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Family Formation and Employment Changes among Descendants of Immigrants and Natives in France: A Multiprocess Analysis

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Family Formation and Employment Changes among Descendants of Immigrants and Natives in France: A Multiprocess Analysis*

Isaure Delaporte† Hill Kulu‡

Abstract

This paper investigates the association between family formation and the labour market trajectories of immigrants' descendants over the life course. Using rich data from the *Trajectories and Origins* survey from France, we apply multilevel event history models to analyse the transitions in and out of employment for both men and women by parity. We account for unobserved co-determinants of childbearing and employment by applying a simultaneous-equations modelling. Our analysis shows that women's professional careers are negatively associated with childbirth. There are differences across descendant groups. The descendants of Turkish immigrants are more likely to exit employment and less likely to re-enter employment following childbirth than women from other groups. The negative impact of childbearing on employment is overestimated among women due to unobserved selection effects. Among men, the descendants of European immigrants are less likely to exit employment after having a child than other descendant groups. The study demonstrates the negative effect of childbearing on women's employment, which is pronounced for some minority groups suggesting the need for further policies to help women reconcile work with family life.

Keywords: Fertility, Employment, Life-course events, Multilevel event history analysis, Descendants of immigrants, France.

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1 Introduction

European labour markets are characterised by gender disparities. Women continue to have lower labour force participation rates than men (ILO 2018). Besides, women work fewer hours, are concentrated in specific occupations, and earn less (OECD 2021). One important root cause of gender inequality in the labour market is family formation. A large body of literature has found that women's professional careers are negatively affected following childbirth, whereas men's employment trajectories are not (Loughran and Zissimopoulos 2009; Bertrand et al. 2010; Angelov et al. 2016; Wilner 2016; Kleven and Landais 2017; Kleven et al. 2019a; Kreyenfeld 2015). Some groups are more affected than others: immigrant women experience a greater motherhood penalty than native women (Kil et al. 2018; Nieto 2021; Vidal-Coso 2019). Yet, little is known about the effect of childbirth on the employment trajectories of the descendants of immigrants.

The effect of having a child on individuals' labour market decisions is likely to differ across population groups for a number of reasons. First, the descendants of immigrants often differ from each other and from the native population (here defined as native-born individuals with two native-born parents) in their cultural background, social norms, and preferences. They hold different preferences about the timing of family formation (Delaporte and Kulu 2022; Kulu et al. 2021) and have different expectations regarding the division of paid and unpaid work (Fleischmann and Höhne 2013; Khoudja and Platt 2018). The descendants of immigrants do not fare equally in the labour market (Algan et al. 2010; Silberman et al. 2007) and individuals who have limited labour market opportunities might be more inclined to exit the labour market following childbirth. Furthermore, the descendants of immigrants may differ from each other in the number of family members available for informal care, and in their attitudes/access to childcare (Seibel and Hedegaard 2017; Biegel et al. 2021). Thus, it is important to investigate potential differences in the effect of childbirth on employment by gender and migration background.

This paper investigates the relationship between family formation and the labour market trajectories of immigrants' descendants and natives. We focus on France which provides a rich context for the study of differences in employment trajectories among diverse population groups. The minority population comprises a number of sizeable groups, with differentiated employment histories, and family patterns (Delaporte and Kulu 2022). We use a French survey – *Trajectories and Origins* – which holds information on immigrants, immigrants' descendants, and French natives, and contains retrospective biographical information on individuals' childbearing events and their labour market outcomes over the life course. We examine the employment trajectories of both men and women and focus on the descendants of immigrants (including the 1.5G of immigrants who have arrived in France before the age of 15) who belong to six origin groups, namely the descendants of North Africans, Sub-Saharan Africans, South East Asians, Turkish, Southern Europeans, and other Europeans. We apply multilevel event history models to study repeated events of employment changes as well as the birth of several children. We examine three sets of

transitions: i) the transition to first employment after leaving full-time education, ii) the transitions out of employment and iii) the transitions to second and higher order employment. For each set of transitions, we investigate the relative risks of experiencing these changes separately for men and women by parity. We also explore differences between immigrants' descendants and natives as well as across origin groups.

This study extends previous research in the following ways. First, although the link between fertility and employment has been investigated extensively among the majority population (Loughran and Zissimopoulos 2009; Bertrand et al. 2010; Angelov et al. 2016; Wilner 2016; Kleven and Landais 2017; Kleven et al. 2019a; Kreyenfeld 2015), only a very limited number of studies have focused on immigrants and their descendants (Kil et al. 2018; Nieto 2021; Vidal-Coso 2019; Lacroix and Vidal-Coso 2019). In this study, we analyse the interaction between gender and migration background. This allows us to shed light on the effect of family formation on the labour market trajectories of immigrants' descendants and native men and women. We also look at differences across origin groups.

Second, we contribute to the literature on the economic integration of the descendants of immigrants (Meurs et al. 2006; Clark and Drinkwater 2010; Piton and Rycx 2020; Zwysen and Demireva 2020; Clark and Ochmann 2022; Algan et al. 2010; Silberman et al. 2007) by studying repeated events of employment changes. Most studies focus on one single transition in the entire professional career of individuals (Ganault and Pailhé 2022). This enables us to shed light on the extent to which patterns of entry or exit explain variation in labour force participation across descendant groups. While higher rates of employment exit might indicate issues around retention or instability, lower rates of employment entry are more likely to be a signal of structural or cultural obstacles (Khoudja and Platt 2018). Therefore, examining differences in both employment entry and exit rates will allow us to better understand some of the obstacles encountered by individuals from different groups.

Lastly, most research on fertility and employment has not accounted for possible unobserved selection effects. Yet, when studying the effect of childbirth on employment, there are potential unobserved selection effects as individuals who are more likely to change their employment status may also be more (or less) likely to have a birth because of unobserved characteristics. For example, some individuals may be more career oriented, whereas others are more family oriented. This would lead to a biased estimation of the effect of childbirth on employment. In this paper, we adopt a simultaneous-equations modelling approach which allows us to detect and control for unobserved time-constant co-determinants of these two processes. Although simultaneous-equations hazard models have been used in research on interrelated event histories of individuals before (Matysiak 2009; Kulu and Steele 2013; Mikolai and Kulu 2018; Steele et al. 2005, 2006), to the best of our knowledge, no study has applied this method to study the interrelationship between employment and childbearing dynamics among migrant and ethnic minority populations.

2 Previous Research

2.1 Work-family balance: a gendered perspective

A large body of research highlights the role of family formation in explaining gender inequality in the labour market (Loughran and Zissimopoulos 2009; Bertrand et al. 2010; Angelov et al. 2016; Wilner 2016; Kleven and Landais 2017; Kleven et al. 2019a; Kreyenfeld 2015). While men's labour force participation tends to be stable across the life course, women's labour force participation varies at different life stages, with lower or no participation often corresponding to periods of childbirth (Angrist and Evans 1996; Jacobsen et al. 1999; Kleven et al. 2019a; Sieppi and Pehkonen 2019; Herrarte et al. 2012).

For women, childbirth results in lower employment rates (Gutierrez-Domenech 2005a; Cristia 2008; Michaud and Tatsiramos 2011; Fitzenberger et al. 2013), lower earnings (Angelov et al. 2016; Kleven et al. 2019b,c), and a reduction in working hours (Lundberg and Rose 2000; Miller 2011; Kleven et al. 2019a; Gutierrez-Domenech 2005b; Wood et al. 2016; Begall and Grunow 2015). It reduces women' performance (Azmat and Ferrer 2017), experience (Klepinger et al. 1999; Daniel et al. 2013), occupational status (Cools et al. 2017; Kleven et al. 2019a), productivity (Krapf et al. 2017), as well as full-time (Paull 2008; Daniel et al. 2013) and high-paid private sector employment (Daniel et al. 2013; Lundborg et al. 2017; Kleven et al. 2019a). Many women move to more family-friendly workplaces after having a child (Hotz et al. 2018).

This negative effect of having children on women's work careers is due to a number of reasons (Matysiak and Cukrowska-Torzewska 2021; Fiori and Di Gessa 2022). First, career breaks and reduced working hours lead to a deterioration of human capital. It can also be taken as a signal of low labour market attachment by employers who may be reluctant to promote women after long parental leaves (Evertsson and Duvander 2011; Puhani and Sonderhof 2011; Evertsson 2016). Second, mothers may display worse labour market outcomes because they choose jobs which are more compatible with childcare, but these positions often pay lower wages and offer fewer promotion prospects. Finally, having children may also affect mothers' productivity and thereby affect their labour market outcomes.

By contrast, research on the effect of parenthood on men's labour market trajectories points to mixed results. Most previous studies have shown that fathers may earn higher wages and occupy higher positions than childless men. This phenomenon, called 'fatherhood premium', is attributed to a selection of highly successful men into parenthood (Baranowska-Rataj and Matysiak 2022), increased work effort of new fathers who see themselves as the primary breadwinner of the family, and discriminatory practices of employers who perceive fathers as highly reliable and committed employees (Hodges et Budig 2010). Yet, recent studies have also shown that an increase in men's involvement in the family may also affect their work careers. For instance, fathers experience wage penalties for taking parental leave or using flexible work arrangements and these penalties

can even be higher than among mothers (Evertsson 2016; Rudman and Mescher 2013). Other studies find that the effect differs across men's wage distribution, and that there are premia among higher earning men (Cooke 2014; Glauber 2018) and penalties for low earning ones (Cooke 2014). Therefore, more research is needed to understand the effect of family formation on men's employment trajectories.

2.2 Work-family balance among immigrant and native populations

Most studies looking at the role of childbirth behind gender inequality in the labour market have focused on majority populations. In comparison, a relatively low number of studies have examined migrant populations. Some studies have adopted a cross-sectional approach to compare the labour force participation of women with and without children across different groups (Holland and de Valk 2017; Lacroix and Vidal-Coso 2019). For instance, Holland and de Valk (2017) find that the gap in labour force participation between mothers and childless women was similar for native and second-generation Turkish women in Germany and Sweden but was larger in the Netherlands and France. Similarly, Lacroix and Vidal-Coso (2019) find a greater drop in the probability of being employed for immigrant women in more affluent households compared to native women.

More recently, a number of studies have adopted a longitudinal approach; they show that employment levels decrease to a larger extent following the transition to parenthood among migrant women than among natives (Kil et al. 2018; Nieto 2021; Vidal-Coso 2019). This is especially the case for women of non-European origin. However, there is also a strong path-dependency of employment trajectories around parenthood for migrant women and natives (Maes et al. 2021) and the fact that second-generation migrant women generally have a lower pre-birth labour market attachment than native women plays a role in explaining the observed migrant-native differentials in maternal employment. Lastly, few studies have explored differences across origin groups in the effect of family formation on individuals' employment trajectories. For instance, Khoudja and Platt (2018) find that Pakistani and Bangladeshi women's labour market entries and exits are less sensitive to childbearing events compared to those of other women in the UK.

Despite the lack of information, there are a number of reasons why we could expect differences between immigrants' descendants and natives, as well as across origin groups. First, there are large strands of literature indicating that descendants of immigrants differ from each other and from the native population in their social norms, and preferences. For instance, the descendants of immigrants often exhibit different partnership and fertility patterns depending on their parents' country of origin. They also hold different preferences about the timing of family formation (Delaporte and Kulu 2022; Kulu et al. 2021). For instance, in Europe, the descendants of immigrants from culturally similar countries such as European and Western countries often have similar partnership patterns as the ones of natives (Hannemann and Kulu 2015; Mikolai and Kulu 2021; Pailhe 2015; Ferrari and Pailhe 2017; Hannemann et al. 2020; Andersson et al. 2015; Liu and Kulu 2021). Their

fertility levels are also closer to levels observed for the native population. By contrast, immigrants' descendants from countries with conservative patterns of family formation exhibit higher marriage, lower cohabitation, and lower separation rates than the natives (Kulu and Hannemann 2016a; Andersson et al. 2015; Kuhnt and Krapf 2020; Liu and Kulu 2021; Hannemann and Kulu 2015; Mikolai and Kulu 2021).

