**The London School of Economics and Political Science**

# The Relationship between Family Context and Job Satisfaction

## A Quantitative Investigation


**Elena Mariani**

A Thesis Submitted to the Department of Social Policy of the London School of Economics and Political Science for the Degree of

*Doctor of Philosophy*

London, June 2017

*To my parents.*

*For giving me drive, curiosity and passion. For their love and support.*

*Ai miei genitori.*

*Per avermi donato curiositá, ambizione e passione. E per il vostro affetto infinito.*

# Declaration

I certify that the thesis I have presented for examination for the PhD degree of the London School of Economics and Political Science is solely my own work other than where I have clearly indicated that it is the work of others (in which case the extent of any work carried out jointly by me and any other person is clearly identified in it).



I warrant that this authorisation does not, to the best of my belief, infringe the rights of any third party.

I declare that my thesis consists of 58,153 words.

**Declaration of editorial help**

I can confirm that my thesis was copy edited for conventions of language, spelling and grammar by Lisa Findley.

Elena Mariani

London, June 2017

# Acknowledgements

In October 2011 I took a module on Welfare Analysis and Measurement taught by Professor Stephen Jenkins and Doctor Berkay Özcan as part of my MSc in European Social Policy at LSE. Back then, I was new to the school and so were they. Five years on, I cannot help thinking that choice was life-changing, and possibly one of the most significant and fortuitous events in my life. In October 2013, Stephen and Berkay became my PhD supervisors, and they have been by my side every day during this long journey.

I would like to thank Stephen for his insightful suggestions on any aspects of my work. Your attention for details, knowledge and clear thinking have been tremendous help. I would like to thank Berkay for introducing me to the world of Demography, always showing me the bigger picture and being a supportive mentor. Without you, this work would not have even started. Thank you both for all the support you have given me, through rough moments and happy ones.

I would like to thank the BIFA team at the DIW in Berlin, especially Professor Katharina Spieß and Professor Pia S. Schober for having welcomed me to the department in the Summer of 2015, and Mathias Huebener with whom I have shared an office and many inspiring conversations.

Special thanks to the Department of Methodology at LSE, in particular Dominik Hangartner

and Ben Wilson, for having given me the opportunity to teach on their courses during my PhD. Teaching during my PhD has been an invaluable experience under so many aspects: participating into the life of the school, contribute to the students' education and developing myself.

I could not have completed this thesis without the generous financial support of the Economic and Research Council and the Department of Social Policy at the LSE.

More people than could possibly fit in this page helped me during the past three years. Within LSE, special thanks to all the members of the Centre for Analysis of Social Exclusion, which has been my professional home. Especially, I am grateful for the support during the PhD and fun outside of it to Kerris Cooper, Polina Obolenskaya, Ellie Suh, Nora Ratzmann and Jack Cunliffe.

Lastly, in the spirit of this thesis, loved ones matter enormously when it comes to work. Starting from my parents: Grazie ai miei genitori Manuela e Fausto; questa tesi è dedicata a voi. Grazie per la vostra pazienza in tutti questi anni e il vostro supporto. La vostra presenza mi ha donato la forza di continuare. Thank you to Hedwig Plamper for being an amazing friend and having introduced me to everything German. Lastly, thank you David. Your continuous support and encouragement in the last months have meant the world to me.

# Abstract

This thesis provides empirical evidence on the relationship between demographic events and job satisfaction. Existing conceptualisations of job satisfaction are not fruitful for theorising the relationship between family context and job satisfaction. I develop a framework whereby job satisfaction is maximised when there are no mismatches between desired and obtained employment characteristics, while desired employment characteristics are in turn affected by family context. On one hand, family events may create negative spill-overs into well-being at work; on the other hand, work may be a buffer against negative family events. As family context I consider motherhood, length of paid leave after birth of a child for women and marital dissolution for men. I use the German Socio-Economic Panel (SOEP), a longitudinal survey representative of German households that spans the period 1984–2013. This dataset is ideal for my research question because it is the longest panel survey of job satisfaction. Although I chose the SOEP due to its high suitability, I also exploit features of German society and policy. I show that family events bring about variations in job satisfaction in unexpected ways. Becoming a mother does not matter for trajectories of job satisfaction. However, factors such as availability of suitable employment and norms may be more important in explaining why childless women have lower job satisfaction than mothers in Eastern Germany, but not in Western Germany. A shorter paid leave brings about a lower level of job satisfaction at the return to work but only for women of a lower socio-economic standing. Men who divorce experience a temporary increase in job satisfaction that lasts for up to three years after marital dissolution.

# Table of contents

# List of figures

# List of tables

# Nomenclature

**Acronyms / Abbreviations**

CASMIN Comparative Analysis of Social Mobility in Industrial Nations

CDU Christian Democratic Union of Germany

CRE Correlated Random Effects

CSU Christian Social Union in Bavaria

DID Difference in Difference

DIW Deutsches Institut für Wirtschaftsforschung - German Economic Institute (English)

FE Fixed Effects Estimator

FRG Federal Republic of Germany

GDP Gross Domestic Product

GDR German Democratic Republic

HILDA Household, Income and Labour Dynamics in Australia Survey

IMR Inverse Mills Ratio

ISCED International Standard Classification of Education

ITT Intention to Treat Effect

IV Instrumental Variable

LFS Labour Force Survey

OLS Ordinary Least Square Estimator

PAIRFAM Panel Analysis of Intimate Relationships and Family Dynamics

SOEP German Socio Economic Panel

SPD Social Democratic Party of Germany

SWB Subjective Well-Being

TS2SLS Two-Sample Two-Stage Least Square Estimator

TSIV Two-Sample Instrumental Variable

UK United Kingdom

UN United Nations

USA United States of America

WCS Working Conditions Survey

WERS Workplace Employment Relations Studies

# Chapter 1

# Introduction

In this doctoral thesis I answer the following question: to what extent does family context affect job satisfaction? While family context defines loosely anything that happens within the realm of the family, the specific factors that I consider are childbearing, fertility and union dissolution. In this introduction, I describe why job satisfaction is an interesting outcome, while reviewing the conceptual, empirical and methodological contributions of my thesis.

Job satisfaction is widely researched. Moreover, it is widely used in policy (European Commission 2001, Leschke et al. 2008, Guest 2008, Muñoz de Bustillo Llorente et al. 2011). Examples of the use of measures of job satisfaction in policy include targeting of public policies to increase workers' well-being. For instance, the UK parliament approved Flexible Working Regulations 2014 (No. 1398) that grant the right to every employee to request flexible working arrangements in order to promote well-being.

The main correlates of job satisfaction are well known. Lower job satisfaction predicts behaviours such as quitting, absenteeism and union membership, while higher job satisfaction is correlated with increased productivity and performance (Freeman 1978, Akerlof et al. 1988, Warr 1999, Clark 2001, Lévy-Garboua et al. 2007, Clark et al. 2012, Böckerman

and Ilmakunnas 2012, Oswald et al. 2014, Bryson et al. 2015). At the individual worker level, higher job satisfaction has been linked to higher future wages, better health and higher likelihood to remain in employment (Staw et al. 1994, Judge et al. 2001, Green 2010, Diener and Chan 2011). At the macro level, improvements in job satisfaction are correlated with business-unit profitability (Patterson et al. 2004, Proudfoot et al. 2009, Harter et al. 2010) and may be conducive to economic growth (Bryson et al. 2015). The benefits of a satisfied workforce are therefore at micro- and macro-level. Substantively, the importance of job satisfaction is found in a central fact: it is easy to measure and is a powerful predictor of future employment intentions.

However, the interpretation of job satisfaction measures is not straightforward. A puzzle often cited is that job satisfaction measures do not systematically correlate with measures of job quality, such as wages, occupation and working hours. The conceptual contribution of my thesis is to propose a new conceptual framework to interpret job satisfaction. I take my cue from discrepancy theory, and I develop it further. The novelty of my conceptual framework is that I explicitly allow for non-workplace variables to have influence in determining job satisfaction. This sets the scene for the empirical part of the thesis.

The lack of a conceptual framework for the relationship between family context and job satisfaction has led to a dearth of empirical studies on the same topic. The majority of studies relating family context and job satisfaction are dated, use non-representative samples and include only US respondents (Crosby 1982, Hodson 1989, Hanson and Sloane 1992, Holtzman and Glass 1999). Thus, there is no systematic empirical evidence on the relationship between family contexts and job satisfaction. The reasons why this is regrettable and why an empirical study on family and job satisfaction is particularly important now are discussed in Chapter 2. My contribution is to show that family context has a significant and often

unexpected effect on job satisfaction.

I provide two methodological contributions. First, many of the methods applied in this thesis have not been applied to job satisfaction measures before. Second, the main methodological challenge when studying job satisfaction arises because the choice of being in paid employment is likely to be correlated with the determinants of job satisfaction, and job satisfaction is only observed for working individuals.

It is important to keep in mind the distinction between sample selection bias and endogeneity bias. It is not uncommon to read studies where the terms sample selection and endogeneity are used interchangeably. However, this is incorrect, because they are two distinct concepts. Sample selection refers to a situation where the dependent variable is observed only for a non-random subset of the population. This is usually a well-defined group (e.g. only those employed, only those who belong to a union etc.). Sample selection does not affect internal validity but only generalisation of findings, as they may not be generalised to subsets of the population beyond the one analysed. However, endogeneity refers to a situation where the dependent variable is observed for the full population, but one of the independent variables is correlated with the unobservables contained in the error term. For instance, if less career-oriented mothers are more likely to stop working when they have a baby and they also have on average lower job satisfaction, then failure to control for this correlation will yield an estimated effect of children on job satisfaction that is biased upward.

In the case of my work, I aim to generalise findings to the population of workers only: this is a non-random, well-defined subset of the population and I observe job satisfaction for all units. However, motherhood and marital dissolution determine the likelihood of being in employment in a non-homogeneous way: because the determinants of returning to work

after a demographic event are likely to be correlated with the determinants of job satisfaction, estimates of family factors on job satisfaction may suffer from endogeneity bias.

Hence, in my work I should be worried about endogeneity bias rather than sample selection. Nevertheless, in this context the two are closely related because endogeneity comes from the fact that job satisfaction and family context are choice variables with respect to the decision of being in paid employment. Hence, a more appropriate term for the specific problem in my work is "endogenous sample selection", which summarises my goal of assessing whether the selection process generates endogeneity in the selected sub-sample. From an analytical point of view, I make use of econometric tools that address sample selection problems, although I am actually interested in determining the seriousness of endogeneity bias.

Surprisingly, literature on job satisfaction ignores this central fact. There is little discourse on either sample selection or endogeneity. My contribution is to apply for the first time a panel data sample selection model to assess the seriousness of endogeneity bias when analysing the effect of motherhood on job satisfaction.

# Chapter 2

# Motivations

## 2.1 Why Job Satisfaction?

Job satisfaction is a central concept in the fields of psychology, management studies and economics. However, a single conceptualisation of job satisfaction measures does not exist. Some have argued that this a major drawback of job satisfaction measures (Muñoz de Bustillo Llorente and Fernández-Macías 2005). Others have seen the opportunity to produce more research on job satisfaction that aims at discovering how job satisfaction is determined. One way to do this is to use a broader framework that does not see job satisfaction as merely determined by work environment, but that includes outside factors as well — especially from the private sphere of life (Brown et al. 2012, Budd and Spencer 2015, Spencer 2015). This thesis belongs to the latter stream.

To define job satisfaction one has to specify a concept and meaning of work. Recent commentators have stressed that work does not end in the factory or the office: Budd and Spencer (2015) argue that "work needs to be embraced not as a private set of tasks done behind closed doors in a factory or an office, but as a very public activity with deep personal as well as societal meanings" (page 2). In other words, we should not measure worker

well-being in a job-centric fashion, but rather in a worker-centric fashion. In a similar manner, Cooke et al. (2013) advocate for broadening job quality into a measure of work that reflects individuals' values on work and life. It is indeed necessary to develop approaches to worker well-being that do not ignore the fact that work is so closely interrelated with other life areas, such as the family (England and Whitely 1990). Additionally, economists' view that work creates dis-utility and is only meaningful insofar as it allows individuals to meet their consumption needs has prevented the development of approaches where work has independent value within an individual's life (Spencer 2015).

The redefinition of job satisfaction in line with a concept of meaningful work is not only a scholarly exercise. In an opinion piece in *The New York Times* in November 2013 Emily Esfahani Smith, an American editor, and Stanford Graduate School of Business Professor Jennifer L. Aaker write that Millennials — that is people born after 1980 — focus on happiness rather than material goods much more than previous generations. Instead of chasing money, they want a career that makes them happy. They are more likely to state that meaningful work rather than money is a factor determining career success. Another initiative that supports the centrality of job satisfaction for younger generations is the online platform Skills Route, supported by the Cabinet Office, the Department for Education and the Department of Business, Innovation and Skills. Using a rich set of data, from average salary to job satisfaction, Skills Route helps young people in the UK to select jobs suitable for them. The founders say that their aim is to "increase the proportion of young people pursuing jobs for their well-being not just for their earning potential". Thus, a concept of worker well-being that is respectful of what people want from their working lives is a central concern for younger generations.

It is impossible to develop a meaningful concept of workers' well-being without making reference to expectations of what a job should be like (Brown et al. 2012, Hebson et al. 2015). Some authors have been puzzled by the idea that if two people have the same jobs but expect different things from their work they will report different levels of job satisfaction (Lévy-Garboua and Montmarquette 2004, Budd and Spencer 2015, Spencer 2015). I do not agree that this introduces bias in job satisfaction measures, as previous authors have suggested. Rather, if we had a more systematic understanding of how individuals develop work attitudes we would be able to better interpret, explain and predict job satisfaction measures (Brown et al. 2012). At the same time, the development of work expectations is likely to lie not only within the workplace itself but in many non-workplace factors: education, socialisation, geographical origin, personality traits, personal ambition, marital status, life stage etc.

Table 2.1 contains a summary of the most prevalent conceptualisations of job satisfaction. These approaches are not mutually exclusive, but have many aspects in common. However, they tend to be discipline-specific, which explains why they have developed separately. My critique of these approaches draws on the underlying meaning of work and workers' well-being.

### 2.1.1 Job Quality

A first approach consists in interpreting job satisfaction measures as an overall measure of job quality. This implies that better quality jobs should increase job satisfaction. The concept of work behind this approach is therefore one in which work is a series of tasks and objective factors.

Table 2.1 Most Prevalent Conceptualisations of Job Satisfaction in Empirical Literature

| Conceptualisation | Description | Examples |
|---|---|---|
| Job Quality | Job satisfaction is a summary measure of job quality. In particular, it is expected that job satisfaction correlates positively with factors as pay, job prestige, occupation. | Clark 1996, Muñoz de Bustillo Llorente and Fernández-Macías 2005, Rose 2003, Kaiser 2002 |
| Utility | Job satisfaction identifies utility from work. This is a function of income, hours worked and a set of job and individual parameters. | Lévy-Garboua and Montmarquette 2004, Sloane and Williams 2000 |
| Discrepancy | Job satisfaction is a function of the perceived relationship between what one wants from one's job and what one perceives it as offering. | Locke 1969, 1976, Muñoz de Bustillo Llorente and Fernández-Macías 2005 |
| Subjective Well-Being | Job satisfaction is an indicator of subjective well-being (SWB). As such it is itself determined by the satisfaction with facets of SWB in individual dimensions of work (e.g. satisfaction with pay, working hours) and contributes to overall life satisfaction. | Skalli et al. 2008, Van Praag and Ferrer-i Carbonell 2008a, Bryson et al. 2015 |

Empirical studies using this approach have reportedly noted that measures of job quality such as pay, overwork and occupational prestige are not systematic predictors of job satisfaction, suggesting that the relationship between work environment and job satisfaction is likely to be more complex (e.g. Weaver 1980, Rose 2003, Muñoz de Bustillo Llorente and Fernández-Macías 2005). Qualitative studies point to the same direction. Cooke et al. (2013) interviewed 88 rural workers in Ireland and found that many considered specific job characteristics of secondary importance, and rather they emphasised the extent to which their work enabled them to live with their preferred lifestyle. Their conclusion was therefore that factors that affect job quality are moulded by broader aspects of life, one of which is family.

### 2.1.2 Utility

Many economists consider job satisfaction as a measure of utility from work and focus almost exclusively on the relationship between measures of income and job satisfaction. In substantive terms, this approach is not different from defining job satisfaction as job quality. Indeed, utility from working depends on standard workplace factors such as pay and hours worked, which are commonly used in studies of job quality. However, this approach has provided the theoretical basis for more elaborate specifications.

