An extended (family) perspective on childbearing postponement

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Introduction

One of the most prominent demographic changes of the past few decades has been an increase of (first) births at older ages. This has attracted the attention of demographers, who have identified socioeconomic incentives as the main drivers of this increasing trend. Namely, experiencing the transition to parenthood at an older age has been associated with higher educational and income levels (Billari, Liefbroer, & Philipov, 2006; Mills et al., 2011; Ní Bhrolcháin & Beaujouan, 2012). Given the selected characteristics of those individuals (women in particular) who postpone, children are expected to benefit from their parents/mothers older age at (first) birth (Martin, 2004b; McLanahan, 2004). This perspective is (implicitly) reflected in the argument that families and their children follow, in post-modern contexts, "diverging destinies" (McLanahan, 2004). Mothers of one group follow a trajectory characterized by gains in resources derived from childbearing postponement, rises in maternal education, employment (in professional occupations) and stable family structures which are expected to benefit children and their development. Conversely, early childbearing interrupts education and career investments and increases the risk of parental dissolution, which are associated with poorer child outcomes.

The "weathering" hypothesis literature, a framework introduced by Geronimus during the 1990s, however argues that this perspective may not well represent the experiences of all groups of women and their children. Indeed, for ethnic minority women who are exposed to cumulative poverty, inequality and experiences of discrimination, (maternal) age should be conceptualized as a marker of cumulative disadvantage rather than an indicator of parenting "quality". The "weathering" hypothesis literature predicts that the health of women exposed to such conditions deteriorates faster than the health of White (and more advantaged) women. A more rapid health deterioration process implies that reproductive health also declines with age and that increasing maternal age at birth is associated with worse child outcomes. Studies based in the U.S. (A. T. Geronimus, 1996a) and, more recently, the U.K. (Goisis & Sigle-Rushton, 2012) provide evidence which is consistent with these predictions. Ethnic gaps, in particular Black/White gaps, in low birth weight, infant mortality, hypertension and allostatic loads[1] (A. T. Geronimus, 1996a; A.T. Geronimus, Andersen, & Bound, 1991; A. T. Geronimus, Hicken, Keene, & Bound, 2006; Rich-Edwards, Buka, Brennan, & Earls, 2003) have been found to widen with increasing (maternal) age (at birth).

While the demographic literature suggests that it is legitimate to think of postponement as linked and perhaps even explained by rising educational and employment levels, describing this process and, implicitly, its consequences uniquely on the basis of these variables may be too narrow and limiting. The evidence presented by the "weathering" hypothesis puts a dent on the alleged positive association between increasing maternal age and child wellbeing and on the universality of the process of childbearing postponement. This indicates that other aspects of the family sphere which may change, in addition or rather than

[1] The allostatic load refers to the price the body pays for being forced to adapt to adverse psychosocial or physical situations and it represents either the presence of too much stress or the inefficient operation of the stress hormone response system (McEwen, 1998, 2000).

socioeconomic status, with increasing age at (first) birth need to be considered as well, especially because subgroups of the population are heterogeneous in their family formation pathways and dynamics.

Background

The "weathering" hypothesis literature was originally introduced to motivate the persistence of an early timing of childbearing for African American women. By revealing that Black/White gaps in child health widen with increasing maternal age, the "weathering" hypothesis literature argues that an early timing of childbearing can be seen as an "adaptive" strategy for African American women. Firstly, it is adaptive because for low income families it is reasonable that (at least some) childbearing takes place before the mother's health deteriorates (A. T. Geronimus, 1996b). In addition, within disadvantaged communities, an early timing of childbearing is socially accepted and supported by extended and multigenerational families who help with child rearing and other activities (Colen, 2011; A. T. Geronimus, 2003). In Arline Geronimus's (2003) words "children [of African American mothers] may fare best if their birth and pre-school years coincide with their mothers' peak health and access to social and practical support from kin". The importance of (access to) kin support for ethnic minority (and) disadvantaged families has been well documented in the U.S. literature. Different patterns of (extended) family organizations between Whites and African American families have been attributed both to socioeconomic and cultural characteristics of the two groups (Sarkisian & Gerstel, 2004; Wong, Capoferro, & Soldo, 1999). Marginalized and minority groups are more likely to make use of multigenerational support networks as a coping strategy in order to facilitate sharing of scant resources (Harknett & Knab, 2007; Jarrett, 1998; Stack, 1983), to overcome institutional discrimination and poverty (Williams, 1999; Wong, et al., 1999) and because of their family structures as African American mothers are more likely to be single than White mothers (Hogan, Hao, & Parish, 1990; Pearson, 2008). Support occurs in different ways, but mostly in the form of child care, housing and household/transportation help (Burton, 1990; Harknett & Knab, 2007; Sarkisian & Gerstel, 2004) and it is found to reduce hardship for low income families (Gordon, Chase-Lansdale, & Brooks-Gunn, 2004; Henly, Danziger, & Offer, 2005).

While the literature documents that ethnic minority mothers who conceive at an early age receive the support of their families of origin (Burton, 1990; A. T Geronimus, 1992; Hogan, et al., 1990; Stack, 1983), knowledge of whether older childbearers are as or less likely to access and maintain contact with their extended families remains elusive (Colen, 2011; Furstenberg, 1991). Theory suggests that with increasing affluence, contact and support from the family of origin might decrease (Albertini, Kohli, & Vogel, 2007; T. W. Chan, 2007; Grundy & Shelton, 2001; Tomassini et al., 2004). This could occur because individuals substitute parental support with market alternatives (e.g. paid nannies) and because upwardly mobile women may find it increasingly difficult to maintain contact with their families of origin because of rising responsibilities in their (new) social position (Colen, 2011). As an older age at (first) birth has been associated with higher socioeconomic status (Goisis, 2011), extended family support may be expected to decrease with increasing

maternal age at birth. Moreover, older mothers may find themselves to care for their (older) unhealthy kin which exacerbate conflicting needs among network members. In line with the "weathering" hypothesis framework, this may be particularly the case for (disadvantaged) African American mothers.

Lack of knowledge of whether these theoretical expectations are confirmed empirically is a limitation as there are grounds to expect that, notwithstanding the higher social class status associated with an older age at birth, losing family support for minority mothers could be detrimental. This argument is mainly supported by the study of Colen et al. (2006) revealing that African American women having a co-residential grandmother in the household at the time of birth have decreased odds (significant at the 1%) of conceiving a low birth weight child; in contrast, an increase in family income is not significantly associated with decreased odds of low birth weight. Although the study by Colen et al. study doesn't explicitly take into account maternal age at birth, the results suggest that conceiving a child (at an older age) with higher social class status but also reduced support from the family of origin may result in more difficult and stressful pregnancies for African Americans. Qualitative evidence by Cole and Omari (2003) also supports this perspective by documenting that upwardly mobile middle-class Black women feel negatively about their children being isolated from their extended families. Moreover, while for White women losing kin support with age can be compensated by higher rates of marriage and more stable partnerships, African American mothers tend, despite increasing maternal age, to have more unstable family structures (Goisis & Sigle-Rushton, 2012).[2] Finally, as upwardly mobile African American women are exposed to experiences of racial discrimination in their new social position and role (Cole & Omari, 2003; Colen, et al., 2006), losing the protective role of kin networks (against racism) could go to the detriment of their health and that of their new-borns (Colen, et al., 2006).

