive schools dominate), the schools in immigrant and ethnic minority areas are often poor and leave most students little chance to pursue further studies (Dale et al. 2002). High spatial concentration of ethnic minority populations may also have a direct effect on fertility levels. Areas with young families and many children tend to have relatively high fertility, even after controlling for compositional factors and selective residential moves. This is attributed to the tendency of couples to copy the childbearing behaviour of their peers and friends or relatives (Kulu and Boyle 2009).

2. Data and methods

2.1 Quality check of the Understanding Society data

This study uses data from the Understanding Society study (UoS), a large longitudinal study in the UK that was launched in 2009. The main immigrant and ethnic minority groups in Britain were over-sampled in the study, thus providing a sufficient sample size to study ethnic differences in attitudes and behaviour. To ensure that the data is of good quality, we conducted a comparison of fertility estimates based on the UoS data and data from the Office for National Statistics (ONS). Data on women born between 1930 and 1989 was used; weights were applied to take into account the oversampling of

ethnic minorities and individuals from Northern Ireland. Table 1 presents a comparison of the percentage of women who entered motherhood at different ages by birth cohort. For women born between 1930 and 1959 the estimated percentage of mothers at age 45 is very similar across the two datasets; the ONS figures lie within the 95% confidence intervals of the values based on the UoS data. For the 1960–1969 cohorts a somewhat higher share of mothers for the UoS data can be observed. A similar pattern also seems to prevail for the two youngest cohorts, those born in the 1970s and 1980s.

Table 1: Percentage of women who entered motherhood by age and birth cohort, comparison between the ONS and (weighted) UoS data

	ONS	UoS	95 % CI	ONS	UoS	95 % CI	ONS	UoS	95 % CI
Age	%	%	lower upper	%	%	lower upper	%	%	lower upper
	1930–1939			1940–1949			1950–1959		
20	9.8	12.3	11.0 – 13.8	16.2	17.9	16.7 – 19.3	17.0	18.0	16.8 – 19.2
25	53.3	52.7	50.6 – 54.9	58.0	57.8	56.1 – 59.4	46.4	47.1	45.5 – 48.6
30	78.6	77.4	75.6 – 79.2	80.4	80.0	78.7 – 81.4	69.9	70.5	69.1 – 71.9
35	85.7	83.4	81.8 – 84.9	86.9	86.0	84.8 – 87.1	79.8	81.4	80.1 – 82.5
40	87.4	85.0	83.5 – 86.5	88.4	87.8	86.6 – 88.8	83.1	84.5	83.3 – 85.6
45	87.7	85.6	84.1 – 87.1	88.9	88.2	87.1 – 89.2	83.9	85.0	83.9 – 86.1
	1960–1969			1970–1979			1980–1989		
20	12.0	15.7	14.7 – 16.7	12.5	15.3	14.4 – 16.4	11.8	16.6	15.5 – 17.7
25	36.0	40.3	39.0 – 41.7	32.5	38.1	36.7 – 39.4	–	–	
30	59.3	64.9	63.6 – 66.2	53.8	62.1	60.7 – 63.4	–	–	
35	73.4	79.3	78.2 – 80.4	–	–		–	–	
40	79.1	84.6	83.6 – 85.5	–	–		–	–	
45	–	–		–	–		–	–	

Source: Authors' own calculations based on the Understanding Society data and data from the Office for National Statistics (2013a).

We also calculated the mean number of children at different ages by birth cohort (Table 2). Again, one can see a consistency between the estimates based on the UoS data and those from the ONS data for cohorts born between the 1930s and 1950s and a somewhat higher average number of children for the 1960s cohort in the UoS data. The estimates for the 1970s cohort are rather similar across the datasets. Both UoS and ONS data shows that the average number of children born to a woman has declined across cohorts, although fertility is still relatively high for women born in the 1960s, the youngest cohort that has passed through its reproductive age. The comparisons of

fertility estimates based on the UoS data and those from the ONS data thus show a good consistency for most cohorts, although the UoS data may slightly overestimate the fertility levels of younger cohorts, particularly first-birth rates. One should be aware of that when interpreting the results.

Table 2: Average number of children by age and birth cohort, comparison between the ONS and (weighted) UoS data

	ONS	UoS	95 % CI	ONS	UoS	95 % CI	ONS	UoS	95 % CI
Age			lower upper			lower upper			lower upper
	1930–1939			1940–1949			1950–1959		
20	0.12	0.11	0.10 – 0.13	0.20	0.18	0.16 – 0.20	0.21	0.18	0.16 – 0.19
25	0.86	0.79	0.74 – 0.83	1.04	0.94	0.90 – 0.98	0.80	0.72	0.68 – 0.75
30	1.72	1.65	1.59 – 1.71	1.76	1.69	1.64 – 1.73	1.43	1.36	1.32 – 1.39
35	2.19	2.12	2.06 – 2.19	2.08	2.05	2.01 – 2.10	1.83	1.86	1.82 – 1.90
40	2.35	2.24	2.17 – 2.30	2.18	2.15	2.11 – 2.20	1.99	2.01	1.96 – 2.05
45	2.38	2.27	2.21 – 2.34	2.21	2.18	2.14 – 2.23	2.02	2.05	2.01 – 2.09
	1960–1969			1970–1979			1980–1989		
20	0.14	0.15	0.13 – 0.16	0.15	0.15	0.14 – 0.16	0.14	0.15	0.14 – 0.16
25	0.61	0.60	0.57 – 0.63	0.53	0.53	0.51 – 0.56	0.51	0.42	0.40 – 0.44
30	1.20	1.21	1.18 – 1.25	1.01	1.05	1.01 – 1.08	–	–	
35	1.65	1.76	1.72 – 1.80	1.53	1.50	1.46 – 1.54	–	–	
40	1.87	1.95	1.91 – 1.99	–	–		–	–	
45	1.93	2.00	1.96 – 2.04	–	–		–	–	

Source: Authors' own calculations based on the Understanding Society data and data from the Office for National Statistics (2013a).

2.2 Sample and covariates

Retrospective fertility, partnership, and employment histories were collected at the first wave of the Understanding Society study (conducted between January 2009 and December 2010). The dataset also contains information on the birthplace of respondents and their household members. In the first wave, data were gathered on 50,994 individuals (including 27,792 women). Full interviews, including a household questionnaire, were conducted with 47,732 individuals aged 16 and older: The remaining interviews were proxy interviews for absent household members. For the current study only women with full interviews are used. From those, individuals with

missing (N=309) or inaccurate vital information (N=234) are excluded from the analysis. The analysis is limited to the birth cohorts born in 1940 and later; therefore, 5,690 individuals who were born before 1940 are disregarded from the original sample. The final sample consists of 41,499 individuals while the analysis is conducted on 23,263 women.

The main variables to define population subgroups in this study are an individual's and her/his parents' country of birth. The research population is divided into British natives, immigrants (the 'first generation'), and descendants of immigrants (the 'second generation'). In this article, we use the terms 'ethnic minorities' and 'ethnic minority populations' interchangeably for immigrants and their descendants, as is common in the UK context.

Natives are defined as individuals who themselves and both of whose parents were born in the UK; they form 70% of the (unweighted) sample. Individuals who were born outside of the UK, independent of the origin of their parents, were classified as immigrants. If a person was born in the UK but at least one of the parents was born outside of the UK they are classified as a descendant of immigrants. If a descendant of immigrants has parents of different foreign origins, priority is given to the father's country of birth. In the analyses we distinguish immigrants and their descendants from a variety of origins. In order to secure statistically robust results, the following aggregated regions of origin are used: 1) Europe and other Western/industrialised countries, 2) India, 3) Pakistan, 4) Bangladesh, 5) Caribbean countries, and 6) all other origins. The last group contains individuals from many different countries and continents, including Africa, the Far and Middle East, China, and Latin America. Although this group is large in comparison to the other sub-groups, no specific origin is of a sufficient size to be analysed separately.

The descendants of immigrants are grouped using similar principles, with two exceptions. First, the descendants of immigrants from Bangladesh and Pakistan were combined into one group due to the small numbers in both groups of origin. Second, there is an additional group ('Missing') for cases where the individual is known to be a descendant of immigrant(s) but the parents' country of birth is unknown. The latter group was kept in the analysis for the sake of a larger sample size (although further analysis showed no significant differences between the analyses with and without the missing group).

The emphasis of this study is on the ethnic minorities with high fertility levels − women from India, Pakistan, and Bangladesh − in comparison to the UK native population. The latter is used in the paper as reference group. The aggregated group of women from 'European and Western countries' as well as all 'Other countries' and the group of unknown origin for descendants of immigrants ('Missing information') are analysed alongside the ethnic minorities with high fertility and the native group, to

provide a more holistic picture of fertility among the descendants of immigrants in the UK.

While most of the analysis is conducted using the entire sample, models including employment status could only be fitted on a subsample because information on employment was available for only a quarter of individuals. Table 3 shows the distribution of the female population by migrant group for both used samples. The share of migrant groups does not differ substantially between the two samples, which supports the notion that the subsample is also representative of the complete sample and therefore can be analysed separately.

Table 3: Distribution of women by migrant group for complete and employment samples

Migrant group	Complete sample		Employment sample	
	N women	%	N women	%
Natives	15,914	68.4	3,749	71.9
Immigrants				
Europe and Western countries	737	3.2	201	3.9
India	455	2.0	85	1.6
Pakistan	409	1.8	58	1.1
Bangladesh	347	1.5	40	0.8
Caribbean countries	166	0.7	31	0.6
Other countries	2,306	9.9	445	8.5
Descendants of Immigrants				
Europe and Western countries	807	3.5	212	4.1
India	346	1.5	65	1.2
Pakistan / Bangladesh	492	2.1	66	1.3
Caribbean countries	290	1.2	65	1.2
Other countries	825	3.5	163	3.1
Missing information	169	0.7	33	0.6
Total	23,263	100.0	5,213	100.0

Source: Authors' own calculations based on the Understanding Society data.