There is some variation in terms of the level of detail that authors go into to justify the use of job satisfaction as representing utility. The most common way in which job satisfaction is specified is through "relative utility" (e.g. Hamermesh 1977, Dolan and Kahneman 2008, Clark and Oswald 1996, Stutzer and Frey 2010). In other words, utility of working does not depend solely on the absolute amount of pay, but also on a reference point for pay. The reference point can be determined by the average level of income of their peers, past levels of incomes or a general expected income level based on one's aspirations and education (Lévy-Garboua and Montmarquette 2004, Clark and Oswald 1996). This has brought about

a wealth of studies considering job satisfaction as a measure of utility affected by relative rather than absolute measures of pay (e.g.Clark and Oswald 1996, Sloane and Williams 2000, Clark et al. 2008b,Brown et al. 2008, Clark et al. 2009, Card et al. 2012, Clark et al. 2013, Godechot and Senik 2015).

However, the main critique to economists' studies of job satisfaction is substantive rather than methodological: economists depict work as an activity whose only goal is to satisfy individuals' needs for consumption (Spencer 2015). In other words, by focusing on the relationship between job satisfaction and income only, they have overlooked qualitative aspects of work, the ones that allow workers to achieve personal fulfilment.

### 2.1.3 Subjective Well-Being

Studies that interpret job satisfaction as a measure of subjective well-being (SWB) see its usefulness in terms of its role in explaining overall life satisfaction (Skalli et al. 2008, Van Praag and Ferrer-i Carbonell 2008a, Bryson et al. 2015). The motivation for these types of studies relies on the importance of life satisfaction as a catch-all measure of well-being. The strength of this approach is that it seeks to capture the qualitative aspect of work (Spencer 2015).

However, these approaches shy away from suggesting an interpretation of job satisfaction that is separate from life satisfaction or SWB in general. In other words, workers' well-being is important because it contributes to general happiness, but at the same time it is reduced to a feeling. Seeing job satisfaction as merely an aspect of SWB ignores the fact that jobs are instrumental to achieve personal goals, and individuals often need to resolve trade-offs within and outside of the workplace in order to achieve a certain level of well-being.

### 2.1.4 Discrepancy

The approach of discrepancy theory is the one that most closely encompasses the role of formation of work expectations, which are key factors to understanding job satisfaction. Early conceptualisations of job satisfaction through discrepancy theory are infrequent in recent academic empirical work, although prevalent in the 1970s (Locke 1969, Lawler III 1973, Warr 2007). This is regrettable because discrepancy theory has the potential to provide the theoretical link between values and employment conditions that is missing in many of the empirical studies on job satisfaction.

Discrepancy theory suggests that job satisfaction should be the result of a comparison between two factors: what the workers expect and what they get from their jobs. The interpretation of job satisfaction through the lenses of discrepancy theory is well exemplified by Locke (1969):

> Job satisfaction and dissatisfaction are a function of the perceived relationship between what one wants from one's job and what one perceives it as offering or entailing. (page 316)

Observe the resemblance with the experienced utility concept used by economists. However, economists have only theorised the relationship between job satisfaction and relative measures of income, while they have ignored the fact that job satisfaction may be also influenced by gaps in non-monetary work factors.

The great advantage of using discrepancy theory rather than other perspectives is that it allows for including factors that are not workplace related. In particular, these factors are responsible for the modification of the "value standard", that is, the subjective optimal level of a work factor. This idea is discussed at length in Chapter 3. However, here I provide two examples to clarify this concept. Imagine a new mother who has just returned to work

after having her first child, and that her job requires her to work 8 hours a day for 5 days a week and she has little flexibility in the organisation of her work schedule. While she may have been satisfied with these conditions when childless, she may now find that her ideal working schedule would be e.g. to work only 2 days a week. This discrepancy between her actual number of work hours and her desired one may lead to a low satisfaction with work. Another example may be of a young childless woman who is well-educated and has the ambition to develop a career. Imagine that she lives in a society where women are only offered low-skilled and low-paid jobs and unemployment is very high. She compares the level of pay that she aspired to, given her education and ambitions, and the much lower level of pay offered by the market. This is likely to bring about low levels of job satisfaction.

These considerations suggest not only that the lens of discrepancy theory can be extended to the analysis of job satisfaction to incorporate non-workplace factors, but also and foremost that ignoring such non-workplace factors leads to misleading interpretations of job satisfaction.

## 2.2 Why Study the Relationship Between Family Context and Job Satisfaction?

Knowing more about the relationship between family context and job satisfaction is important for at least four substantive reasons.

Childbearing and union dissolution are some of the most important and frequent events in people's lives. In Europe and the USA, for every two marriages, one divorces. In the same continents, 85% of women have children at some point in their lives, while involuntary childlessness is on the rise (Tanturri et al. 2015). Childbearing and union dissolution are

not only frequent events but are the most important ones in anyone's life – with divorce being one of the most traumatic and childbearing one of the most stressful, although it brings many joys. They are also some of the most disruptive events; life-changing from the point of view of employment, social networks and time allocation. Therefore, it is surprising that job satisfaction scholars have given so little attention to how family events affect job satisfaction.

There are two main hypotheses regarding the relationship between work and family. Work may be a life domain that acts as a buffer against negative events happening in the private sphere of life (Simon 1997, Tavares and Aassve 2013). On the other hand, there may be spillovers between work and family dimensions, so that negative events in family life lower well-being at work as well (Frone et al. 1994, Turliuc and Buliga 2014). It is important to test these hypotheses because workplace policies are only useful if there is a systematic understanding of what type of events that are not under the control of employers affect well-being of workers.

Women are being more and more encouraged into the labour market (by public and private workplace policies). In the past decade, it was common to find newspapers' statements suggesting that increasing the labour force participation of women would e.g. increase net GDP in Europe by 5% (Aguirre et al. 2012). Female labour force participation rates are now at record levels in Europe, and policy makers are continuously implementing policies to create incentives for women to engage in paid work. However, the personal consequences of pushing women into paid work are still poorly understood. Although there may be macro-economic benefits to increasing female labour force participation, the extent to which policies are supporting working women is unclear. We can learn how to design policies better if we know their full consequences. Thus, a study of the relationship between motherhood and job satisfaction is motivated by a need to understand how women's value standards change when

they become mothers. In particular, in Chapter 5 I analyse the effect on job satisfaction of introducing a new maternity leave policy incentivising early return to work.

Most job satisfaction studies have focussed on male workers. When women are considered, the focus is generally on groups of women in particular industries or professions (e.g. see Jurik and Halemba (1984) for women correctional officers, Olsen et al. (1995) for female academic faculty members, Lu et al. (2005) for female nurses, Bryant and Constantine (2006) for women school counsellors, Archie et al. (2015) for female scientists), or with respect to men (Clark 1997, Sloane and Williams 2000, Sousa-Poza and Sousa-Poza 2003, Kaiser 2007). [1] Studies on job satisfaction of men have rarely touched upon the role of family. This may be partly because the role of family is considered to be of secondary relevance for men (Greenhaus and Beutell 1985, Becker 1991, Lewis and Cooper 1999, Cinamon and Rich 2002, Oláh et al. 2014). [2]

The policy objectives of many European governments have been to incentivise men to engage more in childcare, often with little success (Duvander et al. 2010, Wrohlich et al. 2012, Ekberg et al. 2013). While attempts to push men into the family are having limited success (e.g. Wall and Arnold 2007), some commentators suggest that the reason is the scarce public acceptance of these measures. It is therefore deeply unfair that women are pushed into the labour market and encouraged to enjoy what rewards the marketplace offers them, but there is less debate on giving men social approval to experience what joys (and sorrows) family life can bring. More attention to how men react to family events is also a first step to implement family policies targeted at men. That said, men feature relatively little in this thesis. Unfortunately, I have not been able to include them in my analysis of a change in parental leave policy because the take-up of paternity leave is too small to produce

[1] A number of empirical studies have confirmed the existence of a gender paradox, by which women are more satisfied than men, although they are in lower quality jobs (e.g. Kaiser 2007).

[2] However, this is a gendered statement, as I will discuss later.

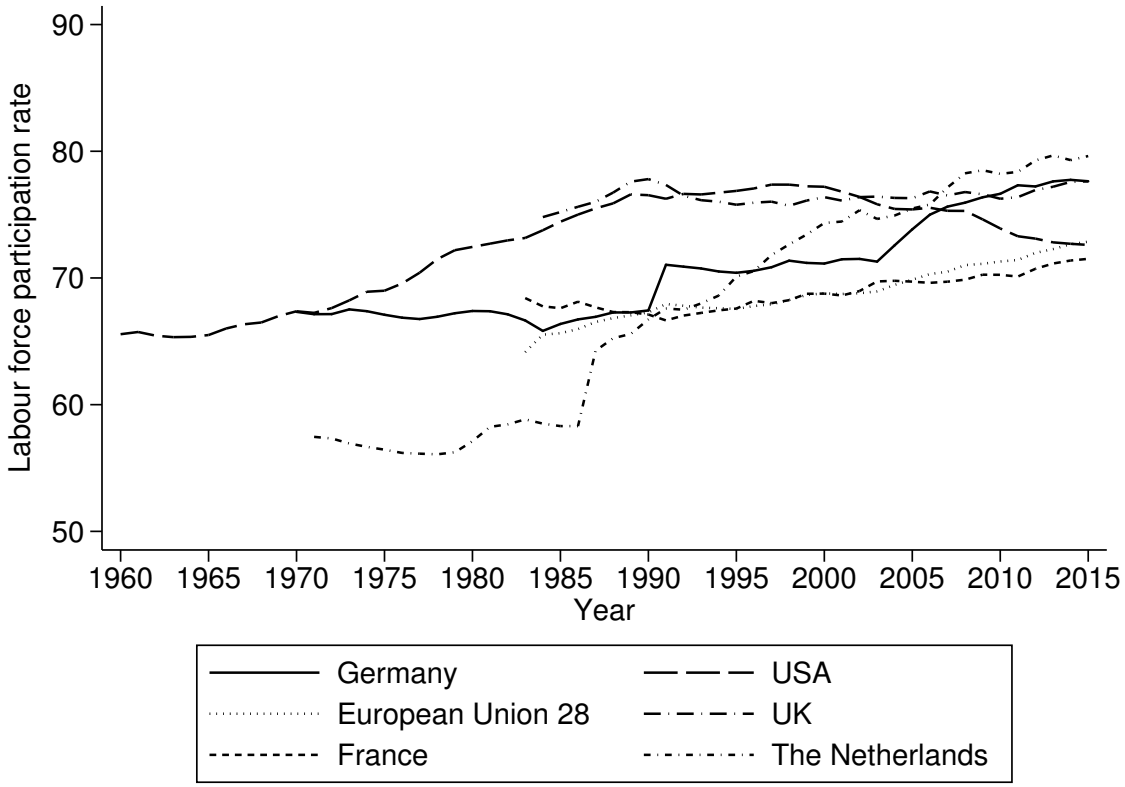
viable sample sizes. Men appear only in the last paper of the thesis, where I examine how separating from their partners affects their job satisfaction and show that men are deeply affected by separation (see also Amato 2010, Kalmijn 2005).

Job satisfaction and family context is a gendered topic because both the family and the labour market spheres are nowadays still gendered. When I started researching for this thesis in 2012 I did not think that I would pursue the gender perspective in the way I do. It is uncontroversial that, in many and possibly different ways, family events affect both men and women. While I had reasons to analyse men and women separately, I did not appreciate the depth into which I had to start thinking about gender when writing a thesis on job satisfaction and family context.

Studies on work and family tend to talk about the combination of employment and family as women's issues. Of course, part of the reason why this is the case is that women are a much more heterogeneous and interesting population to study when considering the workplace (Hakim 1996). One of the reasons why this is the case is that large scale participation of women in the labour force is a relatively new phenomenon. For example, in Europe, until the 20th century there was a marriage bar in place that denied married women employment (Briar 2004). The progress of women in the sphere of work in the past 5 decades has been extraordinary as shown in Figure 2.1, but efforts in pushing women into employment have not been accompanied by efforts in valuing work in the home.

In her recent book Unfinished Business (2015), Anne-Marie Slaughter argues that we should stop thinking about women's problems and start talking about a care problem instead. She explains that the problem is that caring, which is traditionally a woman's job inside

Fig. 2.1 Female Labour Force Participation Rate in Selected OECD Countries, Ages 25-54, 1960 – 2015




*Source*: OECD data, Labour Market Statistics: Labour force statistics by sex and age: indicators

and outside the home, is undervalued in our society. [3] This has the potential to explain why women are still paid less than men, are occupationally segregated and often have to give up their career aspirations to care for children. However, labelling the combination of work with family as women's issues reinforces the belief that family is a component that endangers women's employment but not men's. By demonstrating the importance of family in explaining job satisfaction I want to bring attention to the fact that men and women's well-being is affected by family events.

## 2.3 What is the Application for Germany?

I use data from Germany. Choosing a country to conduct a case study implies that it is hard to generalise the findings to different contexts. However, Germany has some historical, geographical, economic, demographic and social characteristics that make it a particularly interesting setting to study the relationship between family context and job satisfaction.

Germany is an ideal country for a quantitative study on family context and job satisfaction because there are excellent data. This dissertation is predominantly based on German Socio-Economic Panel (SOEP) data. For a comprehensive description see Wagner et al. (2007). The SOEP is a longitudinal survey with annual interviews of about 11,000 adults in private households conducted by the Deutsches Institut für Wirtschaftsforschung (DIW) in Berlin. [4] The quality of SOEP data has been continuously and independently attested (Martin et al. 2009). There are many features that make this source of data excellent for my thesis.

[3] Women are traditionally over-represented in nursing and teaching, occupations that require a high degree of emotional skills and caring.

[4] For a detailed discussion on the features of the SOEP compared to other longitudinal surveys see Martin et al. (2009).

First of all, the SOEP is the longest running panel survey in Europe. At the time of writing there are 30 waves available to the public (1984-2013). Such a long running panel is ideal to construct trajectories and analyse life events because it allows following the same individuals for many consecutive years. Analysis of well-being from a longitudinal point of view provides many advantages, including the ability to assess the stability and change over time, how well-being varies with age, and how policies affect well-being (Schueller et al. 2012).

Secondly, the SOEP has measured job satisfaction since the very first wave in 1984. Job satisfaction is recorded on a 11-point scale, i.e. a longer scale than the 7- or 5-point scale used in e.g. the British Household Panel Survey. Using life satisfaction items, Kroh (2006) shows that a longer scale improves the quality of subjective well-being data. Using polychoric correlations and comparing scales of different lengths he finds that the 11-point scale has the highest validity, suggesting that a 11-scale better captures the latent well-being factor than shorter 7- and 5-point scales.

There are two additional reasons why Germany is an interesting case to study how family affects workers' well-being. The role of women in the labour market in Germany has changed drastically in the last few decades. I find one linguistic fact illuminating to introduce a discussion on the role of women in Germany. In German, there is a word that has no counterpart in English – *Rabenmutter*. Literally, it means raven mother, although really it is a derogatory term for working mothers. [5] Foreign media has noticed this linguistic oddity and found it puzzling that an economic power like Germany has such a negative attitude towards working mothers, whilst linking the attitude to a very low fertility rate and relatively low female employment participation (Evans 2011, The Economist 2008, 2009, Russell 2013).

[5]The origin of this term is that chicks of ravens leave the nest before they can fly. It is thought that this is because they are anxious to leave a mother that does not take good care of them (Deutsche Welle, 2011).

Welfare state scholars have long noted that the German welfare state is designed around the traditional male breadwinner model, so that incentives ingrained in its social and economic policies pushed women in the home and men at work (Esping-Andersen 1990, Sainsbury 1999, Pfau-Effinger 2005).

However, an equally relevant feature is the attention of German policy makers to these statistics. Since the 1990s they have introduced many policies to increase women's attachment to the labour market (Spieß and Wrohlich 2008, Henninger et al. 2008, Ostner 2010). Thus, studying how family affects working lives of women in Germany is interesting and challenging: the policy goal of incentivising women to engage in paid employment provides a motivation for a study of the well-being of working mothers, while the traditional low attachment of women to the labour market implies that those who do work may be rather different from other women — an endogenous sample selection that needs to be accounted for.