Besides, their fertility levels tend to be higher than those of natives (Van Landschoot et al. 2017; Milewski 2007; Krapf and Wolf 2016; Gonzalez-Ferrer et al. 2013; Kulu and Hannemann 2016a). In France, these patterns have been observed for the descendants of immigrants from Turkey and North Africa (Pailhe 2015, 2017; Hannemann et al. 2020; Delaporte and Kulu 2022). These differences in partnership and fertility patterns could be indicative of different social and gender norms (Diehl et al. 2009; Roder and Muhlau 2014), which in turn might influence differently individuals' labour supply following childbirth. Indeed, the children of immigrants coming from countries with more conservative family patterns might be more influenced towards family responsibilities, e.g., women might reduce their employment after becoming mothers while men might feel that they have the responsibility to provide financial support to their family after becoming fathers.

Second, the descendants of immigrants from different origin groups do not fare equally in the labour market. A large strand of literature documents the disadvantaged labour market positions of some groups among the descendants of immigrants in Europe (Meurs et al. 2006; Clark and Drinkwater 2010; Piton and Rycx 2020; Zwysen and Demireva 2020; Clark and Ochmann 2022; Silberman et al. 2007). Algan et al. (2010) show that the labour market performance of immigrants' descendants is worse compared to the natives in France, Germany, and the UK. Silberman et al. (2007) find in France that groups who come from former French colonies and/or are dominated by Muslims are substantially, if not severely, disadvantaged in the process of labour market entry. Furthermore, the descendants of immigrants of sub-Saharan African, North African, and Turkish origin are at risk of experiencing labour market discrimination in France (Meurs et al. 2006). Therefore, we could expect that those that have limited labour market opportunities may have fewer incentives to continue to work after a child is born.

Third, access to family policies such as formal childcare and parental leave that help to reduce work-family conflict may vary across descendant groups. Previous research has found that the uptake of (in)formal childcare is substantially lower among immigrants – especially non-European migrants – compared to the native population (Biegel et al. 2021; Schober and Spiess 2013; Wall and Jose 2004). These differences in the uptake of childcare might be observed as well among the descendants of immigrants. Similarly, the availability of social and family networks may vary across descendant groups. This might be important to explain differences in the effect of childbirth on individuals' employment trajectories given that family members can help to act as support networks by taking over childcare responsibilities.

2.3 Hypotheses

In the light of previous findings, we develop the following hypotheses. First, we expect women's professional careers to be negatively impacted by childbirth contrary to men's careers for whom we do not except to find any significant effect (Hypothesis 1). This negative effect for women might be illustrated by lower rates of employment entry and higher rates of employment exit for women with children compared to those without children (Hypothesis 1a). We also expect this negative effect to increase as parity increases (Hypothesis 1b). Second, we expect the negative effect among women to be stronger for the descendants of immigrants than for native women (Hypothesis 2).

With regard to differences among origin groups, we expect this negative effect to be more pronounced among the descendants of immigrants who come from origin countries with more conservative norms, e.g., children of non-European immigrants, compared to the descendants of immigrants who come from origin countries that are culturally close to France such as the children of other European immigrants (Hypothesis 3). Lastly, we also expect to detect unobserved time-constant co-determinants of childbearing and employment (Hypothesis 4). While we expect the effect of childbirth on employment to remain negative, an interesting question is how and to what extent taking into account selection changes the effect of childbirth on employment trajectories.

3 Data and Methodology

The analysis is based on data from a rich French survey named *Trajectories and Origins* which was collected in 2009. It contains information on a nationally representative sample of more than 20,000 individuals, including immigrants, immigrants' descendants, and French natives. For the purpose of this study, we focus on the descendants of immigrants (including the 1.5G of immigrants who arrived to France before the age of 15) and the French natives. We examine both men and women without imposing any restrictions on age and study period. The final sample is composed of 10,886 immigrants' descendants (including 2,365 1.5G) and 3,462 French natives.

The survey contains retrospective biographical data with information on the employment and childbearing histories of individuals. More specifically, we have information on the month and the year of each childbirth. We decide to subtract 7 months from the time of birth since at this time, the majority of women are aware that they are pregnant, and this knowledge may influence their subsequent employment trajectory and the one of their partners. We also have yearly information on the employment status of individuals across their life course. We convert the employment histories to a monthly format by assuming that each event happens at the end of each year. To ensure that our results are robust, we also conducted additional analyses (not reported in this study) where months were assigned randomly to each employment event. We find similar results in both analyses. Lastly, the survey also contains detailed information on individuals' sociodemographic

characteristics such as gender, birth cohort, origin group, and educational level.

To study changes in the employment status of individuals across their life courses, we estimate multilevel event history models. These models are an extension of conventional event history models: rather than analysing a single employment transition, individuals can move among different states. Regarding their employment status, individuals can either be salaried, self-employed, in education, unemployed, housewife or other. To ensure a reasonable number of events in each category, we regroup salaried and self-employed individuals under the category "employed". Individuals who are "out of employment" are either "unemployed" or "inactive". "Inactive" individuals are "housewife" or "other". It is important to note also that, in our framework, maternity/paternity leaves (which typically last 16 and 6 weeks respectively in France) are not counted as employment exits.

We start by observing all individuals from the time they leave full-time education. At this point, they can move to their first employment. For all individuals, once in employment, they can go out of employment as unemployed or inactive. Individuals are censored if they move to education or switch directly to another employment. Finally, individuals who are out of employment can return to employment. Individuals are censored if they move to education. To study the risk of a change in the employment status of individuals by parity among men and women, we estimate three sets of processes: i) the transition into first employment after leaving full-time education, ii) the transitions out of employment, and iii) the transitions into second and higher-order employment. Each of these transitions was specified as a hazard function as follows:

$$ln\mu_i^{FEN}(t) = ln\mu_0(t) + \sum_j \alpha_j x_{ij} + \sum_l \beta_l w_{il}(t) + \epsilon_i^{EN} \tag{1}$$

$$ln\mu_{im}^{EX}(t) = ln\mu_0(t) + \sum_j \alpha_j x_{ijm} + \sum_l \beta_l w_{ilm}(t) + \epsilon_i^{EX} \tag{2}$$

$$ln\mu_{im}^{LEN}(t) = ln\mu_0(t) + \sum_j \alpha_j x_{ijm} + \sum_l \beta_l w_{ilm}(t) + \epsilon_i^{EN} \tag{3}$$

where $\mu_i^{FEN}(t)$ denotes the hazard of first employment entry, $\mu_i^{EX}(t)$ is the hazard of mth employment exit and $\mu_i^{LEN}(t)$ is the hazard of mth employment entry for individual i. Considering equation (1), $ln\mu_0(t)$ denotes the baseline log-hazard, which is specified as piecewise constant. The baseline is time (in months) since leaving full-time education. x_{ij} and $w_{il}(t)$ represent time-constant and time-varying characteristics, respectively, that influence individuals' propensities to change their employment status. For equations (2) and (3), we estimate multilevel models because each individual can experience several employment changes. For the outcomes of individuals who are out of employment, the baseline is time (in months) since leaving employment; while for the outcomes of employed individuals, the baseline is time (in months) since starting employment. For the three sets of outcomes, our main covariate of interest is parity. Lastly, we include a joint random effect for all employment entries (equations 1 and 3) denoted by ϵ_i^{EN} and a separate

random effect for employment exits (equation 2) denoted by ϵ_i^{EX}.

3.1 Joint model of employment changes and childbearing

Our explanatory variable – childbearing – is likely to be jointly determined with the outcome of interest - employment. To address such concerns, we apply simultaneous-equations hazard models (Lillard et al. 1995; Lillard and Panis 1996; Matysiak 2009; Kulu and Steele 2013; Mikolai and Kulu 2018; Steele et al. 2005, 2006). More specifically, we estimate a joint model of employment changes and childbearing to detect and control for individual-level unobserved factors, which may simultaneously influence both processes. The models are as follows:

$$ln\mu_i^{FEN}(t) = ln\mu_0(t) + \sum_j \alpha_j x_{ij} + \sum_l \beta_l w_{il}(t) + \epsilon_i^{EN} \tag{4}$$

$$ln\mu_{im}^{EX}(t) = ln\mu_0(t) + \sum_j \alpha_j x_{ijm} + \sum_l \beta_l w_{ilm}(t) + \epsilon_i^{EX} \tag{5}$$

$$ln\mu_{im}^{LEN}(t) = ln\mu_0(t) + \sum_j \alpha_j x_{ijm} + \sum_l \beta_l w_{ilm}(t) + \epsilon_i^{EN} \tag{6}$$

$$ln\mu_i^{C1}(t) = ln\mu_0(t) + \sum_j \alpha_j x_{ij} + \sum_l \beta_l w_{il}(t) + \epsilon_i^{C} \tag{7}$$

$$ln\mu_{im}^{C2}(t) = ln\mu_0(t) + \sum_j \alpha_j x_{ij} + \sum_l \beta_l w_{il}(t) + \epsilon_i^{C} \tag{8}$$

$$ln\mu_{im}^{C3}(t) = ln\mu_0(t) + \sum_j \alpha_j x_{ij} + \sum_l \beta_l w_{il}(t) + \epsilon_i^{C} \tag{9}$$

where we have three additional equations. $\mu_i^{C1}(t)$ denotes the hazard of a first birth, $\mu_i^{C2}(t)$ the hazard of a second birth and $\mu_i^{C3}(t)$ the hazard of a third birth for individual i. Each of the hazard equations include a baseline log-hazard. The baseline log-hazard of first birth was specified as age and the baseline log-hazard of second and third births was specified as time since the birth of the previous child. The hazard equations also include a set of time-constant and time-varying variables. Lastly, each of the hazard equations include a random heterogeneity component which is person-specific. These individual-level random effects aim to control for unmeasured time-constant characteristics that may influence individuals' likelihood of having a conception or of changing their employment status. We assume that the residuals of the equations follow a joint bivariate normal distribution:

$$\begin{pmatrix} \epsilon_i^{EN} \\ \epsilon_i^{EX} \\ \epsilon_i^{C} \end{pmatrix} N \left(\begin{pmatrix} 0 \\ 0 \\ 0 \end{pmatrix}, \begin{pmatrix} \sigma^2_{\epsilon_i^{EN}} & \rho_{\epsilon_i^{EN}\epsilon_i^{EX}} & \rho_{\epsilon_i^{EN}u_i^{C}} \\ \rho_{\epsilon_i^{EX}\epsilon_i^{EN}} & \sigma^2_{\epsilon_i^{EX}} & \rho_{\epsilon_i^{EX}u_i^{C}} \\ \rho_{u_i^{C}\epsilon_i^{EN}} & \rho_{u_i^{C}\epsilon_i^{EX}} & \sigma^2_{u_i^{C}} \end{pmatrix} \right) \tag{10}$$

where $\sigma^2_{\epsilon_i^{EN}}$, $\sigma^2_{\epsilon_i^{EX}}$ and $\sigma^2_{u_i^C}$ denote the variances of the person-specific residuals of the different processes, and ρ is the correlation between the residuals. All models are estimated via maximum likelihood using the aML software (Lillard and Panis 2003).