This indirect evidence suggests that combining upward socioeconomic mobility and childbearing postponement may bring along unforeseen consequences and present challenges for certain groups of the population (Colen, 2011).

Study Contribution

The existing literature discussing the determinants and consequences of childbearing postponement has primarily focused on socioeconomic variables such as income and education which, on average, rise with increasing maternal age. However, what emerges from the existing literature is that the process of postponement and, implicitly, its consequences for child wellbeing may have been described in a too limiting and narrow way. Indeed, the understanding of the process and outcome of childbearing postponement (especially for ethnic minority and disadvantaged sub groups of the population) would benefit by adopting a wider perspective that takes into account other aspects of family dynamics. To this end, this study aims to reveal whether, around the time of birth, kin support decreases with rising maternal age at first birth and whether different patterns are observed across ethnic groups. In addition, the study investigates whether possible differences in age gradients of kin support across ethnic groups can be explained by their

[2] This is based on preliminary findings from the Millennium Cohort Study.

(differences in) socio-economic and demographic profiles. The objective of this study is that of describing these patterns. It does not, however, reveal whether and to what extent loosing family support with increasing maternal age, despite gains in social status, is detrimental for family and child wellbeing of certain groups of the population (i.e. an extension of Colen et al. (2006). This is something that will be addressed in a subsequent study.

The present study focuses on first births and excludes higher order births. This choice is consistent with the aim of discussing the process of childbearing postponement and because kin support may vary with parity (Coall & Hertwig, 2010) and possibly differently across ethnic groups.

The geographical focus of this study is the U.K., where patterns of child health consistent with the "weathering" hypothesis have been recently documented (Goisis & Sigle-Rushton, 2012). Focussing on the U.K. is pertinent to answer the research questions which this study aims to address for a series of reasons. First of all, in the U.K., given the research question of this study, Blacks and Whites constitute a very relevant comparison. Indeed, they have similar first births fertility schedules meaning that patterns of kin support for the two ethnic groups can be observed and analysed to a similar extent across the entire age range. This is in contrast with the U.S., where African Americans tend to concentrate their (first) births at younger ages. Moreover, White and Black women have partially comparable socioeconomic profiles in terms of educational level and propensity to work (Goisis & Sigle-Rushton, 2012), such that selection differences, between the two ethnic groups, into maternal age at first birth may be reduced. This means that age gradients in kin support can be compared across the two groups holding somewhat constant selection into first birth for what concerns education and labour market participation. In contrast, Black mothers differ from Whites in family structures as the former are more likely to be single at the time of birth (Kiernan & Mensah, 2010) and over the life course. This is, as mentioned in the background section, a salient aspect to keep into consideration when discussing the consequences of diminishing family support with increasing maternal age. Conversely, Indian, Pakistani and Bangladeshi are not included in the analyses. The decision to exclude Pakistani and Bangladeshi is supported by the fact that they have not yet engaged into a postponement process of childbearing (Coleman & Dubuc, 2010) as they tend to concentrate their (first) births at younger ages and therefore those few that occur at older ages may be highly selected (Robson & Berthoud, 2006). Moreover, Pakistani and Bangladeshi have educational and labour market participation levels which are well below those of Whites (Lindley, Dale, & Dex, 2006) such that their patterns of kin support may be different in light of their very different socioeconomic profiles. These features make a comparison between Pakistani/Bangladeshi and Whites more problematic and less informative than the one with Blacks. Indians, on the other side, show rates of early childbearing which are below those of Whites, higher in the middle age group and lower at older ages. But while they hold degree level qualifications which are at par with those of White women, Indians hold family norms which are more traditional than those of Whites (and Blacks). Indeed, Indian, Pakistani and Bangladeshi families are more likely to be part of multigenerational family households (Owen, Mooney, Brannen, &

Statham, 2004; H. Young, Grundy, & Kalogirou, 2005), which make the study of kin support and transfers difficult to measure in surveys (Shaw, 2004).[3]

A second feature which makes the U.K. a suitable context for this study is the Millennium Cohort Study, a cohort study representative of the U.K. population. The MCS (described in more details in the next section) in addition to providing a range of family background and socioeconomic variables, gives information on kin support around the time of birth (when cohort children are around 9 months old) and oversamples ethnic minorities and disadvantaged groups, all necessary and important elements to address the research questions of this study.

In terms of multigenerational support in the U.K., while research documents that family support is weaker in the U.K. than in other European contexts (Tomassini, et al., 2004), the family is an important source of help and support for British families (Grundy, 2005) including younger generations (Tan, Buchanan, Flouri, Attar-Schwartz, & Griggs, 2010). The majority of people in Great Britain have close relatives in different generations with whom they have regular contact with (Grundy, 2005; Grundy & Murphy, 1999). Moreover, Chan and Ermisch (2011) reveal that in the U.K., although intergenerational support is not extensive, parents and adult children are supportive of each other at critical moments of life transitions such as the birth of a child. In the U.K., compared to the U.S., research on intergenerational support is less developed (Henretta, Grundy, & Harris, 2001; H. Young, et al., 2005), but Henretta et al. (2002) show that there are relatively few differences in the United States and Britain in the socioeconomic and demographic factors influencing the provision of family support (e.g. time and financial transfers). In particular, in the U.K. little attention has been devoted, in part due to data limitations (with a few exceptions (Goulborne, 1999; Hawkes & Joshi, 2007; Shaw, 2004; H. Young, et al., 2005)), to how patterns of kin support vary by ethnic groups. Until now, attention has been mostly given to studying patterns of social support for low income (single) mothers, regardless of their ethnic group (Grundy & Shelton, 2001; Mitchell & Green, 2002; M. Young & Willmott, 1957).

Data

Millennium Cohort Study

The Millennium Cohort Study (MCS) is a U.K. national cohort study tracking over 18,000 births living in selected areas of the U.K. The first wave was collected between 2000 and 2001 when the children were 9 months old and subsequent waves were collected at intervals of roughly two years (ages 3, 5 and 7). Selected wards were disproportionately sampled to over-represent areas of high child poverty, concentrations of ethnic minorities and the three smaller countries of the UK - Scotland, Wales and Northern Ireland. For this reason, the analyses are weighted in order to rebalance the survey and to account for its complex structure. In the great majority of the cases, the mother is interviewed as the main caregiver

[3] Financial support, for example, may occur through housing and sharing of expenses rather than monetary transfers, something which is not often measured in surveys. Owen et al. (2004) report that Indian, Pakistani and Bangladeshi mothers in the MCS are much less likely to receive financial help from the grandparents, but the figures could be deflated as grandparents may provide other sources of financial support such as housing, something that is not measured in the survey.

and, where present, her co-resident partner is also interviewed (who may or may not coincide with the biological father of the cohort child). The MCS questionnaire includes a long series of questions on the child, which are intended to reveal information about his/her birth, and about his/her development over time not only in terms of health, but also concerning different cognitive and behavioural aspects. At the same time, complete information is available on the cohort member's family: demographic characteristics (age, partnership status), socio-economic background (educational level and occupational status) and health (physical and mental wellbeing) and, importantly for this study, contact and support with and from kin.