Another feature of Germany that makes it an ideal case study for my dissertation are the geographical, economic and cultural divides between Eastern and Western Germany. Between 1949 and 1990, Germany was divided into two separate countries that, while sharing a common language and a historic past, had completely different political systems. Eastern Germany (German Democratic Republic — GDR) was part of the Eastern Bloc and adopted a socialist ideology with a rejection of the market economy. There are legacies of this separation in almost all aspects of economy and society. Pfau-Effinger and Smidt (2011) show that employment patterns of women with small children remain different in Eastern and Western Germany nowadays. There are still more Eastern German women in employment than Western German women (Grundig 2008, Holst and Wieber 2014). Differences are not limited only to female employment but also range from political participation (Arnold et al. 2015) to aggregate happiness levels (Easterlin and Plagnol 2008). Thus, I use the case of

Eastern and Western Germany as a useful descriptive device to compare two populations that in spite of having many factors in common — most importantly, the same laws, institutions and policies — have rather different socialisations and attitudes towards work and family life. For the sake of brevity, in the remainder of the thesis I will refer to Eastern Germany as EG and Western Germany as WG.

## 2.4 Thesis Outline

The remainder of this thesis is structured in four empirical chapters plus conclusions that link the results of the empirical chapters.

In Chapter 3, A Conceptual Framework to Study the Relationship between Family Context and Job Satisfaction, I propose a simple model to study how family events affect job satisfaction, setting out the conceptual scene for the rest of the thesis. Drawing on discrepancy theory, I propose an econometric tool to incorporate family and workplace variables to explain variations in job satisfaction. In particular, I suppose that family variables affect work expectations, and that individuals react to changes in work expectations to maximise job satisfaction. I provide empirical validation of the theory; I compute the difference between actual working hours and desired working hours for each respondent and show that in a cross-section of people job satisfaction is at its maximum when the difference between actual and desired working hours is close to 0.

The aim of Chapter 4, Life Course Trajectories of Job Satisfaction for German Women, is to estimate whether motherhood, norms socialisations and their interaction with labour market conditions play a role in determining life-course trajectories of job satisfaction for German women. To do so, I select cohorts of women born before 1970 from the SOEP so that I can construct a measure of completed fertility. To analyse the data I use linear

growth models. This chapter makes three contributions. First, I look at trajectories of job satisfaction over the life course for a group of the population that has never been analysed before. Secondly, I provide a link between motherhood and job satisfaction with explicit reference to the role of norms socialisation in determining work expectations. Lastly, I apply a panel selection estimator to address issues of endogenous sample selection, which has never been done in the job satisfaction literature.

In Chapter 5, The Relationship between Parental Leave Duration and Job Satisfaction of Mothers: Evidence from a Quasi-Experiment in Germany, I exploit the introduction of the 2007 parental leave reform in Germany (*Elterngeld*) to estimate how length of maternity leave affects job satisfaction at the return to work. The contributions of Chapter 5 are multiple: I provide the first empirical evidence on the relationship between length of maternity leave and job satisfaction at the return to work, I do so with an explicit effort on causality, perform an impact evaluation of the *Elterngeld* reform on an outcome so far not analysed, and use for the first time in the job satisfaction literature a two-sample-two-stage-least-squares estimator.

In Chapter 6, Marital Dissolutions and Job Satisfaction Trajectories: The Case of Western Germany, I analyse job satisfaction as an outcome of union dissolution for the first time. The explicit aim of the chapter is to test whether there is anticipation and adaptation of job satisfaction to marital splits, drawing conclusions on the role of work for men during the time of union dissolution. To do so, I select SOEP male respondents from Western Germany and compare job satisfaction levels between those who remain in a union (marital or not) and those who split up, applying fixed effects estimators.

In Chapter 7 I summarise the empirical findings; provide a critical discussion of findings, methods and concepts; review limitations; and suggest directions for future research, data

collection and policy. In particular, I talk about how the results of the thesis may appear unexpected given the prevalent conceptions of relations between work and family. In addition, I discuss how job satisfaction measures may be criticised on the grounds that they express a preoccupation with professional well-off workers, alienating lower social classes. However, the findings of this thesis show that job satisfaction correlates with measures of disadvantage and should be used to describe workplace experiences of all workers.

# Chapter 3

# A Conceptual Framework to Study the Relationship between Family Context and Job Satisfaction

## 3.1 Introduction

In this chapter I propose a conceptual framework to study how family context variables affect job satisfaction. Many authors have expressed dissatisfaction about existing conceptualisations of job satisfaction (e.g. Bassett 1994, Muñoz de Bustillo Llorente and Fernández-Macías 2005, Leßmann and Bonvin 2011, Brown et al. 2012, Budd and Spencer 2015, Spencer 2015). Their main criticism is that job satisfaction does not correlate in a straightforward way with many indicators of job quality. Recently some commentators have argued that one possible way to make job satisfaction measures meaningful is to allow for non-work factors to play a role in the determination and interpretation of job satisfaction (Leßmann and Bonvin 2011, Brown et al. 2012, Hebson et al. 2015, Spencer 2015). The contribution of this chapter is to develop a conceptual framework for job satisfaction that allows for family

factors to contribute to the formation of job satisfaction.

I take my cue from discrepancy theory (Locke 1969, Lawler III 1973). According to discrepancy theory, job satisfaction is the result of a comparison between what individuals obtain from their jobs and what they desire/need/want (Locke 1969). My contribution is to hypothesise that what workers desire/need/want from their employment is a function of household composition. In other words, when individuals experience family life events like childbearing or marital dissolution, they may change their expectations regarding their job (e.g. they may want more flexibility, more or fewer work hours) which in turn may change their job satisfaction.

Empirical work on non-work-related determinants of job satisfaction is scarce. This is in large part because the most prevalent idea is that job satisfaction is a construct that can only be determined by workplace and employment variables (e.g. Diener 1984, Sousa-Poza and Sousa-Poza 2000, Clark and Oswald 1996, Muñoz de Bustillo Llorente and Fernández-Macías 2005, D'Addio et al. 2007, Clark 2011, Possenriede and Plantenga 2014). However, there is empirical evidence showing that there remain large variations in job satisfaction scores that are unaccounted for by variations in working arrangements, so that it is likely that some determinants that are outside of the workplace have been overlooked by previous empirical work (e.g. D'Addio et al. 2007, Muñoz de Bustillo Llorente and Fernández-Macías 2005, Brown et al. 2012).

The main contributions are the following. First, I suggest that the level of desired work and employment characteristics is a function of private level variables. In other words, events and processes that happen at home modify the expectations that individuals have regarding their jobs, which leads to variations in job satisfaction. Second, I provide a clear framework

for conceptualising job satisfaction that allows for the study of the effect of different family events on job satisfaction.

In section 3.2 I introduce the model in its simple form. In section 3.3 I suggest an empirical implementation of the model. In section 3.4 I validate the central idea of the paper with data from the SOEP. In section 3.5, I suggest some extensions of the model and conclude.

## 3.2 A Simple Model of Job Satisfaction

The starting point of the model is that job satisfaction is considered a function of environmental and private level variables. Let there be $t = 1,\ldots,T$ time periods and $j = 1,\ldots,J$ individuals. It is possible to write a job satisfaction equation of the form:

$$J_{jt} = f(P_{jt}, E_{jt}) \qquad \forall j,t \tag{3.1}$$

where $J_{jt}$ is job satisfaction, $P_{jt}$ are person level variables, $E_{jt}$ are environmental variables.

It is not straightforward to define what may be environment and what may be individual related factors. In fact, it may seem straightforward to consider working characteristics as part of the environment. However, individuals choose their jobs based on their own job values and orientations, skills, personalities and many other personal factors, so that strictly speaking working and employment conditions should not be considered external factors. To resolve this problem, I draw on theories that study how work and family are two separate domains and constrain each other. From this perspective, anything that is within one domain is external to the other, and individuals look for a good fit between the two in order to maximise well-being (e.g. Bianchi and Milkie 2010). Therefore, for the purpose of this

study personal factors are all factors that relate to the family domain, while environment is everything else.

I take a cue from discrepancy theories of job satisfaction, which suggest that the expressed level of job satisfaction is the result of the comparison between what the job provides and what employees want, need or desire (Schaffer 1953, Katzell 1964).

**Definition 1** *Individual job satisfaction scores are the results of the comparison between experienced employment and work characteristics and preferences over these characteristics.*

Let me introduce work and employment characteristics $i$. Let me define quantity $d_{ijt}$ called *discrepancy* as a measure of distance ($\delta$) between the actual level of a factor $i$ $A_{ijt}$, and the desired level of the same factor $D_{ijt}$ for individual $j$ at time $t$ and for characteristic $i$.

**Definition 2** $d_{ijt} = -\delta[A_{ijt} - D_{ijt}]$

Measures of $D_{ijt}$ are mostly not available in survey data. The only exception is for the desired number of work hours, which is often recorded as a measure of over/under employment. Nevertheless, as most desired work and employment characteristics are not measured, the concept of discrepancy should be considered a theoretical and latent one, rather than a proper measurable quantity.

Unlike previous studies I do not consider preferences over job and employment characteristics ($D_{ijt}$) as given, but I postulate that they are a function of variables that relate to the personal domains. In other words, preferences over work characteristics are affected by personal factors, and are time varying. This should be considered an assumption of the model (assumption 1).

**Assumption 1** $D_{ijt} = h(P_{jt})$

The next step is to postulate a relationship between job satisfaction and the discrepancies. For now, job satisfaction of individual $j$ ($J_{jt}$) should be seen as a function of discrepancies of factors i, according to definition 1.

### 3.2.1 The Case of $i = 1$

For ease of exposition let there be only one factor $i$ so that it is possible to remove subscript $i$, and let there be only one time period. Let there also be a representative worker $j$ who faces the problem of choosing a level of discrepancy $d$. The worker has utility over $d$, where the utility function is denoted by $U(\cdot)$. The assumptions on $U(d)$ are the standard ones of monotonicity and convexity. The formula in definition 2 shows that $d$ is a number $r$ that varies between 0 and $-r \in \mathbb{R}$.

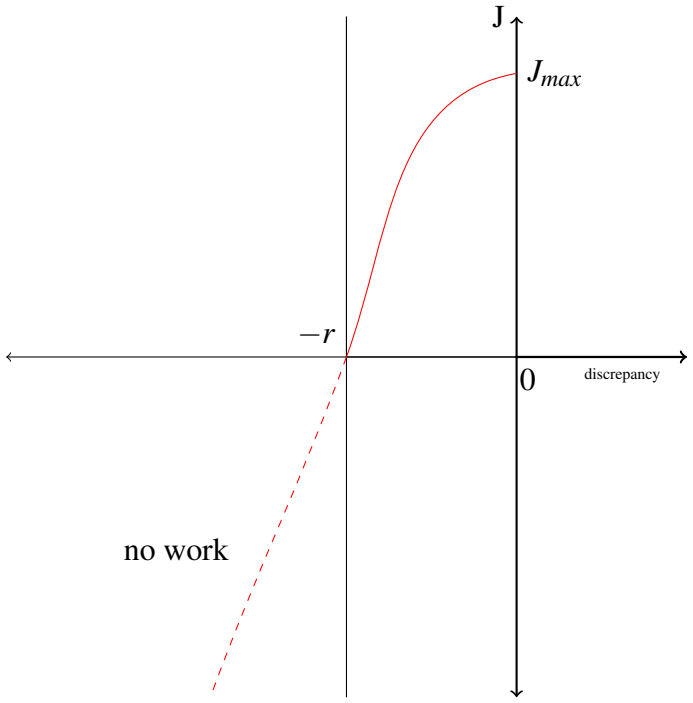
Since there is only one argument, the maximisation problem becomes trivial and utility is maximised when $d = 0$ under the participation constraint that $U(d) \geq 0$. This is intuitive because a value of $d = 0$ corresponds to the case in which there is no discrepancy between the received amounts of the factor and the amount desired, wanted or needed. Thus, we have $J_{max} = U(d|d = 0)$. For values of $d < 0$ we need to have $J < J_{max}$. This can be summarised in a formula of this type

$$J = U(d) = a + z(d) \tag{3.2}$$

where $a = J_{max}$, and $z(\cdot)$ can be any continuous decreasing function.

Equation (3.2) is summarised in Figure 3.1, where $z(\cdot) = -x^2$. When the discrepancy is negative then job satisfaction should decrease. In particular, there should be a threshold $d_{min} = -r$ such that job satisfaction is 0, where 0 is a valid score. For values of the discrepancy lower than $d_{min}$ job satisfaction is negative and the individual does not work.

Fig. 3.1 Relationship between Discrepancy and Job Satisfaction




Given the relationship between discrepancies, desired and actual work and employment characteristics, it is possible to define job satisfaction as

$$J = a + z(d) \tag{3.3}$$

$$= a + z(-\delta[A - D]) \tag{3.4}$$

$$= a + z(-\delta[A - h(P)]) \tag{3.5}$$

$$= f(P, E) \tag{3.6}$$

where $J$ is job satisfaction of representative individual $j$, $A$ is the observed amount of the only employment characteristic, $D$ is the desired amount of the same characteristic and cannot be observed, and $z(\cdot)$ is a decreasing function.

### 3.2.2 The Case of $i = 2$

Let now there be two factors $i = 1,2$. Job satisfaction of the representative individual $j$ at time $t$ is now determined by the levels of the two discrepancies, and the way in which they are combined.

The general problem that worker $j$ faces at time $t$ when there are 2 work characteristics is given by (3.7).

$$\begin{aligned} &\max_{d_1,d_2} U(d_1,d_2) \\ &\text{subject to} \\ &U(d_1,d_2) \geq 0 \Leftrightarrow (d_1,d_2) \in [-r,0] \quad \text{(participation constraint)} \\ &\text{and} \\ &\alpha_1 d_1 + \alpha_2 d_2 \leq M,\ \alpha_i > 0, \forall i \end{aligned} \tag{3.7}$$

The first constraint postulates that the utility has to be positive, otherwise individuals will not work. This is equivalent to say that the discrepancy levels should be greater than $d_{min}$. The second constraint shows that the worker faces a trade-off when choosing the optimal amount of discrepancies. In other words, individuals cannot increase the amount of discrepancy of a factor without decreasing the amount of discrepancy of another factor. Quantity $M$ can be considered a measure of "net resources" that the worker can dispose of. Since it is measured on the same scale as the discrepancies it is itself a measure of distance from the ideal work situation in which the worker would like to be. There is a solution if $U(d_1,d_2)$ is a well-behaved function, that is if it is concave and twice differentiable.

Thus, introducing an aggregation function $g(\cdot)$ one can write job satisfaction of individual $j$ at time $t$ as

$$J = g(d_1, d_2) = \tag{3.8}$$

$$= g(-\delta[A_1 - D_1], -\delta[A_2 - D_2]) = \tag{3.9}$$

$$= g(-\delta[A_1 - h_1(P)], -\delta[A_2 - h_2(P)]) = \tag{3.10}$$

$$= g[f_1(P,E), f_2(P,E)] \tag{3.11}$$

The exact functional form of $g(\cdot)$ is in fact an empirical question, however for the sake of simplification $g(\cdot)$ can be specified as a simple linear function, so that job satisfaction of individual $j$ can be seen as the linear combination of $d_i$, as expressed in equation (3.12).

$$J = af_1(d_1) + bf_2(d_2) = az(A_1 - D_1) + bz(A_2 - D_2) \tag{3.12}$$

Since $D_i$ cannot be observed it is not possible to estimate (3.12) directly. However, from assumption 1 we know that $D_i = h(P)$ so that considering $s$ personal variables (3.12) becomes

$$J = az_1[A_1 - h(P_1, ..., P_s)] + bz_2[A_2 - h(P_1, ..., P_s)] \tag{3.13}$$

### 3.2.3 The Case of $i$ = I

From equation (3.13) it is easy to generalise to the case where there are more than two factors.

$$J = \sum_{i}^{I} a_i z_i [A_i - h(P_1, ..., P_s)] \tag{3.14}$$

## 3.3 Empirical Implementation

Equation (3.14) shows that job satisfaction can be estimated as a linear combination of different components that pertain to the personal and environment domain. To be able to estimate this, it is necessary to impose the assumption of additivity on function $z(\cdot)$, so that $z_j[A_i - h(P_1,...,P_s)] = z_j(A_i) - z[h(P_1,...,P_s)]$, and additivity and separability on $h(\cdot)$.