We estimate two models stepwise. First, we focus on the relationship between parity and employment changes (Model 1). The first model is estimated twice; first (Model 1a) we estimate single-process hazard models for the risk of first employment entry, employment exits, and higher order employment entries and then (Model 1b) we estimate the multi-process hazard model where we account for unobserved time-constant co-determinants of the risk of employment entries, employment exits, and the risk of childbirth. Second, we additionally examine whether and the extent to which the effect differs across origin groups (Model 2). In other words, Model 2 includes an interaction term between parity and origin group. Lastly, we report the results of Model 2 when accounting for the unobserved time-constant co-determinants of childbearing and employment risks. For all models, we analyse men and women separately.[1]

3.2 Variables

We include a number of variables in the models. First, respondents' parity status is treated as a time-varying variable using retrospective information on the year and month of each birth, and is categorised as "childless", "1 child", "2 children", and "3 or more children". For the first employment transition after leaving full-time education, we modify this variable to have only two categories: "childless individuals" and "individuals with children". Partnership status is time-varying and is categorised as "single", "cohabiting", "married" and "separated". The categories "cohabiting" and "married" include both first and higher order unions. Birth cohorts include 4 cohorts: 1948-1959 (reference), 1960-1969, 1970-1979, and 1980-1999. Respondents' educational level is categorized as low (reference), medium, and high. The origin group for immigrants' descendants includes North Africa, Sub-Saharan Africa, South East Asia, Turkey, Southern Europe, and other Europe. Lastly, we control for order of employment change and origin state. Individuals can move into and out of employment several times. Besides, they can move out of employment when being salaried or self-employed.

4 Results

Women and men experienced a large number of employment changes and births events. We report the number and proportions in Tables A.1 and A.2 in Appendix. We show the results of two event history models (Models 1-2) of the risk of a change in employment status. To facilitate interpretation, Tables 1-2 show the relative risks for the key variables of interest whereas Tables A.3-A.5 in Appendix report log-relative hazards for all variables

[1] We report the results of an additional model in the Appendix (Table A.4) where we also look at the effect of time since birth on the employment changes of individuals.

in the models separately by gender.

4.1 Selection

We first estimate single-process hazard models for the risk of first employment entry, employment exits, and higher order employment entries. We then model jointly the risk of a change in the employment status and the risk of having a birth. The results are reported in Table 1. We start our discussion by focusing on the estimates of the standard deviations of the unobserved heterogeneity terms and their pairwise correlations. The standard deviations of the person-specific residuals are significant in all models. This implies that there is a significant portion of individual-specific heterogeneity that is not accounted for by our covariates. It represents an individual-specific propensity to have children in the fertility equations and an individual-specific propensity to work in the employment equations. These results provide a justification for the need to estimate the multi-process hazard model.

The person-specific unobserved heterogeneity terms are correlated. This means that the hazards of birth and employment changes have unobserved co-determinants. Our results show that, for women, the unobserved characteristics that increase the propensity to have a child are negatively correlated with the unobserved characteristics that increase the propensity to enter employment and positively correlated with the unobserved characteristics that increase the propensity to exit employment. We do not find significant correlations for men. These findings indicate that women who are more likely to have a child are more likely to leave employment and less likely to re-enter the labour market. Due to the unobserved selection, the estimates of the impacts of fertility on employment obtained from the single-process hazard models are biased, especially on the impact of children on employment exits.

4.2 Impact of childbearing on employment

Our findings (reported in Table 1, Models 1a and 1b) show first some heterogeneity in employment patterns across origin groups. Among women, all descendant groups except the female descendants of Southern European immigrants are less likely to enter their first employment spell compared to natives. Some descendant groups such as the descendants of North African and Turkish immigrants are also more likely to go out of employment. Among men, the male descendants of Sub-Saharan African immigrants are less likely than other groups to enter their first employment spell. We also find that the male descendants of Sub-Saharan African, North African and South East Asian immigrants are less likely to experience higher order employment entries. The male descendants of North African immigrants are more likely to exit employment, as opposed to the male descendants of Southern European immigrants who are less likely to go out of the labour market.

Regarding parity, children have a strong and clearly negative impact on women's employment. Mothers are less likely to take up a job than childless women do. They are also

more likely to exit employment following childbirth. We also find that as parity increases, women are less likely to re-enter employment. Yet, the likelihood of exiting employment decreases as parity increases. Regarding men, we find mixed results: while men are less likely to enter employment following a birth, they are also less likely to exit employment. The effect also seems lower in magnitude compared to women.

Table 1. Impact of childbearing on employment, relative risks (Model 1)

	Women				Men			
	Model 1a Single process		Model 1b Multi-process		Model 1a Single process		Model 1b Multi-process	
	RR	Sig	RR	Sig	RR	Sig	RR	Sig
First employment entry								
Parity								
Childless (ref.)	1		1		1		1	
With children	0.527	***	0.536	***	0.967		0.951	
Origin Group								
Native (ref.)	1		1		1		1	
North Africa	0.710	***	0.713	***	0.909	*	0.922	
Sub-Saharan Africa	0.722	***	0.720	***	0.787	***	0.793	***
South East Asia	0.897		0.902		1.049		1.071	
Turkey	0.655	***	0.654	***	1.560	***	1.655	***
Southern Europe	1.074		1.078		1.327	***	1.359	***
Other Europe	0.815	***	0.810	***	1.063		1.066	
Employment exits								
Parity								
Childless (ref.)	1		1		1		1	
1 child	1.941	***	1.692	***	0.704	***	0.691	***
2 children	2.028	***	1.557	***	0.780	**	0.739	**
3+ children	2.368	***	1.441	***	1.047		1.011	
Origin Group								
Native (ref.)	1		1		1		1	
North Africa	1.235	***	1.305	***	1.219	***	1.166	*
Sub-Saharan Africa	0.938		1.075		1.143		1.132	
South East Asia	0.973		0.986		1.055		1.000	
Turkey	1.570	***	1.761	***	1.030		0.919	
Southern Europe	0.851	**	0.810	***	0.824	**	0.747	***
Other Europe	1.108		1.158		1.177		1.082	
Higher order employment entries								
Parity								
Childless (ref.)	1		1		1		1	
1 child	0.595	***	0.607	***	0.792	***	0.798	***
2 children	0.488	***	0.495	***	0.641	***	0.652	***
3+ children	0.379	***	0.377	***	0.681		0.646	*
Origin Group								
Native (ref.)	1		1		1		1	
North Africa	0.894		0.890		0.772	**	0.750	**
Sub-Saharan Africa	0.863		0.839		0.721	**	0.682	**
South East Asia	1.002		1.023		0.689	**	0.695	**
Turkey	0.783		0.739	*	0.957		1.031	
Southern Europe	1.050		1.084		0.864		0.890	
Other Europe	0.957		0.945		0.846		1.194	
Unobserved heterogeneity								
Standard deviation of residuals								
Fertility	0.726	***	0.730	***	0.729	***	0.732	***
Employment entry	0.618	***	0.697	***	0.656	***	0.795	***
Employment exit	1.130	***	1.307	***	0.885	***	1.205	***
Correlation between residuals								
Fertility and employment entry			-0.114	***			0.095	*
Fertility and employment exit			0.302	***			-0.070	
Employment entry and exit			-0.658	***			-0.962	***

Source: Trajectories and Origins, authors' own calculations.

Notes: See Table A3 in Appendix for the results of the full equations. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

These conclusions can be drawn from the estimates obtained from the single-process models as well as those from the multi-process hazard model. However, comparing the

results of the two models reveals that controlling for unobserved co-determinants reduces the negative impact of parity on women's employment. In other words, the negative effect of childbirth on the risk of exiting or re-entering employment is overestimated (although slightly) for women if we do not account for unobserved co-determinants of these two processes. For men, we find that the negative effect of parity on employment entries is marginally overestimated, although caution is needed when interpreting the results for men given that they change between models.

Next, we examine possible differences across origin groups in the effect of parity on the risks of employment entry and exit for both men and women (Table 2).

Table 2. Impact of childbearing on employment by origin, relative risks (Model 2)

	Women		Men	
	Model 2 Multi-process		Model 2 Multi-process	
	RR	Sig	RR	Sig
Effects of parity on employment exits by origin group				
Childless x North Africa	1.297	**	0.913	
Childless x Sub-Saharan Africa	1.082		0.725	*
Childless x South East Asia	1.125		0.946	
Childless x Turkey	1.342		0.824	
Childless x Southern Europe	0.898		0.775	***
Childless x Other Europe	1.022		1.099	
Childless x Natives (ref.)	1		1	
With children x North Africa	1.861	***	0.935	
With children x Sub-Saharan Africa	1.408	***	1.019	
With children x South East Asia	1.384	*	0.583	
With children x Turkey	2.886	***	1.036	
With children x Southern Europe	1.334	***	0.503	***
With children x Other Europe	1.857	***	0.564	**
With children x Natives	1.726	***	0.452	***
Effects of parity on employment entries by origin group				
Childless x North Africa	1.220		0.845	
Childless x Sub-Saharan Africa	0.886		0.759	
Childless x South East Asia	1.370	*	0.712	**
Childless x Turkey	1.214		0.836	
Childless x Southern Europe	1.395	***	0.852	
Childless x Other Europe	1.274		0.951	
Childless x Natives (ref.)	1		1	
With children x North Africa	0.708	***	0.559	***
With children x Sub-Saharan Africa	1.025		0.688	
With children x South East Asia	0.817		0.598	*
With children x Turkey	0.526	***	0.882	
With children x Southern Europe	0.811		0.653	***
With children x Other Europe	0.776		0.531	***
With children x Natives	0.628		0.658	
Unobserved heterogeneity				
Standard deviation of residuals				
Fertility	0.658	***	0.666	***
Employment entry	0.681	***	0.796	***
Employment exit	1.322	***	1.250	***
Correlation between residuals				
Fertility and employment entry	-0.302	***	0.043	
Fertility and employment exit	0.336	***	0.004	
Employment entry and exit	-0.664	***	-0.936	***

Source: Trajectories and Origins, authors' own calculations.

Notes: See Table A5 in the Appendix for the results of the full equations.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

In order to ensure a reasonable number of observations, we regroup all individuals who have children under one category. Furthermore, it is important to note that, due to limited sample size, the transition to first employment does not include an interaction

term between parity and origin group. The results show that, among women, all groups are negatively affected by childbirth; yet the female descendants of Turkish immigrants are the least likely to enter employment after childbirth and the most likely to exit employment following childbirth. Among men, there is more heterogeneity: while the French natives as well as the descendants of European immigrants are less likely to exit employment after having a child, we do not find any significant relationship between childbirth and employment exits for other descendant groups.

5 Conclusion and Discussion

This paper investigated the association between family formation and the labour market changes of immigrants' descendants in France. We examined whether and how the association between fertility and employment differs by gender and migration background. We contributed to the literature by simultaneously investigating the effect of childbearing on all employment entries and exits in family ages among the descendants of immigrants. Another novelty is that we also addressed the issue of selection on unobserved characteristics, i.e. individuals who are more likely to have a child (or children) are more/less likely to enter or exit employment. We applied a multi-process hazard model that allows a correlation of person-specific error terms of fertility and employment transitions.

In line with our first hypothesis, our analysis reveals a strong negative impact of children on women's work. The arrival of the first child reduces the propensity of employment entry and increases the risk of employment exit. Furthermore, higher order births further reduce women's likelihood of re-entering the labour market. We do not find evidence of a stronger negative impact of childbirth on the employment of female descendants of immigrants compared to native women (Hypothesis 2). However, the effect of family formation differs among immigrants' descendants, which supports our third hypothesis. Although all groups are negatively affected, the female descendants of Turkish immigrants are the most likely to exit employment and the least likely to re-enter employment following childbirth. Lastly, we have found that not controlling for unobservables led to an overestimation of the negative effect of childbearing on women's work, confirming our fourth hypothesis.

