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Abstract

Labour force participation rates of women differ strongly by ethnic origin. Even though existing research using cross-sectional studies has demonstrated that part of these differences can be attributed to compositional differences in human capital, household conditions and gender attitudes, residual 'ethnic effects' typically remain. To further our understanding of women's labour market behaviour across ethnic groups, we use a large-scale longitudinal study and apply a dynamic perspective to examine how far relevant life-course events in addition to individual characteristics, gender attitudes and religiosity contribute to the explanation of ethnic differences in women's labour force entries and exits in the UK. Our findings show that, adjusting for all these factors, Indian and Caribbean women do not differ from White majority women in their labour force entry and exit probabilities but that Pakistani and Bangladeshi women are less likely to enter and more likely to exit the labour market, whereas Black African women have higher entry rates. We also find that relations between life-course events and labour market transitions differ by ethnic group. Most notably, Pakistani and Bangladeshi women's labour market transitions are less sensitive to child-bearing and Caribbean women's transitions less sensitive to partnership changes than other women's.

Key words: Ethnic minority women, labour force participation, labour market transitions, life-course events, gender attitudes

1. Introduction

In the context of a secular increase in women's labour force participation (LFP) across the last few decades in Western nations (Charles 2011), persistent ethnic differentials in the rates of women being either employed or actively searching for a job are perceived as problematic with regard to female emancipation and the socio-cultural integration of immigrant women (Kokkonen, Esaiasson, and Gilljam 2014). While much existing literature has focused on the lower LFP rates of (certain) minority women, patterns of LFP differ in complex ways across immigrant origin groups. In the UK, for instance, Black African and Indian women have similar LFP rates to White majority women, Pakistani and Bangladeshi women have much lower rates, while Black Caribbean women have slightly higher rates (See Supplementary Materials, Figure A.1). A number of studies have tried to explain ethnic differences in LFP

rates by compositional differences in human capital, household conditions, and, more recently, gender attitudes and religiosity (Dale, Lindley, and Dex 2006; Berthoud and Blekesaune 2007; Khoudja and Fleischmann 2015). Even though these factors account for a substantial share of the differences between groups, a residual ethnic group effect remained in all cases, leaving outstanding questions about how it could best be explained. In light of the relative stagnation in equalisation of labour market opportunities among women relative to men (Charles, 2011), addressing these questions provides an opportunity for a more complete understanding of the factors linked to women's LFP. Furthermore, it informs the debate about how cultural influences shape immigrants' adaption to the host-society (Polavieja, 2015; Read, 2004).

Previous studies that examined ethnic differences in women's LFP have mostly focused on the stock of women in the labour force at one or multiple time points (Bevelander and Groeneveld 2006; Dale, Lindley, and Dex 2006). This tends to assume that labour market status is constant over time, and across different cohorts that have different labour market exposure and experience of economic cycles. Analysing ethnic differences in women's labour force transitions makes it possible instead to examine several key issues that are implicit in much of the discussion of ethnic differences in LFP, but which have rarely been evaluated (but see Taniguchi and Rosenfeld 2002). We therefore exploit a recent panel survey to analyse labour force transitions, focusing on three main contributions.

First, we examine how labour force transitions are linked to net differences in female LFP. Earlier cross-sectional studies necessarily left open the question as to whether ethnic differences in female LFP rates were due to variation in entrance or exit rates (or both). The extent to which patterns of entry or exit drive variation in LFP across groups is potentially informative about the particular processes implied (Bane and Ellwood 1986; Taniguchi and Rosenfeld 2002). For example, higher rates of exit suggest issues around retention, rather than

reluctance to participate, while lower rates of entry are more likely to indicate structural or more deep-seated cultural obstacles.

Second, we examine how far ethnic differences in cultural factors, such as religiosity and gender attitudes, contribute to the explanation of divergent labour force entry and exit rates of ethnic minority women (Reimers 1985). Given the influence of prevailing norms from countries of origin (Norris and Inglehart 2012) and the strong intergenerational persistence of gender attitudes (Bisin and Verdier 2000; Farré and Vella 2013; Polavieja and Platt 2016), women from certain ethnic groups may have more (and others less) traditional attitudes regarding the gendered division of labour, influencing their preferences for domestic and childrearing specialisation. Going beyond previous research, we test whether women with more traditional attitudes are not only less likely to enter but also more likely to exit the labour market compared to women with egalitarian gender attitudes but otherwise similar characteristics, thereby aligning their behaviour with their preferences (cf. Hakim 2000). Religion, and especially Islam, is often critically discussed in public debates about gender equality and immigrant integration (Voas and Fleischmann 2012), and religiosity clearly differs markedly across ethnic groups (Platt 2014). But while studies show that more religious women also tend to have more traditional attitudes and therefore participate less in the labour market (Khoudja and Fleischmann 2015), it is uncertain whether labour market entries, exits or both are affected by women's religious beliefs independently of the traditional gender attitudes that tend to accompany religiosity.

Third, we address the role of life-course events in triggering labour market entries and exits in an ethnically diverse setting (c.f. Bane and Ellwood 1986; Jenkins 2011). We focus on childbirth, partnership change, and household income changes net of women's income, and evaluate their influence on women's labour force transitions. Children and partnership breakdown are well-known causes of change in female LFP (Manning and Swaffield 2008;

Brewer and Nandi 2014); and loss of (partner's) income may drive women into the labour force regardless of preferences, while an increase in household income may facilitate exit from the labour force. Studying labour force transitions allows us to connect life-course events such as starting cohabitation with a partner and childbirth more directly with women's decisions about their LFP. Examining these relations across women from different ethnic groups enables us to estimate the specific contribution of life-course events to ethnic differences in transitions.

Female LFP is particularly well suited to study women's labour market behaviour net of the influence of broader labour market conditions that can be expected to operate differently for women of different ethnic groups. Unemployment or earning levels may be a direct consequence of external factors such as discrimination or a lack of sufficient employment opportunities; LFP is arguably to a larger extent an individual choice, even if non-participation can be influenced by anticipated discrimination, long-term unemployment and limited earnings opportunities. However, even though LFP is in principle an individual choice, it is still possible that external factors such as normative expectations in a woman's family or ethnic group, different occupational opportunities, or ethnic inequality in access to formal childcare might not only shape such preferences but also affect the degree to which women can realize them. This is best captured by studying responsiveness to potential influences through comparing moves into and out of labour force participation. A further aim of this study is therefore to explore how far the relationship between attitudes, life-course events and women's labour market transitions varies between ethnic groups. This informs us about the degree to which commonly used explanations of female labour market participation can be generalized to women with varying cultural backgrounds.

The UK provides a particularly rich context for the study of differences in women's LFP across ethnic groups. The minority population comprises a number of sizeable groups,

with differentiated migration histories, and patterns of settlement, participation and occupation. As noted, LFP rates differ across ethnic groups and we encompass this diversity in our analysis. Ethnic minority women's participation in the UK takes place in a context of a gendered labour market, with a substantial degree of occupational segregation, and high rates of part-time work and changes in occupational trajectories following motherhood (Manning and Petrongolo 2008; Olsen and Walby 2004).

We use the first six waves of Understanding Society: the UK Household Longitudinal Study from 2009/10 to 2014/15 (University of Essex 2016) to analyse both labour force entries and exits across a sample of women comprising the five largest (non-European) minority groups in the UK, namely Indian, Pakistani, Bangladeshi, Black Caribbean and Black African, and white British majority women. Our main research questions are whether we can understand ethnic differences in LFP through differences in entry and exit and whether we can explain these ethnic differences in transitions through variation not only in compositional factors but also gender attitudes, religiosity and life-course events. In an additional exploratory analysis, we also test how far these factors have the same impact on women's labour market transitions across the particular ethnic groups under study, examining the often implicit assumption that economic behaviour can be understood similarly across all cultural contexts. The study is, to our knowledge, one of the first to use dynamic models to analyse ethnic differences in labour market transitions of women in a European country and is therefore of value in its descriptive as well as in its explanatory contribution.

2. Theoretical Background

2.1.The influence of cultural factors: Gender attitudes and religiosity

Gender attitudes, or gender ideology, refer, broadly speaking, to perceptions and normative beliefs about gender specific tasks and positions in society (van de Vijver 2007). In this study, we define gender attitudes as the degree of support for a gendered division of paid and unpaid work, with unpaid work including household tasks, such as cleaning and cooking, but also childrearing. Individuals with traditional gender attitudes consider unpaid household work and childrearing to be the primary tasks of women, while they consider men to be mainly responsible for providing an income for the household. In contrast, individuals with egalitarian gender attitudes think that paid and unpaid work should both be equally divided between men and women. Hakim's (2000) preference theory argues that individual attitudes of women have become more important for life-course decisions due to increasing individualisation and female emancipation in Western society. Gender attitudes might therefore be expected to have a substantial effect on a woman's decision to enter or exit the labour force; and this might either happen directly or indirectly.

Directly, gender attitudes can influence the prioritisation of time between domestic work and paid work. Women with traditional gender attitudes might simply choose to focus on domestic work rather than on paid work (Khoudja and Fleischmann 2015). But women with traditional gender attitudes might also choose to have more children or have higher incentives to live with a partner who wants to be the sole breadwinner of the family, both of which might indirectly lead to lower participation in the labour market (Reimers 1985).

The causal relation between gender attitudes and female LFP is theoretically and empirically contested. Empirical studies that have examined the causal relationships between gender attitudes and later labour market behaviour found evidence for an effect of early gender attitudes on later labour market outcomes (Cunningham 2008) but also of labour market behaviour on later gender attitudes (Corrigall and Konrad 2007; Kroska and Elman 2009). Following the psychological theory of cognitive dissonance, one would argue that

labour market behaviour shapes attitudes by making individuals value what they are doing (Kroska 1997). A woman not active in the labour market would therefore tend to maintain or develop more traditional attitudes to decrease discrepancies between her behaviour and her values (Gangl and Ziefle 2015). In contrast, planned rational choice theory proponents would argue that individuals have certain preferences that they strive to fulfil in their behaviour (Hakim 2000; Hakim 2002), implying that more traditional women would be slower to enter and faster to exit the labour market to align their behaviour with their preferences. This may particularly be the case when they experience a life transition (partnership or parenting) that brings their preferences into relief. We hypothesize that women with more traditional gender attitudes are less likely to enter and more likely to exit the labour market. It is acknowledged that differences in rates of women's LFP cross-nationally are linked not only to policy regimes but also to local, country-specific gender norms (Charles 2011). Since gender norms and values are subject to early socialisation processes (Bandura 1997; Moen, Erickson, and Dempster-Mcclain 1997; Burt and Scott 2002), we expect gender attitudes to vary across ethnic groups (Kane 2000; van de Vijver 2007), and therefore contribute to explaining ethnic differences in women's labour force transitions.

Religion is often related to female LFP (Lehrer 1995). Religiosity, rather than simply religious affiliation, is deemed to foster traditional gender attitudes since nearly all world religions can be characterised by a homogeneously male religious elite and a strict gender hierarchy embedded within their promoted norms (Brinkerhoff and MacKie 1985). Religious beliefs might therefore impact later life-course decisions about LFP, or more indirectly, about giving birth, and in turn indirectly affect labour market attachment. Religiosity varies substantially across ethnic and religious groups, with Muslims often showing much higher religiosity than other groups, and might therefore provide some explanation for differences in labour force transitions. However, whereas older research among immigrants has found a

strong relationship between religiosity and female LFP (van Tubergen 2007) more recent studies find no or rather low associations in immigrant groups (Fleischmann and Phalet 2012; Maliepaard, Gijsberts, and Lubbers 2012). These divergent findings might reflect that the relation between religiosity and gender attitudes seems to be more complex for second-generation immigrants with evidence pointing to the decoupling of religious beliefs from gender ideology, and consequently labour force participation, among Muslim women (Ahmad 2001; Scheible and Fleischmann, 2012; Georgiadis and Manning 2011). As our analysis includes first as well as second-generation immigrants, we hypothesize that religiosity is negatively related to labour market entry and positively related to labour market exit *only* insofar as it is mediated by gender attitudes and indirectly related fertility behaviour. We expect no independent effect of religiosity over and above such attitudes and behaviour.

2.2. Changes in household conditions: Partnership, income and children

A major limitation of existing studies on ethnic differences in the effects of partnership (and household conditions more generally) on women's LFP is that they are based on static models, which only address the association of partnership status with concurrent female LFP. Inherent to this approach is the tendency to assume symmetric effects, meaning, for instance, that starting a partnership increases the probability of exiting the labour market as much as it decreases the probability of entering it. Some studies have shown that this might not be the case (Jeon 2008; Paull 2007) even though there is little consistent evidence. Overall, we expect partnership changes to prompt rates at which women both enter and exit the labour market compared to no change. This will be due to both changes in financial incentives and pressures and in normative expectations and practices relating to women's participation held by both women and their partners.