Let now there be $S$ personal characteristics, for $t = 1,\ldots,T$ , $i = 1,\ldots,I$, and $\forall j$ equation (3.14) becomes

$$J_{jt} = \sum_{i}^{I} a_{it} z_{jt}(A_{it}) - \sum_{i}^{I} a_{it} z_{jt}[h(P_{1t},...,P_{st})] = \tag{3.15}$$

$$= \sum_{i}^{I} a_{it} z_{jt}(A_{it}) - z_{jt}[h(P_{1t},...,P_{st})] \sum_{i}^{I} a_{it} \tag{3.16}$$

Now, linearising and assuming that there are some variations in job satisfaction that are unaccounted for by variations in personal factors and work factors, and that can be captured by the random element $\nu_{jt}$

$$J_{jt} = \sum_{i}^{I} \gamma_i A_{ijt} - \sum_{s}^{S} b_s P_{jts} \sum_{i}^{I} a_{it} + \nu_{jt} \tag{3.17}$$

Calling any cross combination of $-b_{st} \sum_i^I a_{it} = \beta_{st}$ we can write a reduced form model for equation (3.17):

$$J_{jt} = \sum_{i}^{I} \gamma_i A_{ijt} + \sum_{s}^{S} \beta_s P_{jts} + \nu_{jt} \tag{3.18}$$

Thus equation (3.18) is the econometric tool that will be used to estimate equation (3.12). It is important at this point to remember the meaning of equation (3.12). In this equation

we can see how private variables affect job satisfaction through their effect on desired work and employment characteristics. The effect of changes in desired working characteristics is unobserved and should be picked up by looking at the effect of private variables alone. In particular, $\hat{\beta}_s$ can be interpreted as the effect of personal factors on job satisfaction that is transmitted through unobserved changes in the preference set over work and employment characteristics.

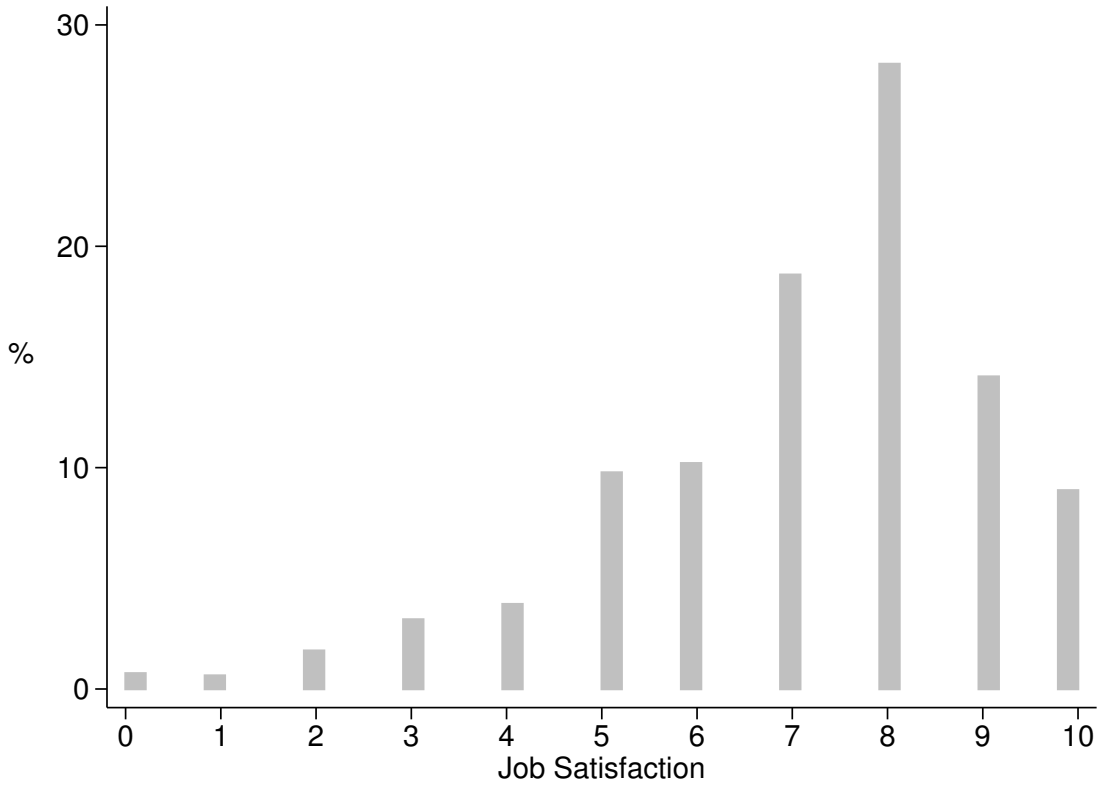
## 3.4 An Illustrative Example

In this section I use a cross-section from the SOEP to validate the idea exposed in the previous paragraphs. The cross-section used in this analysis is made up of all men and women who reported being in employment in year 2012. In section 3.2 I mentioned that most surveys contain a measure of desired work hours. This variable is also available in the SOEP and I use it here to construct a measure of discrepancy and analyse its association with job satisfaction.

To construct a measure of discrepancy, I subtract the actual weekly work hours from desired weekly work hours. I obtain a variable where negative values represent the case of respondents who would like to work less, and positive values the case of respondents who would like to work more. In Figure 3.2 I report the distribution of this discrepancy and in Figure 3.3 the plot of the relationship between job satisfaction and the measure of discrepancy.

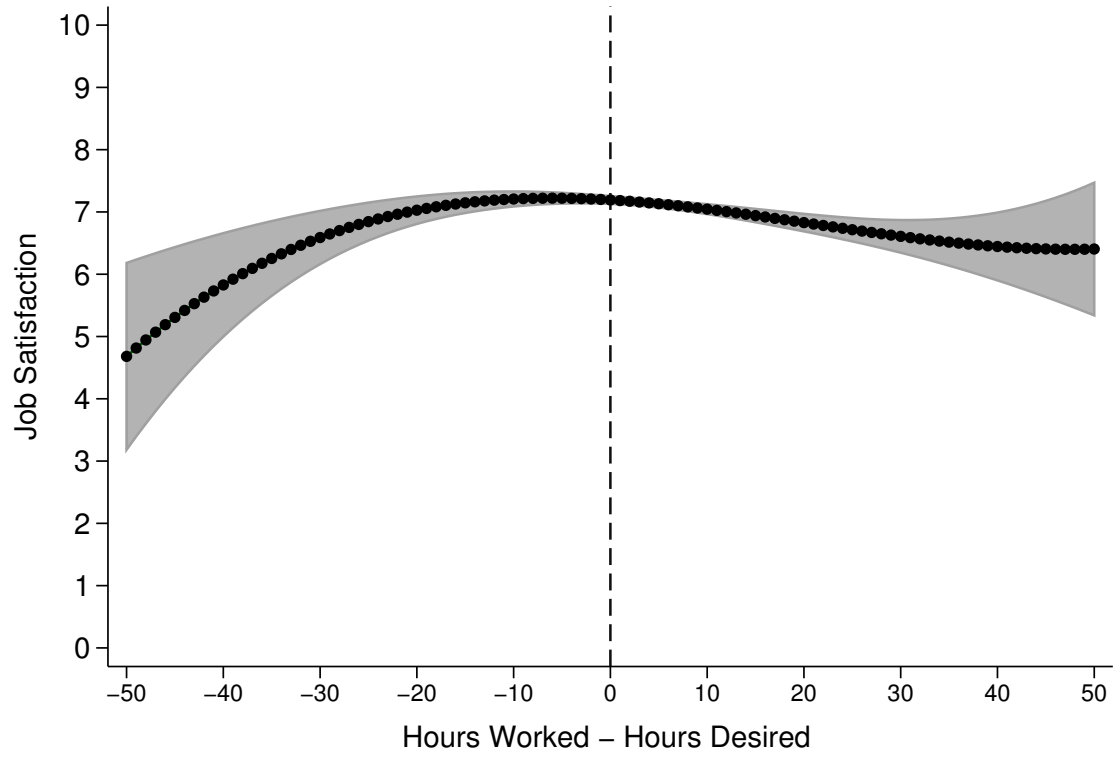
From Figure 3.2 we can see that most individuals work their desired number of hours, however more individuals work more hours than they wish, rather than less. Figure 3.3 is obtained from a linear regression of job satisfaction on a polynomial expansion of the discrepancy item. It can be considered the empirical counterpart of Figure 3.1. Figure 3.3 is a central result for the validation of my idea. In fact, we can see that the maximum in job satisfaction is attained around a value of 0 of the discrepancy.

Fig. 3.2 Distribution of Discrepancy in Work Hours




*Notes*: Discrepancy in work hours is defined as the difference between the observed normal amount of weekly work hours and the desired level for each individual.
*Source*: SOEP 2012. Author's calculations.

Fig. 3.3 Empirical Relationship between Job Satisfaction and Discrepancy in Work Hours




*Notes*: Job satisfaction is measured on a scale from 0 to 10. Discrepancy in work hours is defined as the difference between the observed normal amount of weekly work hours and the desired level.
*Source*: SOEP 2012. Author's calculations.

## 3.5 Conclusions

The discussion so far has focussed on a static situation. In other words, both the model and the empirical implementation refer to one time period, with a single snapshot of the population. In reality, individuals not only change jobs, negotiate new working conditions and progress in their careers, but they also adapt their expectations towards employment.

In particular, changes in working conditions may be driven by preferences over that particular working condition. For example, a worker with caring responsibilities who wishes to work fewer hours may ask to reduce the number of hours worked. If the reduction in working hours is agreed on, the discrepancy will reduce and job satisfaction will increase. As another example, a worker may desire a raise and after having asked for it several times still not have received it. The worker may then give up their expectation for a pay increase, so that the discrepancy with respect to pay would in fact reduce.

Thus, although there are real constraints to individuals to be in high quality jobs (e.g. labour markets are not completely flexible, bosses do not always agree to requests), job satisfaction may still be maximised because their work expectations adapt. This is a phenomenon that psychologists have named "cognitive dissonance". Therefore, the model predicts that in the long run individuals seek to maximise job satisfaction by reducing discrepancies in work factors. This also implies that if there are no shocks in either work expectations or employment conditions, individual job satisfaction remains stable at an equilibrium level. This is consistent with many empirical findings that the majority of the workforce is in fact quite satisfied with their employment (e.g. Brenke 2015 for Germany). Nevertheless, the fact that in Western countries there has been a long term decline in job satisfaction since the late 1980s, may go hand in hand with drastic changes in labour market structure and recessions that have characterised Western labour markets in the past three decades (on the long term

decline in job satisfaction see Jürges (2003) for WG, Hanglberger and Merz (2015) for Germany, Blanchflower and Oswald (1999) for the USA, Green and Tsitsianis (2005) for Britain).

This feature has led some authors to dismiss job satisfaction measures as of little interest to scholars because they depend almost completely on endogenous and subjective processes, leaving little scope for exogenous and social explanations of job satisfaction (Muñoz de Bustillo Llorente and Fernández-Macías 2005). I do not agree with this interpretation. In fact, this perspective is based on the assumption that researchers have no way of identifying possible variations in work expectations and strategies that workers use to maximise job satisfaction. However, systematic studies on how factors that are likely to affect work expectations affect job satisfaction, along with strategies that individuals use to avoid dips in job satisfaction, are what is needed to make sense of job satisfaction measures. One illustrative example is the case of a worker with caring responsibilities who is not able to cope with balancing work and care and for this reason decides to stop working. This situation is not unrealistic, given statistics that show that a large percentage of young mothers interrupt their career to look after family, often quoting work life balance issues as a reason for leaving work.

Although the model developed in this chapter makes reference to family context as a possible source of variation of work expectations, in reality this model can be applied to any non-workplace factors that may affect work expectations, making it a fruitful new tool for job satisfaction scholars.

# Chapter 4

# Life Course Trajectories of Job Satisfaction for German Women

## 4.1 Introduction

In this chapter I adopt a life course approach to describe age-job satisfaction trajectories for German women. This approach means that I analyse women's life histories and relate earlier life events, especially the norms women were exposed to when growing up, to their demographic behaviour and job satisfaction later in life.

Although the empirical outcome of this study is estimates of how job satisfaction varies with age, this is not a study (only) on the relationship between age and job satisfaction. Rather, observing how job satisfaction varies through the working life, I attempt to qualify the role of motherhood and socialisation in determining workers' expectations and the role of labour market and policy environment in making sure that workers' expectations are met.

Three observations motivate this study. First, many studies have investigated the relationship between age and job satisfaction, predominantly using UK and US data (e.g. Clark

1996, Bernal et al. 1998, Ghazzawi 2011, Besen et al. 2013). However, the functional form of the relationship remains unclear, as some studies have found that job satisfaction increases with age (Kalleberg and Loscocco 1983, Ng and Feldman 2010, Riza et al. 2016), others that it decreases (Muchinsky 1978), others again have found a U-shaped relationship (Clark 1996, Hochwarter et al. 2001), or no relationship at all (White and Spector 1987). The difficulty behind estimating the relationship between age and job satisfaction is that it is impossible to disentangle the separate effects of age, period and cohort, and that data following single individuals over their entire life course and their job satisfaction is rare. Previous studies have relied on small samples representative of a specific subgroup or industrial sector (e.g. Ghazzawi 2011), while others have used cross-sectional data (e.g. Clark 1996).

Given these limitations of previous studies, I address this gap by using a long panel survey which allows me to follow individuals for many consecutive years. I use the SOEP, 1984–2013, which provides annual data on job satisfaction. I construct cohort data, so that I can observe women for a maximum of 30 consecutive years. The ideal set-up would be to follow individuals throughout their entire working life and draw each worker's job satisfaction trajectory as she ages. This approach is not practical as it involves analysing a large number of individual trajectories. In this chapter I summarise job satisfaction trajectories in terms of their means and variance for each age, applying a linear growth model (I apply the same approach as Jenkins (2011)). To describe age-job satisfaction trajectories I select birth cohorts for which I have information about women's completed fertility (corresponding to birth years before 1973), that is whether at the end of their reproductive life they have given birth to a child or not. Thus, I am able to distinguish between those who are childless because they have not had a child yet, and those who will never have a child.

The classical motivation for a study of the relationship between age and job satisfaction is that because job satisfaction is directly linked to important work outcomes, employers would be able to better assess the needs of employees of different ages. However, I am not interested in the shape of the age-job satisfaction trajectory *per se*. Considering job satisfaction from a life course perspective enables me to assess the role of norm formation on job satisfaction. Brown et al. (2012) suggest that researchers tend to use norms and expectations as a catch-all term to explain puzzling results. They also note that "there is no attempt to explore and explain the formation and impact of workers' norms and expectations regarding work" (page 1010). This is problematic because without a more systematic understanding of how individuals come to develop their expectations about work it is impossible to interpret job satisfaction data in a meaningful way. In other words, it is possible that a high level of job satisfaction is due to expectations being met by a high-quality job, or to lowering of expectations in a low-quality job.

In this chapter I focus on two particular instances of norms and expectation formation. First, I consider motherhood, which is known to modify attitudes towards employment by increasing emphasis on extrinsic rewards (e.g. Schober and Scott 2012, Baxter and Taylor 2014) and financial responsibility (e.g. Gorman 2000). Second, I consider the process of socialisation, with respect to norms regarding the combination of work and family. Individuals adopt the norms of the society they grow up in: individuals growing up under different institutions and historical periods are likely to develop contrasting norms regarding employment. In this chapter, I consider the case of women who grew up under the German Democratic Republic (GDR) and the Federal Republic of Germany (FRG), as they were exposed to contrasting gender norms. In order to distinguish women who were socialised under WG and EG, I separate women according to the geographical region they grew up in,

regardless of where they resided in the years corresponding to the survey.

Second, there is debate regarding the role of institutions in shaping well-being and to what extent policies can have an impact on subjective well-being of individuals. When the process of German unification happened from 1990 the bulk of social and economic policies of the FRG were transferred with no modification to the new Eastern ländern. The economic and social turmoil that followed negatively affected women more than men, because they were the social group that was hit the hardest by unemployment, by obstruction in certain sectors and cuts in childcare supplies, paired with a rise in prices of childcare services (Adler 1997, Schaeper and Falk 2003). The restructuring of the labour market increased wage dispersion and gender inequality in a society which was constructed on principles of equality (Krueger and Pischke 1995). In other words, reunification created not only strong geographical inequalities in well-being between EG and WG, but also created new inequalities, especially along the dimension of gender, which did not exist before. In recent analysis Priem and Schupp (2014) found that living standards remain lower in the EG than in WG on average.

Because reunification modified the policy environment and the employment opportunities for women it remains an empirical question whether the new social environment was able to meet women's expectations, and how the new arrangements in the labour market fit with the social norms developed under the communist regime. In this chapter I comment on whether the non–gender neutral restructuring of the labour market in EG has enduring consequences for women and their satisfaction with work, and whether these processes have created enduring differences in job satisfaction between women in EG and WG.

Lastly, I comment on how the different employment patterns of mothers and childless women may play a role in explaining the described trajectories, and I apply the panel data

sample selection estimator developed by Wooldridge (2010) in order to determine whether the joint process of labour supply and job satisfaction determination plays a role in determining age-job satisfaction trajectories. No previous study has explicitly modelled the problem of endogenous selection into employment when analysing job satisfaction with panel data. However, the role of endogenous selection into employment is well-known and a possible threat to internal validity for any job satisfaction study.