Variables description

The survey is contemporary as it records births which occurred around the year 2000, such that the association between childbearing postponement and kin support can be studied in contemporary Britain. The analyses focus on those cohort babies for whom the mother is the main interviewer. This is done not only in order to have a complete record of the mother's age at first birth and socioeconomic characteristics (which may be related to the reception of kin support), but also because the literature documents that it is the mother who is likely to be the main recipient of kin contact and support (Grundy & Shelton, 2001; Hawkes & Joshi, 2007; Mitchell & Green, 2002). The study focuses on wave 1 of the MCS, the closest to the birth of the cohort child (around 9 months), a choice consistent with the extant "weathering" literature which has, until now, been preoccupied with analysing age gradients in child health looking primarily at birth outcomes. As mentioned above, the analyses are restricted to first order births. The weighted subsample of analysis includes 6943 White respondents and 164 Black respondents.[4] The Black sample is remarkably small and raises statistical power issues. There isn't, however, any other data source that would enable to address the research questions of this study with a larger sample of minority mothers.

In order to measure kin support, I use five binary variables of wave 1 of the MCS: whether the respondent has daily/weekly contact with the mother, daily/weekly contact with father, whether the (working or non-working) mother receives grandparental childcare, financial help with buying essentials (for the babies and/or for covering household costs) and monetary transfers. Unfortunately, the survey doesn't provide any information concerning the frequency and amount of grandparental childcare help and financial transfers. Those respondents who declare to be living with their mother and/or father have been coded as having at least weekly contact with their mother and/or father. Respondents who declare their mother and/or father to be dead, are coded as 0 on all variables. Excluding them from the analyses would not be consistent with the "weathering" hypothesis argument of maternal age being a marker of disadvantage of certain (disadvantaged) groups of the population. Indeed, a loss in kin contact and support for Black mothers with increasing maternal age could also depend on their parents experiencing a more rapid health deterioration process, chronic conditions and earlier death (A. T. Geronimus, Bound, Waidmann, Colen, & Steffick, 2001; A. T. Geronimus, et al., 2006) compared to the parents of White and more advantaged respondents. There is a

[4] The non-weighted subsample includes 6608 White and 205 Black respondents.

small share of respondents who declare their mother/father to be dead as it is a relatively young sample of mothers. In the sub-sample of analysis, around 5% and 13% of respondents respectively declares that their mothers and their fathers have died, possibly reflecting longer longevity of the formers. Consistently with the "weathering" hypothesis, a larger percentage of Black respondents declares their mother and/or father to be dead.[5]

In terms of mother's characteristics, the main variable of interest is mother's age at first birth and ethnicity (i.e. Black or White). In addition, the models looking at age gradients in kin support (described in the following section) control for a set of socio demographic characteristics: partnership status at the time of birth (married, cohabiting and single), whether the mother is non-UK born and educational levels based on Isced qualification levels. Respondents are categorized as having no educational qualification, Isced level 1 or 2, Isced level 3 and Isced level 4 or 5.[6] As mentioned before, Black mothers are more likely to be single (at the time of birth and over the life course (Dale, Lindley, & Dex, 2006)) and (their more fragile) family structures need to be accounted for when describing patterns of kin support (in relation to those of White mothers). In addition, Black women are more likely than White women to be migrants, a condition which certainly affects the kin networks and resources one is able to draw upon.[7] Finally, although evidence suggests that Black and White women do not (extensively) differ in terms of educational profiles, I control for education as an overall measure of socioeconomic status and look for evidence which is/isn't consistent with the argument that increasing affluence is associated with reduced contact/support from kin. Controlling for household income would be problematic as at the time of interview cohort children are under one year of age and some mothers are on maternity leave.

Method

The first set of analyses reveals, through simple cross-tabs, how kin contact and support, measured through the five indicators described in the data section, vary with increasing maternal age at first birth. While the descriptive analysis is informative of overall patterns, looking at five variables separately does not enable to identify the actual pathway of kin support of any particular woman since these are single indicators' averages and different forms of social support may be interchangeable. For example, monetary transfers from the grandparents may compensate for lack of childcare help or contact. To address this issue, using a Latent Class Analysis (LCA), I generate a summary variable which treats the five indicators as reflecting an underlying, or latent, structure of kin support. LCA is a data reduction technique where the latent variable η as well as the observed items j are categorical

[5] In the subsample of analysis, around 14% and 25% of Black respondents declares their mothers and fathers respectively to be dead; 5.4% and 12% of White respondents declares their mothers and fathers respectively to be dead.

[6] Isced 1/2 corresponds to NVQ 1/2 (primary/secondary education), Isced 3 corresponds to NVQ 3 (GCSE and A levels), Isced 4/5 corresponds to NVQ 4/5 (higher degree).

[7] Research documents that Black Caribbeans draw upon support of overseas family and kinship, something I am only partially able to control for through the financial transfers (Goulborne, 1999).

(which, as described above, are binary variables).[8] LCA is used when the researcher thinks that individuals belong to different classes, but membership to these classes is unknown a priori and must be determined by the available data (Amato et al., 2008). LCA has been already used to measure intergenerational solidarity (T. W. Chan, 2007; Silverstein & Bengtson, 1997).

I first compute item response probabilities for each indicator of kin support, namely the probability that randomly selected individuals, given membership to a certain class c, show a certain value (e.g. l=1) for a given indicator of kin support j. Looking at indicators' response probabilities within each of the classes enables to provide an interpretation of the contents of the latent classes.

$$\pi_{jl|c} = P(y_j = l|\eta = c) \quad (1)$$

For kin support indicators j=1,..5, indicators' values l=0,1 and latent classes c=1,…C

After identifying the number of classes which best describes the data (through model assessment as discussed in the results section), I obtain, for each respondent, the probability of belonging to each of the classes, conditional on her pattern of responses on the five indicators of kin support $\boldsymbol{y}$.

$$P(\eta = c|\boldsymbol{y}) = \frac{P(\boldsymbol{y}|\eta=c)\,P(\eta=c)}{\sum_{c'=1}^{C} P(\boldsymbol{y}|\eta=c')P(\eta=c')} \quad (2)$$

Respondents are then assigned to the latent class to which they have the highest conditional probability of belonging. After obtaining individual respondents assignment into classes, I investigate, depending on the chosen number of classes, through multinomial logistic or logistic models the association between class membership and the main covariate of interest i.e. ethnicity and maternal age at first birth, progressively including controls for socio-demographic variables. The LCA analysis is performed using Mplus and R software[9], while the (multinomial) logistic model is performed using STATA.