Domestic work in couples continues to be primarily conducted by the female partner, leaving partnered women with less time to focus on their career (Breen and Cooke 2005; Gershuny and Sullivan 2003). Moreover, entering a partnership might promote deep-seated notions about the traditional gendered division of domestic work, which could trigger women's labour market exit either on their own behalf or by wanting to meet the expectation of a partner (or a family) with traditional views (Cunningham 2008). In addition, partners are likely to increase family income reducing the necessity for women to participate economically. Conversely, separating from a partner might decrease the normative pressure to focus on domestic work and, in turn, increase the likelihood of women re-entering the labour force. The end of a partnership typically reduces women's household income (Brewer and Nandi 2014), increasing the incentive to (re-)enter the labour market. In the context of low state benefits, strong labour market activation policies and no statutory alimony for separated women, as in the UK, it is challenging for single women to sustain life as a homemaker.

Even when women remain in partnerships their participation is likely to be influenced by their partner's financial resources. Conditional on the partner providing sufficient income to maintain the couple, women can choose to focus on domestic work. However, a decrease in the partner's income might be expected to increase the need for women to become active in the labour market in order to maintain the living standard of the household. Conversely, an increase in household (partner's) earnings might facilitate women's exit from the labour market. The exception may be where the 'poverty trap' in the form of the interaction of earnings and state benefits renders low paid women's LFP not viable in the context of reduced or non-existent partner's earnings. This is supported by the mixed evidence on women's labour supply response to partner's job loss (e.g. Harkenss and Evans 2011). In contrast, continuously single women who are not in education are less likely to face the

domestic constraint of women in partnerships and the economic necessity to enter the labour market will be highest for them.

In sum, therefore, we hypothesise that women leaving partnerships will tend to enter the labour market, whereas women who form partnerships will be more likely to exit. We expect single women to be the least likely to exit the labour market and the most likely to enter. We expect that women who are continuously partnered will be the least likely to enter and the most likely to exit. In addition to the effect of partnership changes, we hypothesize that an income decrease of other household members (primarily the partner) will increase the chances of women entering the labour market while an increase in household income will increase the probability of women exiting the labour market. However, due to the poverty trap, we expect this effect will be weaker, or even reversed, in low income households. Since partnership patterns vary across ethnic groups (Berthoud 2005; Georgiadis and Manning 2011), and ethnic groups are also differentiated in their income volatility and poverty (Fischer and Nandi 2015), such life transitions may again help to account for some of the variation in LFP across ethnic groups.

Children in the household, regardless of partnership status, are among the most recognized factors in decreasing women's LFP (van der Lippe and van Dijk 2002). Children of pre-school age tend to have the strongest negative effect on women's LFP. In countries in which public childcare is not easily accessible, such as the UK, mothers are especially likely to be primarily responsible for raising the child while the father is in paid work. Lone parents in receipt of state benefits are also not expected to seek work until their youngest child is five years old. Even those with strongly egalitarian views may adapt to more traditional behaviours following the birth of a child, with research illustrating how mothers subsequently adapt attitudes to fit these behaviours (Baxter et al. 2015). Once children reach school age (5 years in the UK), the mother's need to stay at home decreases. Moreover, the cost of children

increases with age (Banks and Johnson 1993) and hence can increase the need for mothers to work, regardless of their partnership status. Besides the trigger event of childbirth, the number of children already in the household is also relevant for women's decision whether to participate in the labour force (Jeon 2008). An additional new-born might make little difference if there are already young children in the household but if it is the first or second child, women might feel more pressure to reduce their economic activity. Since women of different ethnic groups have different numbers of children and tend to start families at different ages, with Pakistani and Bangladeshi (Kulu et al. 2017), these compositional differences may help to explain differences in labour market exit net of other characteristics.

2.3. Ethnic differences in women's LFP in the UK

Non-European migration to the UK has been dominated by a range of ethnic groups primarily from former colonies in the Caribbean, South Asia and Africa. These have occurred along different timescales and have involved different patterns of women's migration, with primary migration among women from the Caribbean in the earlier migration period (1950s-1960s) and more family re-unification among women from South Asia joining labour migrants from India, Pakistan and Bangladesh in the 1970s-80s. African migrants are more recent and have included highly educated student migrants alongside refugees and family reunification (ONS 2013). Differences in timing of migration as well as in characteristics of migrants have resulted in differentiated patterns of settlement, family structure and LFP across these main ethnic minority groups.

Women from different ethnic groups tend to concentrate in different occupations, linking them to different patterns of pay, conditions, and labour market flexibility, and demonstrate different labour market attachment (Blackwell and Guinea-Martin 2005; Platt 2006). For example, rates of part-time work are lower across minority compared to majority

group women; and there are higher rates of public sector work among Caribbean women (Platt 2006). Minority group women additionally face substantially higher unemployment than majority group women (ONS 2013). Existing research has tended to identify unexplained ethnic differences in LFP, even after taking account of individual characteristics and household conditions. Qualitative and quantitative accounts have emphasised the potential role of life-course events as well as different orientations to family and gender roles and religiosity (Brah 1993; Dale et al. 2006; Holdsworth and Dale 1997), at the same time as some convergence across generations (Ahmad 2001; Georgiadis and Manning 2011).

More specifically, Pakistani and Bangladeshi (and to a smaller extent Indian) women marry earlier and more often (while divorcing less frequently) than White majority women, whereas Caribbean and Black African women are relatively more often single (Georgiadis and Manning 2011). Moreover, Pakistani and Bangladeshi as well as Black African women tend to have more children than women from the other ethnic groups, while lone parenthood is particularly high among Black African and Black Caribbean women (Berthoud 2005; Nandi and Platt 2010). As noted, these compositional differences may help to understand differences in labour market entry and exit. At the same time, studies in the UK and the Netherlands (Bevelander and Groeneveld 2006) have highlighted that the effect of partnership and children might differ according to women's cultural and family context. Holdsworth and Dale (1997) found that partnership was a key factor associated with lower LFP among Bangladeshi and Pakistani women, though for White majority women having a child was the key trigger. Dale et al. (2006) found a positive effect of having a partner on White and Black women's economic activity, no effect on Indian women and a negative effect for Bangladeshi and Pakistani women. Black Caribbean lone mothers also tend to have a substantially higher LFP rate than single mothers from other groups; and qualitative research has linked Black Caribbean women's motherhood and partnership patterns to the context of migration as labour

migrants as well as to the historical determinants of work and family life in the Caribbean (Reynolds 2005).

Originating in countries in which traditional forms of family organization are the norm, we expect Pakistani and Bangladeshi women to have rather traditional gender attitudes. Based on previous research we can also expect Muslim, i.e. Pakistani and Bangladeshi, women to be more religious than women from other religious groups, with consequences for their endorsement of traditional divisions of labour. We would therefore expect Pakistani and Bangladeshi women to show greater homogeneity in their gender attitudes than women in other groups. This may reduce the explanatory power of these attitudes if we investigate the labour market transition of only Pakistani and Bangladeshi women. White majority and Caribbean women are likely to have less traditional attitudes due to their socialization in countries with a stronger acceptance of non-traditional family forms, while Indian and Black African women might be expected to lie somewhere in between.

Hence, we hypothesize that we can explain ethnic difference in women's labour market entry and exit rates by adding to relevant individual characteristics compositional differences between ethnic groups in gender attitudes and specified life-course events. At the same time, we would also expect the role of some of these compositional factors and events to reflect group-specific cultural and family context.

3. Data and Methods

3.1. Data

We use the first six waves of *Understanding Society*: the UK Household Longitudinal Study (UKHLS). An annual panel study that started in 2009, UKLHS has a number of features that make it particularly suitable for addressing our research aims. First, it is a nationally representative household panel survey with a large sample size of over 28,000 households in

the general population sample (GPS) at wave 1 (2009/10). Second, it has a substantial ethnic minority boost (EMB), of an additional 4,000 households, which allows for more fine-grained analysis of individual ethnic groups than a strictly proportional sample would allow. Third, it collects annual information from respondents on their current state and on events that have happened between waves. Information is collected by both interviewer-administered questionnaire and a self-completion questionnaire for measures more likely to be subject to social desirability bias (De Maio 1984). Fourth, it collects information from all adult household members of the original sample. Hence it provides information on existing and on new partners. Fifth, it contains measures essential for our research questions: gender attitudes, religiosity, ethnic self-categorization, country of origin and ethnic identity of the parents, family status and household context, as well as standard measures of socio-demographics, economic status, health etc. For further information on the study, see www.understandingsociety.ac.uk.

UKHLS has a rich array of questions enabling the construction of ethnic group (McFall, Nandi, and Platt 2016). We use the self-reported ethnic group of the respondent and their parents and information on own/parental/grandparental country of birth to allocate respondents to an ethnic group category. Ethnic self-categorization is the basis for our ethnicity measure: we distinguish between (1) White British/White Irish/other White background, (2) Indian and Sri Lankan, (3) Pakistani and Bangladeshi, (4) Caribbean and mixed Caribbean, (5) Black African and mixed African. We supplement this information with that on parents' ethnic identity and country of birth and grandparents' country of birth to allocate additional respondents with relevant origins to these groups.[1]

[1] More precisely, we proceed in the following way: We use the ethnic self-categorization (on the above named predetermined ethnic categories) of the respondents as basis for our classification. In a second step, we also assign respondents to one of the ethnic groups if at least one of their ancestors was born in the/a country of origin of the minority group. If respondents had ancestors from more than one of the minority groups (mostly the case for Indians, Pakistanis and Bangladeshi), we used the self-categorization of the respondent or the ethnic categorization of their parents (by the respondent) in the case that the respondent identified as White. We also

Our sample comprises all women who responded in at least two of the six waves; and excludes those who were continuously students. However, those who changed their student status, were considered as leaving or entering the labour market (we provide more detail on this below). The sample was restricted to women aged between 16 and 65 years. Our analytical sample comprises 54,668 person-waves, covering 16,062 women (12,748 White majority, 886 Indian and Sri Lankan, 1110 Pakistani and Bangladeshi, 625 Caribbean and mixed Caribbean, and 693 African and mixed African).

3.2. Measures

3.2.1. Entering the labour market and exiting the labour market

Respondents are considered as participating, or active, in the labour force if they are either employed or actively looking for a job and willing to start paid work at short-notice. We measure entry and exit from the labour force with two dummy variables. Women who were inactive at t_1 and active at t_2 are considered to have entered the labour market (with those continuously inactive as reference group) and women who were active at t_1 and inactive at t_2 are considered to have left the labour market (with those continuously active as reference group). Hence, we have two separate samples for estimating entry and exit probabilities (compare the approach used by Jeon 2008).

Those respondents who were students in one wave but had a different economic status in a preceding or subsequent wave were treated with special care. Being a student does not inherently mean being active or inactive in the labour market, but what it means rather depends on how higher education is framed in the life-course, and, in our case, particularly how it can be constructed in relation to the economic status of the respondents in the

used the ethnic categorization of the parents to identify White British born in Africa or India and Indians/Pakistanis with (grand)parents in Africa in order to allocate them appropriately.

preceding or succeeding year. We therefore distinguished between becoming a student after already having been active or inactive and becoming active or inactive after having been a student. While the latter tends to depict the regular life-course stage of young people deciding to become inactive or active after finishing education, the former does not necessarily stand for a change in one's orientation in the labour market. We therefore considered respondents who became active after being a student as entering the labour market and those who became inactive after being a student as leaving the labour market. In contrast, we did not consider women who became a student after being already active or inactive as changing their economic status. Becoming a student after having been active is most likely to mean either reorienting oneself on the labour market or improving ones qualifications. Starting education after having been a homemaker (which is the smallest group in the sample), however, is not necessarily indicative of entering the labour market.

3.2.2. Gender attitudes

The UKHLS offers a small number of items to measure gender attitudes. We chose "A pre-school child is likely to suffer if his or her mother works" and "A husband's job is to earn money; a wife's job is to look after the home and family" as our measures. Whereas the former emphasizes potential (perceived) negative consequences of women's employment for their children's well-being, the latter one is purely ideological as it refers without any pretext to a preference for separated life spheres between men and women. These two items therefore cover important dimensions of gender attitudes.[2] Respondents answered on a five-point scale ranging from "strongly agree" through "neither agree nor disagree" to "strongly disagree" with the statements. We reversed the coding so that a higher value represents more traditional

[2] Of the three other items available, two lacked conceptual clarity ("Both the husband and wife should contribute to the household income" and "Employers should help mothers combine jobs and childcare") and did not load on the same latent factor as the other items in a confirmatory factor analysis. The final one was too similar to the one on children's suffering if his/her mother works to be included ("All in all, family life suffers when the woman has a full-time job").

gender attitudes. Having measures of this variable in wave 2 and wave 4, we decided to use measurement at wave 2 for predicting transitions that occur during the first three waves and the measurement at wave 4 for transitions in the last three waves. The two items had a Pearson's correlation of only .46 and were therefore both included in the analysis.