I find that motherhood does not determine trajectories of job satisfaction. However, the prediction that EG women, and especially childless women have low levels of job satisfaction (section 4.2.2) is confirmed in the data. The findings of this chapter also show that WG women have higher job satisfaction than EG ones at every survey year and at each age. There are very little differences in age-job satisfaction trajectories between mothers and childless women in WG, but mothers are significantly more satisfied than childless women for most of their working life in EG (section 4.5.1). However, there is more variation in job satisfaction scores at the beginning and end of the life course, and among mothers than childless women (section 4.5.2). Although there is evidence of endogenous selection into employment in both populations, it is not large enough to affect the results. In section 4.7 I discuss what these empirical findings mean in terms of interpreting the role of biographical events, social individual norms and policy changes in explaining job satisfaction.

## 4.2 Background

### 4.2.1 Motherhood and Job Satisfaction

Motherhood affects job satisfaction through attitudinal changes towards employment (Diener and Seligman 2004, Lyubomirsky et al. 2005, Headey et al. 2010, Headey 2008). Previous cross-sectional and longitudinal studies have shown that parenthood is associated with

increased emphasis on extrinsic rewards (Gorman 2000, Loscocco and Kalleberg 1988, Loscocco 1989, Kirkpatrick Johnson 2005). [1] An analogous finding is that the transition to parenthood increases the financial responsibility (real or perceived) of parents (e.g. Gorman 2000), where this increase may manifest as increased worries over money (e.g. Belsky and Kelly 1994). These facts suggest that mothers may place more importance on earnings and experience real or perceived heightened financial strains than childless women. At the same time, parenthood brings about changes in employment arrangements and outputs for women. Becoming a mother coincides with a reduction in women's time in paid employment, a decline in women's earnings and a decline in women's level of commitment to employment.

However, women tend to select into family friendly jobs when they become mothers (Felfe 2012), so the availability of employment opportunities for mothers is also a relevant factor. In other words, if women are able to choose jobs which accommodate their needs for flexible or shorter working times, then motherhood may actually not have a strong impact on their well-being at work. Therefore, women can meet their new work-related needs by changing jobs or modifying work hours. At the same time, when children grow up and move out of the family house, women's caring responsibilities return to a similar level as pre-motherhood.

In general, motherhood is associated with changes in women's needs towards their jobs that imply women would try and look for employment arrangements that can satisfy their new expectations. All these considerations suggest that the age-job satisfaction trajectory of childless women is flat, while the trajectory for mothers would involve a negative shift corresponding to the transition to motherhood, and a return to pre-motherhood levels of job

[1] Extrinsic rewards are defined as the group of work rewards that are tangible and visible to others. For instance, pay, promotions, fringe benefits and security (Mottaz 1985).

satisfaction later in life which may be due to accommodation in terms of job characteristics either with the current employer or by changing employers, or revising expectations.

### 4.2.2 Context and Socialisation

The interplay between parenthood and job satisfaction hinges upon an understanding of the German labour market. The analysis is based on a sample of WG and EG individuals who are observed from 1984 until 2013. The labour market structure and gender culture were profoundly different in WG and EG until 1990 (Schaeper and Falk 2003).

Between 1945 and 1990 the EG labour market was part of a centralised economy (for a description see Krueger and Pischke 1995). Under the German Democratic Republic (GDR) there was full integration of women into gainful employment, while childcare and childbearing were understood as a public responsibility (Schaeper and Falk 2003, Rudd 2000). These values had been propagated intensively in the early years of the GDR and the propaganda was accompanied by a range of regulative provisions by which these cultural patterns became structurally institutionalised. For the generations growing up in EG the feasibility of combining work and family, parenthood and continuous full-time employment were taken for granted. Social policies supporting this idea included a generous maternity leave, a shortened work week without loss of pay for mothers with two or more children, a paid day off each month available to most women for housework and provision of virtually free childcare (Rudd 2000).

In WG the traditional vision prevailed of a home-stay mother and the conviction that childcare should be provided at home. Policies were based on and propagated the ideal that there is a sharp separation between labour market and the family. Thus, women growing up in the two parts of the country were exposed to contrasting gender systems, and developed

opposing attitudes to work and childbearing.

Previous authors have indeed emphasised the importance of socialisation to understand long-standing differences between EG and WG (e.g. Wagener 2002, Fisher 2010, Beblo and Görges 2015). Under the GDR women learnt to value employment and family at the same level, while in WG young women were brought up with more conservative attitudes, whereby it was common for women to prioritise family over work. These norms were reflected in the different life course patterns of mothers in EG and WG. In the GDR it was typical to have children early (the average age at first child was 22.9) and continue quickly with their professional life, while childlessness was very low (Stöbel-Richter et al. 2005). In the FRG women had children later, stayed at home until the children were grown up, and rarely managed to establish themselves professionally. Some commentators have argued that EG women tended to identify themselves often through their professional role, but WG women could only gain identification through the family (e.g. Stöbel-Richter et al. 2005).

In 1990 the process of reunification started. WG policies in fields of labour market, social and family policy were transferred to EG without modification (Schaeper and Falk 2003). From 1990 the EG labour market was drastically reconstructed: the WG economic structure and organisation was transferred to EG, while an economic depression was underway, which meant that by 1992 half of the jobs in the former EG had been lost (Krueger and Pischke 1995).

Reunification had strong effects not only on the economy, but on all aspects of society, including fertility behaviour. The drop of fertility in EG was sudden and large (Goldstein and Kreyenfeld 2011). The extremely quick process of unification was accompanied by a resurgence of traditional views about gender roles and family in society brought in by WG

companies. Rudd (2000) argues that women's labour power was devalued while simultaneously, the value of paid employment increased and just as women were increasingly excluded from the public world of work, women's family roles seemed to lose social value. Previous authors have agreed that the "unambiguous losers" of the reunification of Germany have been women (Rudd 2000, Adler 2002).

The labour market was not restructured in a gender-neutral fashion (Schaeper and Falk 2003): the drop in employment opportunities affected women more than men (Engelbrech and Reinberg 1998), female employment in male sectors was obstructed (Schaeper and Falk 2003), there was an inadequate demand for highly skilled women in EG and career-oriented women fled to WG in order to secure employment opportunities (Kröhnert and Vollmer 2012). The changes in opportunity structure meant that EG mothers started behaving like WG mothers, becoming not active or taking up low-skill and part-time jobs (Hanel and Riphahn 2012), while highly skilled and career-oriented women (who are more likely to be childless) had to face high levels of unemployment and obstruction into jobs that would have been available to them under the GDR.

After 1990 in EG there was relatively more availability of part-time jobs than full-time and highly skilled positions. Up until recent years EG women expressed the wish to work longer hours than they actually do, something which is not true among WG women (Holst and Wieber 2014). This suggests that the new conditions of the labour market did not satisfy women's preferences and while EG mothers may have opted for part-time jobs, childless women who wished to affirm themselves in the labour market may have not been able to do so. Thus, mothers may have sorted into part-time jobs to secure an income, but childless women may have found it difficult to find jobs that satisfy their education levels and desire to be employed and develop a career.

### 4.2.3 Predictions

To sum up, this discussion has highlighted that there are three components that feed into the shape of age and job satisfaction trajectories for EG and WG women: motherhood, socialisation and ability to find suitable employment opportunities.

Childbearing changes the value of employment for women, and I expect it to be associated with a shift downward in the age-job satisfaction trajectories of mothers with respect to childless women and a catch-up later in life. Notably, having grown up in EG rather than in WG is also associated with different attitudes towards employment.

To formulate a prediction regarding the role of socialisation in determining job satisfaction one should consider the likelihood that women can find suitable employment opportunities. EG women were faced with much higher levels of unemployment than WG women and they had much higher expectations regarding their jobs, so that job satisfaction of all EG women would be lower than WG's. Also, childless women in EG faced a more difficult labour market situation than mothers because while mothers could take up short-hours employment opportunities, or leave the labour market, childless women found it very difficult to find full-time employment and were likely to experience lower levels of job satisfaction than EG mothers.

## 4.3 Data

The analysis is based on an estimation sample from the SOEP, corresponding to survey years 1984-2013 (1990-2013 for EG). For WG, I observe women for a maximum of 30 years, while for EG for a maximum of 24 years. [2] Because I am interested in women of working age I

[2]For the WG sub-sample only 4% of respondents are observed for the maximum of 30 consecutive years, while for the EG sample 11% of the respondents are observed for the maximum of 24 consecutive years.

retain only women aged between 16 and 66 years old. [3] I retain all probability samples and use survey weights to account for differences in design for each probability sample.

I report the selection criteria and the sample sizes in Table 4.1. The main selection criteria are that individuals report at least two valid interviews, belong to a birth cohort earlier than 1973 included and their fertility at age 40 is observed. The requirement to have at least two observations per individual is to permit the estimation of a linear growth model. Considering cohorts older than 1973 allows me to obtain a measure of completed fertility. I consider an individual to be childless if she has not had a child before 40 years of age. This threshold is appropriate for women, as biologically the chance that a woman becomes pregnant after turning 40 is rather low. [4] The requirement to observe fertility at age 40 is to make sure that there are no childless women in the sample who may go on and have a child after they leave the survey. The focus of this study is parenthood, that is whether a woman has ever given birth to a child or not.

Table 4.1 Selection Criteria and Sample Sizes

| | | |
|---|---|---|
| Selection criteria | Individuals observed for at least two waves, who belong to a birth cohort earlier than 1973 and whose fertility of observed at age 40 | |
| Family status | Childless and mothers | |
| | EG | WG |
| Number of women | 1,429 | 2,543 |
| Person years | 16,733 | 35,941 |
| Mothers | 1,347 | 2,186 |
| Childless women | 82 | 357 |

[3] Individuals older than 65 become eligible for pension and thus have different incentives for remaining in employment than younger individuals.

[4] I only consider biological children, so I exclude adopted and step children.

### 4.3.1 Estimation Sample

I observe 3,972 women (52,674 person-years), among whom 2,543 are from WG and 1,429 from EG. The estimated proportions of childless women in both areas are in line with official statistics for Germany (Dorbritz 2010).

Since I am conducting a study of age-job satisfaction trajectories it is important to compare the distribution of age in the sub-samples defined by parental status and EG and WG. The distribution of age is found in Figure 4.1. For both EG and WG childless women are more likely to be younger. This may be due to panel attrition. It is in fact well known that household structure affects panel attrition, and single childless individuals are less likely to have a successful follow-up (Kroh et al. 2015).

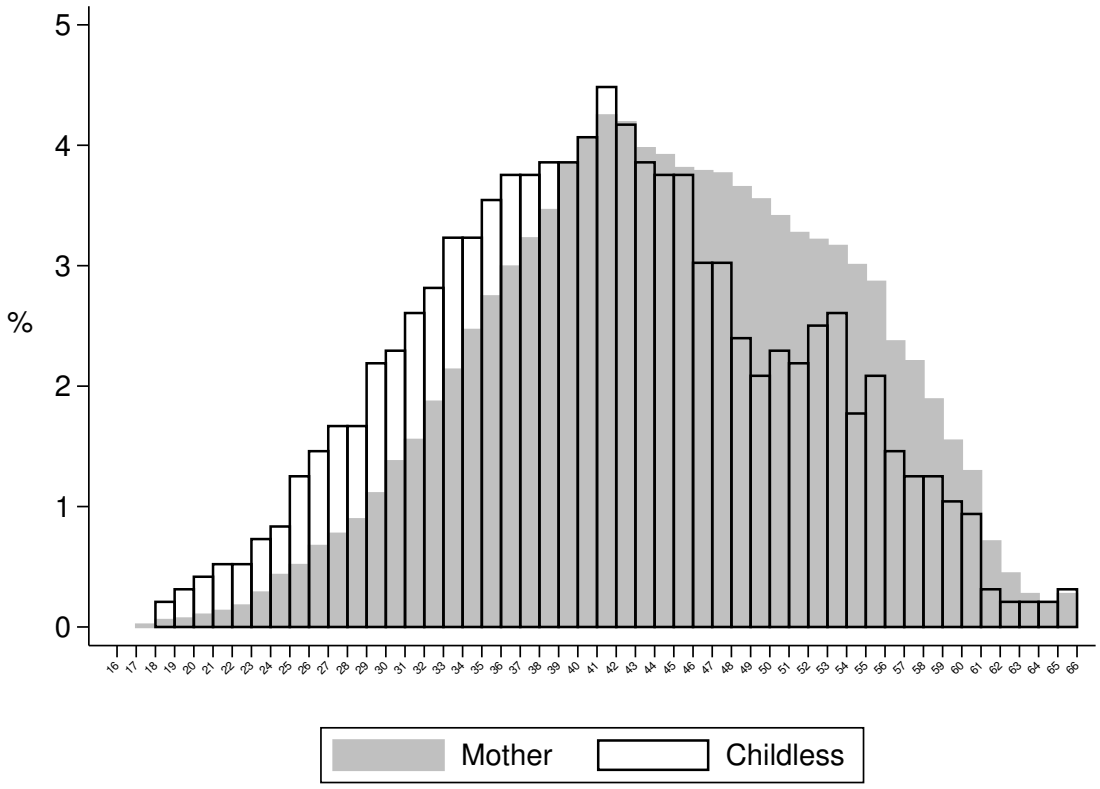
### 4.3.2 Variables and Their Measurement

In this section I provide a description of the level of measurement of the variables used in my analysis. In particular, besides job satisfaction that is the outcome variable, I use information regarding age at the time of interview, whether the respondent is from EG or WG, level of attained education, attitudes towards employment, whether the respondent was born in Germany or abroad and has migrated to Germany later in life, the age at which the respondent was first employed and the occupational status of their first employment (distinguishing between blue collar, self-employed, white collar and civil servant).

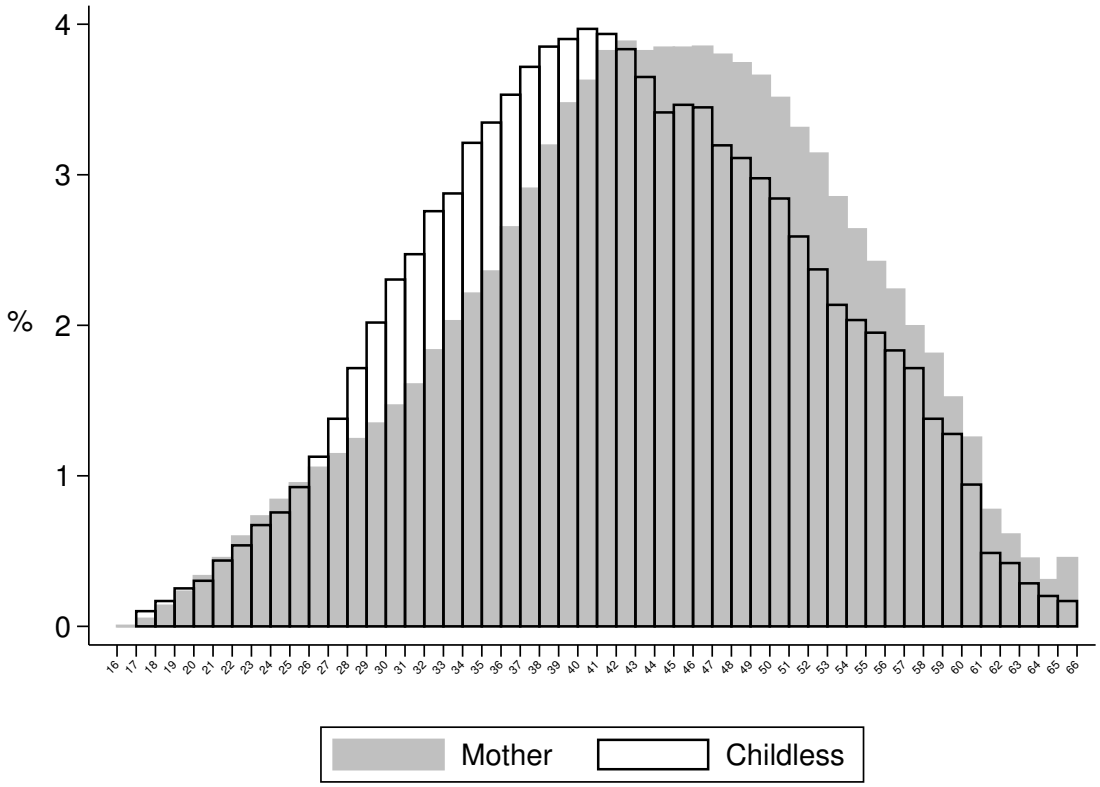
I have selected these background variables because they may potentially explain why individuals remain childless and at the same time explain job satisfaction. Indeed, one of the key aims of the analysis is to describe job satisfaction trajectories making sure that

Fig. 4.1 Distribution of Age

(a) Eastern Germany




(b) Western Germany



differences between childless individuals and parents are not due to baseline differences in other factors.