We expected to find no significant association between childbirth and men's work. Yet, we find that having a child also affects the employment trajectories of men: fathers are less likely to exit employment but also less likely to re-enter employment following childbirth. However, the direction of the effect differs across origin groups. There seems to be more heterogeneity among men: while the French natives as well as the male descendants of European immigrants are less likely to exit employment after having a child, we do not find any significant association between childbirth and employment exits for other descendant groups. Therefore, our results suggest that the association between childbirth and men's work is more complicated.

There are a number of potential explanations for the negative effect of childbirth on

employment of women. First, one factor that could play a role is the weak public support for working parents. Yet, in France, it has been argued that this is less of an issue given the existence of family-friendly policies such as free day-care facilities open all day long and accommodating for children as young as 3 months old (Cukrowska-Torzewska 2017; Lucifora et al. 2017). The French leave policy is also considered quite generous.

Still, there might be differences in the access to or use of childcare among individuals with a migration background compared to the native population. For instance, the descendants of immigrants may hold an aversion towards formal childcare due to institutional distrust. This was reported by second generation Moroccan immigrant mothers in Flanders due to negative experiences such as discrimination as a school pupil, or negative experiences as a childcare worker (Wood 2022). The descendants of immigrants might then rely more on informal childcare than natives do but there again, the availability of social and family networks may vary across groups. These potential differences in the use of or access to childcare among immigrants' descendants and natives might explain why they have different labour market trajectories upon childbirth.

Another reason that could explain our result is that there is also a high instability of employment contracts especially among minority populations (Algan et al. 2010; Meurs et al. 2006). A history of unstable employment prior to family formation is likely to influence individuals' decision to remain or not in the labour market upon childbirth (Maes et al. 2021). It also has implications for access to family policies. Among other things, it affects for instance the allowance that parents who partially/totally stop working in the labour market to look after their children are entitled to. Therefore, having an unstable position or poor employment conditions/prospects might explain why immigrants' descendants are more prone to leave the labour market upon childbirth compared to natives.

On a similar note, the descendants of immigrants are more prone to experience discrimination in the labour market compared to the native population. In France, research has found that the descendants of immigrants from Sub-Saharan Africa, North Africa and Turkey are more likely to be victims of labour market discrimination (Meurs et al. 2006). As a result of this, the children of immigrants may become demotivated to continue to work and may consider family formation as a suitable alternative career.

Lastly, social norms are likely to play an important role. Although the descendants of immigrants have been socialised in an egalitarian family context in France, they might also remain influenced by parental attitudes, family networks and the wider migrant community. Previous studies have shown that some groups among the second generation of immigrants in France continue to exhibit similar family patterns than those of their parents rather than those of natives (Pailhe 2015, 2017; Delaporte and Kulu 2022; Kulu et al. 2021). Therefore, individuals who come from countries with more conservative values might hold more strongly the perception that women are the main homemakers and care providers. This could explain why for instance we find that the female descendants of Turkish immigrants are the least likely to enter employment and the most likely to exit employment after a birth.

This study contributes to the existing body of literature on gender and immigration by analysing the interaction effect of motherhood, and migration background on women's and men's labour market trajectories in France. More precisely, it sheds light on how differently immigrant descendant and native men and women reconcile work with family life in France.

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Appendix A.

Table A.1. Number and proportions of person-months and events by sets of outcomes and categories of variables

	Women				Men			
	Person-Months		Events		Person-Months		Events	
	Number	%	Number	%	Number	%	Number	%
First employment entry								
Time since in education								
0-1 year	29411	17	4165	72	27609	22	3740	69
1-3 years	33260	19	789	14	25325	20	1014	19
3-5 years	22223	13	278	5	14379	12	240	4
5+ years	92209	52	515	9	56247	46	401	7
Birth ohort								
1948-1959	36247	20	823	14	13407	11	757	14
1960-1969	66290	37	1689	29	49984	40	1486	28
1970-1979	49472	28	2005	35	41749	34	1811	34
1980-1999	25094	14	1230	21	18420	15	1341	25
Partnership status								
Single	64951	37	3650	64	76688	62	4183	78
Cohabiting	23125	13	947	16	15609	13	638	12
Married	73354	41	861	15	23090	19	413	8
Separated	15674	9	289	5	8174	7	161	3
Parity								
Childless	83826	47	4993	87	94846	77	5008	93
With children	93277	53	754	13	28715	23	387	7
Educational level								
Low	80075	45	861	15	36561	30	946	18
Medium	78058	44	2964	52	62085	50	2979	55
High	18970	11	1922	33	24913	20	1470	27
Origin group								
Native	35554	20	1592	28	33534	27	1386	26
North Africa	58930	33	1229	21	32612	26	1064	20
Sub-Saharan Africa	13693	8	360	6	8449	7	330	6
South East Asia	6994	4	320	6	6887	6	342	6
Turkey	10946	6	220	4	3906	3	272	5
Southern Europe	31313	18	1440	25	26006	21	1446	27
Other Europe	13889	8	388	7	7910	6	388	7
Total	177103	100	5747	100	123560	100	5395	100
Employment exits								
Time since previous employment								
0-1 year	90773	11	329	12	86965	10	223	12
1-3 years	145729	17	693	26	138185	16	618	34
3-5 years	113854	14	461	17	107987	13	326	18
5+ years	484327	58	1211	45	509486	60	626	35
Birth cohort								
1948-1959	235795	28	559	21	259957	31	401	22
1960-1969	338041	40	938	35	321567	38	605	34
1970-1979	217752	26	914	34	206696	25	552	31
1980-1999	43095	5	283	11	54404	6	235	13
Partnership status								
Single	196925	24	459	17	246979	29	900	50
Cohabiting	135400	16	473	18	139148	17	250	14
Married	387062	46	1413	52	372557	44	404	23
Separated	115296	14	349	13	83939	10	239	13
Parity								
Childless	348665	42	861	32	405428	48	1230	69
1 child	197950	24	802	30	158201	19	199	11
2 children	202354	24	677	25	180194	21	207	12
3+ children	85714	10	354	13	98800	12	157	9
Educational level								
Low	144390	17	640	24	186593	22	524	29
Medium	449340	54	1616	60	477981	57	1038	58
High	240953	29	438	16	178049	21	231	13

Table A.1. Number and proportions of person-months and events by sets of outcomes and categories of variables (Continued)

	Women				Men			
	Person-Months		Events		Person-Months		Events	
	Number	%	Number	%	Number	%	Number	%
Origin group								
Native	281032	34	783	29	260609	31	460	26
North Africa	141905	17	605	22	136815	16	413	23
Sub-Saharan Africa	31325	4	111	4	31645	4	88	5
South East Asia	34527	4	105	4	36604	4	88	5
Turkey	17759	2	136	5	27500	3	71	4
Southern Europe	244096	29	683	25	268906	32	478	27
Other Europe	61979	7	181	7	62600	7	138	8
Order								
1	672962	81	1934	72	632158	75	1289	72
2	114258	14	558	21	139062	17	335	19
3+	47463	6	202	7	71403	8	169	9
Type of employment								
Salaried	799304	96	2609	97	772092	92	1708	95
Self-employed	35379	4	85	3	70531	8	85	5
Total	834683	100	2694	100	842623	100	1793	100
Higher order employment entries								
Time since out of employment								
0-1 year	59192	16	672	22	47244	20	822	29
1-3 years	76334	21	1017	33	45062	19	1018	36
3-5 years	48697	13	383	12	27235	12	218	8
5+ years	180544	49	993	32	117010	49	736	26
Birth cohort								
1948-1959	109673	30	532	17	47283	20	385	14
1960-1969	140282	38	1076	35	101317	43	989	35
1970-1979	86609	24	1044	34	68418	29	1052	38
1980-1999	28203	8	413	13	19533	8	368	13
Partnership status								
Single	70985	19	835	27	98007	41	1367	49
Cohabiting	42852	12	498	16	36146	15	522	19
Married	207177	57	1280	42	77944	33	654	23
Separated	43753	12	452	15	24454	10	251	9
Parity								
Childless	97934	27	1309	43	139391	59	1970	71
1 child	74029	20	645	21	33990	14	305	11
2 children	96780	27	668	22	40770	17	329	12
3+ children	96024	26	443	14	22401	9	190	7
Educational level								
Low	133274	37	659	22	70825	30	586	21
Medium	193143	53	1801	59	131732	56	1590	57
High	38350	11	605	20	33994	14	618	22
Origin group								
Native	104789	29	793	26	69033	29	757	27
North Africa	86682	24	705	23	51746	22	588	21
Sub-Saharan Africa	16387	4	164	5	10507	4	146	5
South East Asia	12877	4	145	5	12116	5	150	5
Turkey	16432	5	132	4	6334	3	95	3
Southern Europe	89752	25	798	26	62479	26	726	26
Other Europe	27827	8	220	7	18795	8	235	8
Order								
1	273396	75	2195	72	175814	74	2050	73
2	68643	19	926	20	48379	20	550	20
3+	22728	6	244	8	12358	5	194	7
Type of out of employment								
Unemployed	73818	20	1209	39	60107	25	1043	37
Housewife	202147	55	1102	36	2076	1	20	0.7
Other	88802	24	754	25	174368	74	1731	62
Total	364767	100	3065	100	236551	100	2794	100

Source: Social Protection Survey of Chile, authors' own calculations.

Notes: the proportions by origin group do not equal to 100 when we sum up because there is around 3% of the sample that belong to other smaller origin groups.

Table A.2. Number and proportions of person-months and events by sets of outcomes and categories of variables

	Women				Men			
	Person-Months		Events		Person-Months		Events	
	Number	%	Number	%	Number	%	Number	%
First birth								
Age								
15-19 year	432585	44	599	14	401852	39	129	4
20-24 years	293506	30	1750	40	305411	30	923	28
25-29 years	137728	14	1440	33	172850	17	1384	43
30-34 years	54954	6	468	11	74510	7	625	19
35+ years	53750	6	115	3	63737	6	190	6
Birth cohort								
1948-1959	132116	14	753	17	141519	14	669	21
1960-1969	273985	28	1545	35	291052	29	1226	38
1970-1979	319226	33	1587	36	329635	32	1147	35
1980-1999	247197	25	487	11	256122	25	209	6
Partnership status								
Single	742545	76	721	16	805263	79	446	14
Cohabiting	101992	10	1200	27	98952	10	964	30
Married	80836	8	2285	52	62228	6	1705	52
Separated	47151	5	166	4	51885	5	136	4
Educational level								
Low	440943	45	1028	24	462941	45	703	22
Medium	392441	40	2283	52	436094	43	1842	57
High	139140	14	1061	24	119292	12	706	22
Origin group								
Native	252575	30	1254	29	259603	25	921	28
North Africa	219542	23	918	21	210187	21	591	18
Sub-Saharan Africa	71571	7	241	6	69024	7	159	5
South East Asia	62093	6	207	5	77759	8	150	5
Turkey	35070	4	180	4	36557	4	152	5
Southern Europe	226771	23	1119	26	255519	25	956	29
Other Europe	67563	7	320	7	73172	7	240	7
Employment status								
Abroad	8187	0.8	38	0.9	8047	0.8	23	0.7
Salaried	318148	33	2812	64	367528	36	2234	69
Self-employed	8835	0.9	62	1	17585	2	132	4
Unemployed	24581	3	153	3	25415	2	57	2
Student	537326	55	599	14	483873	48	238	7
Housewife	14572	1	323	7	1059	0.1	2	0
Inactive	21718	2	136	3	47274	5	372	11
Other	972524	100	4372	100	1018328	100	3251	100
Total								
Second birth								
Time since previous birth								
0-1 year	50314	19	312	10	37305	20	220	10
1-3 years	72883	27	1526	50	52913	29	1168	52
3-5 years	38824	15	722	24	26404	14	509	23
5+ years	103595	39	506	17	66516	36	354	16
Birth cohort								
1948-1959	69046	26	599	20	58673	32	537	24
1960-1969	111378	42	1185	39	73457	40	965	43
1970-1979	70189	26	1102	36	45321	25	688	31
1980-1999	15003	6	180	6	5687	3	61	3
Age at birth 1								
15-19 year	24115	9	368	12	5932	3	72	3
20-24 years	108131	41	1282	42	49181	27	649	29
25-29 years	87047	33	1059	35	77618	42	993	44
30-34 years	34067	13	292	10	37898	21	429	19
35+ years	10684	4	42	1	11856	6	102	5
Partnership status								
Single	22435	8	132	4	8522	5	56	2
Cohabiting	51422	19	580	19	43157	24	483	21
Married	142247	54	2168	71	107648	59	1611	72
Separated	49513	19	186	6	23810	13	101	4