Results

The results section is divided into descriptive, latent class and regression models.

Descriptive

Table 1 and Table 2 show the percentage distribution across age categories of different indicators of kin support for White and Black first time mothers. The choice of the age categories for the descriptive analyses is conventional since the regression models adopt a continuous measure of maternal age. In line with existing evidence (Robson & Berthoud, 2006), Black and White mothers' first births fertility schedules are very similar across the three age categories. White mothers, on average, receive

[8] As a robustness check, I have also performed a Latent Trait Analysis where the latent variable is treated as continuous (rather than categorical as in LCA), but the model fit is considerably worse than the LCA.

[9] Using the LCAT package provided by Dr. J. Kuha and Dr. S. Stares at the LCAT training course held at LSE in May 2012.

higher levels of kin support than Black mothers do. Differences are more marked for the first three indicators namely contact with mother/father and grandparental childcare and less marked for the two indicators of financial support. While White mothers are more likely to receive monetary transfers (especially at younger ages) than Black mothers, there is virtually no difference between the two groups for what concerns help with buying essentials. The analyses confirm the strength of the mother-daughter bond as contact with the mother occurs for a larger share of respondents than contact with the father. Looking at patterns of kin support from an age perspective reveals that Black mothers are not only less likely to have contact and receive childcare help from kin on average, but also they are much more likely to lose support with increasing maternal age at birth. In contrast, both ethnic groups are equally likely to lose financial support with increasing maternal age.

The results are consistent with one of the few U.K. studies analysing intergenerational exchanges across ethnic groups: Young et al. (2005) reveal that Whites are more likely to provide unpaid care than Black Caribbean and, only slightly, Black Africans. The fact that Black and White mothers do not extensively differ in the average and age specific level of financial support from their parents is somewhat in contrast with existing U.S. evidence, which documents that African American mothers are less likely to receive financial support from their families of origin because of their social disadvantage (Sarkisian & Gerstel, 2004). An explanation for this finding could be that as socioeconomic differences between Blacks and Whites in the U.K. are reduced compared to the U.S., differences in their levels of financial support could also diminish.

Table 1 Kin support for White mothers, by age categories (first births)

	White			
	<23	**23-29**	**30+**	**Average**
Daily/weekly contact with mother	83.9%	72.4%	52.9%	68.54%
Daily/weekly contact with father	57.4%	56.3%	39.2%	50.45%
Grandparental childcare	45.5%	49.5%	35.4%	43.28%
Financial help from grandparents : buying essential	50.4%	37.0%	24.2%	36.10%
Financial help from grandparents: money transfer	37.3%	16.6%	8.1%	19.29%
Number of births	27.70%	36.23%	36.07%	6943

Note: Survey weights have been used in order to account for the complex structure of the MCS

Table 2 Kin support for Black (Caribbean and African) mothers, by age categories (first births)

	Black			
	<23	**23-29**	**30+**	**Average**
Daily/weekly contact with mother	67.2%	36.8%	16.4%	38.22%
Daily/weekly contact with father	23.7%	30.4%	6.3%	19.47%
Grandparental childcare	27.8%	22.1%	19.5%	22.80%
Financial help from grandparents : buying essential	48.5%	29.1%	21.7%	32.10%
Financial help from grandparents: money transfer	27.4%	18.2%	9.9%	17.81%
Number of births	29.60%	33.34%	37.05%	164

Note: Survey weights have been used in order to account for the complex structure of the MCS

Latent class analysis

As mentioned above, the descriptive analyses, although informative of general patterns, do not reveal individual mothers' actual pathways of kin support, which is why a LCA analysis is implemented. I begin by establishing the number of classes that well summarizes the data. Table 3 presents goodness of fit statistics for a 2, 3 and 4 class model. As formal theory of model selection for LCA (and other similar techniques) is not complete, different statistics are usually used to guide (rather than entirely determine) model selection. In addition to BIC, AIC and Log Likelihood, I also inspect individual residuals. By comparing observed and expected frequencies for pairs of kin contact/support indicators, I can establish, through a bivariate table, which cells are not fitting well the data. As a rule of thumbs, residuals greater than 4 are considered a poor fit and less than 10% of the residuals being above 4 suggest a reasonable fit. Table 3 reveals that a three class model performs considerably better than a two class model. BIC, AIC and Log Likelihood decrease and the percentage of residuals above 4 drops from 12% to 0%. Although a 4 class model fits slightly better than a 3 classes model on the overall model statistics, a 3 class model is preferred. This is because a 4 class model would be more difficult to interpret and because in the next set of analyses respondents' membership to classes is stratified by ethnicity: since the Black sample is small (n=164), a 3 class model appears as the most sensible choice.

Table 3 Goodness of fitness test of Latent Class Analysis

Classes	BIC	AIC	Log Likelihood	% residuals >4	N*
2	39811.1	39735.93	-19856.97	12	6859
3	39454.4	39338.24	-19652.12	0	6859
4	39436.11	39278.94	-19616.47	0	6859

*The overall number of observations differs from the previous tables as it is not weighted by survey weights

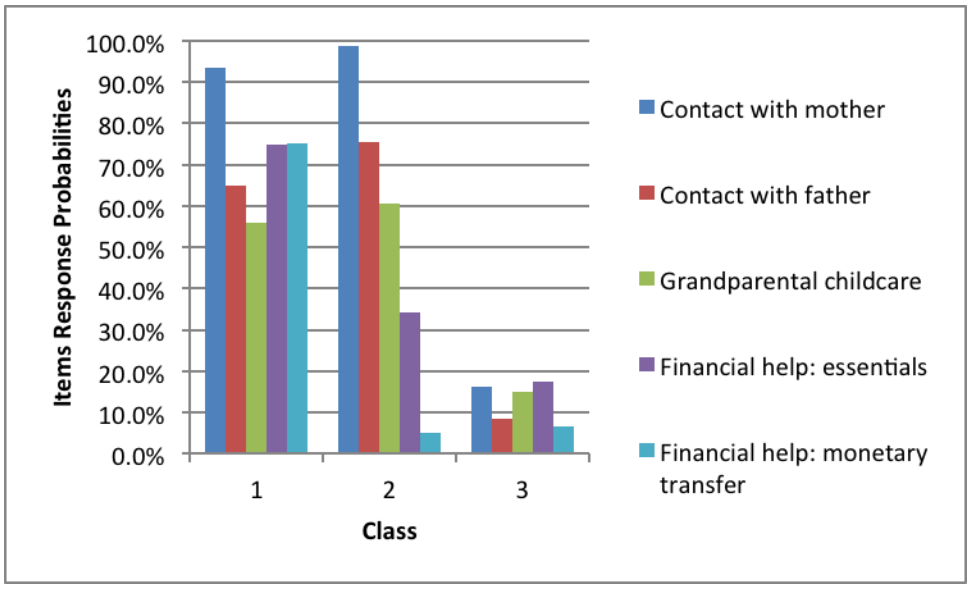
Table 4 reports the item response probabilities across the 3 classes (equation (1) in the methods section), namely the probability that each indicator of kin support takes the value 1 given respondents' membership to a certain class. Figure 1 is a graphical representation of Table 4 and shows that interpretation of the 3 classes is quite straightforward. Class 1 shows a medium-high level of support on all indicators, class 2 shows medium-high level of instrumental support (contact with parents and childcare) but low(er) levels of financial support and class 3 shows a low level of support on all indicators. Items' response probabilities for contact with mother/father and childcare support are higher in class 2 than in class 1, but differences are small. In contrast, the response probabilities of financial help (both with essentials and money transfers) are remarkably smaller in class 2 than in class 1. Therefore, respondents belonging to class 1 are considered to receive more support than respondents belonging to class 2. Contact with the mother is in all classes higher than contact with the father providing support for the strength of the daughter-mother bond. The bottom of Table 4 reveals that almost half of the