### Job Satisfaction

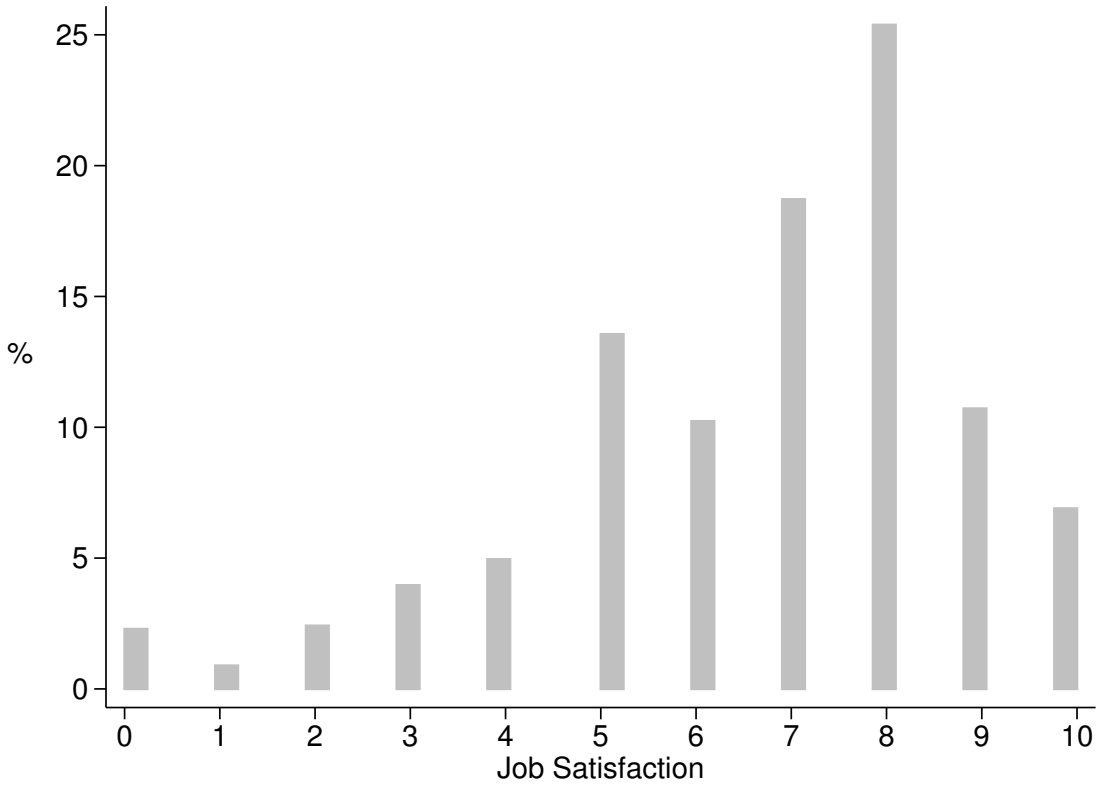
Job satisfaction is measured on a 0-10-point scale, where 0 corresponds to the respondent being "extremely dissatisfied" with their job, and 10 with being "extremely satisfied" with their employment. Job satisfaction is an ordinal variable, however the models I use are apt for continuous variables.

In Figure 4.2 I report the distribution of job satisfaction scores in EG and WG. In both regions about 25% of women report a level of job satisfaction of 8. However, there is considerable variation around levels 5 - 10 and about 85% of respondents in WG and 90% in EG report a job satisfaction score within this range.

In Figures 4.3 and 4.4 I report the distribution of average job satisfaction scores for each year covered by this study and for each age. WG women report a higher level of job satisfaction for each year (Figure 4.3.a) and at each age (Figure 4.4.a). There is a decreasing trend in job satisfaction scores over time. When considering parental status, in EG mothers report a higher level of job satisfaction than childless women for every time period and for some part of the life course (between ages 26 and 42). There are no large differences in job satisfaction scores between WG mothers and childless women over time or over the life course.

Fig. 4.2 Distribution of Job Satisfaction

(a) Eastern Germany




(b) Western Germany

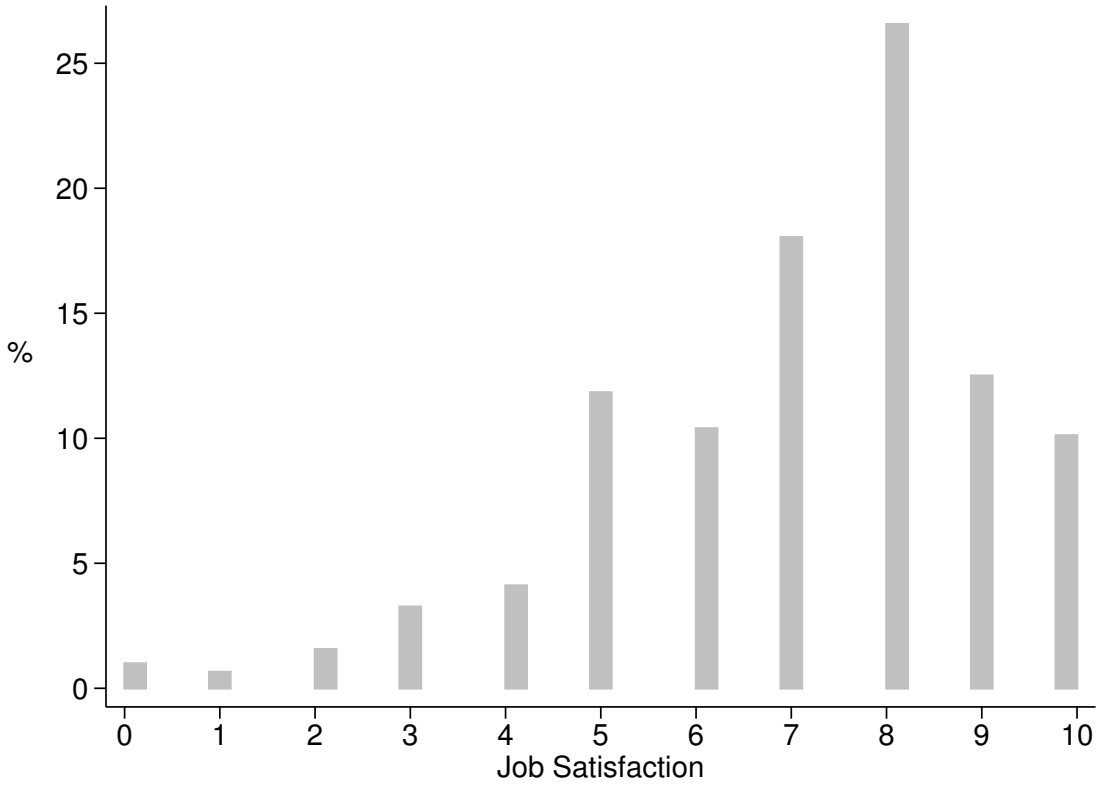
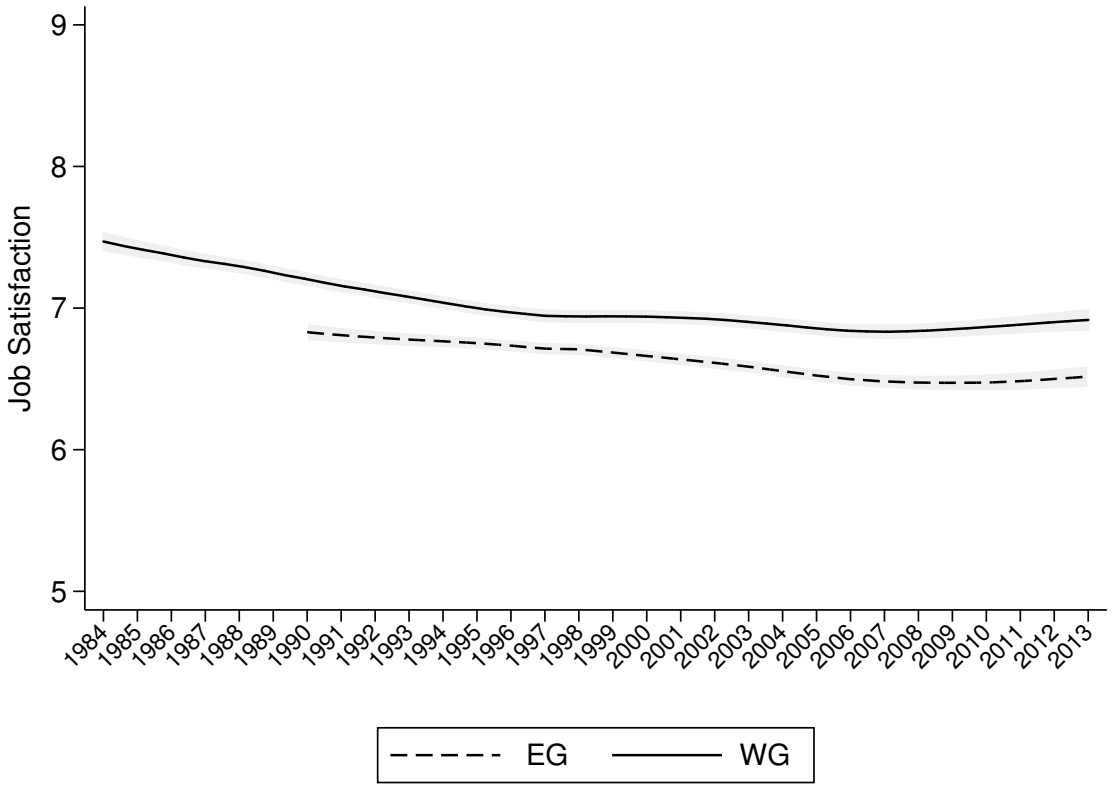


Fig. 4.3 Distribution of Job Satisfaction by Year with 95% Point-wise Confidence Interval

(a) By Geographical Origin




(b) By Geographical Origin and Parental Status

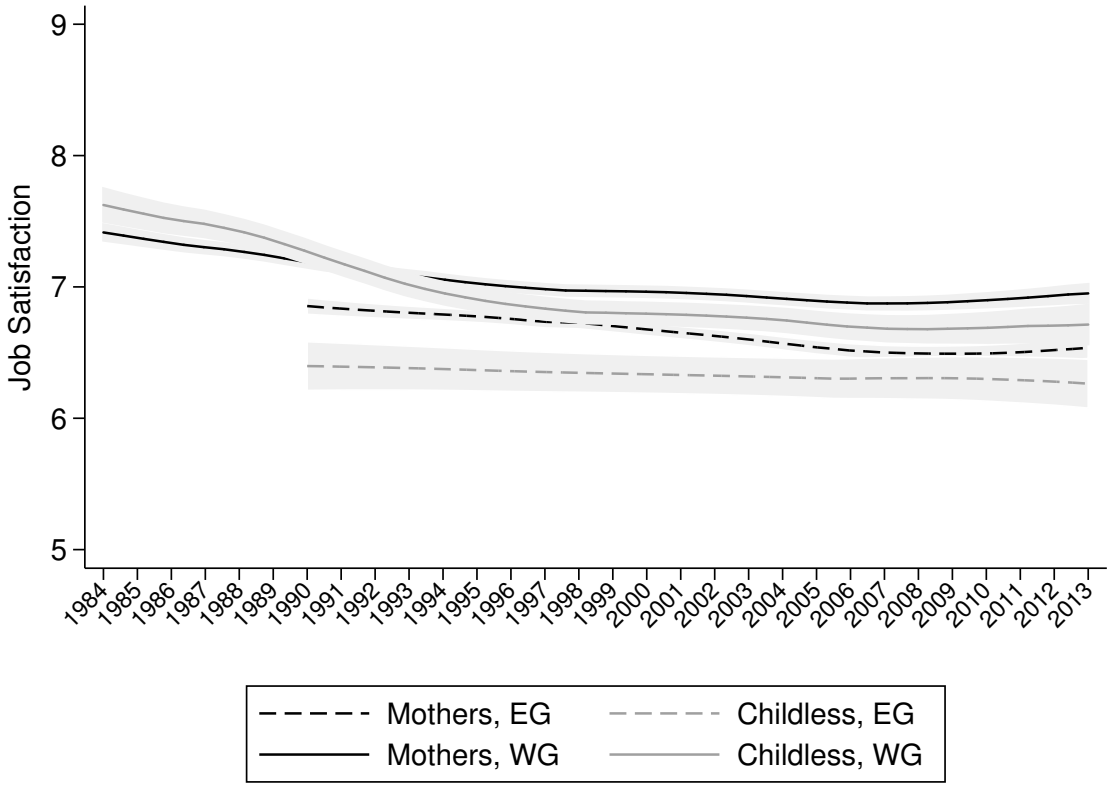
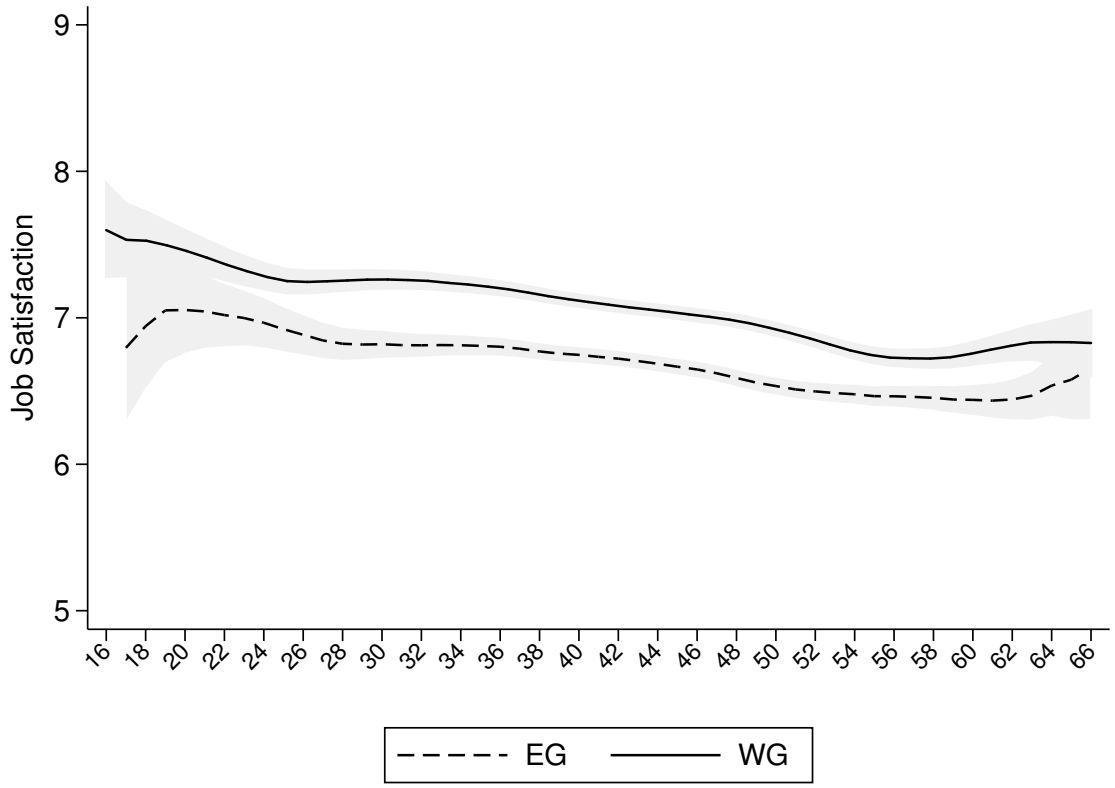
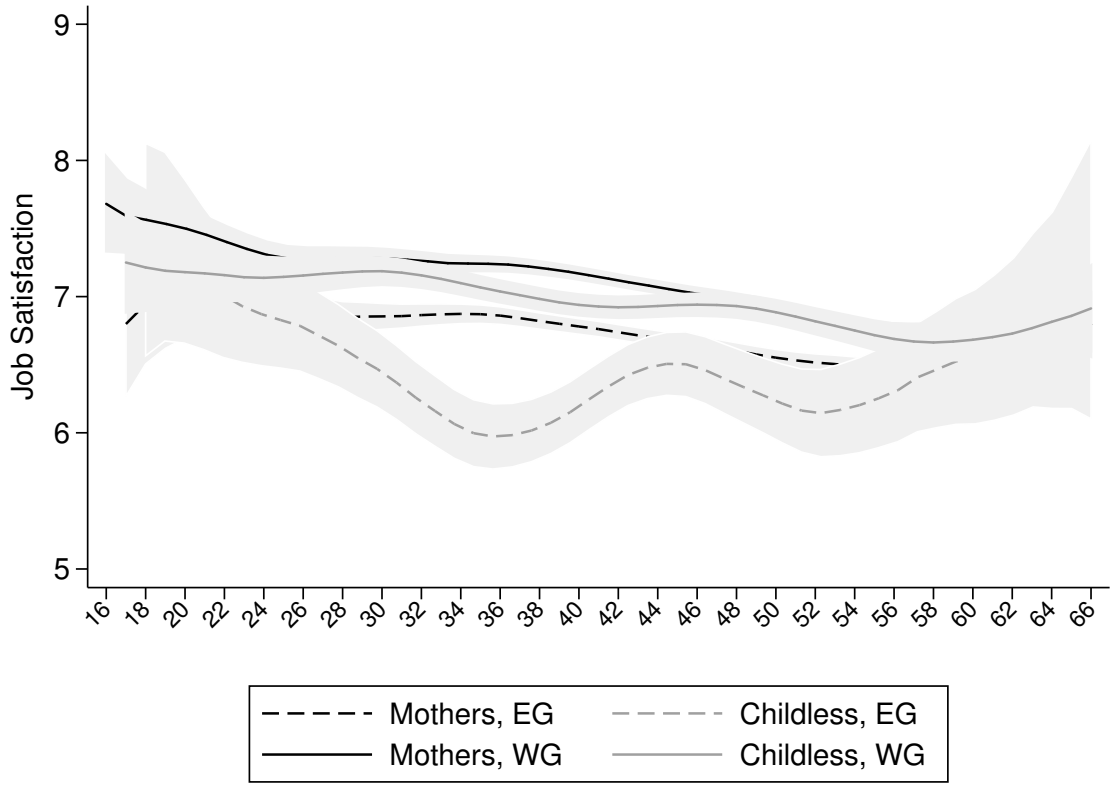