3.2.3. Religiosity

Our measure for religiosity is based on the question "How much difference would you say religious beliefs make to your life? Would you say they make… (1) a great difference, (2) some difference, (3) a little difference, (4) or no difference?". We recoded the variable so that a higher value means that religious belief makes more difference to the respondent's life. This item on religiosity was asked in Wave 1 and Wave 4, and, as for gender attitudes, we use the first measurement for predicting transitions during the first three waves and the second measurement for transitions in the last three waves.

3.2.4. Household Changes

To measure partnership status and change we use a four level categorical variable with (1) women who remained in partnerships over two consecutive waves as the reference group, (2) women who remained single/divorced/widowed, (3) single/divorced/widowed women who started a partnership and (4) women who become single/divorcee/widow between two waves.

To evaluate income changes, we use a measure of household income net of the woman's own income. We test for the impact of increases or decreases of more than 20 per cent in this net household income. Moreover, given that we might expect income effects to vary for poorer compared to more affluent households, as low-income households face higher marginal tax rates, that is the rate at which benefits are withdrawn as earnings rise, we also

control for low income, measured as less than 60 per cent of the overall equivalent household median.

We constructed a measure of change in the number of children in the household younger than five years old. This variable can be thought of as the number of new-borns minus the number of children reaching UK school age (5 years) between waves. We created two dummies: one indicates whether the number of children below the age of 5 increased, and one whether it decreased in order to capture changes in the required amount of childcare as precisely as possible. An additional variable is used to account for the overall number of children in the household below the age of 16.

3.2.5. Control variables

To control for educational level, we use years of education instead of highest educational degree to have a measure that is comparable across ethnic groups, some of whom may have obtained their highest qualification in a different country. For those educated in the UK, we transformed the highest educational degree achieved into years of education based on the age at school start in the UK (5 years) and the predicted age at receiving the respective qualification. The UK education system is relatively rigid in terms of years spent acquiring specific qualifications, with few repeat years and with the majority of university students completing their degree directly after secondary school within the prescribed three years. For those respondents who did not follow their education in the UK, we used the regular school age in their respective country of birth to calculate their years of schooling (UNESCO Institute for Statistics, 2017).

We additionally control for English language skills with a dummy variable that is coded 1 if the respondent indicated having difficulties in (a) speaking day-to-day English, (b) speaking English on the phone, (c) reading English, or (d) completing forms in English and

coded 0 if the respondent did not claim to have difficulties with English in any of these situations, or if English was their first language.

We control for time-varying general health using a 5-point scale ranging from (1) excellent to (5) poor, which was measured at every wave. We would expect those with poorer general health to be more likely to be or move out of the labour market and less likely to enter it. Years since migration is controlled for by a four-value variable that indicates whether the respondent was born in the UK (0), or whether she has lived in the UK for (1) at most five years, (2) between 6 and 10 years and (3) more than 10 years. We also control additionally for age (centred) age squared, and wave in which the transition was observed.

3.2.6. Dealing with missing values

Partly as a result of lower response on the self-completion element of the questionnaire, the share of respondents with missing values on the items for gender attitudes, religiosity, education and general health cumulatively accounted for about 10 per cent of the sample and were therefore too high, particularly within the ethnic minority groups, to be dealt with by listwise deletion (Acock 2005). We assume that the data are missing at random and therefore multiply impute complete sets of responses for 10 imputed data sets, following the rule of thumb that the number of imputed datasets should correspond to the percentage of missing cases (White, Royston, and Wood 2011). We used chained equations as the imputation method with labour market status and change, ethnicity, marital status, children in the household, age, age squared, wave, household income (excluding women's income) and years since migration as predictors in the imputation model.

3.3. Method of Analysis

Given the relatively small number of events of interest that occur between any two sweeps, we follow standard practice in pooling pairs of waves from across the first four waves of the study. We then model the transitions between t1 and t2 (e.g. moves into or out of the labour force for those at risk) with time-invariant & time-variant characteristics.[3] Using a base transition specification (see the discussion in Cappellari and Jenkins 2008), we estimate average marginal effects based on logit models for the transitions. This allows us straightforwardly to explore and quantify the extent to which there are a) ethnic differences in rates of entry and or exit which contribute to overall differences in LFP and b) the extent to which such differences in labour force transitions can be accounted for by the relevant variables outlined in our hypotheses above.

Modelling transitions is a common application to panel data in the econometric literature. It has been applied to study, for instance, movements of individuals into and out of poverty (Cappellari and Jenkins 2004; Stewart and Swaffield 1999) or the labour market (Jeon 2008). For investigating transitions, the starting point, or initial measurement status may lead to an over-estimate of state dependence, if those 'initial conditions' represent a greater underlying propensity to be in a given state (Cappellari and Jenkins 2008; Wooldridge, 2005). In our case, this means that some of the ethnic differences and the effects we find in our transition models might be caused by factors that determine the labour force status at the first observation. In other words, the group of women who are at risk of becoming inactive, or becoming active, is a non-random sample since it is the group of women who are already active or inactive respectively at the beginning of the observations. Whether a woman is in one or the other group in the first place might be related to unobserved individual characteristics. Following Orme (2001), and as applied by Jeon (2008), we incorporate

[3] If the respondent did not participate in t_2, we used t_3 as the consecutive wave. Similarly, if respondents were only part of the sample at t_2 and t_4, we used these waves as the basis to measure transitions or trigger events. Respondents with a two-wave gap, meaning those that were, for instance, only present in wave 1 and wave 4, were excluded from the analysis.

generalized residuals to adjust for initial conditions by estimating the generalised residuals as given in Gourieroux et al. (1987).[4] Following this method, first, a logit regression for LFP in the year of the first observation is estimated using a model that includes basic predictors for LFP (see Table A1 in online supplement). In a second step, a generalized residual is calculated based on this logit regression, which is then included as a predictor in the final logit models of entering and leaving the labour market.

Our modelling strategy is the following: In a first model, we examine how far ethnic differences in women's labour force transitions are explained by various control variables. In a second step, we test the contribution of religiosity and gender attitudes to labour force transitions. We then evaluate the explanatory power of inter-wave events (such as partnership separation, the birth of a child, or a substantial change in the household income) for ethnic differences in women's labour force transitions; and subsequently test in how far accounting for initial conditions affects the ethnicity coefficients, and the other relevant predictor variables. In a final analysis, we explore whether the contribution of the trigger events and the cultural factors to labour market transitions differs by ethnic group.

Analysis was conducted in Stata 13.1. All analyses adjust for the complex survey design of the UKHLS by incorporating adjustments for clustering and stratification and employing the design weight to adjust for sampling probabilities and initial non-response (see Knies 2014), and using Stata's svy command. Standard errors are adjusted for repeat observations on individuals.

3.4. Robustness of results

Besides the initial condition bias, results may also be sensitive to unobserved heterogeneity between individuals. Differences in exit and entry rates, particularly over extended periods of

[4] Other methods have been suggested, but Capellari & Jenkins (2008) could not find substantial difference when comparing the different approaches for the risk of receiving social assistance.

time, may reflect underlying unobserved differences in the propensity to engage in the labour market (Allison 2014). In order to test the robustness of our results to the potential influence of unobserved heterogeneity, we estimate random effect models, both probit and linear probability models. As our results were consistent across these specifications, when compared with an unweighted AME specification (see Tables A4 and A5 in the online supplement) and since the literature has not yet clarified how to take account of complex sample designs and weights in particular in mixed (random effects) models, we preferred the original specification outlined above, and focus on the results from these models.

Additionally, we estimated fixed effects logit models for labour market entries and exits and compared them with random effects logit models to further test the robustness of our results, and to possibly strengthen the causal claims of our analysis (see Table A6 in the online supplement). However, due to the inefficiency of fixed effects models, the number of cases on which these estimates are based are small. Moreover, these models cannot account for weight, person sampling units, or strata. The main aim of this test is therefore to get an impression to what extent unobserved heterogeneity may affect our estimates rather than a arrive at a better estimation of the true coefficients.

4. Results

4.1. Descriptive Results

Table 1 illustrates how patterns of labour market transitions vary between ethnic groups. Most striking is the particularly low LFP rate of Pakistani and Bangladeshi women. While this finding is not new, we can now see that it is driven not only by low rates of labour market entry but also by particularly high rates of labour market exit compared to the other ethnic groups. If the LFP of Pakistani and Bangladeshi women was primarily driven by overall cultural norms of women's participation, rather than the intersection with life-course events,

we might expect lower entry rates, but not necessarily different rates of exit for those in work. Higher exit rates might also imply greater discouragement to participate stemming from more limited opportunities or higher unemployment rates.

While Pakistani and Bangladeshi women have an entry rate of 14 per cent (this is the share of women entering the labour market between t_k and $t_{k+1(or2)}$ divided by the share of women that remain inactive in the same time frame), White majority women have an entry rate of 31 per cent, Indian and Sri Lankan women an entry of 24 per cent and Caribbean and

Table 1: Range, mean/proportion (M), standard deviation (SD) and number of person-year observations (N)

			All groups		White majority		Indian/ Sri Lankan		Pakistani/ Bangladeshi		Caribbean/ mixed Caribbean		Black African/ mixed African	
Variable	Range	N	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Labour force entry (Ref. remain inactive)	0/1	11556	.28		.31		.24		.14		.39		.38	
Labour force exit (Ref. remain active)	0/1	43112	.05		.04		.06		.16		.05		.08	
Economic activity	0-2	54668												
Active in Labour Force	0		.80		.84		.74		.38		.82		.74	
Homemaker	1		.19		.15		.25		.61		.16		.23	
Full-time student	2		.01		.01		.01		.01		.02		.03	
Ethnic origin group	0-4	54668												
White majority	0		.81											
India/Sri Lankan	1		.05											
Pakistan/Bangladeshi	2		.06											
Caribbean/mixed Caribbean	3		.04											
Black African/mixed African	4		.04											
Partnership status	0-3	54668												
Remains in partnership	0		.65		.66		.76		.70		.32		.45	
Remains single	1		.31		.30		.22		.26		.64		.48	
Partnership started	2		.02		.02		.01		.02		.02		.03	
Partnership ended	3		.02		.02		.01		.02		.02		.04	
Change in no. of children <5 years	-3 to 4	54668	-.01	.34	-.01	.32	-.02	.38	-.04	.51	-.02	.33	-.03	.40
Number of children<16	0-9	54668	.83	1.08	.75	1.01	.97	1.06	1.49	1.42	.77	1.00	1.27	1.34
Household (HH) income changes	0-2													
HH income stable	0	54668	.53		.54		.48		.35		.55		.49	
HH income decrease 20%	1	54668	.20		.20		.21		.27		.19		.22	
HH income increase 20%	2	54668	.27		.26		.31		.38		.26		.29	
HH below 60% median income	0/1	54668	.34		.32		.25		.32		.58		.51	
Religiosity	1-4	54126	2.20	1.18	1.93	1.06	3.17	1.01	3.70	.66	2.86	1.16	3.49	.94
Children suffer if mother works	1-5	51695	2.80	1.09	2.70	1.05	3.31	1.19	3.59	1.10	2.68	1.04	3.22	1.18
Husbands should earn, wife should stay at home	1-5	51705	2.21	1.07	2.13	1.02	2.55	1.20	3.07	1.20	2.17	1.08	2.49	1.18
Years of education	4-18	54587	13.32	2.79	13.36	2.70	13.61	2.97	12.12	3.33	13.64	2.61	13.56	3.14
English problems	0/1	54668	.03		.01		.14	.35	.29		0		.12	
Age	16-66	54668	41.10	11.83	41.75	11.98	40.01	10.53	35.35	9.95	40.58	11.71	38.55	1.11
Years since migration	0-3	54629												
White majority/Second generation	0		.84		.94		.37		.38		.73		.18	
<=5 years	1		.01		.01		.07		.04		.01		.07	
>5 years & <=10 years	2		.03		.01		.15		.10		.02		.22	
>10 years	3		.12		.04		.41		.48		.24		.53	
General Health	1-5	54365	2.41	1.01	2.36	.99	2.56	1.02	2.78	1.08	2.67	1.00	2.32	1.02
Wave	2-6	54668	3.81	1.41	3.81	1.41	3.82	1.41	3.88	1.41	3.83	1.41	3.76	1.41
Generalized residual	-.97 to .96	51377	.00	.38	.03	.36	-.04	.44	-.31	.44	.05	.36	-.03	.44

Notes: Descriptives based on unweighted sample.