respondents are clustered in class 2, followed by class 3 and then class 1, which has the least number of respondents.

Table 4 Item response probabilities into classes

	Class 1	Class 2	Class 3
Daily/weekly contact with mother	93.4%	98.7%	16.1%
Daily/weekly contact with father	64.9%	75.6%	8.3%
Grandparental childcare	55.8%	60.7%	15.0%
Financial Help from grandparents: Buying Essentials	74.8%	34.1%	17.5%
Financial Help from grandparents: money transfer	75.3%	4.9%	6.5%
Total	22.0%	45.8%	32.2%

Figure 1 Item response probabilities of kin support indicators by classes



Respondents are assigned to the class to which they have the highest conditional probability of belonging (equation (2) in the methods section) and Table 5 and Table 6 report White and Black respondents' membership to classes stratified by ethnicity and maternal age at first birth. The overall distribution reported at the bottom of the Tables shows that almost half of White mothers belong to class 2, while the great majority of Black mothers belongs to class 3 (the percentage of Blacks belonging to class 3 is almost double than that of Whites). For both ethnic groups, there is an age gradient in the distribution of respondents across the three classes. With increasing maternal age at birth, the distribution shifts away from class 1 and 2 towards class 3, namely from higher to lower kin contact/support. While this pattern is observed for both Blacks and Whites, it is more marked for the formers: amongst those mothers conceiving at ages 30 and above, the great majority (85%) belongs to class 3, while the distribution for Whites is balanced across classes 2 and 3.

Table 5 Distribution of White respondents into classes by maternal age at first birth

Maternal age at first birth	Class		
	1	**2**	**3**
Below 23	35.10%	43.47%	21.42%
23-29	14.28%	53.54%	32.18%
30+	6.75%	40.94%	52.31%
Total	17.33%	46.21%	36.46%
N		6944	

Note: the results are weighted

Table 6 Distribution of Black respondents into classes by maternal age at first birth

Maternal age at first birth	Class		
	1	**2**	**3**
Below 23	25.64%	34.10%	40.26%
23-29	16.15%	21.91%	61.93%
30+	6.33%	8.81%	84.86%
Total	15.32%	20.67%	64.01%
N		164	

Note: the results are weighted

Regression models

The LCA analysis reveals that a three class model well summarizes the patterns of kin contact and support in the data. Therefore, a multinomial logistic model is used to analyse age gradients in kin support for White and Black mothers progressively controlling for partnership status at birth, educational level and migration status of the respondent. Table 7 presents the percentage distribution of the control variables across the 3 classes. Married respondents are less likely to belong to class 1 and more likely to belong to class 2 or 3 than cohabiting or single individuals. Respondents with lower levels of education (no education, Isced 1/2/3), on average, receive more kin support (i.e. they are more likely to belong to classes 1 or 2) than respondents with higher levels of education (Isced 4/5). As expected, non UK born respondents are less likely to receive kin support as 80% of this group belongs to class 3.

Table 7 Distribution of control variables into classes

Educational level	**1**	**2**	**3**
No education	32.07%	38.23%	29.70%
Isced 1/2	23.55%	50.88%	25.57%
Isced 3	18.01%	49.98%	32.01%
Isced 4/5	7.48%	39.70%	52.82%
Partnership time of birth			
Married	8.06%	46.33%	45.62%
Cohabiting	21.08%	45.66%	33.26%
Single	34.84%	43.70%	21.46%
Migration status			
Non UK born	5.46%	15.06%	79.48%
UK born	17.09%	47.73%	35.18%

Table 8 presents the results of the multinomial logistic models where class 1 is the reference category. Maternal age is measured continuously. Several model specifications have been tested by including quadratic and cubic terms of maternal age. But while for Whites including a quadratic term improves the model fit, for Blacks it considerably lowers it. I have therefore decided to only include a linear term for maternal age.

Model (1) is the baseline model and includes controls for maternal age at birth, a binary indicator for being a Black mother and their interaction. Models (2), (3) and (4) add controls for partnership status at birth (being married is the reference category), educational level (Isced 1/2 is the reference category) and migration status (UK born is the reference category) respectively. Model (5) includes all control variables at once. Given how small the Black sample is (n=164 when using survey weights), it wouldn't be meaningful to interact the control variables with the Black binary indicator. The number of observations drops in Models (4) and (5) as information concerning whether the mother is UK or non UK born is retrieved from sweep 2 of the MCS and because of attrition some respondents are lost.

In Model (1) being a Black mother is positively associated with membership to classes 2 and 3, but the coefficient is statistically significant (at the 5% level) only for membership to class 3. In order to facilitate interpretation of the age gradients, Figures 2, 3 and 4 present the predicted probabilities, computed from Model (1), of membership to classes for Black and White mothers. In line with the descriptive analyses, the probability of belonging to class 1 decreases with maternal age at birth for both Black and White mothers to a similar extent. In contrast, while the age gradient reflecting the probability of belonging to Class 2 is fairly flat for Whites, for Black mothers it decreases quite remarkably with age. Finally, for both ethnic groups the probability of belonging to class 3 increases monotonically with age, with some indication that the Black/White gap widens with increasing maternal age. A Wald test on the joint significance of the Black coefficient and its interaction with maternal age reveals that the age gradients for classes 2 and 3 (but not class 1) are significantly different (at the 1% level) between Black and White mothers. This first set of result reveals that kin support and contact tends to decrease with maternal age at first birth and that the pattern seems more marked for Black than for White mothers.