Fig. 4.4 Distribution of Job Satisfaction by Age with 95% Point-wise Confidence Interval

(a) By Geographical Origin




(b) By Geographical Origin and Parental Status



### Eastern and Western Germany

For the purpose of this study residency in WG or EG is not a relevant criterion in terms of socialisation, because I want to capture the role of social attitudes. For this reason, I would like to use a measure of "origin", that is an indication of whether the individuals are likely to have been exposed to either one of the region specific values. To do so I exploit a question in the SOEP that asks respondents where they were residing in 1989, the year before the fall of the Berlin Wall. Due to mobility restrictions between the two parts of Germany it is likely that a woman who was residing in WG in 1989 also spent many years before that in the same region, thus being exposed to specific attitudes and values. For this reason, when talking about WG women, I am referring to women who were in WG in 1989. Moreover, I also exclude individuals who were abroad in 1989.

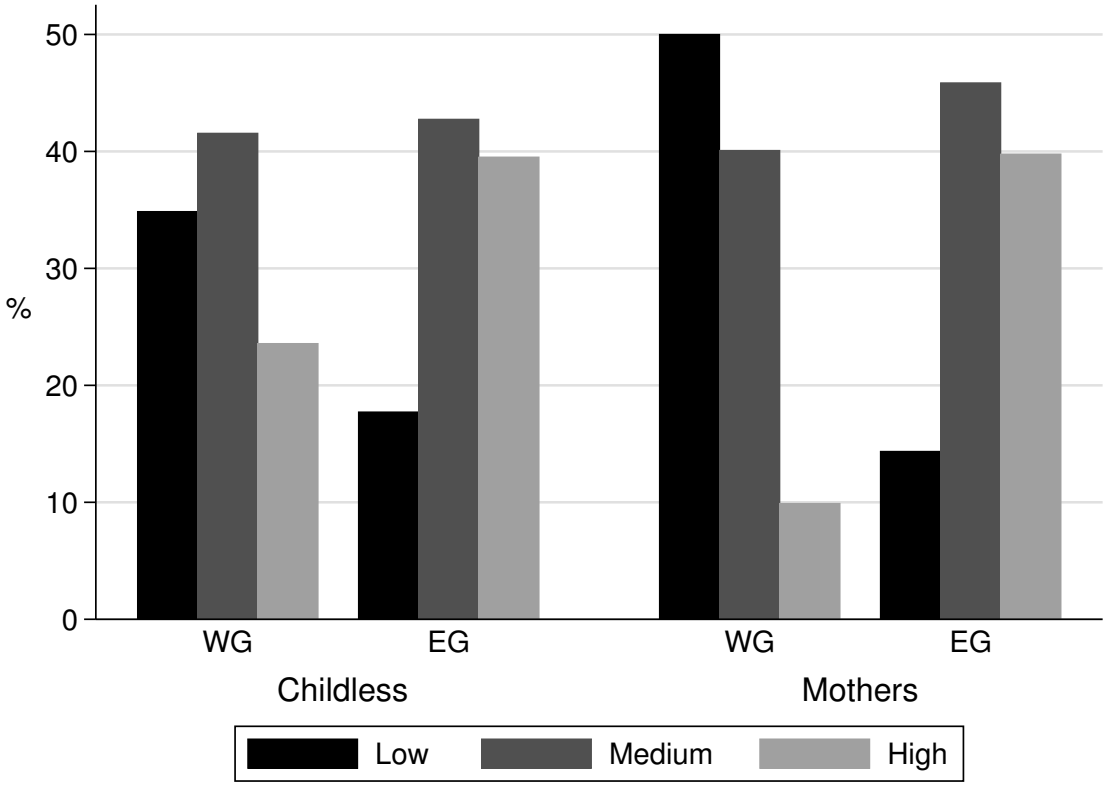
### Educational Attainment

For each individual I only consider the highest level of achieved educational attainment. I consider three levels of educational attainment (low, medium and high), derived from the Comparative Analysis of Social Mobility in Industrial Nations (CASMIN) education variable. An individual has a low level of education if she has inadequately completed primary education, or has completed general elementary school or has a basic vocational qualification. A medium level of education is assigned to respondents who have an intermediate general or vocational qualification, and a general or vocational maturity certificate (*Abitur* or equivalent). All higher levels of education (lower and higher tertiary) are coded as having a high level of education.

In Figure 4.5 I show the distribution of the highest level of education attained broken down by parental status and geographical origin. It is striking to note that only 15% of women from EG had a low level of education and 40% of EG women had a high level of education

while only 10% of mothers and 24% of childless women from WG had achieved a high education level. To formally test the equality of the distribution in educational attainment between the two regions, I run a $\chi^2$ test. The null hypothesis is strongly rejected with a $\chi^2$ statistics of 7,600 and a P-value $\leq 0.001$.

Fig. 4.5 Distribution of Educational Attainment by Parental Status and Geographical Origin




*Notes*: An individual has a low level of education if she has inadequately completed primary education, or has completed general elementary school of basic vocational qualification. A medium level of education is assigned to respondents who have an intermediate general or vocational qualification, and a general or vocational maturity certificate (*Abitur* or equivalent). All higher levels of education (lower and higher tertiary) are coded as having a high level of education.

### Attitudes Towards Employment

The variables measuring attitudes towards employment are collected as part of a set of variables measuring importance of life areas. This set of variables is constructed following Kluckhohn and Strodtbeck (1961)'s value orientation theory. The variables that I have selected answer the question "Different individuals find different things in life important. How important are the following things to you today?" referring to success at work and earnings/income, and allows respondents to select one of the following: "very important", "fairly important", "somewhat important" and "not important". The variable referring to the importance of income is available for 1990, 1991, 1994, 1998 and 1999. The variable on the importance of success at work is available for the following years: 1990, 1991, 1992, 1994, 1995, 1998, 1999, 2004, 2008, and 2012. Because I am interested in baseline or initial levels of work values I record only the first value of each variable for each individual. This is therefore a time invariant variable. To be sure, if a woman has her first child before 1990 then this variable is endogenous. In WG 81% of mothers have their child before 1990, while in EG this figure is 91%. Given that these figures are large I check the robustness of the results by excluding women who have children before 1990, significantly reducing the sample size, but guaranteeing that attitudes towards employment are recorded before having their first child.

Kluckhohn and Strodtbeck (1961)'s value orientation variables are often used to measure work values (e.g. Meglino et al. 1992, Roe and Ester 1999). In this case I consider importance of earnings as an example of extrinsic work values. In reality, extrinsic work values refer to prioritizing security over other aspects of work and underline the importance of material job features. In particular, work is seen as necessary for providing one's livelihood (Ester et al. 2006, p. 92). Thus, a broader measure of extrinsic work values would include the importance attached to not only income but other material job features as well (e.g. comfortable working

times, protection). However, income is probably the most central element of a job in terms of work outcomes that provide one's livelihood, so I focus on importance of earnings/income as a proxy for extrinsic work values.

Intrinsic work values are values which emphasise non-material features of a job. Such characteristics range from possibility of personal development to autonomy, and having interesting, responsible and challenging jobs (Ester et al. 2006, p. 93). I use a measure of importance attached to job success to quantify intrinsic work values. However, job success may have different interpretations. Job success could refer to possibility of career progression (which would then be considered an extrinsic work value), but also to personal success, which is an intrinsic reward. I am going to adopt the last interpretation and define the chosen variable as a proxy for intrinsic work values.

Because I conceptualise job satisfaction as a function of expectations towards employment, one may expect a strong correlation between job satisfaction and the value orientation variables. In particular, the more important an aspect of the job is, the lower the level of job satisfaction. However, because I measure the value orientation variables at their first occurrence, the temporal distance between the measurement might break the link. In Figure 4.6 I plot the proportion of respondents who answered each of the four answers for the value orientation variables by their level of job satisfaction score. The general pattern is that the more important job success/earnings are, the lower the value of job satisfaction.

I formally test for the equality of distribution of work values between EG and WG. For both scales, I reject the null hypothesis that the distribution of both work values is the same in WG and EG (for importance of job success I obtain a $\chi^2$ statistics of 2,400 and P-value $\leq 0.001$; for importance of earnings the $\chi^2$ statistics is 1,100 and the P-value $\leq 0.001$). In

particular, it appears that EG women are more likely to state that job success and earnings are important than WG women.

**Born in Germany**

This is a generated variable collected in all SOEP interviews. Respondents are asked in which country they were born. The variable takes value 1 if the respondent was born in Germany, or if they were not but they migrated to Germany before 1948, which means that they have spent at least 36 years in Germany (given that the first survey year available is 1984).

**First Employment**

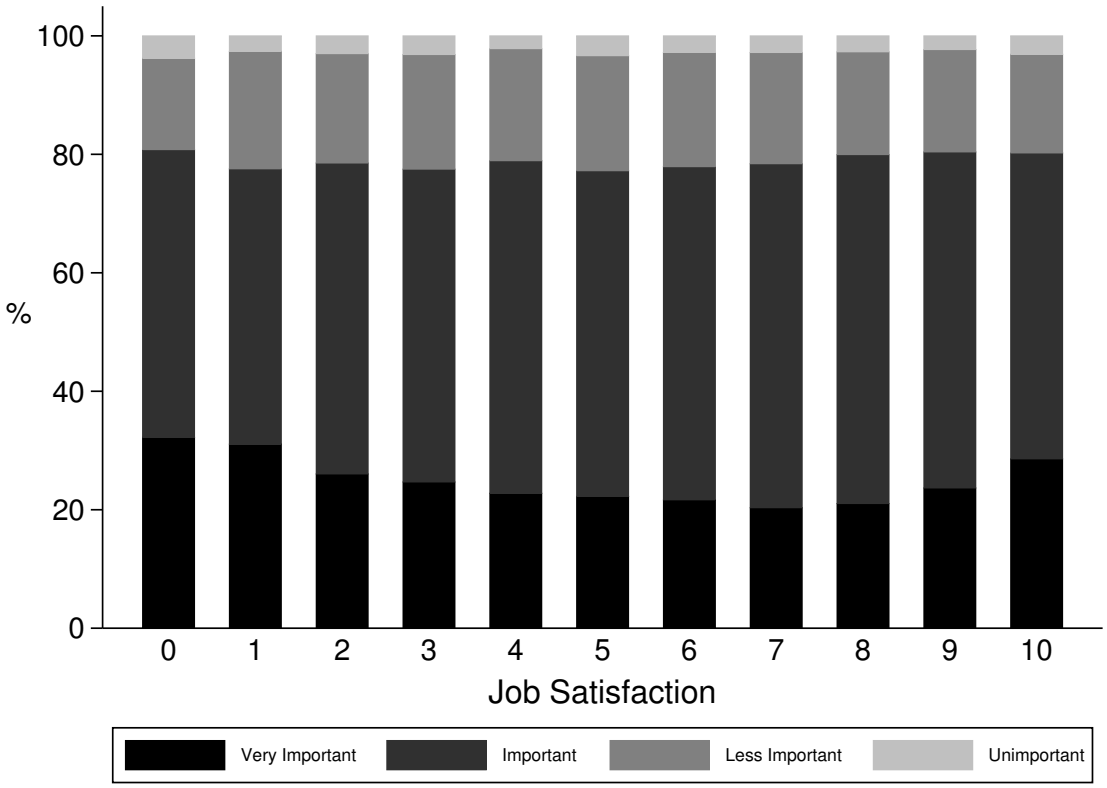
I use two variables from the employment history of respondents that is collected at the first individual interview. These are self-reported variables and are retrospective, as they make reference to the first employment spell of the individual. Respondents are asked the age at which they first entered paid employment and the occupation in their first job. For the occupation variable, they have the option to select either self-employment, white collar, blue collar or civil servant.

In Table 4.2 I report mean estimates for the background characteristics described so far for mothers and childless women in EG and WG.

There are significant differences between mothers and childless individuals along most dimensions considered. Among WG women, mothers are less likely to be high educated, and more likely to be low educated. Mothers start their first job earlier (as a consequence of fewer years spent in education), are more likely to be immigrants and more likely to have started employment in a blue collar job or in the public sector, but less likely to have been in a white collar job. Moreover, they are more likely to agree that job success is

Fig. 4.6 Distribution of Attitudes towards Employment Variables by Job Satisfaction