African women of almost 40 per cent. The exit rate of Pakistani and Bangladeshi women is 16 per cent (the share of women exiting the labour market between t_k and $t_{k+1(or2)}$ divided by the share of women that remain active in the same time frame), which is four times higher than the exit rate of White majority women (four per cent). Indian/Sri Lankan and Caribbean women have an exit rate of five to six per cent while the rate of Black African women is slightly higher at about 8 per cent. It is worth noting that even though Caribbean women have a similar LFP rate as White majority women, the former have a substantially higher entry rate (by about eight percentage points) as well as a somewhat higher exit rate. Similarly, African women have a similar LFP rate as Indian/Sri Lankan women but a much higher entry rate and a somewhat higher exit rate. This could suggest that Caribbean and African women are more flexible in their decisions to participate in the labour market over the life-course than White majority and Indian/Sri Lankan women and may indicate that different explanatory approaches are required for the different groups' LFP. While White majority women make extensive use of part-time work to combine LFP with family commitments, the greater dependence on full-time work among Caribbean and Black African women may present starker choice.

This can be linked to the fact that Caribbean women, in particular, have very distinct partnership patterns. Whereas over 65 per cent of White majority, Indian/Sri Lankan and Pakistani and Bangladeshi women are partnered over two waves, this is only the case for 32 percent of the Caribbean women. The majority of them are, and remain, single from one year to the next. Black African women fall in-between with about 45 per cent continuously partnered and 48 per cent continuously single. Turning to cultural factors, White majority women are by far the least religious, whereas Pakistani and Bangladeshi women are the most religious. The latter also show the most traditional gender attitudes whereas White majority women, together with Caribbean women, have the least traditional attitudes. Interestingly,

across ethnic groups, the Pearson's correlation between religiosity and "a pre-school child is likely to suffer if his or her mother works" is .18 while the correlation between religiosity and "A husband's job is to earn money; a wife's job is to look after the home and family" is .15, indicating a rather weak aggregate relationship between being highly religious and having traditional gender attitudes.

4.2.Multivariate analysis of labour market transitions

Table 2: Average marginal effects for entering the labour market

	(1)		(2)		(3)		(4)		(5)	
Predictors	LM entry		LM entry		LM entry		LM entry		LM entry	
Ethnic group (Ref.=White)										
Indian/Sri Lankan	-.03	(.02)	-.02	(.02)	-.03	(.02)	-.02	(.02)	-.02	(.02)
Pakistani and Bangladeshi	-.09***	(.02)	-.07***	(.02)	-.09***	(.02)	-.07***	(.02)	-.07***	(.02)
Black Caribbean/mixed Caribbean	.04	(.03)	.03	(.03)	.02	(.03)	.01	(.03)	.01	(.03)
Black African/mixed African	.14***	(.03)	.14***	(.03)	.11***	(.03)	.12***	(.03)	.12***	(.03)
Partnership (Ref.=Remains in partnership)										
Remained single					.15***	(.02)	.14***	(.02)	.15***	(.02)
Partn. started					.05	(.03)	.05	(.03)	.06+	(.03)
Partn. ended					.09**	(.03)	.08**	(.03)	.08**	(.03)
Changes in young children in HH (Ref.=no changes)										
Child <5 year old increase					-.22***	(.02)	-.22***	(.02)	-.23***	(.02)
Child < 5 year old decrease					-.01	(.02)	-.01	(.02)	-.02	(.02)
Household (HH) income (Ref.=stable)										
Household income decrease 20%					.06***	(.01)	.06***	(.01)	.07***	(.01)
Household income increase 20%					.01	(.01)	.01	(.01)	.01	(.01)
HH below 60% median income					-.09***	(.01)	-.08***	(.01)	-.09***	(.01)
Religiosity			.01	(.00)			.00	(.00)	.00	(.01)
Children suffer if mother works			-.02***	(.00)			-.02***	(.00)	-.02***	(.01)
Husbands should earn, wife should stay at home			-.04***	(.00)			-.04***	(.00)	-.04***	(.00)
Generalized residual									.08***	(.01)
No of children aged under 16	-.10***	(.01)	-.10***	(.01)	-.08***	(.01)	-.07***	(.01)	-.07***	(.01)
Years of Education	.02***	(.00)	.02***	(.00)	.02***	(.00)	.02***	(.00)	.02***	(.00)
English language problems	-.07**	(.03)	-.05	(.03)	-.07**	(.03)	-.05	(.03)	-.05*	(.03)
Age (centred)	-.01***	(.00)	-.01***	(.00)	-.01***	(.00)	-.01***	(.00)	-.01***	(.00)
Age^2	.00	(.00)	.00	(.00)	-.00	(.00)	-.00	(.00)	-.00	(.00)
Years since migration (Ref.=native-born/Second generation)										
<=5 years	-.05	(.03)	-.05	(.03)	-.02	(.03)	-.02	(.03)	-.01	(.03)
>5 & <=10 years	-.02	(.02)	-.01	(.02)	-.00	(.02)	.01	(.02)	.01	(.02)
>10 years	-.02	(.02)	-.02	(.02)	-.02	(.02)	-.02	(.02)	-.02	(.02)
General health	-.04***	(.00)	-.04***	(.00)	-.04***	(.00)	-.04***	(.00)	-.04***	(.00)
Wave	.01***	(.00)	.01***	(.00)	.01***	(.00)	.01***	(.00)	.00	(.00)
N	11484		11484		11484		11484		11484	

* $p < .05$, ** $p < .01$, *** $p < .001$ (two-tailed test)

Notes: The overall number of observations for labour market entries in the descriptive table is slightly higher than the number of observations here because 72 missing values were not imputed for unknown reasons.

4.2.1. Entering the labour force

Table 2 shows the estimates from a series of models of labour market entry. Model 1 shows that considerable ethnic differences in labour market entry rates persist even after accounting for number of children in the household, years of education and other variables conventionally considered of relevance for women's LFP. More specifically, Pakistani and Bangladeshi women have lower entry rates whereas African women have higher entry rates than White majority women.

In Model 2, we include gender attitudes and religiosity. As expected, both items on gender attitudes show that women who support a more traditional gender ideology are less likely to enter the labour market than women who reject them. Also in line with our expectations, religiosity has no effect on women's labour market entries net of gender attitudes. In an additional model (available upon request), we included religiosity without gender attitudes, and it still had no significant effect, nor did it reduce the ethnic group coefficients. This indicates that, contrary to common assumptions, religiosity plays no substantial role in explaining ethnic differences in women's labour market entries.

Model 3 shows that, net of the control variables, remaining single increases the likelihood of entering the labour market, relative to remaining partnered, as we expected. Moreover, results show a marginally significant five percentage points increase in labour market entries after partnerships started and a nine percentage points increase after partnerships ended. In line with our hypothesis, we find that a 20 per cent decrease in the household's income (net of the woman's income) increases women's probability of entering the labour market by about 6 percentage points.

We also find strong evidence that a new child substantially decreases the likelihood of entering the labour market, but women with a child that has reached school age are no more likely to enter the labour market than inactive women without any change in young children

in the household. The overall number of children in the household decreases the probability of entering the labour market in a given year, in line with our expectations.

Model 4 combines religiosity and gender attitudes with life-course events but shows no substantial change in coefficients when these set of factors are accounted for simultaneously.

As already briefly mentioned, while the substantial differences in labour force entry between Caribbean and majority group women are accounted for by their different circumstances and characteristics, difference in labour market entry rates for other ethnic groups remain substantial. Even after accounting for the control variables, Pakistani and Bangladeshi women have nine percentage points lower and Black African/mixed African women have 14 percentage points higher entry rates. Including the items on gender attitudes in Model 2 lowers the average marginal effects of having Pakistani and Bangladeshi origin on entry rates by about two percentage points to a difference of seven percentage points from White majority women. This indicates that Pakistani and Bangladeshi women's lower entry rates are partly explained by their more traditional gender attitudes. In contrast, the higher entry rates of Black African/ mixed African women compared to White majority women are not explained by adding gender attitudes to the model, which is not surprising considering that the former have on average somewhat more traditional attitudes than the latter. Changes in family context and household income seem not to explain the lower entry rate of Pakistani and Bangladeshi women as it remains about nine percentage points lower than the labour force entry rate of White majority women in Model 3. In contrast, for Black African/mixed African women the differences decrease from 14 percentage points to an entry rate that is 11 percentage points higher than White majority women's after accounting for life-course events. Model 4 shows that Pakistani and Bangladeshi women still have a seven percentage points lower entry rate than White majority women whereas Black African/mixed African women

have a twelve percentage points higher entry rate. This is an important point as it indicates that those factors that are most discussed in the literature on women's labour market participation are insufficient to explain contrasting ethnic difference in women's labour market entries. The generalized residual that we add in Model 5 to account for initial condition bias is positively related to labour market entries but does not substantively affect the other coefficients.

Table 3: Average marginal effects for exiting the labour market

Predictors	(1) LM exit		(2) LM exit		(3) LM exit		(4) LM exit		(5) LM exit	
Ethnic group (Ref.=White)										
Indian/Sri Lankan	-.00	(.00)	-.01	(.00)	-.00	(.00)	-.01	(.00)	-.01	(.01)
Pakistani and Bangladeshi	.06***	(.01)	.04***	(.01)	.05***	(.01)	.04***	(.01)	.03***	(.01)
Black Caribbean/mixed Caribbean	.00	(.01)	.01	(.01)	.00	(.01)	.00	(.01)	.01	(.01)
Black African/mixed African	.01	(.01)	.01	(.01)	.01	(.01)	-.00	(.01)	.01	(.01)
Partnership (Ref.=Remains in partnership)										
Remained single					-.00	(.00)	-.00	(.00)	-.01*	(.00)
Partn. started					.00	(.01)	.00	(.01)	-.00	(.01)
Partn. ended					.00	(.01)	.00	(.01)	.00	(.01)
Changes in young children in HH (Ref.=no changes)										
Child <5 year old increase					.04***	(.00)	.04***	(.00)	.04***	(.00)
Child < 5 year old decrease					-.00	(.00)	-.00	(.00)	.00	(.00)
Household (HH) income (Ref.=stable)										
Household income decrease 20%					.01***	(.00)	.01***	(.00)	.01***	(.00)
Household income increase 20%					.01***	(.00)	.01***	(.00)	.01***	(.00)
HH below 60% median income					.01*	(.00)	.01**	(.00)	.01*	(.00)
Religiosity			-.00	(.00)			-.00	(.00)	-.01	(.00)
Children suffer if mother works			.01***	(.00)			.01***	(.00)	.01***	(.00)
Husbands should earn, wife should stay at home			.01***	(.00)			.01***	(.00)	.01***	(.00)
Generalized residual									-.04***	(.00)
No of children aged under 16	.02***	(.00)	.02***	(.00)	.02***	(.00)	.02***	(.00)	.02***	(.00)
Years of Education	-.00***	(.00)	-.00***	(.00)	-.00***	(.00)	-.00***	(.00)	-.00***	(.00)
English language problems	.01	(.01)	.01	(.01)	.02*	(.01)	.01	(.01)	.01	(.01)
Age (centred)	-.00	(.00)	-.00	(.00)	-.00	(.00)	-.00	(.00)	-.00	(.00)
Age^2	.00***	(.00)	.00***	(.00)	.00***	(.00)	.00***	(.00)	.00***	(.00)
Years since migration (Ref.=native-born/ Second generation)										
<=5 years	.04*	(.02)	.03	(.02)	.04*	(.02)	.03	(.02)	.03+	(.02)
>5 & <=10 years	.02	(.01)	.01	(.01)	.01	(.01)	.01	(.01)	.01	(.01)
>10 years	.01	(.00)	.01	(.00)	.01	(.00)	.01	(.00)	.01	(.01)
General health	.01***	(.00)	.01***	(.00)	.01***	(.00)	.01***	(.00)	.01***	(.00)
Wave	-.00	(.00)	-.00	(.00)	-.00	(.00)	-.00	(.00)	-.00*	(.00)
N	42987		42987		42987		42987		42987	

* $p < .05$, ** $p < .01$, *** $p < .001$ (two-tailed test)

Notes: The overall number of observations for labour market exits in the descriptive table is slightly higher than the number of observations here because 125 missing values were not imputed.

4.2.2. Exiting the labour force

Table 3 gives the results for women's labour market exits. Model 1 shows that after including control variables only Pakistani and Bangladeshi women show significantly higher labour

market exit rates than White majority women. In Model 2, we include religiosity and the two items on gender attitudes. As expected, the two items on gender attitudes show a significant positive effect on the likelihood of exiting the labour market, and religiosity is not independently positively related to women's labour market exit.

In Model 3, we find little evidence for a relationship between partnership dynamics and women's likelihood of exiting the labour market except for a marginally significant and weak negative effect of remaining single. However, we find strong evidence that an increase in children under 5 in the household triggers higher rates of labour market exit, supporting our expectation. We also find that a substantial increase in the household's income is associated with a greater likelihood of women exiting the labour market. Results also show a positive relationship between a decrease in the household's income and women exiting the labour market. Model 4 includes all the factors of the earlier models but does not show much difference in the coefficients.