2.3 Methodology

This study examines the fertility of immigrants and their descendants born between 1940 and 1994. The study goes beyond conventional aggregate fertility measures (the total fertility rate and age-specific fertility rates) dominant in the literature on the

fertility of ethnic minorities, and analyses fertility by parity, applying event history analysis. By examining childbearing patterns by birth order, fertility measures are disaggregated, which is necessary to detect the underlying fertility behaviour of ethnic minority women. Event history analysis allows us to take a step further and calculate parity-specific fertility rates with and without controlling for the women's socioeconomic characteristics. In order to measure the effect of these covariates on childbearing decisions as precisely as possible, the model uses the time until a conception (i.e., nine months prior to a recorded live birth). The basic model can be formalised as follows:

$$\ln \mu_i (t) = \ln \mu_0 (t) + \sum_j \alpha_j x_{ij} + \sum_l \beta_l w_{il}(t), \quad (1)$$

where $\mu_i(t)$ denotes the hazard of the first, second, third, or fourth birth (or conception leading to a live birth) for individual i, and $\ln\mu_0(t)$ denotes the baseline log-hazard, which is specified as a piecewise constant hazard; the baseline for first birth is a woman's age in months by five-year age categories (women are considered at risk of a first birth from age 15); for the second, third, and fourth births the baseline is measured as time since the previous birth. The term x_{ij} represents the values of time-constant variables, and $w_{il}(t)$ represents time-varying variables.

The analytical strategy of this study is as follows. First, the total fertility rate (TFR) for each migrant group is calculated and presented, to provide an overview of the fertility levels among immigrants and their descendants in the UK. Thereafter, first-, second-, third-, and fourth-birth rates are calculated by migrant group, controlling for age of woman (first birth), time since previous birth (higher order births), and birth cohort in the initial model. The following models stepwise control for women's socioeconomic and cultural characteristics, to explore the extent to which they explain fertility differences by migrant group. Those socioeconomic and cultural characteristics include individual education level (tertiary degree, other higher education, A-level, GSCE, and no or lower qualifications). For education level we have imputed the age of the completion of various levels following the general structure of the British educational system (e.g., GCSE at age 16; A-level at age 18; tertiary degree at age 21), making it a time-varying variable. The next model additionally includes English language skills (speaks English as the first language, speaks English without problems, speaks English with problems) and the importance of religion in their lives (religion makes no difference, little difference, some difference, a great difference). In further steps the models control for the number of siblings (only child, one, two to three, and four or more siblings) and place of residence (London, other urban areas, small towns and rural areas, as well as Scotland and Northern Ireland). This variable is important to control for clustering of immigrants and their descendants. The values of all of the

above-mentioned variables were measured at the first wave of the survey. Additionally, for transition to higher order births two further variables were included. The first indicates the woman's age at first birth (for the second, third, and fourth birth models) and the second the sex of the previous child(ren).

In the next step a model was fitted including information on partnership status (for first birth: single, cohabiting, married and separated; for higher order births this was simplified due to smaller numbers: in union, out of union). Changes in partnership status are strongly related to the decision to have a child, particularly a first child. Therefore, the role of partnership status as an 'explanatory' variable should be treated with caution. Because employment histories were only collected for about a quarter of the UoS sample the final models are based on this subsample. Employment status was categorized as full-time employed, part-time employed (including self-employed), unemployed, in education, or other. Due to the strong correlation of union status and fertility decision, partnership status was excluded from the employment sample models. All models use unweighted data because migrant group, the main weighting variable, is included in the analysis. However, models that use weights are also fitted for sensitivity analysis; the comparison of the results is provided in Table A-8 in the Appendix.

Although we are aware of the difficulties in the measurement of 'culture' in empirical survey research, we follow previous literature on ethnic minority fertility and consider the following factors as indicators of the effect of 'culture': religiosity, the number of siblings, and sex of the previous child(ren). Previous research has also classified English language skills as an indicator of 'culture', although it may equally measure aspects of individual human capital (Forste and Tienda 1996).

Table 4 provides the distribution of risk time and number of births by migrant group. We see that the number of births is sufficient to study the transition to first, second, third, and fourth birth by migrant group. The distribution of risk time and the number of events for all covariates is presented in Tables A-1 and A-2 in the Appendix.

Table 4: Person-months and number of events by migrant group

	First births				Second births			
	Person-months		Events		Person-months		Events	
Migrant group	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Natives	2048720	68.3	11559	70.3	569648	70.9	8845	71.3
Immigrants								
Europe and Western countries	111017	3.7	445	2.7	20435	2.5	312	2.5
India	59244	2.0	339	2.1	14298	1.8	258	2.1
Pakistan	44147	1.5	353	2.1	9878	1.2	297	2.4
Bangladesh	29338	1.0	310	1.9	11305	1.4	256	2.1
Caribbean countries	19584	0.7	139	0.8	10091	1.3	101	0.8
Other countries	320096	10.7	1560	9.5	77952	9.7	1076	8.7
Descendants of Immigrants								
Europe and Western countries	117275	3.9	577	3.5	31297	3.9	422	3.4
India	45125	1.5	208	1.3	8131	1.0	163	1.3
Pakistan / Bangladesh	40258	1.3	212	1.3	4913	0.6	157	1.3
Caribbean countries	38574	1.3	207	1.3	15563	1.9	131	1.1
Other countries	106757	3.6	431	2.6	23082	2.9	299	2.4
Missing information	18413	0.6	114	0.7	6494	0.8	81	0.7
Total	**2998548**	**100**	**16454**	**100**	**803087**	**100**	**12398**	**100**
	Third births				**Fourth births**			
	Person-months		Events		Person-months		Events	
Migrant group	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Natives	916927	78.2	3465	67.1	353942	74.4	1105	60.9
Immigrants								
Europe and Western countries	26552	2.3	95	1.8	7372	1.6	35	1.9
India	20431	1.7	108	2.1	10787	2.3	42	2.3
Pakistan	12919	1.1	215	4.2	12284	2.6	112	6.2
Bangladesh	10845	0.9	166	3.2	8106	1.7	94	5.2
Caribbean countries	8937	0.8	48	0.9	4247	0.9	23	1.3
Other countries	76533	6.5	479	9.3	31922	6.7	186	10.3
Descendants of Immigrants								
Europe and Western countries	40882	3.5	197	3.8	19366	4.1	69	3.8
India	11341	1.0	81	1.6	5949	1.3	22	1.2
Pakistan / Bangladesh	6658	0.6	87	1.7	3828	0.8	43	2.4
Caribbean countries	9393	0.8	68	1.3	5194	1.1	30	1.7
Other countries	24264	2.1	110	2.1	8567	1.8	33	1.8
Missing information	6841	0.6	44	0.9	4028	0.8	20	1.1
Total	**1172523**	**100**	**5163**	**100**	**475592**	**100**	**1814**	**100**

Source: Authors' own calculations based on the Understanding Society data.
Note: Risk time starts at age 15 (1st child) or time since previous birth and lasts until conception or the individual is censored.

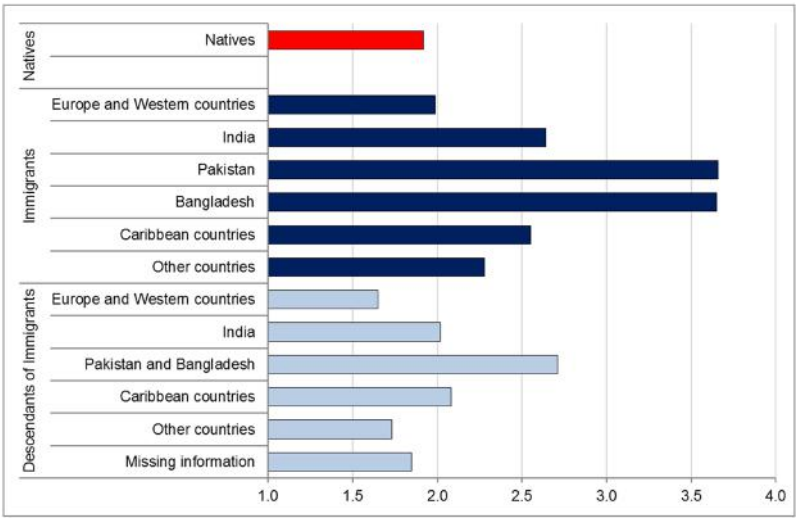
3. Results

3.1 Total fertility by migrant group

As a first step of the analysis the TFR is calculated by migrant group for the period 1989 to 2008 (women born between 1940 and 1993 formed the risk population). The

estimated TFR for the UK in this period, based on the (weighted) UoS data, was 1.9, which was slightly higher than expected. It varies by period, being lowest in the late 1990s (1.8) and highest in 2005 to 2008 (2.0). The analysis of UoS data by migrant group shows that migrants had higher fertility than natives. The highest levels were observed for immigrants from Pakistan and Bangladesh (3.6). Fertility levels were also relatively high among Indian and Caribbean immigrants (Figure 1). The descendants of immigrants had lower total fertility than immigrants, as expected. However, fertility levels varied significantly across migrant groups. While most groups had a total fertility rate below or around replacement level, women of Pakistani and Bangladeshi descent exhibited high fertility levels (2.8). The analysis of the total fertility rate by migrant group thus largely supports what previous studies on immigrant fertility in the UK have shown (Coleman and Dubuc 2010; Dormon 2014). As contribution to the literature, this study provides (period) fertility estimates for immigrant descendants (the so-called 'second generation'). We have thus calculated the TFR also for immigrants, although we should be cautious when interpreting its values. We know from previous studies that the TFR is a poor measure of expected family size for immigrants because of the strong relationship between international migration, marriage and family formation (Andersson 2004; Kulu 2005; Milewski 2007; Parrado 2011). The duration-specific TFR could be a better aggregate measure of immigrant fertility (Persson and Hoem 2014; cf. Robards and Berrington 2016).