Table A.2. Number and proportions of person-months and events by sets of outcomes and categories of variables (Continued)

	Women				Men			
	Person-Months		Events		Person-Months		Events	
	Number	%	Number	%	Number	%	Number	%
Educational level								
Low	59441	22	671	22	42037	23	478	21
Medium	149062	56	1645	54	109083	60	1254	56
High	57113	22	750	24	32018	17	519	23
Origin group								
Native	86799	33	902	29	59385	32	642	29
North Africa	47266	18	641	21	26163	14	406	18
Sub-Saharan Africa	12560	5	143	5	6473	4	104	5
South East Asia	11356	4	133	4	5692	3	100	4
Turkey	6282	2	129	4	5552	3	115	5
Southern Europe	72829	27	817	27	60396	33	676	30
Other Europe	21404	8	215	7	14930	8	161	7
Employment status								
Abroad	1113	0.4	22	0.7	798	0.4	16	0.7
Salaried	171763	65	1882	61	128451	70	1604	71
Self-employed	5816	2	59	2	11000	6	152	7
Unemployed	9059	3	69	2	3458	2	31	1
Student	9759	4	81	3	4803	3	51	2
Housewife	32350	12	643	21	172	0	4	0
Inactive	12999	5	128	4	6779	4	70	3
Other	22757	9	182	6	27677	15	323	14
Total	265615	100	3066	100	183138	100	2251	100
Third birth								
Time since previous birth								
0-1 year	36336	12	129	11	26654	12	94	11
1-3 years	59297	20	520	43	43811	20	371	43
3-5 years	42638	14	308	25	31088	14	221	25
5+ years	161913	54	266	22	115987	53	182	21
Birth cohort								
1948-1959	106320	35	286	23	89583	41	236	27
1960-1969	130934	44	492	40	94046	43	399	46
1970-1979	57098	19	411	34	32422	15	221	25
1980-1999	5833	2	34	3	1489	0.7	12	1
Age at birth 1								
15-19 year	34154	11	236	19	5565	3	50	6
20-24 years	139669	40	588	48	76662	35	316	36
25-29 years	99872	33	324	26	95921	44	338	39
30-34 years	21763	7	52	4	31898	15	137	16
35+ years	3082	1	7	0.6	6433	3	23	3
Partnership status								
Single	8179	3	33	3	2741	1	14	2
Cohabiting	32416	11	139	11	28298	13	129	15
Married	216455	72	956	78	165360	76	662	76
Separated	43135	14	95	8	21140	10	63	7
Educational level								
Low	64919	22	376	31	45474	21	246	28
Medium	172683	58	613	50	128040	59	447	51
High	62583	21	234	19	44026	20	175	20
Origin group								
Native	112153	37	330	27	77172	35	221	25
North Africa	40357	13	329	27	24578	11	207	24
Sub-Saharan Africa	7924	3	66	5	5746	3	54	6
South East Asia	8541	3	54	4	7494	3	42	5
Turkey	6540	2	67	5	5576	3	58	7
Southern Europe	96956	32	242	20	77841	36	207	24
Other Europe	20690	7	98	8	15333	7	65	7

Table A.2. Number and proportions of person-months and events by sets of outcomes and categories of variables (Continued)

	Women				Men			
	Person-Months		Events		Person-Months		Events	
	Number	%	Number	%	Number	%	Number	%
Employment status								
Abroad	935	0.3	13	1	596	0.3	6	0.7
Salaried	180233	60	542	44	146481	67	619	71
Self-employed	11170	4	24	2	20986	10	59	7
Unemployed	7080	2	30	2	3365	2	16	2
Student	50059	17	442	36	218	0.1	2	0.2
Housewife	50059	17	442	36	218	0.1	2	0.2
Inactive	11439	4	59	5	5592	3	33	4
Other	35872	12	97	8	38014	17	116	13
Total	300185	100	1223	100	217539	100	868	100

Source: Social Protection Survey of Chile, authors' own calculations.

Notes: the proportions by origin group do not equal to 100 when we sum up because there is around 3% of the sample that belong to other smaller origin groups.

Table A.3. Impact of childbearing on employment, log-relative risks (Model 1, full specification)

	Women				Men			
	Model 1a Single process		Model 1b Multi-process		Model 1a Single process		Model 1b Multi-process	
	RR	Sig	RR	Sig	RR	Sig	RR	Sig
First employment entry								
Constant	-1.293	***	-1.364	***	-1.108	***	-1.212	***
Time since in education								
0-1 year (slope)	-0.260	***	-0.252	***	-0.216	***	-0.203	***
1-3 years (slope)	0.032	***	0.031	***	0.025	***	0.027	***
3-5 years (slope)	-0.026	***	-0.025	***	-0.061	***	-0.058	***
5+ years (slope)	0.001		0.001		0.004	***	0.005	***
Birth cohort								
1948-1959 (ref.)	0		0		0		0	
1960-1969	-0.246	***	-0.238	***	-0.455	***	-0.471	***
1970-1979	-0.217	***	-0.200	***	-0.434	***	-0.443	***
1980-1999	-0.357	***	-0.340	***	-0.296	***	-0.274	***
Partnership status								
Single (ref.)	0		0		0		0	
Cohabiting	0.095	**	0.080		0.389	***	0.413	***
Married	-0.187	***	-0.223	***	0.281	***	0.308	***
Separated	0.350	***	0.338	***	0.136		0.189	*
Parity								
Childless (ref.)	0		0		0		0	
With children	-0.641	***	-0.624	***	0.034		-0.050	
Educational level								
Low (ref.)	0		0		0		0	
Medium	0.746	***	0.773	***	0.358	***	0.373	***
High	1.138	***	1.179	***	0.391	***	0.430	***
Origin group								
Native (ref.)	0		0		0		0	
North Africa	-0.342	***	-0.338	***	-0.095	*	-0.081	
Sub-Saharan Africa	-0.326	***	-0.328	***	-0.239	***	-0.232	***
South East Asia	-0.109		-0.103		0.048		0.069	
Turkey	-0.423	***	-0.425	***	0.445	***	0.504	***
Southern Europe	0.071		0.075		0.283	***	0.307	***
Other Europe	-0.205	***	-0.211	***	0.061		0.064	
Employment exits								
Constant	-9.977	***	-9.919	***	-8.961	***	-8.994	***
Time since previous employment								
0-1 year (slope)	0.313	***	0.317	***	0.329	***	0.332	***
1-3 years (slope)	-0.021	***	-0.018	***	-0.044	***	-0.040	***
3+ years (slope)	-0.001	**	0.001		0.001	***	0.002	***
Birth cohort								
1948-1959 (ref.)	0		0		0		0	
1960-1969	0.258	***	0.297	***	0.173	*	0.335	***
1970-1979	0.749	***	0.796	***	0.472	***	0.615	***
1980-1999	1.365	***	1.487	***	0.610	***	0.885	***
Partnership status								
Single (ref.)	0		0		0		0	
Cohabiting	0.346	***	0.403	***	-0.508	***	-0.536	***
Married	0.482	***	0.643	***	-0.875	***	-0.901	***
Separated	0.275	***	0.323	***	-0.004		-0.089	
Parity								
Childless (ref.)	0		0		0		0	
1 child	0.663	***	0.526	***	-0.508	***	-0.536	***
2 children	0.707	***	0.443	***	-0.249	**	-0.303	**
3+ children	0.862	***	0.365	***	-0.046		0.011	
Educational level								
Low (ref.)	0		0		0		0	
Medium	-0.298	***	-0.512	***	-0.326	***	-0.450	***
High	-1.194	***	-1.495	***	-0.901	***	-1.084	***

Table A.3. Impact of childbearing on employment, log-relative risks (Model 1, full specification) (Continued)

	Women				Men			
	Model 1a Single process		Model 1b Multi-process		Model 1a Single process		Model 1b Multi-process	
	RR	Sig	RR	Sig	RR	Sig	RR	Sig
Origin group								
Native (ref.)	0		0		0		0	
North Africa	0.211	***	0.266	***	0.198	**	0.154	*
Sub-Saharan Africa	-0.064		0.072		0.134		0.124	
South East Asia	-0.027		-0.014		0.054		-0.001	
Turkey	0.451	***	0.566	***	0.030		-0.084	
Southern Europe	-0.161	**	-0.211	***	-0.194	**	-0.292	***
Other Europe	0.103		0.147		0.163		0.079	
Order								
1 (ref.)	0		0		0		0	
2	0.095		0.293	***	0.181	***	0.317	***
3+	-0.614	***	-0.272	***	-0.046		0.241	**
Type of employment								
Salaried (ref.)	0		0		0		0	
Self-employed	-0.412	***	-0.432	***	-0.436	***	-0.447	***
Higher order employment entries								
Constant	-7.765	***	-7.718	***	-8.876	***	-8.792	***
Time since out of employment								
0-1 year (slope)	0.312	***	0.315	***	0.488	***	0.498	***
1-3 years (slope)	-0.020	***	-0.019	***	-0.081	***	-0.076	***
3-5 years (slope)	-0.012	***	-0.011	***	-0.018	***	-0.018	***
5+ years (slope)	0.005	***	0.005	***	0.008	***	0.009	***
Birth cohort								
1948-1959 (ref.)	0		0		0		0	
1960-1969	0.290	***	0.282	***	0.176	***	0.127	*
1970-1979	1.452	***	1.469	***	-0.163	**	-0.006	
1980-1999	0.075		0.080		-0.240	***	-0.113	
Partnership status								
Single (ref.)	0		0		0		0	
Cohabiting	0.032		0.036		0.227	***	0.337	***
Married	-0.221	***	-0.224	***	-0.163	**	-0.006	
Separated	0.079		0.088		-0.240	***	-0.113	
Parity								
Childless (ref.)	0		0		0		0	
1 child	-0.519	***	-0.499	***	-0.233	***	-0.225	***
2 children	-0.717	***	-0.703	***	-0.445	***	-0.428	***
3+ children	-0.969	***	-0.975	***	-0.384	***	-0.437	***
Educational level								
Low (ref.)	0		0		0		0	
Medium	0.567	***	0.636	***	0.517	***	0.575	***
High	1.179	***	1.325	***	1.101	***	1.158	***
Origin group								
Native (ref.)	0		0		0		0	
North Africa	-0.112		-0.117		-0.259	**	-0.288	**
Sub-Saharan Africa	-0.147		-0.176		-0.327	**	-0.382	**
South East Asia	0.002		0.023		-0.373	**	-0.364	**
Turkey	-0.245		-0.303	*	-0.044		0.031	
Southern Europe	0.049		0.081		-0.146		-0.117	
Other Europe	-0.044		-0.057		-0.167		-0.177	
Order								
1 (ref.)	0		0		0		0	
2	0.402	***	0.463	***	0.249	***	0.299	***
3+	0.527	***	0.692	***	0.293	***	0.488	***
Type of out of employment								
Unemployed (ref.)	0		0		0		0	
Housewife	-0.732	***	0.463	***	0.249	***	0.299	***
Other	-0.554	***	-0.626	***	-0.330	***	-0.361	***