From the descriptive results, we already know that differences between ethnic groups in exit rates are not as pronounced as for entry rates – with the exception of Pakistani and Bangladeshi women who have a 12 percentage points higher exit rate than White majority women. Model 1 shows that individual characteristics explain about half of this difference so that about six unexplained percentage points difference in the exit rate remain after we account for these factors. Including gender attitudes in Model 2 also explains some of the differences in the exit rate between Pakistani and Bangladeshi and White majority women. However, the ethnic group coefficient remains statistically significant, indicating that about 4 percentage points difference remains unaccounted for. Incorporating life-course events (Model 3) and the generalized residual (Model 5) barely contribute to the explanation of ethnic differences in women's exit rates.

Table 4: Average marginal effect for entering the labour market, by ethnic group

Predictors	(1) White majority		(2) Indian/Sri Lankan		(3) Pakistani/ Bangladeshi		(4) Caribbean		(5) African	
Partnership (Ref.=Remains in partnership)										
Remained single	.09***	(.01)	.20**	(.06)	.17***	(.05)	.02	(.09)	.28***	(.05)
Partn. started	.03	(.02)	.22+	(.13)	.04	(.06)	-.07	(.14)	.11	(.08)
Partn. ended	.05*	(.02)	.07	(.15)	.18**	(.07)	.07	(.16)	.18+	(.10)
Changes in young children in HH (Ref.=no changes)										
Child <5 year old increase	-.16***	(.02)	-.25***	(.07)	-.06	(.04)	-.08	(.10)	-.08	(.07)
Child < 5 year old decrease	-.01	(.01)	-.00	(.05)	-.02	(.02)	.00	(.09)	-.03	(.06)
Household (HH) income (Ref.=stable)										
Household income decrease 20%	.04***	(.01)	.11**	(.04)	-.00	(.02)	-.03	(.06)	.11*	(.05)
Household income increase 20%	.00	(.01)	.00	(.03)	.00	(.02)	-.05	(.06)	.09*	(.04)
HH below 60% median income	-.06***	(.01)	-.08*	(.04)	-.01	(.02)	-.21**	(.07)	-.15***	(.04)
Religiosity	.00	(.00)	-.02	(.01)	-.00	(.01)	-.01	(.02)	.02	(.02)
Children suffer if mother works	-.01***	(.00)	-.02	(.02)	-.01	(.01)	-.01	(.03)	-.05**	(.02)
Husbands should earn, wife should stay at home	-.03***	(.00)	-.00	(.01)	-.02	(.01)	-.05+	(.03)	-.06***	(.02)
No of children aged under 16	-.05***	(.00)	-.02	(.02)	-.01	(.02)	-.15***	(.03)	-.06***	(.02)
Years of Education	.01***	(.00)	.01*	(.01)	.02***	(.00)	.02+	(.01)	.02**	(.01)
English problems	-.03	(.04)	-.02	(.04)	-.07*	(.03)	.00	(.)	-.03	(.05)
Age	-.01***	(.00)	-.01*	(.00)	-.00	(.00)	-.01	(.01)	-.00	(.00)
Age^2 (centred)	-.00	(.00)	.00	(.00)	.00	(.00)	-.00	(.00)	-.00	(.00)
Years since migration (Ref.=native-born/Second generation)										
<=5 years	.01	(.04)	-.17***	(.05)	.01	(.05)			.01	(.09)
>5 & <=10 years	.05+	(.03)	-.12**	(.04)	-.05	(.03)	.20+	(.11)	-.10	(.07)
>10 years	-.02	(.02)	-.04	(.05)	.02	(.03)	.08	(.08)	-.12	(.07)
General health	-.03***	(.00)	-.03*	(.01)	-.01	(.01)	-.02	(.02)	-.05**	(.02)
Wave	.01***	(.00)	-.00	(.01)	.01	(.01)	.04*	(.02)	-.00	(.01)
N	7521		810		2157		404		591	

+ $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$ (two-tailed test)

Table 5: Average marginal effect for exiting the labour market, by ethnic group

Predictors	(1) White majority		(2) Indian/Sri Lankan		(3) Pakistani/ Bangladeshi		(4) Caribbean		(5) African	
Partnership (Ref.=Remains in partnership)										
Remained single	-.01*	(.00)	-.04+	(.02)	.05	(.04)	.01	(.02)	.04+	(.02)
Partn. started	-.00	(.01)	-.00	(.04)	.04	(.07)	.00	(.03)	.03	(.04)
Partn. ended	.01	(.01)	.03	(.05)	.17	(.14)			.01	(.03)
Changes in young children in HH (Ref.=no changes)										
Child <5 year old increase	.06***	(.01)	.04*	(.02)	.06	(.04)	.08***	(.02)	.06*	(.02)
Child < 5 year old decrease	-.00	(.01)	-.00	(.02)	-.04	(.05)	-.00	(.02)	.04+	(.03)
Household (HH) income (Ref.=stable)										
Household income decrease 20%	.02***	(.00)	-.01	(.02)	.09*	(.04)	.01	(.01)	.04*	(.02)
Household income increase 20%	.02***	(.00)	.00	(.01)	-.01	(.03)	-.01	(.01)	.02	(.02)
HH below 60% median income	.01*	(.00)	.01	(.01)	.00	(.03)	.03*	(.02)	-.02	(.02)
Religiosity	-.00	(.00)	-.01*	(.01)	.01	(.02)	-.00	(.01)	-.02+	(.01)
Children suffer if mother works	.01***	(.00)	.00	(.01)	.03+	(.01)	.00	(.01)	.02*	(.01)
Husbands should earn, wife should stay at home	.01***	(.00)	.02**	(.01)	.03*	(.01)	.01*	(.00)	.00	(.01)
No of children aged under 16	.02***	(.00)	.01	(.01)	.07***	(.01)	.02*	(.01)	.03*	(.01)
Years of Education	-.00***	(.00)	.00	(.00)	-.01	(.01)	-.00	(.00)	-.01*	(.00)
English problems	-.00	(.02)	.04+	(.02)	.12*	(.05)	.00	(.)	.04	(.03)
Age	-.00+	(.00)	.00	(.00)	.00	(.00)	-.00	(.00)	-.00	(.00)
Age^2 (centred)	.00***	(.00)	.00**	(.00)	.00**	(.00)	.00	(.00)	.00	(.00)
Years since migration (Ref.=native-born/Second generation)										
<=5 years	.06+	(.03)	-.02	(.02)	.09	(.11)			.05	(.05)
>5 & <=10 years	.03+	(.02)	-.02	(.02)	-.10**	(.03)	.01	(.04)	.01	(.03)
>10 years	.01	(.01)	.01	(.02)	.03	(.03)	.02	(.02)	.01	(.02)
General health	.01***	(.00)	-.00	(.01)	.03+	(.01)	.01	(.01)	.02**	(.01)
Wave	.00	(.00)	-.01	(.00)	-.01	(.01)	-.00	(.00)	-.01	(.01)
N	36684		2076		1164		1614		1409	

+ $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$ (two-tailed test)

4.2.3. Differences between the ethnic groups

The assumption underlying the analysis so far is that life-course events and gender attitudes operate consistently across groups and, alongside individual characteristics, represent potential sources of compositional variation across ethnic groups that can help account for ethnic differences in labour force transitions. Given that the overall sample is dominated by an 81 per cent share of White majority women, these relationships will tend to be driven by those that pertain to the majority population. To explore the extent to which life-course transitions, gender attitudes and religiosity operate in a consistent fashion across groups, we estimated Model 4 separately for each ethnic group. As the number of events for any given minority group is rather small (particularly the transitions in partnerships), the significance levels for their coefficients should be treated with some caution. Instead, Tables 4 and 5 allow more qualitative consideration of the overall consistency of contributory factors across groups in their size and sign. Given the comparison is within groups, strong within-group homogeneity on certain factors is likely to result in these factors offering rather limited explanatory power for differences in transitions within the group, even if they are relevant to explaining differences between groups.

Table 4 shows the results for women entering the labour market by ethnic group. We see that partnership seems to affect Caribbean women in a different way to women from other ethnic groups. Specifically, we see that Caribbean women who remain single over two waves are no more likely to enter the labour market than Caribbean women who remain partnered. In the other ethnic groups, single women are more likely to enter the labour market. Changes in household income dynamics also seem to impact women's probability of entering the labour market differently across ethnic groups. Pakistani, Bangladeshi and Caribbean women do not show higher entry rates following a substantial decrease in the household income while we can observe this relationship for the other ethnic groups. Pakistani and Bangladeshi women

are also the only group that is not negatively affected in their labour market entry by a low household income.

Interestingly, we can also see that an increase in the household's income seems to be positively linked to the labour market entries of African women, possibly because the poverty trap means work is only economically viable if the primary earners reach a certain threshold. For the other ethnic groups, we can find no evidence for this relationship.

Another interesting finding is that having young children in the household seems not to affect Pakistani and Bangladeshi women's propensity to enter the labour market. By contrast, women from other ethnic groups are less likely to enter the labour market when they give birth or when they have children under the age of 16 in the household. Finally, gender attitudes are not related to labour market entries of Indian and Sri Lankan and Pakistani and Bangladeshi women, suggesting either that individual attitudes are more homogeneous within these minority groups or that attitudes are not central for these women's decision to enter the labour market.

We find fewer differences between women from different ethnic groups in the labour market exit models (see Table 5). Children seem to increase women's labour market exits in all ethnic groups even though a few details differ. The labour market exits of Pakistani and Bangladeshi women are not directly affected by an increase in young children and Indian women are not affected in their labour market exits by the total number of children under the age of 16 in the household. Household income is of little relevance for Indian and Sri Lankan women's labour market exits whereas a decreasing or low household income is positively linked to labour market exits in all other ethnic groups, which perhaps provides more evidence for the poverty trap.

More traditional gender attitudes are associated with higher rates of exit in all ethnic groups and are therefore linked as much, if not more, to withdrawal from the labour market as

they are to entering the labour market in the first place. Interestingly, we find a somewhat negative relationship between religiosity and labour market exits for Indian and Sri Lankan and for Black African women, while no such tendency can be shown in the other ethnic groups.

5. Conclusion and Discussion

This paper examined transitions into and out of the labour force of women from different ethnic groups in the UK. We argued that in order to understand and explain ethnic differences in female LFP rates, it is necessary to examine why women enter or exit the labour market. Our main goal was to explain ethnic differences in women's labour market transitions, with a focus on gender attitudes and on potential trigger events related to children, partnership, and household income changes.

We show that compared to the other ethnic groups, Pakistani and Bangladeshi women have the most distinctive labour force transition patterns. Not only do they have much lower labour force entry rates than White majority women or women from other ethnic groups, they also have much higher exit rates. This is the reason why their overall LFP rate is substantially lower than in the other ethnic groups. In contrast, Indian and Sri Lankan women do not differ substantially from their White majority counterparts in their labour market entry and exit patterns. Another interesting pattern is that Caribbean women have considerably higher entry rates than White majority women and also slightly higher exit rates while having a similar overall LFP rate, suggesting that they might have a more flexible attitude towards LFP. The same can be said about African women who have similar LFP rates as Indian women but higher entry and exit rates. These descriptive findings already show that LFP rates are not necessarily indicative of the patterns in which women from different ethnic groups enter or

exit the labour market, which highlight the importance of studying labour market dynamics in addition to static LFP rates.

Our findings regarding the influence of partnership show that changes in the partner's income play a crucial role for women's labour market transitions: with a deteriorating financial situation of the household women are more likely to enter the labour market while with an increasing household income, women are more likely to exit the labour market. These results are in line with household specialization theory and have been confirmed in other studies (Becker 1965; Bernasco, de Graaf, and Ultee 1998). Since changes in household income to some extent reflect partnership changes, it is not very surprising that we find little evidence for the additional influence of starting or ending a partnership on female labour market exits. But we do find that ending a partnership is positively related to labour market entries, which suggests that non-financial reasons are also driving women back into the labour market after a break up. We also find that beyond transitions triggered by the economic situation of the household, remaining single increases women's likelihood of entering the labour market. This indicates that some of the mechanisms that connect partnership with a lower LFP of women manifest themselves not directly after changes in the partnership status, but rather in the long-term. Alternatively, it could be that women who do not intend to participate in the labour market are also more likely to be in a partnership, but accounting for the role of initial conditions produced substantively similar results, suggesting this is not the main reason. These findings suggest that partnerships in the UK often occur within a broader normative framework of a traditional gendered division of paid and domestic work. This accords with the wider trend that has been noted towards stagnation of progress in women's LFP, the high rates of part-time work among women with children, and flatlining of progressive gender attitudes in recent years (England 2010).