Figure 1: Total fertility rate by migrant group, 1989–2008



Source: Authors' own calculations based on the Understanding Society data.

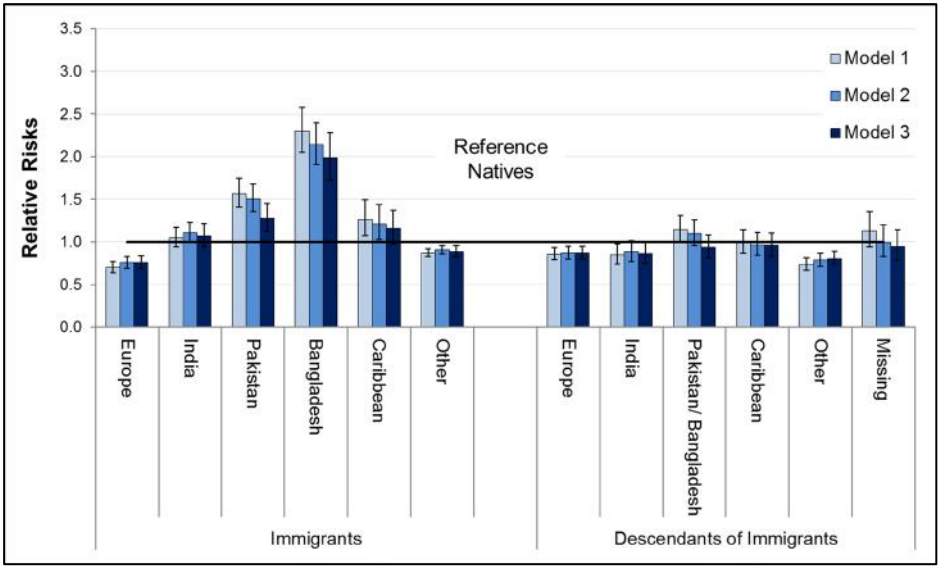
Next, we calculate first-, second-, third-, and fourth-birth rates by migrant group and investigate the extent to which sociodemographic characteristics of women explain the high fertility observed among certain UK-born ethnic minority women.

3.2 Parity-specific fertility

3.2.1 First birth

The first model estimates the risk of a conception leading to a first birth controlling only for age (baseline) and cohort next to the variable of interest: migrant group. Figure 2 shows that immigrants from Europe and Western countries and 'Other' countries have a low risk of first birth, whereas those from Pakistan and particularly from Bangladesh have significantly higher first-birth rates compared to natives (natives as the reference category are represented by the black line in Figure 2). This supports the notion of early and universal childbearing among these groups (relative risks for all models and covariates are presented in Table A-3 in the Appendix). First-birth risks are also elevated among immigrants from the Caribbean region. Fertility variations among the descendants of immigrants are smaller. Although the estimated first-birth risks are higher for women of Pakistani and Bangladeshi descent, the differences compared to native levels are not statistically significant. Descendants of immigrants from other European countries, from India, and from 'Other' countries have lower first-birth rates than natives. Models 2 and 3 additionally control for education level and other socioeconomic characteristics. Fertility differences between immigrants and natives decline slightly, but immigrants from Pakistan and Bangladesh still exhibit high first-birth risks. Similarly, the differences compared to natives decline slightly for the descendants of immigrants, although women of European and Western origin still have lower first-birth levels.

Figure 2: Relative risk of a conception leading to a first birth (Ref=natives with RR=1)



Model 1: controlled for age, birth cohort, and migrant group, Model 2: additionally controlled for education level, Model 3: additionally controlled for English skills, importance of religion in life, number of siblings, and place of residence
Source: Authors' own calculations based on the Understanding Society data.

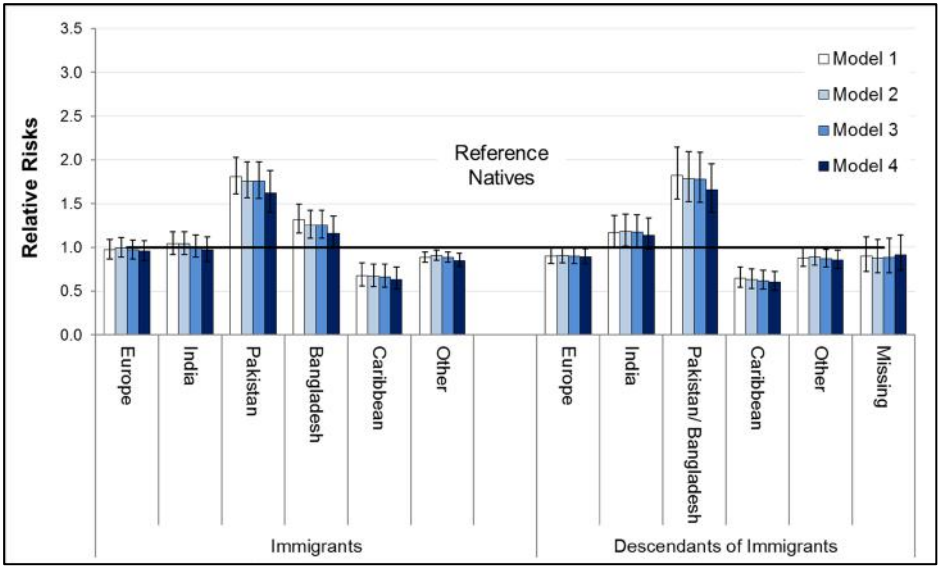
Model 4 additionally controls for partnership status (not displayed in Figure 2, see Table A-3 in the Appendix). The differences between most groups of immigrants and their descendants disappear, suggesting that first-birth rates vary across groups because of different partnership patterns – some ethnic groups are more likely to marry (earlier) than other groups. Although the results from Model 4 are appealing, they do little to improve our understanding of the factors behind the differences in first-birth levels because the event of marriage and the birth of a first child are often part of the same family formation process. Notably, once we control for partnership status, first-birth rates become elevated among immigrants from the Caribbean region and their descendants. This suggests that for most population subgroups, partnership formation (marriage) and childbearing are indeed closely related events, whereas this may not be the case for women of Caribbean origin in the UK. Given this strong relationship between fertility and marriage behaviour, the additional models including employment status do not control for partnership status. Employment histories are only available for a subsample of the UoS study; therefore, models are estimated with and without employment status using this subsample. Model 5 (based on the subsample) shows

largely similar results as Model 3 (which uses the main sample), although there is some variation in the magnitude of the coefficients for immigrants (Table A-3 in the Appendix). Most importantly, however, once employment status is controlled for the variation between population subgroups slightly changes, but previously observed differences largely persist (Table A-3 in the Appendix, Models 5 and 6).

3.2.2 Second birth

Model 1 measures the relative risk of a second birth, controlling for time since first birth, birth cohort, and migrant group. Only women who reported a first birth are at risk. Again, immigrants from Pakistan and Bangladesh exhibit a significantly higher risk of having a second child than native British women. Notably, the second-birth risk for Caribbean immigrants is relatively low, while they showed high first-birth rates (Figure 3, Model 1). The propensity to have a second child also varies among the descendants of immigrants. Women of Pakistani and Bangladeshi origin have significantly higher second-birth risks than natives, whereas the descendants of immigrants from Europe and the Caribbean region have lower fertility levels compared to natives. Estimated second-birth rates are also higher for women of Indian descent, although the difference between them and the natives is not statistically significant. Models 2 to 4 additionally control for women's age at first birth, their education level, and other sociodemographic characteristics. Again, fertility variation between migrant groups decreases but the main differences persist. Immigrants from Pakistan and Bangladesh and their descendants have high second-birth risks, whereas those of Caribbean origin exhibit low second-birth rates (Figure 3, Model 4). Notably, religiosity and number of siblings explain some initial fertility differences, particularly elevated second-birth levels among South Asians, but the role of education is negligible (Table A-4 in the Appendix, Model 4). Similarly, the role of employment status is small (Table A-4 in the Appendix, Models 6 and 7), and the inclusion of partnership status in the analysis reduces initial differences in the risk of second birth, indicating some differences by partnership status across migrant groups (Table A-4 in the Appendix, Model 5).