Table A.3. Impact of childbearing on employment, log-relative risks (Model 1, full specification) (Continued)

	Women				Men			
	Model 1a Single process		Model 1b Multi-process		Model 1a Single process		Model 1b Multi-process	
	RR	Sig	RR	Sig	RR	Sig	RR	Sig
First birth								
Constant	-7.039	***	-7.05	***	-9.309	***	-9.318	***
Age								
15-19 year (slope)	0.014	***	0.015	***	0.040	***	0.040	***
20-24 years (slope)	0.001		0.001		0.001		0.001	
25-29 years (slope)	0.005	***	0.005	***	0.007	***	0.008	***
30-34 years (slope)	-0.004	**	-0.004	**	-0.003	**	-0.003	**
35+ years (slope)	-0.024	***	-0.024	***	-0.016	***	-0.016	***
Birth cohort								
1948-1959 (ref.)	0		0		0		0	
1960-1969	0.126	**	0.136	**	-0.017		-0.027	
1970-1979	-0.019		-0.005		-0.279	***	-0.288	***
1980-1999	-0.287	***	-0.266	***	-0.710	***	-0.723	***
Partnership status								
Single (ref.)	0		0		0		0	
Cohabiting	2.249	***	2.259	***	2.479	***	2.478	***
Married	3.251	***	3.261	***	3.644	***	3.642	***
Separated	1.166	***	1.171		1.173	***	1.174	***
Educational level								
Low (ref.)	0		0		0		0	
Medium	-0.302	***	-0.313	***	-0.091		-0.084	
High	-0.592	***	-0.613	***	-0.362	***	-0.350	***
Origin group								
Native (ref.)	0		0		0		0	
North Africa	-0.028		-0.018		0.117	*	0.119	*
Sub-Saharan Africa	0.320	***	0.322	***	0.303	***	0.303	***
South East Asia	-0.073		-0.069		-0.040		-0.037	
Turkey	0.001		0.008		0.472	***	0.486	***
Southern Europe	-0.101	*	-0.105	*	0.098	*	0.103	*
Other Europe	0.017		0.022		-0.107		-0.105	
Employment status								
Salaried (ref.)	0		0		0		0	
Self-employed	0.079		0.064		0.162		0.162	
Unemployed	-0.111		-0.216	**	-0.391	***	-0.347	**
Student	-1.025	***	-1.057	***	-0.746	***	-0.730	***
Housewife	0.609	***	0.511	***	-0.673	***	-0.636	
Inactive	-0.118		-0.208	***	-0.120		-0.055	
Other	-0.064		-0.163		0.095		0.168	**
Second birth								
Constant	-7.702	***	-7.674	***	-8.065	***	-8.081	***
Time since previous birth								
0-1 year (slope)	0.172	***	0.174	***	0.183	***	0.183	***
1-3 years (slope)	0.035	***	0.036	***	0.039	***	0.040	***
3-5 years (slope)	-0.011	***	-0.011	***	-0.019	***	-0.019	***
5+ years (slope)	-0.018	***	-0.017	***	-0.016	***	-0.016	***
Birth cohort								
1948-1959 (ref.)	0		0		0		0	
1960-1969	0.049		0.054		0.134	*	0.125	*
1970-1979	0.204	***	0.216	***	-0.001		-0.010	
1980-1999	-0.291	***	-0.275		-0.509	***	-0.524	***
Partnership status								
Single (ref.)	0		0		0		0	
Cohabiting	0.897	***	0.901	***	0.884	***	0.880	***
Married	1.452	***	1.469	***	1.480	***	1.473	***
Separated	0.075		0.080		0.096	***	0.089	

Table A.3. Impact of childbearing on employment, log-relative risks (Model 1, full specification) (Continued)

	Women				Men			
	Model 1a Single process		Model 1b Multi-process		Model 1a Single process		Model 1b Multi-process	
	RR	Sig	RR	Sig	RR	Sig	RR	Sig
Educational level								
Low (ref.)	0		0		0		0	
Medium	-0.218	***	-0.238	***	-0.106		-0.096	
High	-0.102		-0.143	**	0.125		0.141	*
Origin group								
Native (ref.)	0		0		0		0	
North Africa	0.086		0.094		0.344	***	0.348	***
Sub-Saharan Africa	0.083		0.098		0.510	**	0.510	***
South East Asia	-0.103		-0.105		0.315	**	0.318	**
Turkey	0.175		0.197		0.454	***	0.463	***
Southern Europe	-0.124	**	-0.125	**	0.002		0.008	
Other Europe	-0.076		-0.069		0.029		0.032	
Employment status								
Salaried (ref.)	0		0		0		0	
Self-employed	-0.032		-0.051		0.258	**	0.259	**
Unemployed	-0.368	***	-0.501	***	-0.278		-0.239	
Student	-0.563	***	-0.604	***	-0.308	*	-0.293	*
Housewife	0.330	***	0.209	***	0.632		0.707	
Inactive	-0.063		-0.184	*	-0.186		-0.110	
Other	0.005		-0.095		0.020		0.087	
Third birth								
Constant	-8.071	***	-8.026	***	-7.904	***	-7.928	***
Time since previous birth								
0-1 year (slope)	0.140	***	0.141	***	0.143	***	0.143	***
1-3 years (slope)	0.019	***	0.019	***	0.024	***	0.024	***
3-5 years (slope)	-0.011	**	-0.012	**	-0.028	***	-0.028	***
5+ years (slope)	-0.022	***	-0.022	***	-0.017	***	-0.017	***
Birth cohort								
1948-1959 (ref.)	0		0		0		0	
1960-1969	0.099		0.107		0.071		0.062	
1970-1979	0.156		0.163	*	-0.020		-0.031	
1980-1999	-0.686	***	-0.684	***	-0.328		-0.349	
Partnership status								
Single (ref.)	0		0		0		0	
Cohabiting	0.649	***	0.655	***	0.542	*	0.546	*
Married	1.062	***	1.084	***	0.893	***	0.898	***
Separated	0.377		0.376	***	0.701	**	0.705	**
Educational level								
Low (ref.)	0		0		0		0	
Medium	-0.501	***	-0.523	***	-0.484	***	-0.476	***
High	-0.565	***	-0.617	***	-0.535	***	-0.519	***
Origin group								
Native (ref.)	0		0		0		0	
North Africa	0.618	***	0.628	***	0.813	***	0.816	***
Sub-Saharan Africa	0.730	**	0.755	**	1.014	***	1.017	***
South East Asia	0.386	**	0.383	**	0.509	***	0.509	***
Turkey	0.496	***	0.526	***	0.996	***	1.004	***
Southern Europe	-0.373	***	-0.377	***	-0.171		-0.166	
Other Europe	0.311	**	0.319	**	0.370	**	0.372	**
Employment status								
Salaried (ref.)	0		0		0		0	
Self-employed	-0.265		-0.279		-0.063		-0.065	
Unemployed	0.184		0.050		0.028		0.062	
Student	0.026		-0.021		0.013		0.030	
Housewife	0.652	***	0.520	***	0.772		0.815	
Inactive	0.122		-0.006		0.053		0.123	
Other	0.089		-0.010		-0.216	*	-0.156	

Table A.3. Impact of childbearing on employment, log-relative risks (Model 1, full specification) (Continued)

	Women				Men			
	Model 1a Single process		Model 1b Multi-process		Model 1a Single process		Model 1b Multi-process	
	RR	Sig	RR	Sig	RR	Sig	RR	Sig
Unobserved heterogeneity								
Standard deviation of residuals								
Fertility	0.726	***	0.730	***	0.729	***	0.732	***
Employment entry	0.618	***	0.697	***	0.656	***	0.795	***
Employment exit	1.130	***	1.307	***	0.885	***	1.205	***
Correlation between residuals								
Fertility and employment entry			-0.114	***		0.095	*	
Fertility and employment exit			0.302	***		-0.070		
Employment entry and exit			-0.6508	***		-0.962	***	
ln-L	-96771.47		-96689.48		-76239.96		-76109.02	

Source: Social Protection Survey of Chile, authors' own calculations.

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.4. Impact of childbearing on employment, log-relative risks (additional specification)

	Women		Men	
	Model 2 Multi-process		Model 2 Multi-process	
	RR	Sig	RR	Sig
First employment entry				
Constant	-1.341	***	-1.212	***
Time since in education				
0-1 year (slope)	-0.256	***	-0.203	***
1-3 years (slope)	0.030	***	0.027	***
3-5 years (slope)	-0.026	***	-0.058	***
5+ years (slope)	0.001	***	0.005	***
Birth cohort				
1948-1959 (ref.)	0		0	
1960-1969	-0.235	***	-0.474	***
1970-1979	-0.194	***	-0.447	***
1980-1999	-0.329	***	-0.276	***
Partnership status				
Single (ref.)	0		0	
Cohabiting	0.089	*	0.411	***
Married	-0.209	***	0.307	***
Separated	0.317	***	0.194	*
Time since birth				
Childless (ref.)	0		0	
0-1 year after birth	-0.746	***	0.063	
1+ year after birth	-0.446	***	-0.083	
Educational level				
Low (ref.)	0		0	
Medium	0.759	***	0.373	***
High	1.153	***	0.431	***
Origin group				
Native (ref.)	0		0	
North Africa	-0.336	***	-0.078	
Sub-Saharan Africa	-0.337	***	-0.230	***
South East Asia	-0.105		0.069	
Turkey	-0.426	***	0.503	***
Southern Europe	0.071		0.309	***
Other Europe	-0.210	***	0.065	
Employment exits				
Constant	-9.684	***	-8.992	***
Time since previous employment				
0-1 year (slope)	0.319	***	0.331	***
1-3 years (slope)	-0.024	***	-0.039	***
3+ years (slope)	0.003	***	0.002	***
Birth cohort				
1948-1959 (ref.)	0		0	
1960-1969	0.247	**	0.351	***
1970-1979	0.642	***	0.624	***
1980-1999	1.336	***	0.886	***
Partnership status				
Single (ref.)	0		0	
Cohabiting	0.307	***	-0.527	***
Married	0.570	***	-0.859	***
Separated	0.444	***	-0.081	
Time since birth				
Childless (ref.)	0		0	
0-1 year after birth	0.857	***	-0.197	
1-3 years after birth	0.793	***	-0.425	***
3-5 years after birth	-0.207	**	-0.596	***
5+ years after birth	-0.442	***	-0.184	

Table A.4. Impact of childbearing on employment, log-relative risks (additional specification) (Continued)