Besides the effect of partnership status, we show that an increase in the number of children below the age of five decreases the likelihood of entering the labour market and increases the likelihood of women exiting the labour market, even while controlling for the number of children that are already present in the household. These results are hardly surprising given the previous empirical research that found a similar association (Jeon 2008; Schober 2013; Smeaton 2006). More interesting is that we could not find this relationship among Pakistani and Bangladeshi women. It is possible that the decision on participation is taken earlier, prior to the birth of a child, or, as argued by Holdsworth and Dale (1997), it is the impact of partnering rather than children that is critical for Pakistani and Bangladeshi women compared to White majority women. However, the fact that we cannot find a larger effect of changes in partnership for Pakistani and Bangladeshi women is not fully in line with this interpretation, leaving a puzzle for future research to investigate further.

We find that women with more traditional attitudes are less likely to enter and more likely to exit the labour market, confirming earlier research that showed the importance of women's attitudes for their LFP after accounting for the most common alternative explanations (Read 2004; Khoudja and Fleischmann 2015). Furthermore, differences in gender attitudes partially explain why Pakistani and Bangladeshi women have lower labour force entry rates and higher exit rates than White majority women even after accounting for life-course events and individual characteristics. In contrast, religiosity seems to be of little relevance for women's decision to enter or exit the labour market, which leads us to conclude that the role of religiosity is probably overstated in public debates about the LFP of women in general and ethnic minority women in specific. In an additional analysis, we also assessed to what degree support for traditional gender attitudes condition the effect of life-course events on labour market transitions, but results do not offer a clear-cut interpretation (see Tables A2 and A3 in the online supplement).

As we noted, gender attitudes and partnership and child-bearing are unlikely to be independent. Here we view gender attitudes as the consequences of early socialization within the family and cultural group, meaning that life course events are likely to mediate some of their effect. We thus measured gender attitudes prior to the transitions of interest.[5] However, given that we know that attitudes also adapt to circumstances, we might also expect partnership and child bearing to influence the development of attitudes over the longer term. Such an analysis is beyond the scope of this study and the time span of the observations, but would merit further investigation.

Ultimately, we were not able to fully account for all the differences in labour force transitions across women from different ethnic groups. Even accounting for initial conditions by adding generalized residuals in the model did not have a substantial effect on the ethnic coefficients or on our predictors leading us to the conclusion that the variations in labour force transitions between the ethnic groups are unlikely to be due to differences in the ethnic composition of the two initial samples (women at risk of entering or exiting the labour market). Even in additional models that allowed for unobserved individual-level heterogeneity (see Table A4 and A5 in online supplement), we could not explain the lower entry rates of Pakistani and Bangladeshi women and the higher entry rates of African women nor the higher exit rates of Pakistani and Bangladeshi women. These findings strongly indicate that earlier models of female LFP, based on individual level characteristics have some shortcomings in explaining labour market behaviour of women with different cultural backgrounds. This impression is supported by the separate analyses for each ethnic group, which showed some notable ethnic differences in the relation between the explanatory factors and women's labour market transitions. The relationships were mostly as expected for White

[5] We conducted additional analyses excluding wave 1 to 2 and wave 3 to 4 transitions where the attitudes were measured contemporaneously with the outcome and the results were the same. Our additional FE estimates suggested some caution in interpreting a causal influence of the role of gender attitudes on labour market exits (Table A6 in online supplement).

majority women, but there were some unexpected findings for certain ethnic minority groups. These were perhaps most pronounced for, but not limited to, Pakistani and Bangladeshi women whose labour market entries were not driven by children, income or attitudes and whose higher labour market exits were not related to changes in partnerships or children in the household. Partnership changes seemed also to be of little relevance for Caribbean women's labour market transitions. This raises questions about which further factors might be of importance when analysing the labour market behaviour of non- White majority women, and how we should adjust our models of women's LFP accordingly.

One potential explanation is that the quality of the jobs available to women from different ethnic groups influences their decision to participate or not. That is, women adjust their expectations and adopt greater household specialisation, where they observe more limited options for participation or potential rewards. We know that occupational distributions vary substantially across ethnic groups and that minority groups face labour market discrimination, restricting their opportunities. We conducted some additional exploratory analysis (available on request) in which we investigated whether (lower) earnings and (fewer) hours worked resulted in a greater propensity to exit the labour market among those in work. We found that those women working fewer hours (and consequently accruing fewer earnings) were more likely to exit. However, this still failed to account for the higher rates of exit among Pakistani and Bangladeshi women.

Other candidates for explaining inter-group differences in LFP might therefore be norms and values not accounted for in our model, or varying degrees of involvement of the larger family and ethnic community in women's decision to participate in the labour market. Residential neighbourhoods may offer different occupational opportunities, which may impact women's attitudes to LFP, as well as being sites in which group norms around LFP are reinforced or relaxed (Zuccotti and Platt 2016). Women's behaviours might also be

influenced not only by their own attitudes but also by the behaviours of their parents and partners (Platt and Polavieja 2016; Arcarons 2017) or by wider local or origin communities, linking our findings to contemporary discussions of the role of culture in women's labour supply (Polavieja 2015, Finseraas and Kotsadam 2017). Such discussions of culture link practices and attitudes in origin societies to behaviours in destination societies into the second generation, via processes of (partial) intergenerational transmission. While these discussions leave the 'content' of such cultural explanations undeveloped, they speak to the ways in which migration literature is now linking theoretical approaches to the drivers of migration, with those relating to conditions under which migrants migrate, the aims of their migration, and the modes of incorporation experienced at destination, all of which are implied in 'origin country effects' (Czaika and de Haas, 2013; Luthra et al. 2017; Massey 1999, Portes and Börösz 1989).

As a consequence, even though our analysis is limited to ethnic groups in the UK, the deeper insights about how ethnicity shapes women's labour market behaviour may also be applicable to other migrant-receiving countries. The conditions in the origin countries and the reasons for migration are often comparable among the various ethnic minority groups. For instance, like the Pakistani and Bangladeshi women in our UK sample, Turkish women, who belong to the largest ethnic minority group in Germany and the Netherlands, as well as comprising substantial populations in Belgium and Denmark, also came primarily as family migrants from regions that are shaped by a strong prevalence of traditional gender norms and low female LFP (Spierings 2015). Patterns of family formation also show some similarities across these Turkish and Pakistani and Bangladeshi women (Kulu et al. 2017), as do high levels of transnational marriages into the second generation (Charsley et al. 2012) and relatively high levels of group concentration. The combination of close country of origin connections and non-economic migration orientations contribute to intergenerational

transmission and maintenance of more traditional gender attitudes as well as to re-inforce patterns of LFP that are more similar to those in the origin country. This would tend to suggest that for groups with such migration and origin histories, relatively traditional – and homogenous – gender attitudes will both help to account for differences in LFP as compared to majority populations, and yet be insufficient to fully account for them. Our findings also speak to analyses of LFP differences among ethnic minority women whose origins lie in Muslim majority countries. They indicate that focusing on religiosity *per se* as a potential cause is unlikely to be fruitful. The additional factors proposed above (including family and community influences) might valuably be tested in future studies to establish how multidimensional patterns of migration and destination experience (Luthra et al. 2017) lead to specific labour market dynamics.

A tradition of economic migration and 'breadwinner' status, combined with insertion into specific, skilled labour markets marks out a rather different nexus of drivers, motivations and context of reception. There are women from the Caribbean islands in the Netherlands (mainly the Antilles and Aruba), who migrated under similar circumstances to the Caribbean women in the UK (who are mainly from Jamaica, but also from many other Caribbean islands), and who share historical experiences of patterns of family formation and labour that can be traced back to slavery. At the same time, large proportions of these women are now second or third generation and have shared in common broader socialization patterns with the majority population (Peach 2005), even as they retain some distinctive patterns of family formation and LFP. Our findings would suggest that for such women, patterns of fluctuations in LFP will be linked to compositional differences, including their susceptibility to the impact of children and fertility (though not partnerships). It would strengthen the theoretical arguments about the historical influences on family formation and LFP if this was indeed found to be the case.

Women from Africa migrate to a wide range of European contexts that might be thought to be broadly comparable to the UK. Yet they are a diverse 'group' encompassing a wide range of national and ethnic origins as well as migration motivations and historical (colonial) relationships to countries of destination (see e.g. Mazzucato et al. 2014). Within this diversity, labour migration combined with relatively traditional attitudes (and relatively large families) set their experience somewhere between that of Caribbean and Pakistanis and Bangladeshis. Despite this diversity, it was nevertheless surprising that so little of their increased probability of labour market entry could be explained by compositional effects. A more complete account of the different migration contexts and drivers, and destination contexts and communities that stratify these heterogeneous groups in other country contexts, or where it is further possible to disaggregate migration histories and origins, would facilitate the development and testing of the causes of their LFP. To better provide an empirical underpinning from which to theorise the combinations and relative contribution of origin-level-factors, migration motivations and contexts of reception more generally, we first need more country specific studies on ethnic differences in women's labour market participation in different national contexts. `

Despite exploiting longitudinal data, incorporating temporal ordering into our analysis, and adjusting for within-individual variation on repeat observations (see Supplementary Material) we do not make strong claims about the direction of effects in our analysis. It is possible that, in fact, transitions in the labour force are causing women to make changes (or no changes) in their partnership. It is also possible that an additional unobserved factor is responsible for changes in partnership, family and participation, or a whole range of life-dimensions. This question can only be answered by more sophisticated analyses, likely exploiting yet larger samples and more events than we have here.

Regardless of these limitations, we have demonstrated in this paper how crucial it is to not only look at ethnic differences in labour market stocks of women, but also at their differences in labour market transitions. Focusing on life-course events as well as gender attitudes as explanations of ethnic differences in women's labour market transition, we were able to demonstrate their relevance to labour market entrance and exit and to account for some of the variation between the ethnic groups even if not all of it. Future research is needed to interrogate further what might be driving the remaining differences.

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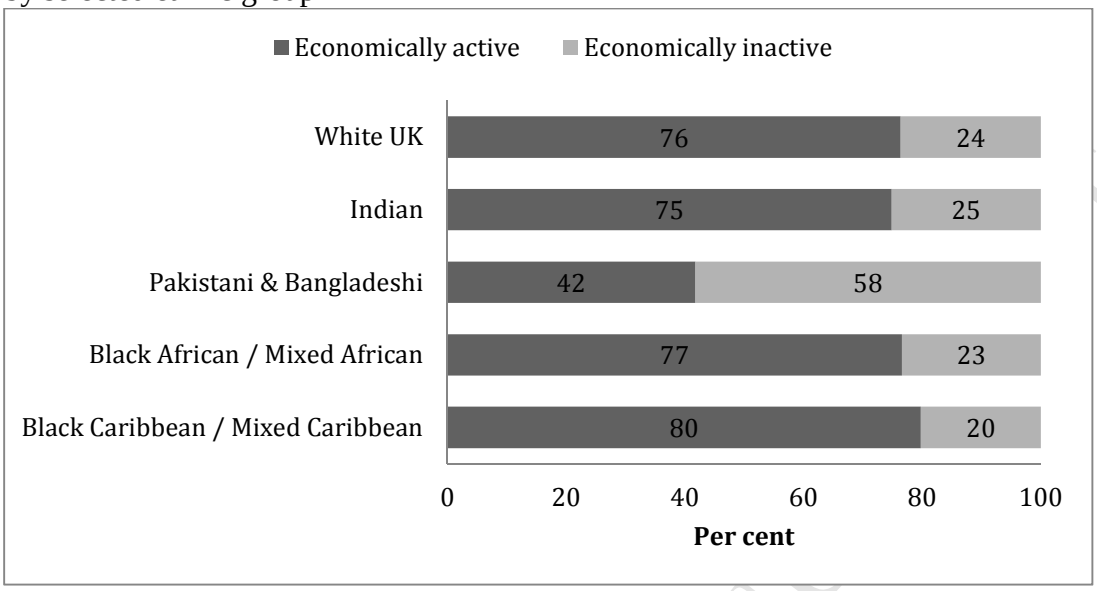
A. Appendix: Supplementary figures and tables

Figure A1: Economic activity and inactivity among women aged 16-64 (excluding students) by selected ethnic group



Source: ONS 2011 Census. Constructed by authors from Table BD0076.

Table A1: Initial Condition model

Predictors	Initial Condition LFP Logit model	
Age	0.025***	(0.002)
Age^2	-0.000**	(0.000)
Years of Education	0.215***	(0.009)
hhincome_exclf	0.000	(0.000)
No of children aged under 5	-0.833***	(0.037)
Government Office Region		
North East	Ref.	
North West	0.246+	(0.128)
Yorkshire and the Humber	-0.002	(0.133)
East Midlands	0.152	(0.134)
West Midlands	-0.001	(0.126)
East of England	-0.011	(0.133)
London	-0.577***	(0.123)
South East	0.020	(0.128)
South West	0.063	(0.129)
Wales	0.033	(0.136)
Scotland	0.308*	(0.136)
Northern Ireland	-0.005	(0.149)
Constant	-1.963***	(0.182)
N	15295	

Standard errors in parentheses
+ $p < 0.10$, * $p < 0.05$, ** $p < .01$, *** $p < .001$

Additional analysis

In additional analyses, we examined first, how far women's gender attitudes at an early stage of the survey condition the relation between life-course events and labour market transitions, and second, to what extent unobserved heterogeneity on the individual level affects the results.