Table 8 Odds ratios for multinomial logistic models

	(1)		(2)		(3)		(4)		(5)	
Class (*class 1 reference category*)	**2**	**3**	**2**	**3**	**2**	**3**	**2**	**3**	**2**	**3**
	OR/SE	**OR/SE**	**OR/SE**	**OR/SE**	**OR/SE**	**OR/SE**	**OR/SE**	**OR/SE**	**OR/SE**	**OR/SE**
Maternal age at birth	1.128***	1.218***	1.084***	1.165***	1.109***	1.180***	1.127***	1.221***	1.077***	1.146***
	(0.009)	(0.012)	(0.010)	(0.012)	(0.009)	(0.011)	(0.010)	(0.012)	(0.011)	(0.013)
Maternal age at birth x Black	0.908*	0.946	0.927	0.963	0.910**	0.950	0.881**	0.930*	0.897**	0.949
	(0.046)	(0.035)	(0.047)	(0.036)	(0.043)	(0.033)	(0.053)	(0.038)	(0.048)	(0.035)
Black	5.618	7.961**	4.314	7.413*	5.182	6.890*	15.641*	6.355*	12.269*	4.780
	(7.120)	(8.267)	(5.370)	(7.728)	(6.056)	(6.993)	(24.232)	(7.092)	(17.051)	(4.953)
Cohabiting at birth			0.562***	0.545***					0.611***	0.652***
			(0.065)	(0.067)					(0.074)	(0.089)
Single at birth			0.414***	0.308***					0.467***	0.400***
			(0.056)	(0.041)					(0.064)	(0.058)
Education: None					0.771*	1.441**			0.850	1.141
					(0.104)	(0.219)			(0.125)	(0.219)
Education: ISCED 3					1.139	1.376***			1.055	1.147
					(0.123)	(0.160)			(0.124)	(0.157)
Education: ISCED 4-5					1.476***	3.048***			1.318**	2.700***
					(0.173)	(0.367)			(0.173)	(0.360)
Not UK born							0.881	5.453***	0.857	5.238***
							(0.337)	(1.919)	(0.333)	(1.883)
Number of observations	6,859		6,859		6,859		5,476		5,476	

Note: *** p<0.01, ** p<0.05, * p<0.1

Figure 2

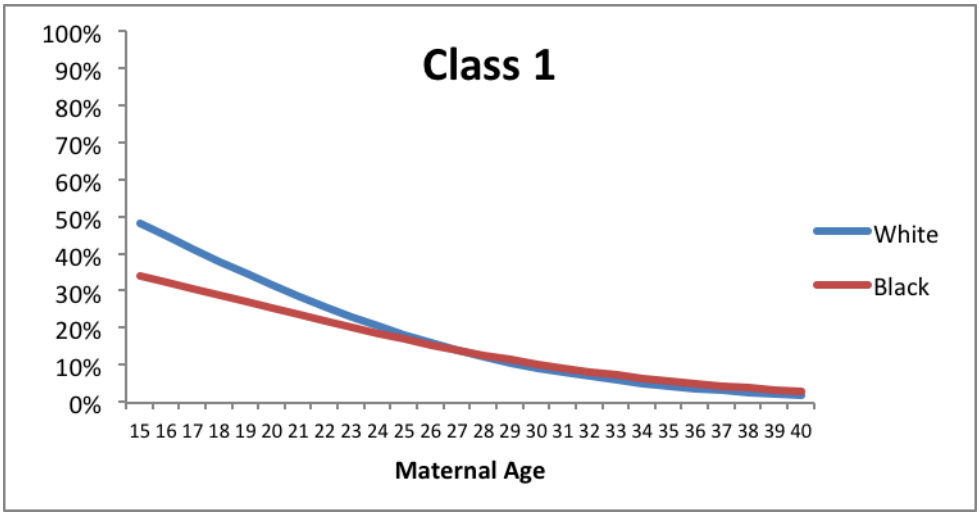


Figure 3

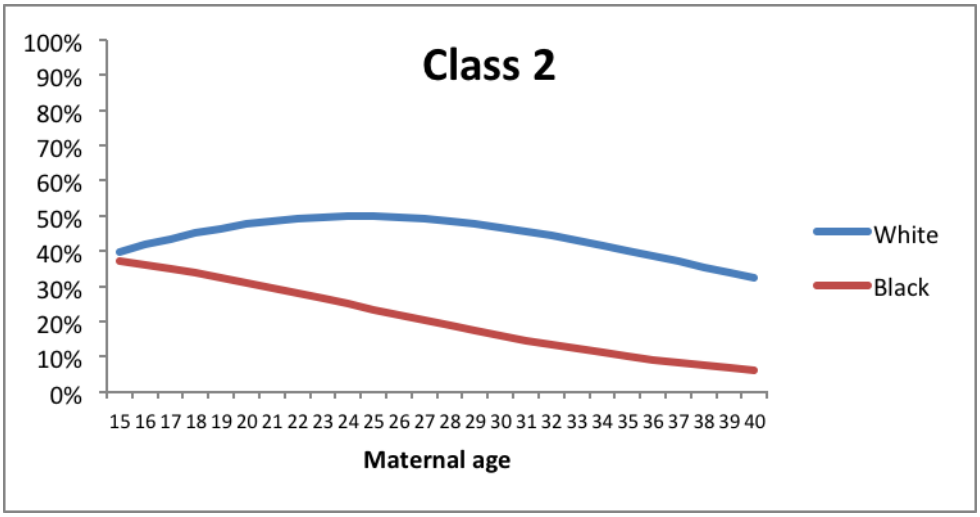
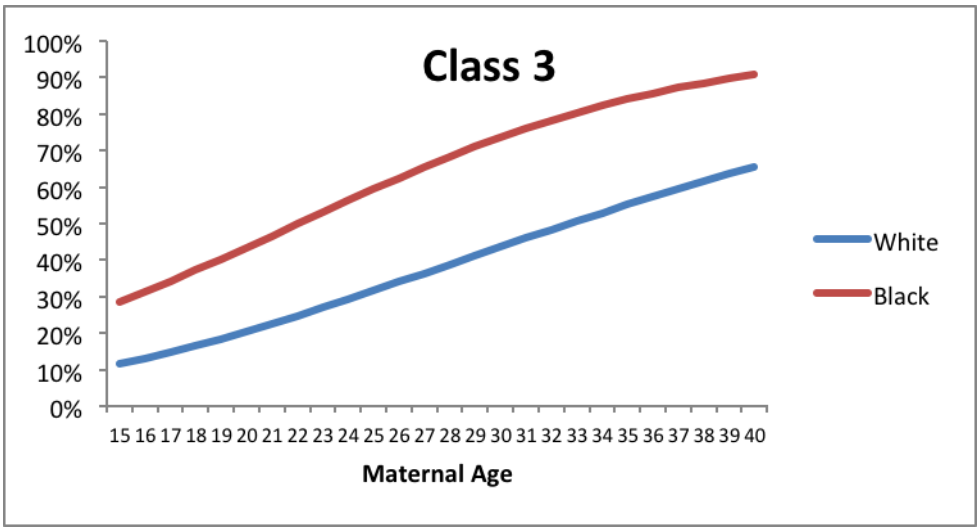