Figure 3: Relative risk of a conception leading to a second birth (Ref=natives with RR=1)



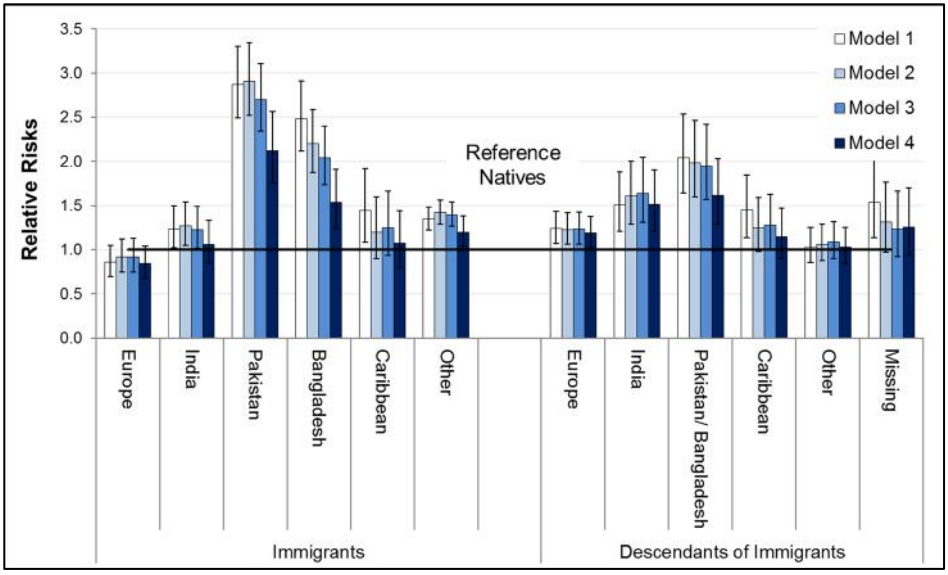
Model 1: controlled for time since previous birth, birth cohort, and migrant group, Model 2: additionally controlled for age at first birth, Model 3: additionally controlled for education level, Model 4: additionally controlled for English skills, importance of religion in life, number of siblings, sex of previous child, and place of residence
Source: Authors' own calculations based on the Understanding Society data.

3.2.3 Third birth

The patterns for third birth are very pronounced and reveal an important source of fertility variation between the descendants of immigrants and native British women. Apart from immigrants from European and Western countries, all other ethnic groups exhibit a significantly higher propensity to have a third child compared with native women (Figure 4, Model 1). Third-birth rates are particularly high among women of Pakistani and Bangladeshi origin, with third-birth levels more than twice as high as those for natives. Third-birth risks are also elevated among the descendants of Indian and Caribbean immigrants, whose first- and second-birth rates are close to or below the levels of native women. Again, once the models control for women's sociodemographic characteristics, fertility variations across population subgroups decrease. However, the main differences persist, with descendants of South Asian origins, but also from Europe, still having significantly higher third-birth risks than native women (Figure 4,

Model 4). Estimated third-birth levels are also higher among women of Caribbean descent, but the difference between them and the natives is not significant. Notably, although low educational qualifications account for some elevated fertility among immigrants, neither education nor employment explains high fertility among the descendants of immigrants (Table A-5 in the Appendix, Model 7). Again, religiosity and number of own siblings are the main factors that account for some elevated fertility among immigrants and their descendants. Poor English language skills also play a role in high immigrant fertility (Table A-5 in the Appendix, Model 4).

Figure 4: Relative risk of a conception leading to a third birth (Ref natives with RR=1)



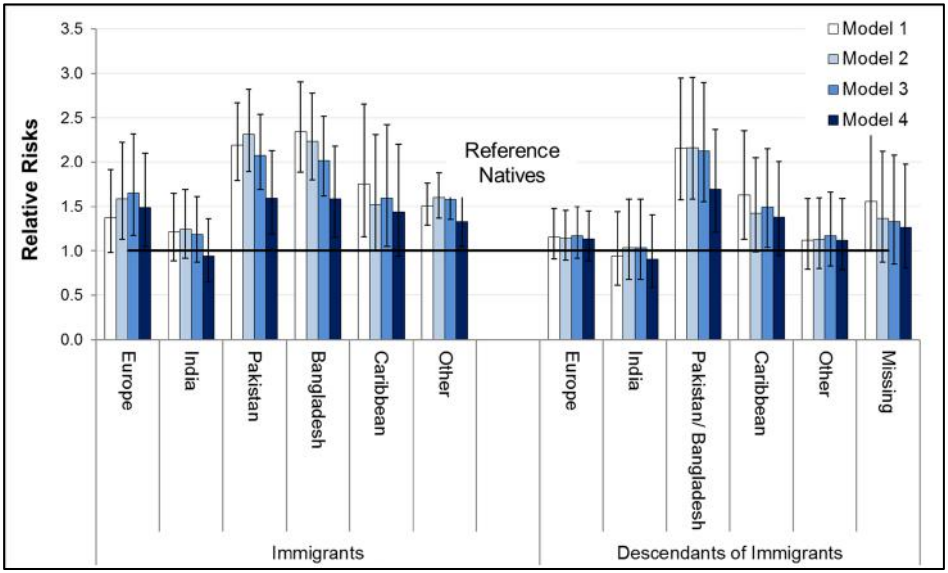
Model 1: controlled for time since previous birth, birth cohort, and migrant group, Model 2: additionally controlled for age at first birth, Model 3: additionally controlled for education level, Model 4: additionally controlled for English skills, importance of religion in life, number of siblings, sex of previous children, and place of residence
Source: Authors' own calculations based on the Understanding Society data.

3.2.4 Fourth birth

Finally, fourth-birth rates are also investigated by migrant group. The patterns for fourth-birth risks are similar to those for third birth, with minor differences. Most

immigrant groups have a significantly higher likelihood of having a fourth child compared to native British women. Again, fourth-birth rates are particularly high among immigrants from Pakistan and Bangladesh and their descendants, twice as high as among native women (Figure 5, Model 1). Notably, fourth-birth risks are also high among individuals of Caribbean origin (immigrants and their descendants), whereas the risks among women of Indian origin are relatively low. Again, once the models control for the sociodemographic characteristics of women, particularly religiosity, the differences across immigrant groups decrease but largely persist (Figure 5, Models 2–4). Controlling for employment status, immigrants from Pakistan and Bangladesh and their descendants still have significantly higher risks of a fourth birth (Table A-6 in the Appendix, Models 6 and 7). Estimated fourth-birth rates are also high among individuals of Caribbean origin, but the sample size is too small to draw final conclusions.

Figure 5: Relative risk of a conception leading to a fourth birth (Ref=natives with RR=1)



Model 1: controlled for time since previous birth, birth cohort, and migrant group, Model 2: additionally controlled for age at first birth, Model 3: additionally controlled for education level, Model 4: additionally controlled for English skills, importance of religion in life, number of siblings, sex of previous children, and place of residence
Source: Authors' own calculations based on the Understanding Society data.

4. Summary and discussion

This study investigates the fertility patterns among the descendants of immigrants in the UK in comparison to immigrants and native British women, and examines the determinants of high fertility among certain UK-born ethnic minority groups. Using data from the Understanding Society study, total fertility was calculated for various ethnic minority groups, and then fertility variations were investigated by birth order using event history models, with and without controlling for sociodemographic characteristics. This is the first study in the UK to analyse fertility dynamics among ethnic minorities by parity and to investigate the role of various factors in explaining fertility patterns among the descendants of immigrants in a multivariate setting.

The analysis of the total fertility rate showed that many immigrant groups had higher fertility than native British women, and the highest levels were observed for immigrants from Pakistan and Bangladesh. The descendants of immigrants had lower total fertility rates than immigrants from the same origin. For most UK-born minority groups, the total fertility rate was below or around the replacement level. However, women of Pakistani and Bangladeshi descent still exhibited high fertility levels. The analysis of fertility by parity showed, first, that there was little variation in the first-birth rates among natives and UK-born ethnic minority women. First-birth levels of the descendants of Pakistani, Bangladeshi, and Caribbean immigrants did not differ from those of native women. The levels for women of Indian and other European and Western descent were lower, suggesting a lower likelihood of becoming a mother among these groups. The differences between groups persisted once the models controlled for sociodemographic characteristics.

Second, the descendants of immigrants from Pakistan and Bangladesh exhibited a significantly higher risk of a second birth, whereas risk levels were low among women of European and Western and, particularly, Caribbean origin. Again, the differences between the migrant groups largely persisted once individual characteristics were taken into account. Third, all UK-born ethnic minority groups exhibited a higher likelihood of having a third child than native British women, and many also showed a higher risk of a fourth child. Third- and fourth-birth rates were particularly high among women of Pakistani and Bangladeshi descent. Once sociodemographic characteristics were taken into account, particularly the importance of religion and number of siblings, the differences between natives and descendants of immigrants decreased but still persisted. The addition of place of residence in the model had an opposite effect because most ethnic minorities live in large cities where fertility levels are lower than in smaller settlements. The sex of the previous child(ren) did not modify the migrant group effects.

The parity-specific analysis thus showed that high second-, third-, and fourth-birth rates were responsible for the high total fertility observed among women of Pakistani and Bangladeshi origin. Their first-birth levels were not that different from those of native British women, suggesting relatively similar timing and levels of family formation. The results suggest some polarisation among the descendants of Pakistani and Bangladeshi immigrants. There was a significant minority who remained childless or had their first child as late as native women, while the majority had ultimately a relatively large family of three to four children, similar to their parents. Interestingly, the aggregate figures provide us with an impression of convergence towards the fertility levels of natives, whereas parity-specific analysis provides a different picture where many UK-born women of Pakistani and Bangladeshi origin had large families.

Women of Indian and European descent had a low risk of first birth and relatively high third-birth rates, suggesting a similar polarisation among these groups where some women remained childless while others had two or three children. The descendants of immigrants from the Caribbean region experienced first-birth rates similar to those of natives. However, they had low second- but high third- and fourth-birth levels, again suggesting a strong polarisation among this group, with some women having one child and others having three or four children.