Interaction effects

Evidence for interactions between life-course events and gender role attitudes is shown for labour market entries in Table A2 and labour market exits in Table A3. Surprisingly, the interaction between the two gender role attitudes and remaining single go in opposite directions. We find a significant positive interaction between the item "a pre-school child is likely to suffer if his or her mother works" and being single suggesting that single women are more likely to enter the labour market if they have high values on this item. However, as the negative partial effect of "a pre-school child is likely to suffer if his or her mother works" is of similar size as the interaction term, and therefore cancels it out, the dominant effect is the positive one of remaining single on labour market entries. There is a significant negative interaction between the other gender role attitudes item "A husband's job is to earn money; a wife's job is to look after the home and family" and remaining single, suggesting that single women who endorse this claim are less likely to enter the labour market than single women who don't. Somewhat more difficult to understand is the positive interaction term of "a pre-school child is likely to suffer if his or her mother works" and starting a partnership. This implies that more traditional women are more likely to enter the labour market than egalitarian women when they move in with their partner or spouse. However, the result was sensitive to the number of waves we included, and we do not want to over-interpret this unexpected effect.

We also find a marginally significant negative interaction between the view that a child is likely to suffer if the mother works and an increase in young children in the household, supporting our expectation that women with more traditional attitudes are less likely to enter the labour market after giving birth compared to women with more egalitarian attitudes.

For labour market exits, we find a positive interaction between "A husband's job is to earn money; a wife's job is to look after the home" and ending a partnership suggesting that traditional women are more likely to exit the labour market than egalitarian women after a partnership ended. We also find significant interactions of similar size between both gender role attitudes items and an increase in young children in the household – though in opposite directions. Considering that the partial effects of the two gender role attitude items are positive and of similar size as the interaction terms, it seems that, overall, gender role attitudes do not substantially moderate the effect of giving birth on women's labour market exits.

Unobserved heterogeneity

To account for individual unobserved heterogeneity across the different waves we estimated random effects probit models with individuals at the second level and time/person observations at the first level, while using a clustered standard error for person sampling units (Table A4 & A5). We could not find any difference in the results that would lead us to different conclusions compared to the average marginal effect models described in the main text. The differing results in the random effects models can in fact be explained by the unaccounted weights as unweighted average marginal effect models come to almost identical conclusions.

To further test the robustness of our results, we estimated fixed effects logit models for labor market entries and exits and compared them with random effects models (Table A6). As fixed effects logit models do not allow the use of probability weights or clustered standard

errors, we estimated the models not accounting for any aspects of the complex sample design and compared them to random effects models that also did not account for these issues. Hence, the main aim of this test is to get an idea to what degree unobserved heterogeneity may affect our estimates (and not to get a better estimation of the true coefficients). Additional caution should be used in interpreting the results given the limited amount of change in the covariates over this period. Model 1 shows the estimates of the random effects coefficients for labor market entries and exits and Model 2 shows the coefficients of the fixed effects models (from which years since migration had to be removed to enable the models to converge).

Even though the coefficients in the fixed effects models have, expectedly, higher standard errors, the results of the random effects and fixed effects models are relatively similar.
In both models, the effects of gender attitudes and changes in the number of young children in the household on labour market entries are significant and go in the same direction. The effects of partnership coefficients on labour market entries are significant in the random effects model, but not in the fixed effects model, even though they do go in the same direction. The same applies for the effects of a decrease in the household income on labour market entries.
In the random and fixed effects model for labor market exits, partnership, children, and household income coefficients are also similar (though the effect size of having new children is smaller and the effect size of remaining single larger in the fixed effects than in the random effects estimates).
The main differences between the random effects and fixed effects models for labour market exits are that religiosity has a significant negative effect in the fixed effects model and a smaller and insignificant negative effect in the random effects model. The two gender attitude

items are significant in the random effects model but not in the fixed effects model. This suggests that we might have to interpret the effects of gender attitudes on labour market exits in our main analysis with caution.

Concerning the effects of ethnicity on women's labour market entries and exits, the interaction between time and ethnic group in the FE model shows how propensity to exit the labour market changes over time, rather than providing an estimate of the main effect of ethnic group (including all the unobserved factors associated with it) that we derive from the RE model. Such interactions are of interest when the temporal process is of interest, that is the extent to which inequalities in participation are increasing or reducing over time. Given that the ethnicity coefficients are also heavily influenced by the design weight, the coefficients here should be interpreted with caution.

The results of the fixed effects model for labour market entries show that over time Pakistani/Bangladeshi are less likely to enter the labour market, i.e. over this short period, they are not increasing their propensity to enter the labour market, but the opposite. In contrast, Black Caribbean women increase their relative probability of entering the labour market over time.

The results of the fixed effects model for labour market exits show that all the minority groups are increasingly less likely to exit over time, conditional on having a job, even if their initial probabilities of exit relative to White British women differ.

Table A2: Average marginal effects for entering the labour market with interactions

Predictors	AME		AME: Interaction effects		AME: Interaction effects accounting for initial condition	
Ethnic group (Ref.=White)						
Indian/Sri Lankan	-0.017	(0.023)	-.01	(.02)	-0.013	(0.022)
Pakistani & Bangladeshi	-0.071***	(0.019)	-.07***	(.02)	-0.067***	(0.019)
Black Caribbean/mixed Caribbean	0.014	(0.027)	.01	(.03)	0.009	(0.027)
Black African/mixed African	0.122***	(0.032)	.12***	(.03)	0.112***	(0.031)
Partnership (Ref.=Remains in partnership)						
Remained single	0.145***	(0.016)	.14***	(.02)	0.150***	(0.016)
Partn. started	0.050+	(0.028)	.06*	(.03)	0.063*	(0.028)
Partn. ended	0.085**	(0.031)	.08**	(.03)	0.081**	(0.031)
Changes in young children in HH (Ref.=no changes)						
Child <5 year old increase	-0.219***	(0.024)	-.24***	(.03)	-0.243***	(0.027)
Child < 5 year old decrease	-0.011	(0.015)	-.01	(.02)	-0.017	(0.015)
Household (HH) income (Ref.=stable)						
Household income decrease 20%	0.064***	(0.012)	.06***	(.01)	0.064***	(0.012)
Household income increase 20%	0.006	(0.010)	.00	(.01)	0.004	(0.010)
HH below 60% median income	-0.085***	(0.013)	-.08***	(.01)	-0.087***	(0.012)
Religiosity	0.004	(0.005)	.00	(.00)	0.004	(0.005)
Children suffer if mother works	-0.020***	(0.005)	-.03***	(.01)	-0.028***	(0.008)
Husbands should earn, wife should stay at home	-0.036***	(0.005)	-.03***	(.01)	-0.026***	(0.008)
Generalized residual					0.074***	(0.013)
Childsuffermotherwork X Single			.03**	(.01)	0.027**	(0.010)
Childsuffermotherwork X Partn.start			.07*	(.03)	0.065*	(0.026)
Childsuffermotherwork X Partn.end			.03	(.03)	0.032	(0.029)
Husbandearn,wifehome X Single			-.02**	(.01)	-0.024**	(0.009)
Husbandearn,wifehome X Partn.start			-.03	(.02)	-0.031	(0.023)
Husbandearn,wifehome X Partn.end			-.00	(.02)	-0.005	(0.025)
Childsuffermotherwork X birth			-.04	(.02)	-0.042+	(0.025)
Childsuffermotherwork X childo5			-.00	(.01)	-0.002	(0.013)
Husbandearn,wifehome X birth			-.04	(.02)	-0.039	(0.025)
Husbandearn,wifehome X childo5			.02	(.01)	0.017	(0.013)
Childsuffermotherwork X income increase			.00	(.01)	-0.000	(0.011)
Childsuffermotherwork X income decrease			-.00	(.01)	-0.002	(0.011)
Husbandearn,wifehome X income increase			-.01	(.01)	-0.008	(0.010)
HusbandearnwifehomeX income decrease			.01	(.01)	0.006	(0.011)
No of children aged under 16	-0.071***	(0.006)	-.07***	(.01)	-0.071***	(0.006)
Years of Education	0.020***	(0.002)	.02***	(.00)	0.021***	(0.002)
English language problems	-0.050+	(0.026)	-.05*	(.03)	-0.052*	(0.025)
Age	-0.008***	(0.001)	-.01***	(.00)	-0.008***	(0.001)
Age^2	-0.000	(0.000)	-.00	(.00)	-0.000	(0.000)
Years since migration (Ref.=native-born/ Second generation)						
<=5 years	-0.017	(0.034)	-.01	(.03)	-0.012	(0.033)
>5 & <=10 years	0.009	(0.024)	.01	(.02)	0.007	(0.023)
>10 years	-0.019	(0.020)	-.02	(.02)	-0.017	(0.019)
General health	-0.039***	(0.004)	-.04***	(.00)	-0.038***	(0.004)
Wave	0.011***	(0.003)	.01***	(.00)	0.003	(0.003)
N	11484		11484		11484	

Standard errors in parentheses

+ $p < 0.10$, * $p < 0.05$, ** $p < .01$, *** $p < .001$

Table A3: Average marginal effects for exiting the labour market with interactions

Predictors	AME		AME: Interaction effects		AME: Interaction effects accounting for initial conditions	
Ethnic group (Ref.=White)						
Indian/Sri Lankan	-0.006	(0.004)	-.01	(.00)	-0.005	(0.005)
Pakistani & Bangladeshi	0.037***	(0.009)	.04***	(.01)	0.034***	(0.009)
Black Caribbean/mixed Caribbean	0.003	(0.006)	.01	(.01)	0.007	(0.006)
Black African/mixed African	-0.000	(0.006)	.01	(.01)	0.006	(0.007)
Partnership (Ref.=Remains in partnership)						
Remained single	-0.009***	(0.002)	-.00	(.00)	-0.007*	(0.003)
Partn. started	0.001	(0.006)	-.00	(.01)	-0.001	(0.005)
Partn. ended	0.005	(0.007)	.00	(.01)	0.002	(0.007)
Changes in young children in HH (Ref.=no changes)						
Child <5 year old increase	0.040***	(0.003)	.04***	(.00)	0.043***	(0.003)
Child < 5 year old decrease	-0.001	(0.004)	-.00	(.00)	0.001	(0.004)
Household (HH) income (Ref.=stable)						
Household income decrease 20%	0.009***	(0.003)	.01***	(.00)	0.011***	(0.003)
Household income increase 20%	0.010***	(0.002)	.01***	(.00)	0.010***	(0.002)
HH below 60% median income	0.007**	(0.002)	.01*	(.00)	0.006*	(0.002)
Religiosity	-0.002*	(0.001)	-.00	(.00)	-0.001	(0.001)
Children suffer if mother works	0.005***	(0.001)	.01***	(.00)	0.007***	(0.002)
Husbands should earn, wife should stay at home	0.007***	(0.001)	.01***	(.00)	0.007***	(0.002)
Generalized residual					-0.036***	(0.003)
Childsuffermotherwork X Single			-.00	(.00)	-0.001	(0.002)
Childsuffermotherwork X Partn.start			-.00	(.01)	-0.000	(0.006)
Childsuffermotherwork X Partn.end			.00	(.01)	0.001	(0.006)
Husbandearn,wifehome X Single			.00	(.00)	0.002	(0.002)
Husbandearn,wifehome X Partn.start			-.00	(.01)	-0.002	(0.005)
Husbandearn,wifehome X Partn.end			.01**	(.01)	0.015**	(0.005)
Childsuffermotherwork X birth			.01	(.00)	0.005+	(0.003)
Childsuffermotherwork X childo5			.00	(.00)	0.001	(0.004)
Husbandearn,wifehome X birth			-.01*	(.00)	-0.007*	(0.003)
Husbandearn,wifehome X childo5			-.01	(.00)	-0.007	(0.005)
Childsuffermotherwork X income increase			-.00	(.00)	-0.004+	(0.003)
Childsuffermotherwork X income decrease			-.00	(.00)	-0.000	(0.003)
Husbandearn,wifehome X income increase			.00	(.00)	0.002	(0.002)
Husbandearn,wifehomeX income decrease			-.00	(.00)	-0.000	(0.003)
No of children aged under 16	0.014***	(0.001)	.02***	(.00)	0.015***	(0.001)
Years of Education	-0.003***	(0.000)	-.00***	(.00)	-0.004***	(0.000)
English language problems	0.010	(0.008)	.01	(.01)	0.009	(0.008)
Age	-0.000	(0.000)	-.00	(.00)	-0.000	(0.000)
Age^2	0.000***	(0.000)	.00***	(.00)	0.000***	(0.000)
Years of migration (Ref.=native-born /Second generation)	0.000	(.)			0.000	(.)
<=5 years	0.034+	(0.018)	.03	(.02)	0.027+	(0.016)
>5 & <=10 years	0.009	(0.008)	.01	(.01)	0.009	(0.008)
>10 years	0.006	(0.005)	.01	(.00)	0.007	(0.005)
General health	0.009***	(0.001)	.01***	(.00)	0.009***	(0.001)
Wave	-0.000	(0.001)	-.00	(.00)	-0.002*	(0.001)
N	42987		42987		42987	