Figure 4



Model (2) reveals that, in line with the descriptive analyses, married mothers (the reference category) are more likely to belong to classes 2 and 3 compared to single and cohabiting mothers (odds ratios significant at the 1% level). This confirms that family structure is an important determinant in shaping the level of kin support and contact. Model (3) shows that compared to those mothers holding an ISCED qualification level 1 or 2 (the reference category), those holding no qualification levels are, respectively, less likely to belong to class 2 and more likely to belong to class 3 (as opposed to class 1). This somewhat mixed picture might be explained by the fact that both groups have very low levels of qualifications and those having ISCED qualification levels 1 or 2 cannot be considered as being more "affluent" than those having no qualifications at all. Mothers holding ISCED qualification level 3 are not significantly more or less likely to belong to class 2 than the reference group, but they are significantly (at the 1% level) more likely to belong to class 3. Respondents holding ISCED qualification levels 4 or 5 are significantly (at the 1% level) more likely to belong to class 2 and 3, with larger odds ratios compared to the other educational groups. On average, consistently with the existing literature, higher education is negatively associated with kin support and contact but this is particularly true when those holding particularly low levels of education are compared to those holding the highest levels of education. Model (4) shows that being non UK born vs. UK born (the reference category) increases the odds (significant at the 1% level) of belonging to class 3 compared to class 1 by five times.

Including controls for partnership status at birth and educational levels marginally reduces (both in magnitude and significance level) the odds of belonging to class 2 and 3 for Black mothers compared to White ones. In contrast, once migration status is accounted for, the odds of belonging to class 2 as opposed to class 1 for a Black mother compared to a White mother increase remarkably. However, the increase in the odds ratio is an artefact of the smaller sample used in Model (4): as mentioned above, information on the migration status of the respondent is retrieved through sweep 2 of the MCS. Indeed, around 40% of the Black sample is lost due to attrition once we control for migration status. In order to account for this, I have done three sets of robustness checks. Firstly, models have been run using multiple imputation (Acock, 2005) and the results haven't changed significantly. As a second robustness check, I have created a binary variable taking the value 1 when the respondent's migration status is missing in sweep 2. I have included this variable in Models (1), (2) and (3) in order to assess whether there are systematic differences in level of kin support between those respondent for whom I have/don't have information regarding migration status. The indicator fails to reach statistical significance in all models with the exception of the last equation of model (3) where those respondents with missing values on migration status have 20% higher odds of belonging to class 3 than to class 1. Given the small size of the odds ratio and the low level of statistical significance (i.e. 10%), this result is not considered to be problematic. Lastly, I have run Model (1) on the smaller sample used for Model (4). Reassuringly, the age gradients for Blacks and Whites are very similar to the ones presented in Figures 2-4 and the results are available upon request. When Model (1) is run on this smaller sample, the odds ratios of belonging to class 2 or 3 compared to class 1 for a Black as opposed to a White mother are much larger, namely 15.07 (10% significance level) for class 2 and 18 (5% significance level) for class 3.

Therefore, it makes sense to comment the odds ratios observed in Model (4) in light of these. Controlling for migration status leaves the odds ratio of belonging to class 2 for a Black as opposed to a White mother almost unchanged. In contrast, controlling for migration status considerably reduces (more than halves) the odds ratio of belonging to class 3 as opposed to class 1 for Blacks compared to White mothers. This could suggest that Black mothers are partially more likely than White mothers to belong to class 3 because of their migration status (i.e. their families of origin being far away and unable to help).

Figures 5, 6 and 7 show the predicted probabilities of belonging to classes using regression coefficients from Model (5) where all the control variables have been included. Compared to Figure 2, the probability of belonging to class 1 for Black mothers is somewhat reduced at younger ages and increased at older ages i.e. the age gradient is flatter, while for White mothers it is reduced at younger ages but not altered at older ages. Compared to Figure 3, the probability of belonging to class 2 for Black mothers is now larger at younger ages, but it still shows a decreasing age gradient. The age gradient for Whites is almost unchanged. Finally, the predicted probability of belonging to class 3 for Black mothers is slightly reduced, when Figure 7 is compared to Figure 4, at younger and older ages, but still shows a quite marked increasing age gradient. For Whites, the predicted probability of belonging to class 3 is almost unchanged and the Black/White gap increases with maternal age. A Wald test on the joint significance of the Black coefficient and its interaction with maternal age reveals that the age gradient for class 3, but not class 1 and 2, is statistically significant (at the 10% level). The odds ratios of belonging to class 2 and 3 for a Black mother, compared to Model (4), are reduced. The odds ratios for partnership status at birth and migration status remain almost unchanged, when compared to Model (2) and (4), while only the odds ratio for ISCED qualification levels 4/5 remains significant but is reduced in size compared to Model (3).

Taken together, the results suggest that by controlling for partnership status at birth, migration status and educational levels differences in age gradients between Black and White mothers are reduced, but not entirely eliminated. In addition, the overall diminishing level of kin support and contact with increasing maternal age is only partially explained by these socio-demographic factors. Clearly, there are other important variables not included in the analyses which could explain these patterns, such as grandparents' health status, cultural norms, geographical distance between parents and grandparents etc.