	Women		Men	
	Model 2 Multi-process		Model 2 Multi-process	
	RR	Sig	RR	Sig
Educational level				
Low (ref.)	0		0	
Medium	-0.544	***	-0.459	***
High	-1.536	***	-1.088	***
Origin group				
Native (ref.)	0		0	
North Africa	0.249	***	0.164	*
Sub-Saharan Africa	0.069		0.153	
South East Asia	-0.018		0.002	
Turkey	0.524	***	-0.057	
Southern Europe	-0.197	***	-0.295	***
Other Europe	0.148		0.083	
Order				
1 (ref.)	0		0	
2	0.595	***	0.331	***
3+	0.313		0.260	**
Type of employment				
Salaried (ref.)	0		0	
Self-employed	-0.424	***	-0.446	***
Higher order employment entries				
Constant	-7.767	***	-8.769	***
Time since out of employment				
0-1 year	0.317	***	0.498	***
1-3 years	-0.024	***	-0.077	***
3-5 years	-0.016	***	-0.019	***
5+ years	0.004	***	0.009	***
Birth cohort				
1948-1959 (ref.)	0		0	
1960-1969	0.337	***	0.108	
1970-1979	0.736	***	0.366	***
1980-1999	0.880	***	0.527	***
Partnership status				
Single (ref.)	0		0	
Cohabiting	0.081		0.334	***
Married	-0.244	***	-0.025	
Separated	0.031		-0.105	
Time since birth				
Childless (ref.)	0		0	
0-1 year after birth	-0.962	***	-0.267	**
1-3 years after birth	-0.895	***	-0.205	**
3-5 years after birth	-0.112		-0.346	***
5+ years after birth	-0.306	***	-0.433	***
Educational level				
Low (ref.)	0		0	
Medium	0.625	***	0.581	***
High	1.275	***	1.161	***
Origin group				
Native (ref.)	0		0	
North Africa	-0.119		-0.295	**
Sub-Saharan Africa	-0.182		-0.402	**
South East Asia	0.025		-0.372	**
Turkey	-0.313	**	0.020	
Southern Europe	0.070		-0.115	
Other Europe	-0.044		-0.179	

Table A.4. Impact of childbearing on employment, log-relative risks (additional specification) (Continued)

	Women		Men	
	Model 2 Multi-process		Model 2 Multi-process	
	RR	Sig	RR	Sig
Order				
1 (ref.)	0		0	
2	0.404	***	0.298	***
3+	0.560	***	0.486	***
Type of out of employment				
Unemployed (ref.)	0		0	
Housewife	-0.737	***	-0.560	*
Other	-0.609	***	-0.364	***
First birth				
Constant	-6.963	***	-9.295	***
Age				
15-19 year (slope)	0.014	***	0.040	***
20-24 years (slope)	-0.0002		0.001	
25-29 years (slope)	0.004	***	0.007	***
30-34 years (slope)	-0.005	**	-0.004	**
35+ years (slope)	-0.024	***	-0.016	***
Birth cohort				
1948-1959 (ref.)	0		0	
1960-1969	0.146	***	-0.018	
1970-1979	0.013		-0.276	***
1980-1999	-0.254	***	-0.709	***
Partnership status				
Single (ref.)	0		0	
Cohabiting	2.253	***	2.474	***
Married	3.241	***	3.631	***
Separated	1.178	***	1.172	***
Educational level				
Low (ref.)	0		0	
Medium	-0.287	***	-0.082	
High	-0.562	***	-0.337	***
Origin group				
Native (ref.)	0		0	
North Africa	-0.005		0.126	*
Sub-Saharan Africa	0.314	***	0.303	***
South East Asia	-0.062		-0.031	
Turkey	0.009		0.464	***
Southern Europe	-0.102	**	0.101	*
Other Europe	0.025		-0.103	
Employment status				
Salaried (ref.)	0		0	
Self-employed	0.056		0.164	
Unemployed	-0.230	**	-0.375	**
Student	-1.056	***	-0.735	***
Housewife	0.459	***	-0.648	
Inactive	-0.238	***	-0.086	
Other	-0.170	*	0.128	
Second birth				
Constant	-7.429	***	-7.955	***
Time since previous birth				
0-1 year (slope)	0.174	***	0.183	***
1-3 years (slope)	0.034	***	0.039	***
3-5 years (slope)	-0.012	***	-0.020	***
5+ years (slope)	-0.018	***	-0.016	***

Table A.4. Impact of childbearing on employment, log-relative risks (additional specification) (Continued)

	Women		Men	
	Model 2 Multi-process		Model 2 Multi-process	
	RR	Sig	RR	Sig
Birth cohort				
1948-1959 (ref.)	0		0	
1960-1969	0.051		0.135	**
1970-1979	0.166	**	-0.008	
1980-1999	-0.319	***	-0.538	***
Partnership status				
Single (ref.)	0		0	
Cohabiting	0.865	***	0.864	***
Married	1.388	***	1.439	***
Separated	0.047		0.081	
Educational level				
Low (ref.)	0		0	
Medium	-0.200	***	-0.097	
High	-0.048		0.162	*
Origin group				
Native (ref.)	0		0	
North Africa	0.119	*	0.354	***
Sub-Saharan Africa	0.114		0.522	***
South East Asia	-0.096		0.332	**
Turkey	0.225	*	0.435	***
Southern Europe	-0.110	*	0.005	
Other Europe	-0.058		0.029	
Employment status				
Salaried (ref.)	0		0	
Self-employed	-0.029		0.262	**
Unemployed	-0.482	***	-0.270	
Student	-0.582	***	-0.291	*
Housewife	0.186	***	0.691	
Inactive	-0.193	*	-0.142	
Other	-0.075	0.048		
Third birth				
Constant	-7.650	***	-7.387	***
Time since previous birth				
0-1 year (slope)	0.141	***	0.143	***
1-3 years (slope)	0.019	***	0.024	***
3-5 years (slope)	-0.012	**	-0.028	***
5+ years (slope)	-0.023	***	-0.017	***
Birth cohort				
1948-1959 (ref.)	0		0	
1960-1969	0.270	**	0.067	
1970-1979	0.428	***	-0.017	
1980-1999	-0.319		-0.486	
Partnership status				
Single (ref.)	0		0	
Cohabiting	-0.194	*	0.673	**
Married	-0.248	**	1.018	***
Separated	-0.035		0.824	***
Educational level				
Low (ref.)	0		0	
Medium	-0.378	***	-0.467	***
High	-0.104		-0.451	***

Table A.4. Impact of childbearing on employment, log-relative risks (additional specification) (Continued)

	Women		Men	
	Model 2 Multi-process		Model 2 Multi-process	
	RR	Sig	RR	Sig
Origin group				
Native (ref.)	0		0	
North Africa	0.474	***	0.862	***
Sub-Saharan Africa	0.641	**	1.016	***
South East Asia	0.170		0.581	***
Turkey	0.140		0.895	***
Southern Europe	-0.392	***	-0.155	
Other Europe	0.206		0.371	**
Employment status				
Salaried (ref.)	0		0	
Self-employed	-0.045		-0.054	
Unemployed	0.435	**	0.036	
Student	-0.129		0.011	
Housewife	0.687	***	0.739	
Inactive	0.232		0.089	
Other	0.021		-0.177	
Unobserved heterogeneity				
Standard deviation of residuals				
Fertility	0.660	***	0.698	***
Employment entry	0.661	***	0.795	***
Employment exit	1.222	***	1.205	***
Correlation between residuals				
Fertility and employment entry	-0.194	***	0.057	
Fertility and employment exit	0.313	***	-0.005	
Employment entry and exit	-0.781	***	-0.975	***
ln-L	-96381.75		-76095.14	

Source: Social Protection Survey of Chile, authors' own calculations.

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table A.5. Impact of childbearing on employment, log-relative risks (Model 2, full specification)

	Women		Men	
	Model 2 Multi-process		Model 2 Multi-process	
	RR	Sig	RR	Sig
First employment entry				
Constant	-1.449	***	-1.121	***
Time since in education				
0-1 year (slope)	-0.261	***	-0.205	***
1-3 years (slope)	0.029	***	0.027	***
3-5 years (slope)	-0.030	***	-0.059	***
5+ years (slope)	0.0004		0.004	***
Birth cohort				
1948-1959 (ref.)	0		0	
1960-1969	-0.266	***	-0.442	***
1970-1979	-0.290	***	-0.427	***
1980-1999	-0.456	***	-0.282	***
Partnership status				
Single (ref.)	0		0	
Cohabiting	0.055		0.409	***
Married	-0.490	***	0.313	***
Separated	0.168	**	0.163	
Educational level				
Low (ref.)	0		0	
Medium	0.818	***	0.364	***
High	1.249	***	0.389	***
Employment exits				
Constant	-9.981	***	-8.967	***
Time since previous employment				
0-1 year (slope)	0.318	***	0.333	***
1-3 years (slope)	-0.017	***	-0.039	***
3+ years (slope)	0.0004		0.003	***
Birth cohort				
1948-1959 (ref.)	0		0	
1960-1969	0.328	***	0.308	***
1970-1979	0.850	***	0.587	***
1980-1999	1.556	***	0.912	***
Partnership status				
Single (ref.)	0		0	
Cohabiting	0.438	***	-0.558	***
Married	0.676	***	-0.871	***
Separated	0.359	***	-0.075	
Parity x Origin group				
Childless x Natives (ref.)	0		0	
Childless x North Africa	0.260	**	-0.091	
Childless x Sub-Saharan Africa	0.079		-0.322	*
Childless x South East Asia	0.118		-0.056	
Childless x Turkey	0.294		-0.194	
Childless x Southern Europe	-0.108		-0.255	***
Childless x Other Europe	0.022		0.094	
1+ children x Natives	0.546	***	-0.794	***
1+ children x North Africa	0.621	***	-0.067	
1+ children x Sub-Saharan Africa	0.342	**	0.019	
1+ children x South East Asia	0.325	*	-0.540	
1+ children x Turkey	1.056	***	0.035	
1+ children x Southern Europe	0.288	***	-0.688	***
1+ children x Other Europe	0.619	***	-0.572	**
Educational level				
Low (ref.)	0		0	
Medium	-0.517	***	-0.453	***
High	-1.510	***	-1.075	***

Table A.5. Impact of childbearing on employment, log-relative risks (Model 2, full specification) (Continued)

	Women		Men	
	Model 2 Multi-process		Model 2 Multi-process	
	RR	Sig	RR	Sig
Order				
1 (ref.)	0		0	
2	0.270	***	0.300	***
3+	-0.313	*	0.247	**
Type of employment				
Salaried (ref.)	0		0	
Self-employed	-0.435	***	-0.399	***
Higher order employment entries				
Constant	-8.022	***	-8.886	***
Time since out of employment				
0-1 year (slope)	0.314	***	0.499	***
1-3 years (slope)	-0.020	***	-0.077	***
3-5 years (slope)	-0.013	***	-0.018	***
5+ years (slope)	0.005	***	0.009	***
Birth cohort				
1948-1959 (ref.)	0		0	
1960-1969	0.296	***	0.151	**
1970-1979	0.644	***	0.419	***
1980-1999	0.804	***	0.585	***
Partnership status				
Single (ref.)	0		0	
Cohabiting	0.004		0.336	***
Married	-0.314	***	-0.020	
Separated	0.031		-0.122	
Parity x Origin group				
Childless x Natives (ref.)	0		0	
Childless x North Africa	0.199		-0.168	
Childless x Sub-Saharan Africa	-0.121		-0.276	
Childless x South East Asia	0.315	*	-0.339	**
Childless x Turkey	0.194		-0.179	
Childless x Southern Europe	0.333	***	-0.160	
Childless x Other Europe	0.242		-0.050	
1+ children x Natives	-0.466		-0.419	
1+ children x North Africa	-0.345	***	-0.581	***
1+ children x Sub-Saharan Africa	-0.025		-0.374	
1+ children x South East Asia	-0.202		-0.515	*
1+ children x Turkey	-0.642	***	-0.125	
1+ children x Southern Europe	-0.209		-0.426	***
1+ children x Other Europe	-0.254		-0.633	***
Educational level				
Low (ref.)	0		0	
Medium	0.639	***	0.582	***
High	1.316	***	1.143	***
Order				
1 (ref.)	0		0	
2	0.424	***	0.300	***
3+	0.616	***	0.474	***
Type of out of employment				
Unemployed (ref.)	0		0	
Housewife	-0.781	***	-0.525	*
Other	-0.610	***	-0.630	***

Table A.5. Impact of childbearing on employment, log-relative risks (Model 2, full specification) (Continued)