Why do descendants of immigrants from Pakistan and Bangladesh have high second- and higher-order birth rates? It was expected that education and employment would explain at least some of the high fertility among ethnic minority women, especially those of Pakistani and Bangladeshi origin. However, this is true only to a small extent. Although education and employment accounted for some of the high fertility among immigrants, they played little (if any) role in the high second-, third-, and fourth-birth levels among the descendants of immigrants. One reason might be that the measures available for this study were too crude. Education level was measured at the time of the survey, and the values of education were imputed to include it in the analysis as a time-varying variable. However, sensitivity analysis on the inclusion of education in the models measured either at the survey or with imputed values showed that the results barely changed. Additionally, the fact that employment status was available only for a subsample should not challenge the results of the study. The effect of employment status on fertility is consistent with that observed in other studies (e.g., Kulu and Washbrook 2014).

Does this finding suggest that cultural factors explain the high fertility among women of Pakistani and Bangladeshi descent in the UK? The level of religiosity and number of siblings were the only factors related to high birth rates among South Asian women. This is unsurprising: Many studies in Europe have shown the importance of religion in the decision to have a third child (Philipov and Berghammer 2007), as well as the influence of larger families on fertility decisions (Penn and Lambert 2002). The

decision among UK-born Pakistani and Bangladeshi women to have large families is thus (partly) related to background: The women come from large families and are more religious than women from other minority groups. However, the level of religiosity was measured at the time of the survey rather than at age 15: Therefore, the effect of family events and careers on an individual's level of religiosity measured at the survey is unclear. Although previous studies have suggested that there may be some influence, most research assumes that the causality runs from religiosity to family behaviour rather than vice versa. However, most important is the fact that once the model controls for religiosity and number of siblings, differences in the second-, third-, and fourth-birth rates decreased, but persisted, between women of Pakistani and Bangladeshi origin and native women. Because the various models also controlled for education and employment, it can be assumed that the 'residual effect' is likely related to (further) cultural and normative factors, which are difficult to capture with the measures available in standard surveys.

This study offers opportunities for future research. It could not investigate the role that intra-group marriages may play in high fertility among the descendants of immigrants. A recent census-based study on childbearing patterns among women of Turkish origin in Belgium shows that fertility levels vary significantly by origin of the individual's partner (Van Landschoot, Van Bavel, and De Valk 2016). The prevalence of ethnically homogamous marriages may sustain high fertility. In the UK, high fertility may be further supported by the fact that some spouses of UK-born ethnic minority women are immigrants from the same countries as their parents, where fertility has recently declined but remains high (Dale and Ahmed 2011). The main reason why this study did not include spouse's country of birth as an explanatory variable was the lack of heterogeneity. Most marriages for which information on the partner's country of birth was available in the sample were endogamous: There were very few exogamous marriages.

This study supports previous findings of high fertility among UK-born Pakistani and Bangladeshi women (Coleman and Dubuc 2010). Additionally, we show that relatively high second-, third-, and fourth-birth rates were responsible for the high total fertility rates among immigrant descendants, especially for women of Pakistani and Bangladeshi origin. The fertility differences between them and native British women slightly decreased once the model controlled for women's sociodemographic characteristics, particularly their religiosity and number of siblings, but overall they persisted. These findings suggest that factors related to family background and the minority subculture play an important role in fertility differences between UK-born ethnic minorities and natives.

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Appendix

Table A-1: Person-months and number of events by covariates among women

Variable	First births				Second births			
	Person-months	%	N	%	Person-months	%	N	%
Age								
15−19 years	1255374	41.9	4009	24.4				
20−24 years	836952	27.9	5725	34.8				
25−29 years	461455	15.4	4258	25.9				
30−34 years	225788	7.5	1895	11.5				
35+ years	218979	7.3	567	3.4				
Duration since first birth								
0−1 year					176603	22.0	2720	21.9
1−3 years					217424	27.1	6210	50.1
3−5 years					112931	14.1	2026	16.3
5−10 years					153886	19.2	1192	9.6
10+ years					142243	17.7	250	2.0
Birth cohort								
1940−1949	450056	15.0	2988	18.2	153876	19.2	2559	20.6
1950−1959	599030	20.0	3373	20.5	187781	23.4	2831	22.8
1960−1969	810998	27.0	4376	26.6	250554	31.2	3468	28.0
1970−1979	709327	23.7	3842	23.3	160946	20.0	2711	21.9
1980+	429137	14.3	1875	11.4	49930	6.2	829	6.7
Age at first birth								
15−19 years					155426	19.4	2521	20.3
20−24 years					283698	35.3	4735	38.2
25−29 years					223445	27.8	3470	28.0
30+ years					140518	17.5	1672	13.5
Education level								
Tertiary degree	531034	17.7	2713	16.5	125668	15.6	2001	16.1
Other higher degree	407451	13.6	2158	13.1	111896	13.9	1727	13.9
A-level	424352	14.2	2496	15.2	127292	15.9	1869	15.1
GSCE	1063397	35.5	6090	37.0	293675	36.6	4424	35.7
No or lower qualifications	572314	19.1	2997	18.2	144556	18.0	2377	19.2
English skills								
English is first language	2578735	86.0	14081	85.6	702978	87.5	10666	86.0
Speaks without problems	343220	11.4	1808	11.0	77196	9.6	1293	10.4
Speaks with problems	76593	2.6	565	3.4	22913	2.9	439	3.5

Table A-1: (Continued)

Variable	First births				Second births			
	Person-months	%	N	%	Person-months	%	N	%
Religion makes a difference in life								
No difference	1089636	36.3	6131	37.3	310427	38.7	4468	36.0
Little difference	546958	18.2	2913	17.7	146131	18.2	2170	17.5
Some difference	683117	22.8	3551	21.6	174218	21.7	2685	21.7
Great difference	678837	22.6	3859	23.5	172311	21.5	3075	24.8
Number of siblings								
Only child	402340	13.4	2159	13.1	117384	14.6	1654	13.3
1 sibling	928087	31.0	4386	26.7	207846	25.9	3204	25.8
2−3 siblings	1099796	36.7	5973	36.3	288411	35.9	4423	35.7
4+ siblings	568325	19.0	3936	23.9	189446	23.6	3117	25.1
Sex of previous child								
Girl					404477	50.4	6291	50.7
Boy					398610	49.6	6107	49.3
Place of residence								
London	677864	22.6	3256	19.8	159299	19.8	2354	19.0
Other urban areas	1073459	35.8	6134	37.3	304721	37.9	4600	37.1
Small towns and rural areas	895030	29.8	5125	31.1	243620	30.3	3962	32.0
Scotland	224792	7.5	1227	7.5	65247	8.1	919	7.4
Northern Ireland	127403	4.2	712	4.3	30200	3.8	563	4.5
Union status								
Single	2071740	69.1	4387	26.7				
Cohabiting	294079	9.8	2533	15.4				
Married	478516	16.0	9067	55.1				
Separated	154213	5.1	467	2.8				
In union					582094	72.5	11061	89.2
Out of union					220993	27.5	1337	10.8
Total	2998548	100.0	16454	100.0	803087	100.0	12398	100.0
Employment status (subsample)								
Full-time employed	403556	56.6	2705	69.1	70271	37.6	764	25.8
Part-time employed	31652	4.4	250	6.4	37222	19.9	576	19.5
Unemployed	12175	1.7	107	2.7	4835	2.6	48	1.6
In education	234968	32.9	344	8.8	7636	4.1	85	2.9
Other	31270	4.4	507	13.0	67018	35.8	1487	50.2
Total	713621	100.0	3913	100.0	186982	100.0	2960	100.0

Source: Authors' own calculations based on the Understanding Society data.
Note: Risk time starts at age 15 (1st child) or time of first birth (2nd child) until conception or the individual is censored.

Table A-2: Person-months and number of events by covariate categories among women

Variable	Third births				Fourth births			
	Person-months	%	Events	%	Person-months	%	Events	%
Duration since second/third birth								
0−1 year	136734	11.7	1088	21.1	56327	11.8	438	24.1
1−3 years	220456	18.8	2012	39.0	91548	19.2	724	39.9
3−5 years	170705	14.6	1051	20.4	73038	15.4	307	16.9
5−10 years	317355	27.1	822	15.9	136832	28.8	285	15.7
10+ years	327273	27.9	190	3.7	117847	24.8	60	3.3
Birth cohort								
1940−1949	316387	27.0	1159	22.4	145964	30.7	421	23.2
1950−1959	349885	29.8	1193	23.1	134711	28.3	436	24.0
1960−1969	348135	29.7	1517	29.4	141859	29.8	560	30.9
1970−1979	139782	11.9	1079	20.9	49126	10.3	353	19.5
1980+	18334	1.6	215	4.2	3932	0.8	44	2.4
Age at first birth								
15−19 years	221123	18.9	1571	30.4	150601	31.7	745	41.1
20−24 years	498656	42.5	2187	42.4	218278	45.9	779	42.9
25−29 years	343649	29.3	1063	20.6	87514	18.4	240	13.2
30+ years	109095	9.3	342	6.6	19199	4.0	50	2.8
Education level								
Tertiary degree	167680	14.3	659	12.8	53690	11.3	147	8.1
Other higher degree	166636	14.2	608	11.8	56410	11.9	162	8.9
A-level	170933	14.6	711	13.8	60595	12.7	226	12.5
GSCE	440205	37.5	1825	35.3	175008	36.8	639	35.2
No or lower qualifications	227069	19.4	1360	26.3	129889	27.3	640	35.3
English skills								
English is first language	1063809	90.7	4276	82.8	419683	88.2	1409	77.7
Speaks without problems	85463	7.3	602	11.7	38821	8.2	257	14.2
Speaks with problems	23251	2.0	285	5.5	17088	3.6	148	8.2
Religion makes a difference in life								
No difference	438974	37.4	1782	34.5	173661	36.5	578	31.9
Little difference	219260	18.7	785	15.2	78579	16.5	250	13.8
Some difference	263702	22.5	1066	20.6	103871	21.8	336	18.5
Great difference	250587	21.4	1530	29.6	119481	25.1	650	35.8