Figure 5

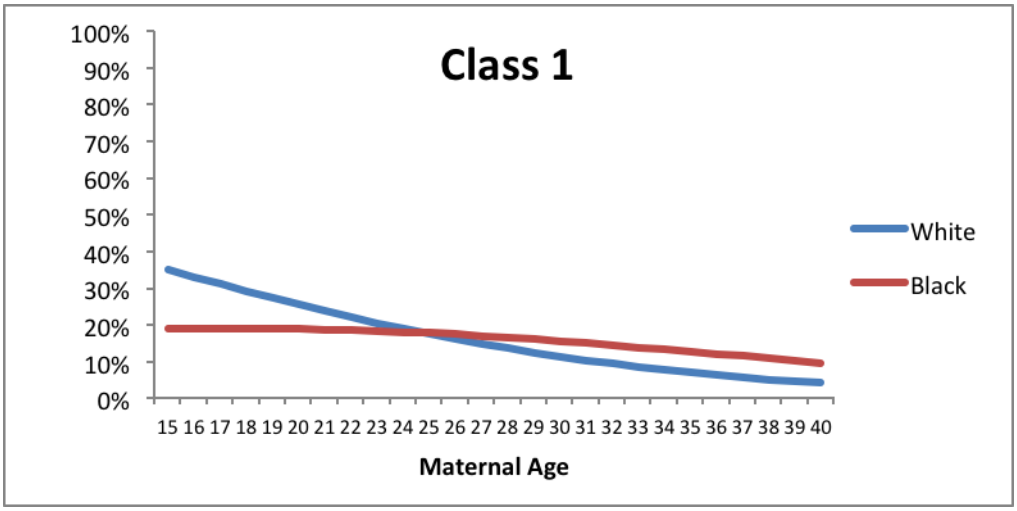


Figure 6

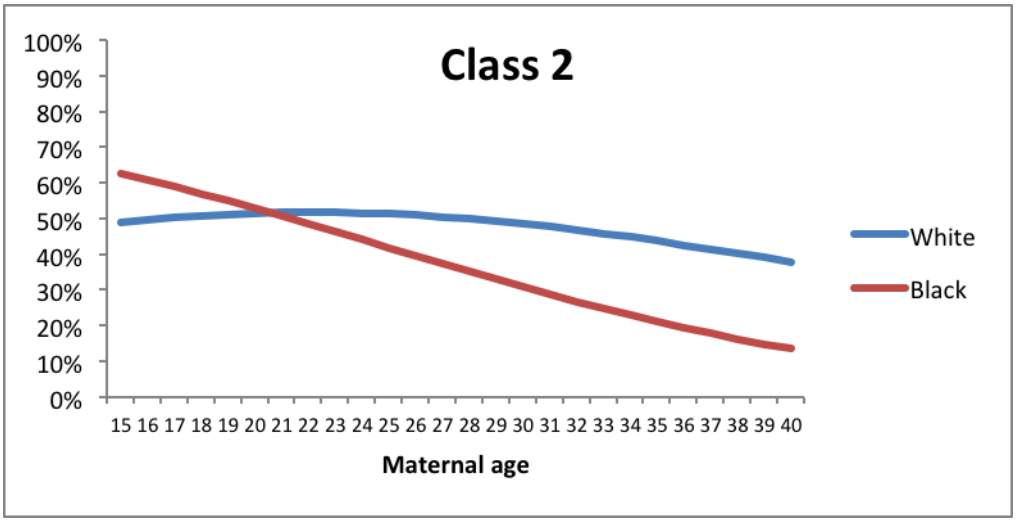
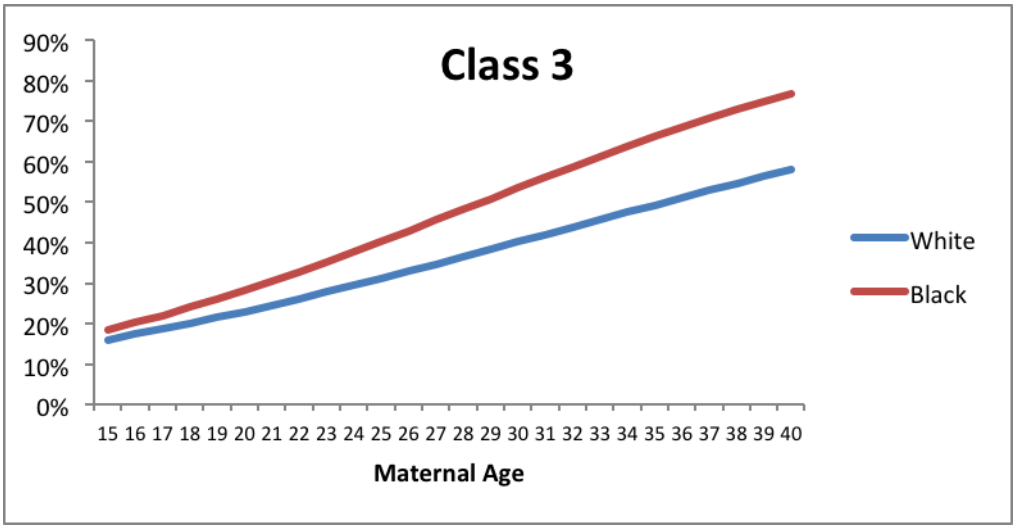


Figure 7


Class 3
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40
Maternal Age
White
Black

Discussion

In order to contribute to extend the way childbearing postponement and, implicitly, its consequences have been conceptualized in the existing literature, this study examines whether patterns of kin support and contact vary with increasing maternal age at first birth in the UK. The decision to focus on this aspect of the family sphere is supported by the "weathering" hypothesis argument that early childbearing may be adaptive for ethnic minority (disadvantaged) mothers as they may be more likely to access the support of the extended family. Nonetheless, there is no evidence showing whether older mothers are less or equally likely to receive support than younger mothers and whether this varies across ethnic groups. The study focuses on the U.K. both because of substantive (i.e. differences and similarities between Blacks and Whites) and data availability (i.e. the MCS) reasons. By conducting a Latent Class Analysis, respondents are assigned to 3 classes of kin contact and support; the first class shows the highest level of support, the third one the lowest and the second class is somewhere in between. The results reveal that, on average, increasing maternal age at first birth is negatively associated with kin support and contact. The results also reveal that Black mothers are more likely than White mothers, on average and with increasing maternal age at first birth, to have low levels of kin support and contact. Controlling for respondents' socio-demographic characteristics such as partnership status at birth, educational level and migration status, reduces but does not entirely eliminate differences between the two ethnic groups and the overall pattern. Different implications of the results are discussed.

In line with a "weathering" hypothesis perspective, the results support an argument according to which maternal age, its link with child wellbeing and, consequently, postponement need to be analysed with a broader scope. The results suggest that it is necessary to embrace the idea that an older age at first birth may be associated with changing family/personal dynamics which go beyond conventional socioeconomic measures such as income and education. Alternatively, one could also think of an older age at birth being associated with increased socioeconomic status which in turns brings along other changes such as diminishing levels of kin support. To the extent that subgroups of the population have different family forms and dynamics, understanding what these changes are and what their consequences might be for children will enable to reach a more comprehensive understanding of what childbearing postponement means for different groups of women.

While revealing that increasing maternal age at first birth is associated with diminishing kin support, the study hasn't established whether this pattern has different implications for Black and White mothers (and children). The findings that overall levels of kin support decrease with maternal age and the fact that the pattern seems more marked for Black than for White mothers suggest that there are grounds to carry out such an analysis in a subsequent study. The literature in this respect presents two contrasting arguments of what the consequences might be. Furstenberg (1991) argues that a loss in kin support (for African American mothers) could be compensated by the family's higher socioeconomic status. Conversely,

Colen et al. (2006) argue that loosing family support for African American mothers is negatively associated with infant's health regardless of the family (increased) financial wellbeing. In support to Colen's argument, I believe that one of the reasons why loosing family support could be more detrimental for Black mothers compared to White ones is because of their different family structures. Preliminary evidence from the MCS shows that White mothers are less likely to be single than Black mothers at any age, but, importantly, they are much more likely to be cohabiting and married with increasing age at birth. In contrast, Black mothers are only marginally more likely to be partenered with increasing maternal age. A loss in kin support may not be compensated with a more stable family structure (i.e. the presence of a partner) for Blacks to the same extent as for Whites.

This research has a number of limitations. First of all, notwithstanding the design of the MCS which overepresents ethnic minorities, the sample of Black respondents is very small (n=164 when the data is weighted) and this could affect the shape of the age gradient, the magnitude and significance of the results. There isn't, however, any other data source that would enable to address the research questions of this study in the UK to the same extent as the MCS does. In addition, merging together Black Africans and Caribbeans may also raise issues. Black Africans have a more recent migration history making them more likely to be far away from their families of origin and to have low(er) levels of support than Black Caribbeans and Whites.

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Stuff

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