	Women		Men	
	Model 2 Multi-process		Model 2 Multi-process	
	RR	Sig	RR	Sig
First birth				
Constant	-6.954	***	-10.237	***
Age				
15-19 year (slope)	0.014	***	0.102	
20-24 years (slope)	-0.0003		0.058	***
25-29 years (slope)	0.003	***	0.022	**
30-34 years (slope)	-0.005	**	0.007	***
35+ years (slope)	-0.024	***	-0.003	***
Birth cohort				
1948-1959 (ref.)	0		0	
1960-1969	0.155	***	0.045	
1970-1979	0.029		-0.178	***
1980-1999	-0.233	***	-0.722	***
Partnership status				
Single (ref.)	0		0	
Cohabiting	2.259	***	2.469	***
Married	3.249	***	3.633	***
Separated	1.181	***	1.219	***
Educational level				
Low (ref.)	0		0	
Medium	-0.294	***	-0.092	*
High	-0.570	***	-0.277	***
Origin group				
Native (ref.)	0		0	
North Africa	-0.025		0.161	**
Sub-Saharan Africa	0.289	***	0.342	***
South East Asia	-0.068		0.0001	
Turkey	-0.019		0.433	***
Southern Europe	-0.098	*	0.094	*
Other Europe	0.011		-0.104	
Employment status				
Salaried (ref.)	0		0	
Self-employed	0.052		0.205	**
Unemployed	-0.265	***	-0.430	***
Student	-1.070	***	-0.776	***
Housewife	0.412	***	-0.736	
Inactive	-0.290	***	-0.125	
Other	-0.213	**	0.155	*
Second birth				
Constant	-7.408	***	-7.884	***
Time since previous birth				
0-1 year (slope)	0.174	***	0.183	***
1-3 years (slope)	0.034	***	0.038	***
3-5 years (slope)	-0.012	***	-0.020	***
5+ years (slope)	-0.018	***	-0.016	***
Birth cohort				
1948-1959 (ref.)	0		0	
1960-1969	0.056		0.150	**
1970-1979	0.177	***	0.016	
1980-1999	-0.309	***	-0.522	***
Partnership status				
Single (ref.)	0		0	
Cohabiting	0.867	***	0.847	***
Married	1.395	***	1.409	***
Separated	0.052		0.076	

Table A.5. Impact of childbearing on employment, log-relative risks (Model 2, full specification) (Continued)

	Women		Men	
	Model 2 Multi-process		Model 2 Multi-process	
	RR	Sig	RR	Sig
Educational level				
Low (ref.)	0		0	
Medium	-0.210	***	-0.096	
High	-0.065		0.169	**
Origin group				
Native (ref.)	0		0	
North Africa	0.095		0.356	***
Sub-Saharan Africa	0.082		0.524	***
South East Asia	-0.109		0.335	**
Turkey	0.200		0.415	***
Southern Europe	-0.105	*	0.002	
Other Europe	-0.069		0.028	
Employment status				
Salaried (ref.)	0		0	
Self-employed	-0.038		0.265	**
Unemployed	-0.516	***	-0.275	
Student	-0.596	***	-0.289	*
Housewife	0.152	***	0.645	
Inactive	-0.248	**	-0.152	
Other	-0.111		0.037	
Third birth				
Constant	-7.624	***	-7.306	***
Time since previous birth				
0-1 year (slope)	0.141	***	0.143	***
1-3 years (slope)	0.019	***	0.024	***
3-5 years (slope)	-0.012	**	-0.028	***
5+ years (slope)	-0.023	***	-0.017	***
Birth cohort				
1948-1959 (ref.)	0		0	
1960-1969	0.151	*	0.083	
1970-1979	0.173	*	0.012	
1980-1999	-0.769	***	-0.457	
Partnership status				
Single (ref.)	0		0	
Cohabiting	0.625	***	0.644	**
Married	1.025	***	0.978	***
Separated	0.306		0.796	**
Educational level				
Low (ref.)	0		0	
Medium	-0.407	***	-0.466	***
High	-0.329	***	-0.446	***
Origin group				
Native (ref.)	0		0	
North Africa	0.649	***	0.859	***
Sub-Saharan Africa	0.715	***	1.011	***
South East Asia	0.404	***	0.580	***
Turkey	0.489	***	0.868	***
Southern Europe	-0.350	***	-0.161	
Other Europe	0.332	***	0.366	**

Table A.5. Impact of childbearing on employment, log-relative risks (Model 2, full specification) (Continued)

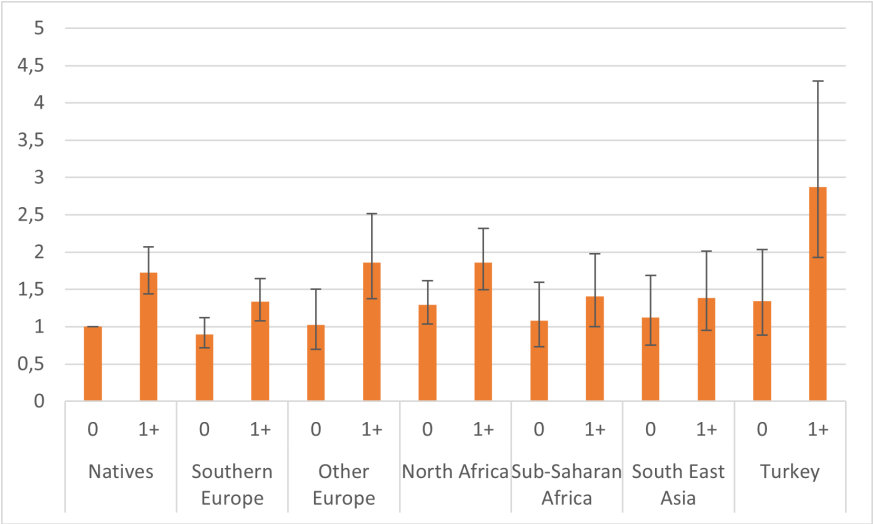
	Women		Men	
	Model 2 Multi-process		Model 2 Multi-process	
	RR	Sig	RR	Sig
Employment status				
Salaried (ref.)	0		0	
Self-employed	-0.264		-0.056	
Unemployed	0.022		0.030	
Student	-0.019		0.010	
Housewife	0.427	***	0.736	
Inactive	-0.112		0.076	
Other	-0.020		-0.185	
Unobserved Heterogeneity				
Standard Deviation of Residuals				
Fertility	0.658	***	0.666	***
Employment entry	0.681	***	0.796	***
Employment exit	1.322	***	1.250	***
Correlation Between Residuals				
Fertility and employment entry	-0.302	***	0.043	
Fertility and employment exit	0.336	***	0.004	
Employment entry and exit	-0.664	***	-0.936	***
ln-L	-96765.09		-76211.10	

Source: Social Protection Survey of Chile, authors' own calculations.

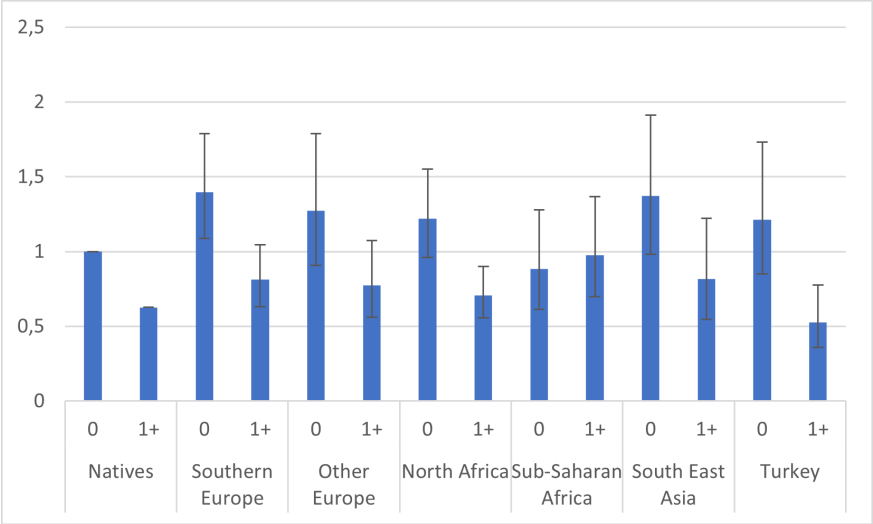
Notes:

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Figure A.1. Relative risks of employment entry and exit by origin and parity for women (Model 2)



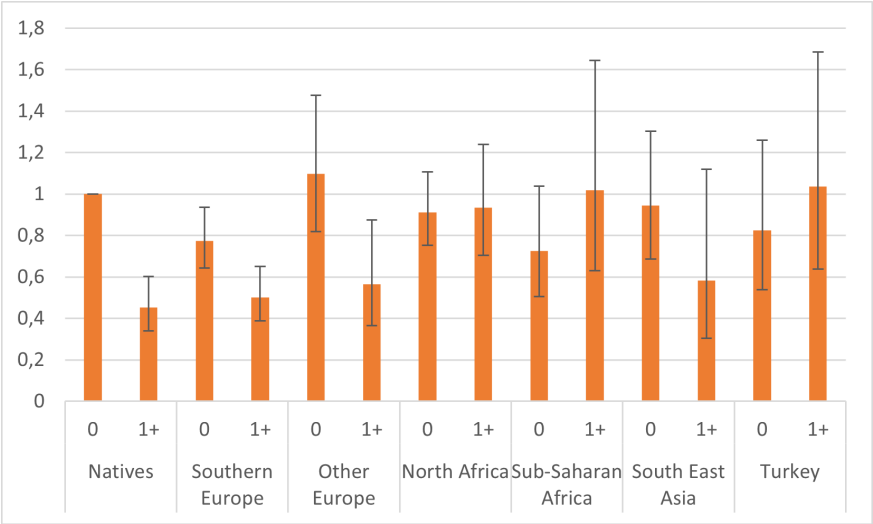
(a) Employment exits



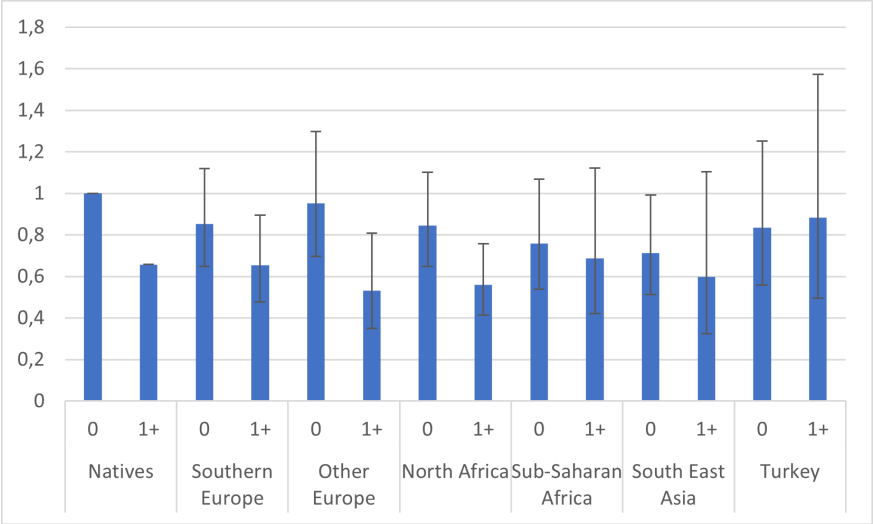
(b) Second and higher order employment entries

Source: Trajectories and Origins, authors' own calculations.

Figure A.2. Relative risks of employment entry and exit by origin and parity for men (Model 2)



(a) Employment exits



(b) Second and higher order employment entries

Source: Trajectories and Origins, authors' own calculations.