Table A-2: (Continued)

Variable	Third births				Fourth births			
	Person-months	%	Events	%	Person-months	%	Events	%
Number of siblings								
Only child	177735	15.2	661	12.8	65018	13.7	235	13.0
1 sibling	315295	26.9	1098	21.3	105042	22.1	308	17.0
2−3 siblings	423917	36.2	1771	34.3	166920	35.1	578	31.9
4+ siblings	255576	21.8	1633	31.6	138612	29.1	693	38.2
Sex of previous child								
Girl	288752	24.6	1451	28.1	67274	14.1	271	14.9
Boy	271182	23.1	1335	25.9	58770	12.4	266	14.7
Mixed	612589	52.2	2377	46.0				
2 boys, 1 girl					176550	37.1	627	34.6
1 boy, 2 girls					172998	36.4	650	35.8
Place of residence								
London	193036	16.5	1032	20.0	78726	16.6	379	20.9
Other urban areas	430091	36.7	1941	37.6	178363	37.5	728	40.1
Small towns and rural areas	407903	34.8	1548	30.0	159558	33.5	478	26.4
Scotland	96510	8.2	358	6.9	35405	7.4	114	6.3
Northern Ireland	44983	3.8	284	5.5	23540	4.9	115	6.3
Union status								
In union	1001517	85.4	4545	88.0	399901	84.1	1584	87.3
Out of union	171006	14.6	618	12.0	75691	15.9	230	12.7
Total	1172523	100.0	5163	100.0	475592	100.0	1814	100.0
Employment status (subsample)								
Full-time employed	95836	33.1	237	20.3	36030	31.3	59	15.6
Part-time employed	86880	30.0	210	18.0	31491	27.3	67	17.7
Unemployed	3696	1.3	30	2.6	2712	2.4	11	2.9
In education	5936	2.0	31	2.7	2708	2.3	5	1.3
Other	97554	33.7	658	56.4	42337	36.7	237	62.5
Total	289902	100.0	1166	100.0	115278	100.0	379	100.0

Source: Authors' own calculations based on the Understanding Society data.
Note: Risk time starts at time of second birth (3rd child) or third birth (4th child) until conception or the individual is censored.

Table A-3: Relative risks of conception leading to first birth

Variable	Model 1		Model 2		Model 3		Model 4		Model 5 (empl. subsample)		Model 6 (empl. subsample)	
Age (baseline)												
15–19 years	0.003	***	0.003	***	0.003	***	0.027	***	0.003	***	0.005	***
20–24 years	0.007	***	0.008	***	0.008	***	0.025	***	0.008	***	0.008	***
25–29 years	0.009	***	0.011	***	0.011	***	0.023	***	0.011	***	0.010	***
30–34 years	0.008	***	0.010	***	0.010	***	0.020	***	0.010	***	0.008	***
35+ years	0.002	***	0.003	***	0.003	***	0.006	***	0.003	***	0.003	***
Birth cohort												
1940−1949	1.31	***	1.22	***	1.27	***	1.00		1.21	***	1.10	
1950−1959	1.07	**	1.04		1.04		0.83	***	1.09		1.06	
1960−1969	1		1		1		1		1		1	
1970−1979	0.95	*	0.99		1.01		1.11	***	0.97		0.99	
1980+	0.98		1.01		1.03		1.17	***	1.02		1.09	
Migrant group												
Natives	1		1		1		1		1		1	
Immigrants												
Europe and Western countries	0.70	***	0.76	***	0.76	***	0.84	**	0.82	*	0.93	
India	1.05		1.10		1.07		1.02		0.99		1.08	
Pakistan	1.57	***	1.51	***	1.28	***	0.96		1.55	**	1.31	
Bangladesh	2.30	***	2.14	***	1.98	***	1.05		1.63	*	1.62	*
Caribbean countries	1.27	**	1.21	*	1.16		1.55	***	1.77	**	2.03	***
Other countries	0.87	***	0.91	***	0.89	**	0.99		0.91		0.96	
Descendants of Immigrants												
Europe and Western countries	0.86	***	0.87	**	0.87	**	0.97		0.90		0.89	
India	0.85	*	0.88		0.86	*	0.93		0.83		0.85	
Pakistan and Bangladesh	1.14		1.10		0.94		0.82	**	1.23		1.27	
Caribbean countries	0.99		0.97		0.96		1.36	***	0.97		0.99	
Other countries	0.74	***	0.79	***	0.81	***	1.01		0.81	*	0.91	
Missing information	1.13		1.00		0.94		1.05		1.12		1.00	
Education level (time varying)												
Tertiary degree			0.58	***	0.61	***	0.72	***	0.61	***	0.71	***
Other higher degree			0.72	***	0.73	***	0.84	***	0.78	***	0.94	
A-level			0.91	***	0.92	***	0.92	***	0.94		0.93	
GSCE			1		1		1		1		1	
No or lower qualifications			1.02		0.99		1.05	*	1.05		1.16	**
English skills												
English is first language					1		1		1		1	
Speaks without problems					1.02		1.00		0.99		1.05	
Speaks with problems					1.10		1.05		1.08		0.87	

Table A-3: (Continued)

Variable	Model 1	Model 2	Model 3	Model 4	Model 5 (empl. subsample)	Model 6 (empl. subsample)
Religion makes a difference in life						
No difference			1	1	1	1
Little difference			0.95 *	0.94 **	0.99	1.03
Some difference			0.92 ***	0.89 ***	0.91 *	0.93
Great difference			0.97	1.00	1.03	1.06
Number of siblings						
Only child			1	1	1	1
1 sibling			0.93 **	0.97	0.90	0.90 *
2−3 siblings			1.10 ***	1.12 ***	1.04	1.01
4+ siblings			1.39 ***	1.44 ***	1.27 ***	1.17 **
Place of residence						
London			0.84 ***	0.93 **	0.86 **	0.86 **
Other urban areas			1	1	1	1
Small towns and rural areas			1.01	0.97	1.04	1.02
Scotland			0.96	0.99	0.92	0.92
Northern Ireland			0.93	1.07	0.98	1.00
Union status						
Single				0.08 ***		
Cohabiting				0.41 ***		
Married				1		
Separated				0.18 ***		
Employment status (subsample)						
Full-time employed						1
Part-time employed						1.24 **
Unemployed						1.30 **
In education						0.26 ***
Other						2.34 ***

Source: Authors' own calculations based on the Understanding Society data.
Significance levels: * p < 0.05, ** p < 0.01, *** p < 0.001

Table A-4: Relative risks of conception leading to second birth

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6 (empl. subsample)	Model 7 (empl. subsample)
Duration since first birth (baseline)							
0 − 1 year	0.015 ***	0.016 ***	0.016 ***	0.014 ***	0.016 ***	0.015 ***	0.011 ***
1 − 3 years	0.027 ***	0.031 ***	0.030 ***	0.026 ***	0.032 ***	0.030 ***	0.023 ***
3 − 5 years	0.017 ***	0.020 ***	0.019 ***	0.017 ***	0.022 ***	0.019 ***	0.015 ***
5 − 10 years	0.007 ***	0.008 ***	0.008 ***	0.007 ***	0.010 ***	0.008 ***	0.007 ***
10+ years	0.002 ***	0.002 ***	0.002 ***	0.001 ***	0.002 ***	0.001 ***	0.001 ***
Birth cohort							
1940−1949	1.27 ***	1.21 ***	1.21 ***	1.21 ***	1.08 **	1.24 ***	1.21 **
1950−1959	1.13 ***	1.10 ***	1.10 ***	1.09 **	1.03	1.09	1.06
1960−1969	1	1	1	1	1	1	1
1970−1979	0.98	0.93 **	0.92 **	0.93 **	0.96	0.91	0.92
1980+	0.84 ***	0.73 ***	0.73 ***	0.74 ***	0.83 ***	0.74 **	0.75 **
Migrant group							
Natives	1	1	1	1	1	1	1
Immigrants							
Europe and Western countries	0.97	0.99	0.97	0.96	0.95	1.01	1.07
India	1.04	1.04	1.01	0.97	0.91	0.96	0.95
Pakistan	1.81 ***	1.76 ***	1.76 ***	1.62 ***	1.51 ***	2.16 ***	1.97 ***
Bangladesh	1.32 ***	1.26 ***	1.25 ***	1.16	0.99	1.31	1.23
Caribbean countries	0.68 ***	0.67 ***	0.67 ***	0.63 ***	0.87	0.57 *	0.61 *
Other countries	0.89 ***	0.91 **	0.89 ***	0.85 **	0.91	0.86	0.93
Descendants of Immigrants							
Europe and Western countries	0.90 *	0.91 *	0.90 *	0.89 *	0.91	0.86	0.87
India	1.17	1.18 *	1.17 *	1.14	1.10	1.30	1.30
Pakistan and Bangladesh	1.83 ***	1.79 ***	1.78 ***	1.66 ***	1.48 ***	1.80 **	1.76 **
Caribbean countries	0.65 ***	0.63 ***	0.62 ***	0.60 ***	0.73 **	0.58 **	0.62 *
Other countries	0.88 *	0.89	0.87 *	0.86 *	0.97	0.93	0.99
Missing information	0.90	0.88	0.89	0.92	1.02	1.13	1.06
Age at first birth							
15−19 years		1.04	1.05	1.05	1.17 ***	0.99	1.01
20−24 years		1	1	1	1	1	1
25−29 years		0.90 ***	0.89 ***	0.89 ***	0.85 ***	0.87 **	0.87 **
30+ years		0.64 ***	0.62 ***	0.63 ***	0.59 ***	0.64 ***	0.64 ***