Standard errors in parentheses

+ $p < 0.10$, * $p < 0.05$, ** $p < .01$, *** $p < .001$

Table A4: Random effect probit models for entering the labour market (not accounting for design weight)

Predictors	AME (unweighted)		Random effect probit		AME (unweighted): Accounting for initial conditions		Random effect probit: Accounting for initial conditions	
Ethnic group (Ref.=White)								
Indian/Sri Lankan	-0.01	(0.02)	-0.03	(0.11)	-0.01	(0.02)	-0.03	(0.11)
Pakistani & Bangladeshi	-0.06***	(0.01)	-0.38***	(0.09)	-0.06***	(0.01)	-0.36***	(0.09)
Black Caribbean/mixed Caribbean	0.00	(0.02)	0.03	(0.12)	-0.00	(0.02)	0.00	(0.12)
Black African/mixed African	0.12***	(0.03)	0.59***	(0.12)	0.11***	(0.03)	0.55***	(0.12)
Partnership (Ref.=Remains in partnership)								
Remained single	0.15***	(0.01)	0.69***	(0.06)	0.16***	(0.01)	0.71***	(0.06)
Partn. started	0.07**	(0.03)	0.34**	(0.12)	0.07**	(0.03)	0.35**	(0.12)
Partn. ended	0.11***	(0.03)	0.46***	(0.13)	0.10***	(0.03)	0.46***	(0.12)
Changes in young children in HH (Ref.=no changes)								
Child <5 year old increase	-0.19***	(0.02)	-0.88***	(0.10)	-0.19***	(0.02)	-0.89***	(0.10)
Child < 5 year old decrease	-0.01	(0.01)	-0.01	(0.06)	-0.02	(0.01)	-0.03	(0.06)
Household (HH) income (Ref.=stable)								
Household income decrease 20%	0.06***	(0.01)	0.27***	(0.05)	0.06***	(0.01)	0.28***	(0.05)
Household income increase 20%	0.01	(0.01)	0.05	(0.05)	0.01	(0.01)	0.05	(0.05)
HH below 60% median income	-0.08***	(0.01)	-0.37***	(0.06)	-0.08***	(0.01)	-0.38***	(0.06)
Religiosity	0.01	(0.00)	0.03	(0.02)	0.01	(0.00)	0.03	(0.02)
Children suffer if mother works	-0.02***	(0.00)	-0.10***	(0.02)	-0.02***	(0.00)	-0.09***	(0.02)
Husbands should earn, wife should stay at home	-0.03***	(0.00)	-0.18***	(0.02)	-0.03***	(0.00)	-0.18***	(0.02)
Generalized residual					0.04***	(0.01)	0.16***	(0.03)
No of children aged under 16	-0.06***	(0.00)	-0.34***	(0.03)	-0.06***	(0.00)	-0.33***	(0.03)
Years of Education	0.02***	(0.00)	0.12***	(0.01)	0.02***	(0.00)	0.12***	(0.01)
English language problems	-0.05*	(0.02)	-0.30**	(0.11)	-0.04*	(0.02)	-0.29**	(0.11)
Age	-0.01***	(0.00)	-0.04***	(0.00)	-0.01***	(0.00)	-0.03***	(0.00)
Age^2	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)
Years since migration (Ref= native-born/ Second generation)								
<=5 years	-0.05*	(0.02)	-0.34*	(0.14)	-0.05+	(0.02)	-0.31*	(0.14)
>5 & <=10 years	-0.03	(0.02)	-0.19+	(0.11)	-0.03+	(0.02)	-0.18+	(0.10)
>10 years	-0.02	(0.01)	-0.14	(0.08)	-0.02	(0.01)	-0.13	(0.08)
General health	-0.03***	(0.00)	-0.18***	(0.02)	-0.03***	(0.00)	-0.18***	(0.02)
Wave	0.01**	(0.00)	0.12***	(0.02)	0.00	(0.00)	0.10***	(0.02)
Constant			-2.08***	(0.17)			-1.91***	(0.17)
var(_cons[pidp])								
Constant			0.89***	(0.09)			0.82***	(0.09)
N	11550		11550		11550		11550	

Standard errors in parentheses
+ $p < 0.10$, * $p < 0.05$, ** $p < .01$, *** $p < .001$

Table A5: Random effect probit models for exiting the labour market (not accounting for design weight)

Predictors	AME (unweighted)		Random effect probit		AME (unweighted): Accounting for initial conditions		Random effect probit: Accounting for initial conditions	
Ethnic group (Ref.=White)								
Indian/Sri Lankan	-0.00	(0.00)	0.01	(0.08)	0.00	(0.00)	0.02	(0.08)
Pakistani & Bangladeshi	0.04***	(0.01)	0.49***	(0.08)	0.04***	(0.01)	0.46***	(0.08)
Black Caribbean/mixed Caribbean	0.01*	(0.01)	0.18*	(0.08)	0.01*	(0.01)	0.20**	(0.08)
Black African/mixed African	0.02*	(0.01)	0.23*	(0.09)	0.02*	(0.01)	0.22*	(0.09)
Partnership (Ref.=Remains in partnership)								
Remained single	-0.00	(0.00)	-0.07+	(0.04)	-0.01*	(0.00)	-0.10*	(0.04)
Partn. started	0.00	(0.01)	0.00	(0.08)	0.00	(0.01)	-0.01	(0.08)
Partn. ended	0.00	(0.01)	0.03	(0.09)	0.00	(0.01)	0.02	(0.09)
Changes in young children in HH (Ref.=no changes)								
Child <5 year old increase	0.05***	(0.00)	0.63***	(0.05)	0.05***	(0.00)	0.66***	(0.05)
Child < 5 year old decrease	-0.00	(0.00)	-0.01	(0.06)	0.00	(0.00)	0.03	(0.06)
Household (HH) income (Ref.=stable)								
Household income decrease 20%	0.01***	(0.00)	0.16***	(0.04)	0.01***	(0.00)	0.16***	(0.04)
Household income increase 20%	0.01***	(0.00)	0.14***	(0.03)	0.01***	(0.00)	0.14***	(0.03)
HH below 60% median income	0.01*	(0.00)	0.08*	(0.04)	0.00*	(0.00)	0.08*	(0.04)
Religiosity	-0.00	(0.00)	-0.02	(0.02)	-0.00	(0.00)	-0.02	(0.02)
Children suffer if mother works	0.01***	(0.00)	0.10***	(0.02)	0.01***	(0.00)	0.08***	(0.02)
Husbands should earn, wife should stay at home	0.01***	(0.00)	0.13***	(0.02)	0.01***	(0.00)	0.12***	(0.02)
Generalized residual					-0.02***	(0.00)	-0.33***	(0.03)
No of children aged under 16	0.02***	(0.00)	0.24***	(0.02)	0.02***	(0.00)	0.24***	(0.02)
Years of Education	-0.00***	(0.00)	-0.05***	(0.01)	-0.00***	(0.00)	-0.06***	(0.01)
English language problems	0.02**	(0.01)	0.32**	(0.12)	0.02*	(0.01)	0.29*	(0.12)
Age	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)	-0.00	(0.00)
Age^2	0.00***	(0.00)	0.00***	(0.00)	0.00***	(0.00)	0.00***	(0.00)
Years since migration (Ref.=native-born/ Second generation)								
<=5 years	0.02+	(0.01)	0.29*	(0.13)	0.02+	(0.01)	0.27*	(0.13)
>5 & <=10 years	0.01+	(0.01)	0.18*	(0.09)	0.01+	(0.01)	0.18*	(0.09)
>10 years	0.01	(0.00)	0.10+	(0.06)	0.01	(0.00)	0.10+	(0.06)
General health	0.01***	(0.00)	0.14***	(0.02)	0.01***	(0.00)	0.14***	(0.02)
Wave	-0.00	(0.00)	0.01	(0.01)	-0.00**	(0.00)	-0.01	(0.01)
Constant			-2.24***	(0.11)			-1.91***	(0.11)
var(_cons[pidp])								
Constant			0.46***	(0.03)			0.42***	(0.03)
N	43079		43079		43079		43079	

Standard errors in parentheses
+ $p < 0.10$, * $p < 0.05$, ** $p < .01$, *** $p < .001$

Table A6: Random and fixed effects of labor market entries and exits

Predictors	(1) RE enter		(2) FE enter		(1) RE exit		(2) FE exit	
Ethnic group (Ref.=White)								
Indian/Sri Lankan	-0.05	(0.18)			0.04	(0.17)		
Pakistani and Bangladeshi	-0.67***	(0.16)			1.08***	(0.17)		
Black Caribbean/mixed Caribbean	0.05	(0.20)			0.41*	(0.18)		
Black African/mixed African	1.01***	(0.20)			0.52**	(0.19)		
Ethnic group (Ref.=White)#wave								
Indian/Sri Lankan			-0.16	(0.16)			-0.21*	(0.11)
Pakistani and Bangladeshi			-0.27*	(0.12)			-0.12	(0.11)
Black Caribbean/mixed Caribbean			0.51+	(0.27)			-0.24+	(0.13)
Black African/mixed African			-0.09	(0.16)			-0.01	(0.15)
Partnership (Ref.=Remains in partnership)								
Remained single	1.21***	(0.11)	0.53	(0.35)	-0.18+	(0.10)	-0.69*	(0.29)
Partn. started	0.60**	(0.21)	0.31	(0.34)	-0.02	(0.17)	-0.34	(0.26)
Partn. ended	0.81***	(0.21)	0.25	(0.35)	0.06	(0.20)	-0.25	(0.31)
Changes in young children in HH (Ref.=no changes)								
Child <5 year old increase	-1.54***	(0.18)	-0.93**	(0.29)	1.22***	(0.10)	0.24+	(0.13)
Child < 5 year old decrease	-0.01	(0.10)	0.13	(0.13)	-0.03	(0.13)	-0.19	(0.17)
Household (HH) income (Ref.=stable)								
Household income decrease 20%	0.47***	(0.09)	0.07	(0.15)	0.35***	(0.08)	0.45***	(0.12)
Household income increase 20%	0.07	(0.08)	0.12	(0.13)	0.31***	(0.07)	0.33**	(0.10)
HH below 60% median income	-0.67***	(0.09)	0.04	(0.19)	0.18*	(0.08)	-0.13	(0.15)
Religiosity	0.05	(0.04)	-0.03	(0.11)	-0.06	(0.03)	-0.18*	(0.09)
Children suffer if mother works	-0.18***	(0.04)	-0.25*	(0.11)	0.21***	(0.04)	0.12	(0.09)
Husbands should earn, wife should stay at home	-0.32***	(0.04)	-0.23*	(0.11)	0.29***	(0.04)	0.06	(0.08)
No of children aged under 16	-0.60***	(0.04)	-1.06***	(0.18)	0.56***	(0.04)	0.90***	(0.13)
Years of Education	0.21***	(0.02)	0.22	(0.17)	-0.11***	(0.01)	0.25+	(0.13)
English language problems	-0.57**	(0.19)	0.00	(.)	0.71**	(0.24)	0.00	(.)
Age (centred)	-0.06***	(0.01)	-0.03	(0.26)	-0.01	(0.01)	-0.16	(0.21)
Age^2	0.00	(0.00)	-0.01*	(0.00)	0.00***	(0.00)	0.01***	(0.00)
Years since migration (Ref.=native-born/ Second generation)								
<=5 years	-0.58*	(0.24)			0.62*	(0.26)		
>5 & <=10 years	-0.31+	(0.19)			0.40*	(0.19)		
>10 years	-0.23+	(0.14)			0.22+	(0.13)		
General health	-0.32***	(0.04)	-0.22**	(0.07)	0.30***	(0.03)	0.13*	(0.06)
Wave	0.21***	(0.03)	0.65*	(0.26)	0.04*	(0.02)	0.50*	(0.21)
Constant	-3.57***	(0.29)			-4.70***	(0.27)		
lnsig2u								
Constant	0.94***	(0.11)			1.20***	(0.10)		
N	11550		2777		43079		3422	

Standard errors in parentheses. The models do not account for design weight, person sampling unit, or strata.
+ $p < 0.10$, * $p < 0.05$, ** $p < .01$, *** $p < .001$