Table A-4: (Continued)

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6 (empl. subsample)	Model 7 (empl. subsample)
Education level (time varying)							
Tertiary degree			1.17 ***	1.15 ***	1.11 ***	1.14 *	1.24 ***
Other higher degree			1.06 *	1.05	1.04	1.10	1.16 *
A-level			1.00	1.00	1.00	1.04	1.05
GSCE			1	1	1	1	1
No or lower qualifications			1.04	1.04	1.06 *	1.10	1.10
English skills							
English is first language				1	1	1	1
Speaks without problems				0.99	0.94	0.94	0.95
Speaks with problems				1.00	0.93	0.96	0.94
Religion makes a difference in life							
No difference				1	1	1	1
Little difference				1.02	1.00	0.94	0.95
Some difference				1.04	1.03	0.97	0.97
Great difference				1.15 ***	1.15 ***	1.15 **	1.17 **
Number of siblings							
Only child				1	1	1	1
1 sibling				1.07 *	1.05	1.08	1.05
2−3 siblings				1.08 *	1.05	1.08	1.06
4+ siblings				1.11 **	1.10 **	1.09	1.09
Sex of previous child							
Girl				1	1	1	1
Boy				1.01	1.00	0.96	0.96
Place of residence							
London				1.00	1.03	0.98	0.99
Other urban areas				1	1	1	1
Small towns and rural areas				1.08 **	1.07 **	1.03	1.01
Scotland				0.95	0.95	0.84 *	0.84 *
Northern Ireland				1.16 **	1.14 **	1.12	1.18 *
Union status							
In union					1		
Out of union					0.36 ***		

Table A-4: (Continued)

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6 (empl. subsample)	Model 7 (empl. subsample)
Employment status (subsample)							
Full-time employed						1	
Part-time employed						1.32	***
Unemployed						0.81	
In education						0.74	**
Other						1.47	***

Source: Authors' own calculations based on the Understanding Society data.
Significance levels: * p < 0.05, ** p < 0.01, *** p < 0.001

Table A-5: Relative risks of conception leading to third birth

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6 (empl. subsample)	Model 7 (empl. subsample)
Duration since second birth (baseline)							
0 − 1 year	0.007 ***	0.008 ***	0.007 ***	0.007 ***	0.007 ***	0.006 ***	0.004 ***
1 − 3 years	0.008 ***	0.009 ***	0.009 ***	0.008 ***	0.009 ***	0.007 ***	0.005 ***
3 − 5 years	0.005 ***	0.006 ***	0.006 ***	0.006 ***	0.006 ***	0.005 ***	0.004 ***
5 − 10 years	0.002 ***	0.003 ***	0.003 ***	0.003 ***	0.003 ***	0.002 ***	0.002 ***
10+ years	0.001 ***	0.001 ***	0.001 ***	0.001 ***	0.001 ***	0.000 ***	0.000 ***
Birth cohort							
1940−1949	1.07	1.02	0.95	0.97	0.94	1.00	0.96
1950−1959	0.92 *	0.89 **	0.87 ***	0.86 ***	0.84 ***	0.83 *	0.81 **
1960−1969	1	1	1	1	1	1	1
1970−1979	1.17 ***	1.02	1.03	1.04	1.05	0.99	0.96
1980+	1.35 ***	0.95	0.97	0.98	1.00	0.69	0.66 *
Migrant group							
Natives	1	1	1	1	1	1	1
Immigrants							
Europe and Western countries	0.86	0.92	0.92	0.85	0.85	0.85	0.89
India	1.24 *	1.27 *	1.23 *	1.06	1.04	1.05	1.14
Pakistan	2.87 ***	2.90 ***	2.69 ***	2.12 ***	2.06 ***	2.40 ***	2.35 ***
Bangladesh	2.48 ***	2.20 ***	2.04 ***	1.54 ***	1.48 ***	1.37	1.33
Caribbean countries	1.44 *	1.20	1.25	1.07	1.16	1.06	1.16
Other countries	1.35 ***	1.42 ***	1.40 ***	1.20 *	1.23 **	1.18	1.26
Descendants of Immigrants							
Europe and Western countries	1.24 **	1.23 **	1.23 **	1.19 *	1.21 *	1.41 *	1.42 *
India	1.51 ***	1.61 ***	1.64 ***	1.52 ***	1.50 ***	1.59	1.59
Pakistan and Bangladesh	2.04 ***	1.98 ***	1.95 ***	1.62 ***	1.59 ***	2.42 ***	2.43 ***
Caribbean countries	1.45 **	1.25	1.28 *	1.15	1.23	1.41	1.50
Other countries	1.03	1.06	1.09	1.03	1.06	1.10	1.16
Missing information	1.54 **	1.31	1.24	1.26	1.28	1.16	1.14
Age at first birth							
15−19 years		1.54 ***	1.49 ***	1.49 ***	1.51 ***	1.49 ***	1.46 ***
20−24 years		1	1	1	1	1	1
25−29 years		0.65 ***	0.66 ***	0.67 ***	0.66 ***	0.62 ***	0.63 ***
30+ years		0.51 ***	0.52 ***	0.53 ***	0.52 ***	0.46 ***	0.46 ***

Table A-5: (Continued)

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6 (empl. subsample)	Model 7
Education level (time varying)							
Tertiary degree			1.05	1.05	1.04	0.99	1.07
Other higher degree			0.96	0.96	0.96	1.13	1.22 *
A-level			0.98	0.98	0.98	1.11	1.14
GSCE			1	1	1	1	1
No or lower qualifications			1.32 ***	1.27 ***	1.28 ***	1.28 **	1.25 **
English skills							
English is first language				1	1	1	1
Speaks without problems				0.96	0.95	0.99	0.96
Speaks with problems				1.23 *	1.22 *	1.51	1.41
Religion makes a difference in life							
No difference				1	1	1	1
Little difference				0.94	0.93	0.98	0.98
Some difference				1.03	1.03	1.03	1.02
Great difference				1.20 ***	1.20 ***	1.21 *	1.21 *
Number of siblings							
Only child				1	1	1	1
1 sibling				1.00	1.00	0.95	0.98
2−3 siblings				1.09	1.09	1.17	1.20
4+ siblings				1.26 ***	1.26 ***	1.33 **	1.36 **
Sex of previous child							
Boys				1	1	1	1
Girls				1.02	1.02	1.06	1.06
Mixed				0.82 ***	0.82 ***	0.87	0.87
Place of residence							
London				1.02	1.03	1.03	1.02
Other urban areas				1	1	1	1
Small towns and rural areas				0.98	0.98	1.01	1.01
Scotland				0.97	0.97	1.11	1.11
Northern Ireland				1.42 ***	1.42 ***	1.31 *	1.33 *
Union status							
In union					1		
Out of union					0.76 ***		

Table A-5: (Continued)

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6 (empl. subsample)	Model 7 (empl. subsample)
Employment status (subsample)							
Full-time employed						1	
Part-time employed						0.97	
Unemployed						1.92 **	
In education						1.11	
Other						1.58 ***	

Source: Authors' own calculations based on the Understanding Society data.
Significance levels: * p < 0.05, ** p < 0.01, *** p < 0.001

Table A-6: Relative risks of conception leading to fourth birth

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6 (empl. subsample)	Model 7 (empl. subsample)
Duration since third birth (baseline)							
0–1 year	0.006 ***	0.006 ***	0.006 ***	0.006 ***	0.006 ***	0.006 ***	0.005 ***
1–3 years	0.006 ***	0.007 ***	0.006 ***	0.006 ***	0.007 ***	0.007 ***	0.005 ***
3–5 years	0.004 ***	0.004 ***	0.003 ***	0.004 ***	0.004 ***	0.003 ***	0.003 ***
5–10 years	0.002 ***	0.002 ***	0.002 ***	0.002 ***	0.002 ***	0.002 ***	0.001 ***
10+ years	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***
Birth cohort							
1940–1949	1.01	0.97	0.90	0.91	0.89	0.85	0.86
1950–1959	0.97	0.96	0.94	0.92	0.90	0.79	0.80
1960–1969	1	1	1	1	1	1	1
1970–1979	1.22 **	1.07	1.08	1.08	1.09	1.16	1.13
1980+	1.49 *	1.13	1.13	1.13	1.14	1.18	1.07
Migrant group							
Natives	1	1	1	1	1	1	1
Immigrants							
Europe and Western countries	1.37	1.58 **	1.65 **	1.48 *	1.49 *	1.20	1.41
India	1.21	1.24	1.18	0.94	0.93	0.82	0.93
Pakistan	2.19 ***	2.31 ***	2.07 ***	1.59 **	1.59 **	1.66	1.55
Bangladesh	2.34 ***	2.23 ***	2.02 ***	1.59 **	1.56 **	1.70	1.63
Caribbean countries	1.75 **	1.52 *	1.60 *	1.44	1.53	1.60	2.12
Other countries	1.50 ***	1.60 ***	1.58 ***	1.33 *	1.35 *	1.19	1.25
Descendants of immigrants							
Europe and Western countries	1.16	1.14	1.17	1.13	1.13	0.90	0.88
India	0.94	1.03	1.04	0.91	0.90	0.75	0.81
Pakistan and Bangladesh	2.15 ***	2.16 ***	2.12 ***	1.69 **	1.66 **	2.07 *	2.03 *
Caribbean countries	1.63 **	1.42	1.49 *	1.38	1.46	0.90	1.01
Other countries	1.12	1.13	1.17	1.12	1.15	0.90	1.01
Missing information	1.56 *	1.36	1.33	1.26	1.30	1.31	1.27
Age at first birth							
15–19 years		1.44 ***	1.39 ***	1.40 ***	1.41 ***	1.38 **	1.35 *
20–24 years		1	1	1	1	1	1
25–29 years		0.67 ***	0.73 ***	0.72 ***	0.72 ***	0.90	0.88
30+ years		0.50 ***	0.55 ***	0.56 ***	0.55 ***	0.42 *	0.41 *

Table A-6: (Continued)

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6 (empl. subsample)	Model 7 (empl. subsample)
Education level (time varying)							
Tertiary degree			0.85	0.84	0.84	0.68	0.74
Other higher degree			0.91	0.89	0.89	0.57 **	0.61 *
A-level			1.02	1.02	1.02	0.98	0.98
GSCE			1	1	1	1	1
No or lower qualifications			1.31 ***	1.28 ***	1.29 ***	1.18	1.15
English skills							
English is first language				1	1	1	1
Speaks without problems				1.07	1.06	1.05	1.04
Speaks with problems				1.10	1.09	1.97 *	1.78
Religion makes a difference in life							
No difference				1	1	1	1
Little difference				1.03	1.02	1.09	1.08
Some difference				1.01	1.00	1.02	1.00
Great difference				1.27 ***	1.26 **	1.08	1.07
Number of siblings							
Only child				1	1	1	1
1 sibling				0.93	0.94	1.01	1.04
2−3 siblings				1.02	1.02	1.07	1.08
4+ siblings				1.12	1.13	1.26	1.28
Sex of previous child							
Boys				1	1	1	1
Girls				1.12	1.12	1.07	1.07
2 boys, 1 girl				0.92	0.92	0.86	0.86
1 boy, 2 girls				0.96	0.96	0.81	0.79
Place of residence							
London				0.90	0.91	0.85	0.84
Other urban areas				1	1	1	1
Small towns and rural areas				0.86 *	0.86 *	0.90	0.90
Scotland				0.94	0.94	1.17	1.16
Northern Ireland				1.31 *	1.30 *	1.38	1.41
Union status							
In union					1		
Out of union					0.80 **		

Table A-6: (Continued)

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6 (empl. subsample)	Model 7 (empl. subsample)
Employment status (subsample)							
Full-time employed						1	
Part-time employed						1.16	
Unemployed						1.32	
In education						0.67	
Other						1.67 **	

Source: Authors' own calculations based on the Understanding Society data.
Significance levels: * p < 0.05, ** p < 0.01, *** p < 0.001

Table A-7: Number of individuals and events and exclusions for all transitions

Parity	Women under risk		Exclusions	Women analysed	Conception events
First child	23,263		n.a.	23,263	16,454
Second child	16,454	367	cases due to timing*	15,914	12,398
		173	cases due to twin births**		
Third child	12,398	257	cases due to timing	12,001	5,163
		140	cases due to twin births		
Fourth child	5,163	128	cases due to timing	4,961	1,814
		74	cases due to twin births		

* Timing: women reported last birth as pregnancy at time of the interview and never became at risk of a new birth during the observation period.
** Twin births: mothers of twins are removed from the analysis.
Source: Authors' own calculations based on Understanding Society data.

Table A-8: Relative risks of conception leading to first, second, third, and fourth birth for final models, with and without weights

Variable	First Birth		Second Birth		Third Birth		Fourth Birth	
	no weights	weights	no weights	weights	no weights	weights	no weights	weights
Age (baseline)								
15 − 19 years	0.003 ***	0.003 ***						
20 − 24 years	0.008 ***	0.008 ***						
25 − 29 years	0.011 ***	0.012 ***						
30 − 34 years	0.010 ***	0.010 ***						
35+ years	0.003 ***	0.003 ***						
Duration since previous birth (baseline)								
0−1 year			0.014 ***	0.015 ***	0.007 ***	0.008 ***	0.006 ***	0.008 ***
1−3 years			0.026 ***	0.029 ***	0.008 ***	0.009 ***	0.006 ***	0.007 ***
3−5 years			0.017 ***	0.017 ***	0.006 ***	0.006 ***	0.004 ***	0.004 ***
5−10 years			0.007 ***	0.007 ***	0.003 ***	0.003 ***	0.002 ***	0.002 ***
10+ years			0.001 ***	0.001 ***	0.001 ***	0.000 ***	0.000 ***	0.000 ***
Birth cohort								
1940−1949	1.27 ***	1.25 ***	1.21 ***	1.16 ***	0.97	0.89 **	0.91	0.80 **
1950−1959	1.04	1.00	1.09 **	1.05 *	0.86 ***	0.79 ***	0.92	0.82 **
1960−1969	1	1	1	1	1	1	1	1
1970−1979	1.01	0.94 *	0.93 **	0.88 ***	1.04	0.98	1.08	1.01
1980+	1.03	0.91 **	0.74 ***	0.69 ***	0.98	1.00	1.13	1.12
Migrant group								
Natives	1	1	1	1	1	1	1	1
Immigrants								
Europe and Western countries	0.76 ***	0.76 ***	0.96	0.97	0.85	0.90	1.48 *	1.47 *
India	1.07	1.09	0.97	0.95	1.06	1.25	0.94	1.13
Pakistan	1.28 ***	1.25 **	1.62 ***	1.81 ***	2.12 ***	2.31 ***	1.59 **	1.66 **
Bangladesh	1.98 ***	1.94 ***	1.16	1.31 **	1.54 ***	1.50 **	1.59 **	1.70 **
Caribbean countries	1.16	1.24 *	0.63 ***	0.70 ***	1.07	1.19	1.44	1.82 **
Other countries	0.89 **	0.90 *	0.85 **	0.81 ***	1.20 *	1.13	1.33 *	1.25
Descendants of Immigrants								
Europe and Western countries	0.87 **	0.86 ***	0.89 *	0.90 *	1.19 *	1.20 *	1.13	1.08
India	0.86 *	0.82 **	1.14	1.09	1.52 ***	1.27	0.91	0.78
Pakistan and Bangladesh	0.94	1.01	1.66 ***	1.68 ***	1.62 ***	1.42 **	1.69 **	1.34
Caribbean countries	0.96	0.97	0.60 ***	0.59 ***	1.15	1.07	1.38	1.21
Other countries	0.81 ***	0.75 ***	0.86 *	0.96	1.03	1.12	1.12	0.96
Missing information	0.94	0.92	0.92	0.94	1.26	1.16	1.26	1.14

Table A-8: (Continued)

Variable	First Birth				Second Birth				Third Birth				Fourth Birth			
	no weights		weights		no weights		weights		no weights		weights		no weights		weights	
Age at first birth																
15−19 years					1.05		1.04		1.49	***	1.50	***	1.40	***	1.38	***
20−24 years					1		1		1		1		1		1	
25−29 years					0.89	***	0.88	***	0.67	***	0.63	***	0.72	***	0.68	***
30+ years					0.63	***	0.59	***	0.53	***	0.48	***	0.56	***	0.43	***
Education level																
Tertiary degree	0.61	***	0.60	***	1.15	***	1.21	***	1.05		1.16	**	0.84		0.91	
Other higher degree	0.73	***	0.73	***	1.05		1.09	**	0.96		1.05		0.89		0.97	
A-level	0.92	***	0.90	***	1.00		1.00		0.98		1.02		1.02		1.06	
GSCE	1		1		1		1		1		1		1		1	
No or lower qualifications	0.99		1.02		1.04		1.02		1.27	***	1.30	***	1.28	***	1.37	***
English skills																
English is first language	1		1		1		1		1		1		1		1	
Speaks without problems	1.02		1.01		0.99		0.90	*	0.96		0.83	*	1.07		0.94	
Speaks with problems	1.10		1.00		1.00		0.89		1.23	*	1.13		1.10		1.03	
Religion makes a difference in life																
No difference	1		1		1		1		1		1		1		1	
Little difference	0.95	*	0.95	*	1.02		1.04		0.94		0.93		1.03		1.06	
Some difference	0.92	***	0.92	***	1.04		1.06	*	1.03		1.05		1.01		1.07	
Great difference	0.97		0.93	**	1.15	***	1.14	***	1.20	***	1.20	***	1.27	***	1.26	**
Number of siblings																
Only child	1		1		1		1		1		1		1		1	
1 sibling	0.93	**	0.96		1.07	*	1.05		1.00		1.00		0.93		0.92	
2−3 siblings	1.10	***	1.13	***	1.08	*	1.07	*	1.09		1.11	*	1.02		0.98	
4+ siblings	1.39	***	1.44	***	1.11	**	1.11	**	1.26	***	1.28	***	1.12		1.14	
Sex of previous child																
Boy(s)					1		1		1		1		1		1	
Girl(s)					1.01		1.01		1.02		0.98		1.12		1.08	
Mixed									0.82	***	0.81	***				
2 boys, 1 girl													0.92		0.85	*
1 boy, 2 girls													0.96		0.87	
Place of residence																
London	0.84	***	0.83	***	1.00		1.04		1.02		1.04		0.90		0.93	
Other urban areas	1		1		1		1		1		1		1		1	
Small towns and rural areas	1.01		1.01		1.08	**	1.07	**	0.98		0.97		0.86	*	0.89	*
Scotland	0.96		0.96		0.95		0.99		0.97		1.00		0.94		1.01	
Northern Ireland	0.93		0.91	*	1.16	**	1.15	**	1.42	***	1.40	***	1.31	*	1.37	**