(a) Importance of Job Success




(b) Importance of Earnings

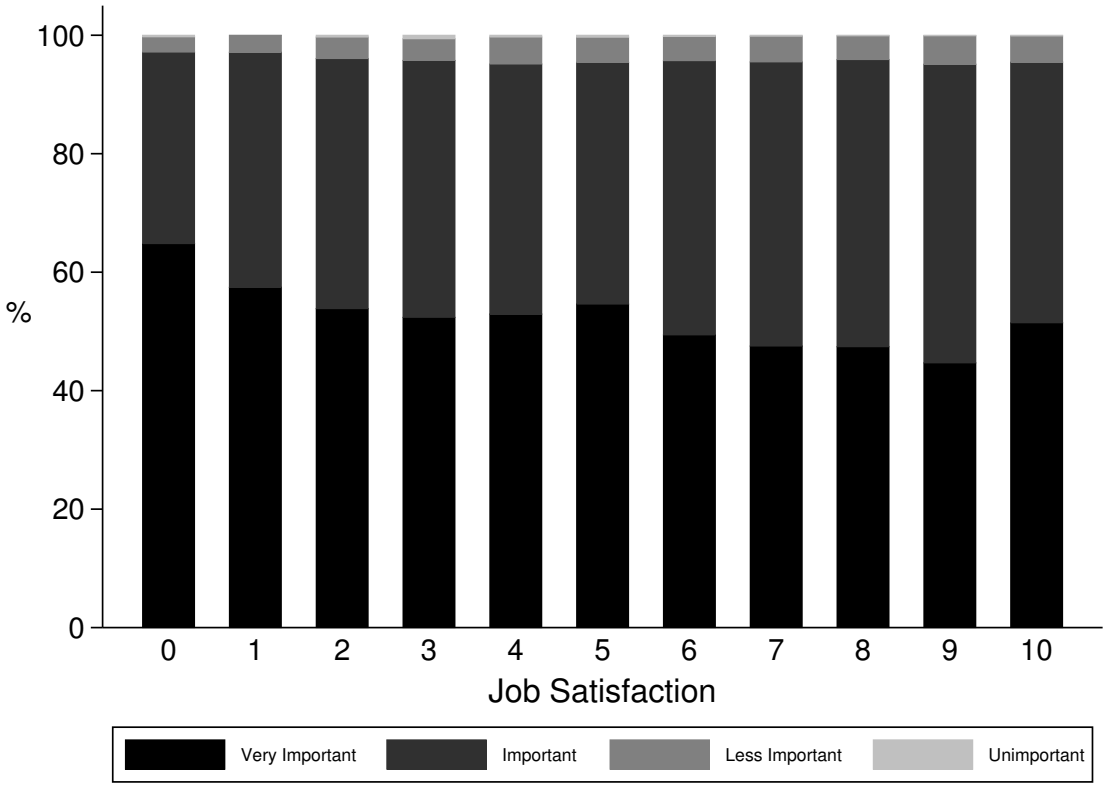


Table 4.2 Sample Characteristics for Analytical Sample

| | WG | | | | EG | | | |
|---|---|---|---|---|---|---|---|---|
| | Childless n=357 | Mothers n=2,186 | | Sample | Childless n=82 | Mothers n=1,347 | | Sample |
| *Education* | | | | | | | | |
| Low | 0.37 | 0.5 | *** | 1,328 | 0.21 | 0.16 | *** | 419 |
| | (0.009) | (0.004) | | | (0.02) | (0.004) | | |
| Medium | 0.41 | 0.4 | | 931 | 0.42 | 0.48 | ** | 552 |
| | (0.009) | (0.004) | | | (0.02) | (0.01) | | |
| High | 0.22 | 0.1 | *** | 284 | 0.37 | 0.37 | | 458 |
| | (0.007) | (0.002) | | | (0.023) | (0.01) | | |
| Age at first job† | 19.66 | 18.8 | *** | | 18.52 | 19.31 | *** | |
| | (0.08) | (0.03) | | | (0.08) | (0.03) | | |
| Born in Germany | 0.95 | 0.85 | *** | | 1 | 0.98 | *** | |
| | (0.004) | (0.003) | | | (0.00) | (0.001) | | |
| *First job* | | | | | | | | |
| Blue collar | 0.18 | 0.31 | *** | 913 | 0.5 | 0.41 | *** | 654 |
| | (0.007) | (0.004) | | | (0.02) | (0.006) | | |
| Self employed | 0.02 | 0.02 | | 48 | 0.003 | 0.01 | ** | 10 |
| | (0.003) | (0.001) | | | (0.001) | (0.001) | | |
| White collar | 0.77 | 0.61 | *** | 1,473 | 0.49 | 0.58 | *** | 762 |
| | (0.01) | (0.004) | | | (0.02) | (0.01) | | |
| Civil servant | 0.04 | 0.06 | *** | 109 | 0 | 0.01 | ** | 3 |
| | (0.003) | (0.002) | | | (0.00) | (0.002) | | |
| *Job success* | | | | | | | | |
| Very important | 0.27 | 0.18 | *** | 438 | 0.3 | 0.33 | | 478 |
| | (0.01) | (0.004) | | | (0.02) | (0.006) | | |
| Important | 0.57 | 0.56 | * | 1,334 | 0.62 | 0.58 | | 814 |
| | (0.01) | (0.004) | | | (0.02) | (0.006) | | |
| Less important | 0.14 | 0.22 | *** | 602 | 0.08 | 0.078 | | 123 |
| | (0.01) | (0.003) | | | (0.02) | (0.003) | | |
| Unimportant | 0.007 | 0.03 | *** | 169 | 0 | 0.001 | *** | 14 |
| | (0.002) | (0.001) | | | (0.00) | (0.001) | | |
| *Earnings* | | | | | | | | |
| Very important | 0.34 | 0.45 | *** | 1,125 | 0.58 | 0.59 | | 898 |
| | (0.009) | (0.004) | | | (0.02) | (0.01) | | |
| Important | 0.57 | 0.5 | *** | 1,292 | 0.36 | 0.37 | | 486 |
| | (0.01) | (0.004) | | | (0.02) | (0.01) | | |
| Less important | 0.09 | 0.04 | *** | 121 | 0.05 | 0.04 | | 43 |
| | (0.01) | (0.002) | | | (0.02) | (0.002) | | |
| Unimportant | 0 | 0.002 | *** | 5 | 0 | 0.001 | *** | 2 |
| | (0.00) | (0.0003) | | | (0.00) | (0.000)2 | | |
| *Labour supply* | | | | | | | | |
| Years full time† | 18.65 | 11.65 | *** | | 17 | 18.1 | ** | |
| | (0.2) | (0.08) | | | (0.47) | (0.13) | | |
| Years part time† | 2.27 | 6.55 | *** | | 2.67 | 3.12 | | |
| | (0.08) | (0.06) | | | (0.3) | (0.06) | | |
| Years unemployed† | 0.41 | 0.53 | *** | | 0.69 | 0.96 | *** | |
| | (0.02) | (0.01) | | | (0.08) | (0.03) | | |

*Notes*: † continuous variable. All remaining variable are binary. Significance levels: *** 1%, **, 5%, * 10%. Standard errors in parentheses.

not an important dimension of life, and that earnings are an important dimension of life. Although there are differences between mothers and childless women in the EG sample, the associations are different than in WG. In EG childless women are more likely to be low educated, less likely to have a medium level of education but there is no difference in terms of high levels of education. In this region, mothers start their job later, they are less likely than childless women to have started in a blue collar position but more likely to have been in a white collar job. There are no significant differences in terms of work values.

The figures in Table 4.2 imply that selection into motherhood operates differently in WG and EG. In WG it is women who are high educated and in high skills-jobs that are more likely to remain childless, but in EG it is the low educated and with low attachment to the labour market who do so. Mothers and childless women are different possibly in even more ways that I am able to observe. Thus, selection into parental status may be a concern in this sample if these differences are also determinants of job satisfaction. For instance, Cetre et al. (2016) show that happier individuals are more likely to have children, and the higher happiness of future mothers is not entirely explained by having a higher socio-economic status or other living conditions, which is evidence of positive selection into parenthood.

Another important fact that stands out from Table 4.2 is the difference in labour market history between mothers and childless women, and between EG and WG. WG mothers spend significantly fewer years in full-time employment than childless women. WG mothers also spend more time in part-time employment. None of this is true for the EG sample, where mothers spend on average more years in full-time employment and there are no differences in terms of part-time employment. Lastly, EG women spend on average more months in unemployment than WG women. This is evidence that employment opportunities for women

in EG fell after 1990.

To investigate this aspect further, I consider the likelihood of being in employment at each age for EG and WG women. In Figure 4.7 I plot the proportion of women in employment (either full-time or part-time) for each age, and broken down by family status. In WG childless women are more likely to be employed at any point during the life course, while the largest differences are between age 25 and 50. In EG the difference is smaller in magnitude, and follows a different pattern. Mothers are less likely to be employed at the beginning of the life course, but there is convergence: from age 50 mothers are slightly more likely to be employed than childless women.

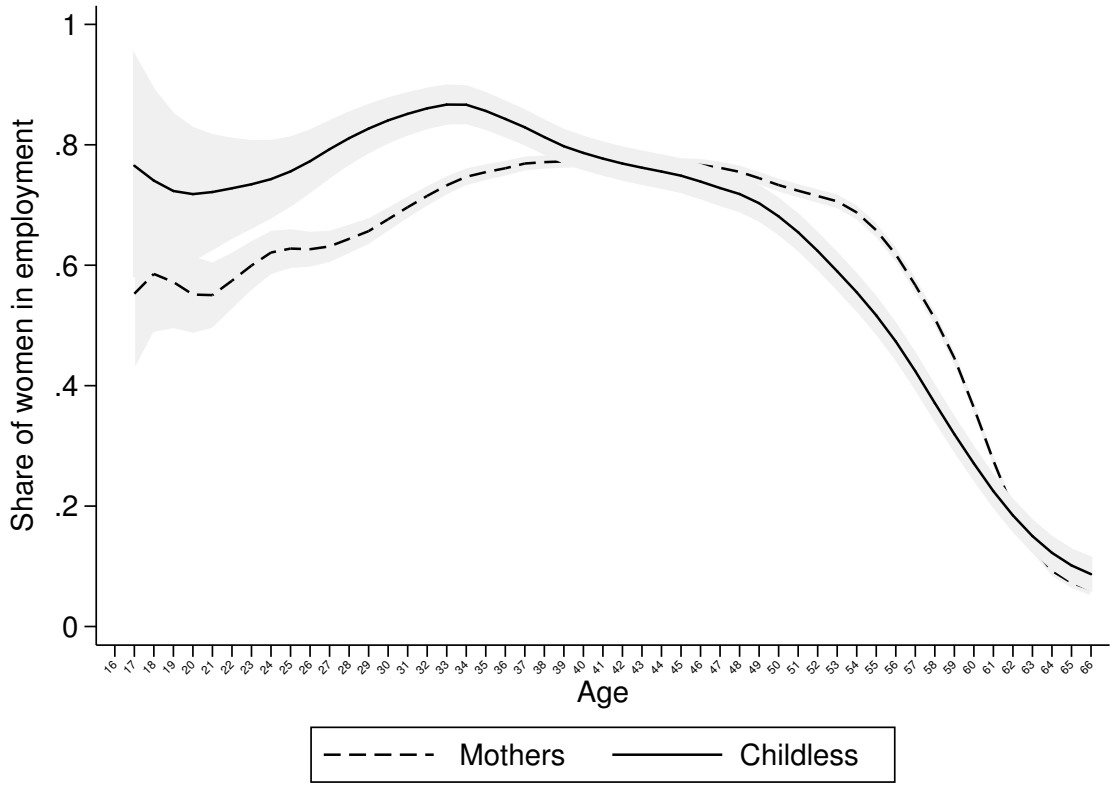
The different propensity of being in employment for mothers and childless women can be a result of their objective conditions (e.g. taking care of the children), or be determined by individual traits that also determine the likelihood of being a mother. In either case, the determinants of their labour force participation are likely to also affect job satisfaction. This is the problem of endogenous sample selection. It is ideal to be able to explain whether age-job satisfaction trajectories are the result of different life experiences of mothers and childless women independently of their propensity for labour force participation. In Appendix A I illustrate a statistical model to assess the seriousness of endogenous sample selection.

## 4.4 Describing Trajectories of Job Satisfaction

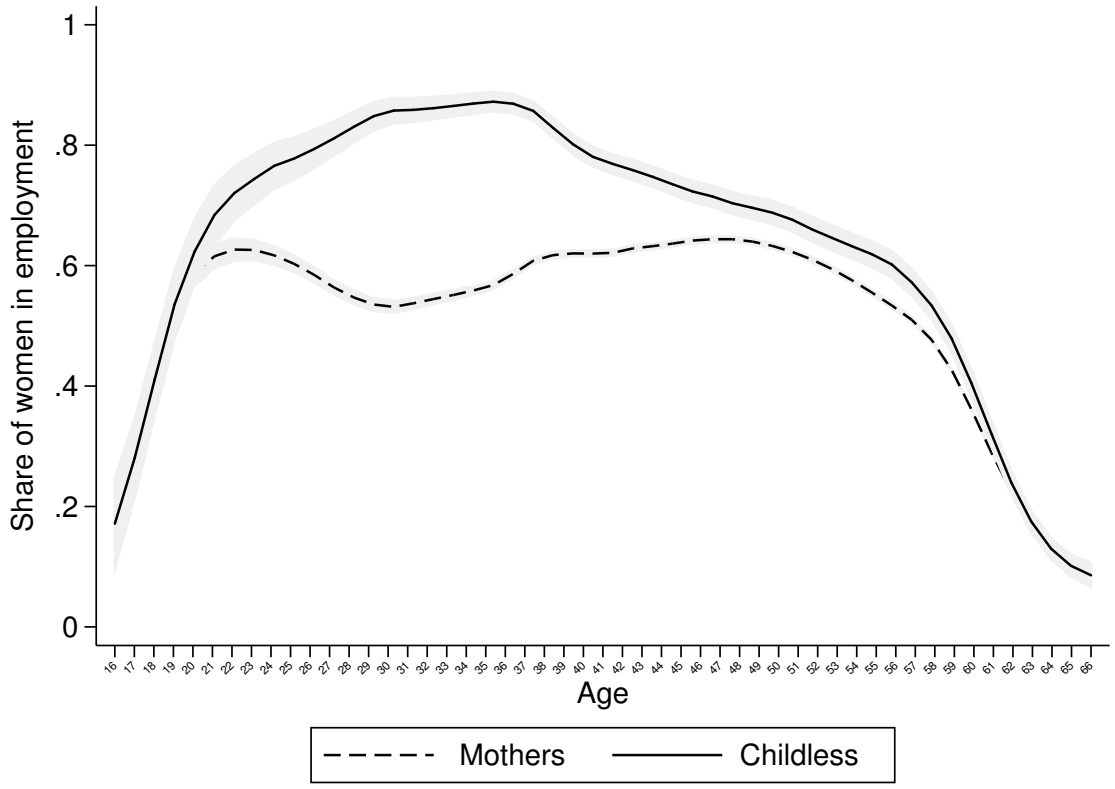
The ideal set-up for my study would be to follow each woman and analyse her trajectory of job satisfaction over the life course. However, this is impractical. Thus, in order to put structure on the data I summarise the trajectories in terms of two components: the mean job satisfaction at each age, and the variance around the age. In Figure 4.8 I illustrate this

Fig. 4.7 Share of Women in Employment over the Life Course by Parental Status and Geographical Origin with 95% point-wise confidence interval

(a) Eastern Germany

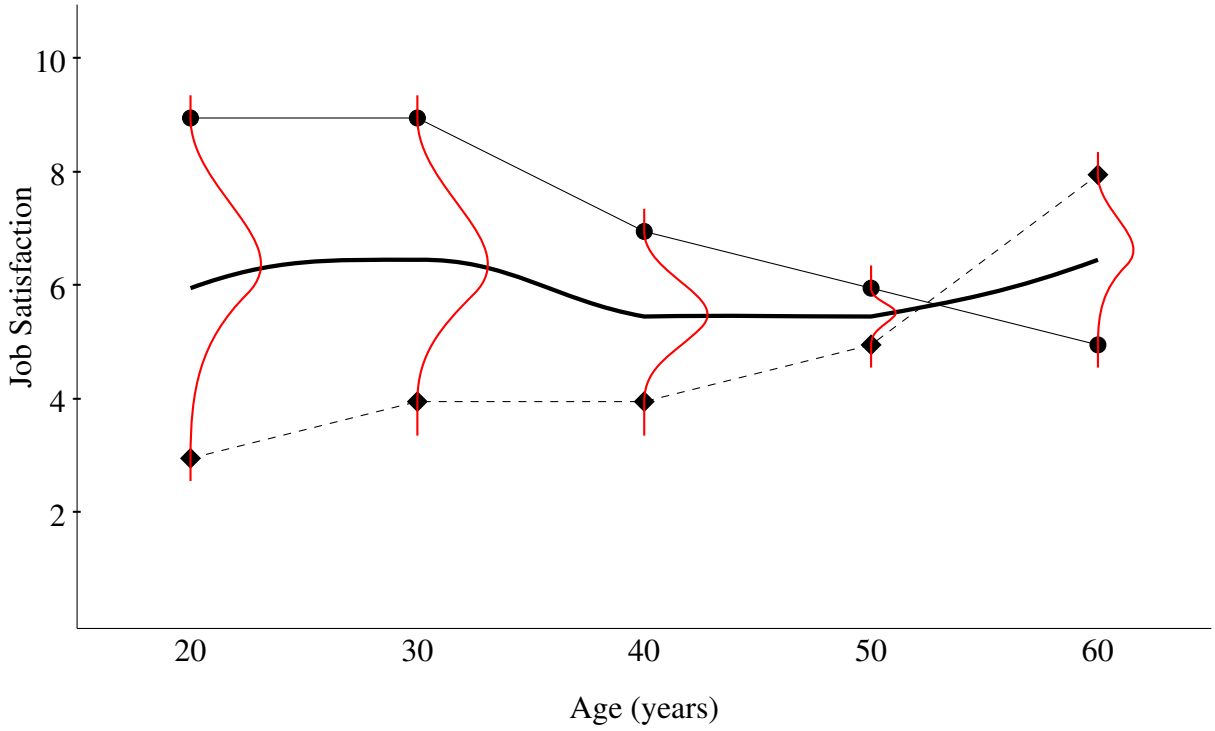



(b) Western Germany



approach, making reference to two fictitious individual age-job satisfaction trajectories.

Fig. 4.8 Stylized Individual Age-Job Satisfaction Trajectories and the Average Trajectory




Notes: Chart shows two fictitious age-job satisfaction trajectories (connected line), an average trajectory (solid thick line), and the relative frequencies of high and low deviations from the average at each point (red curvy lines).

To estimate these two statistics I apply linear growth models. Besides the advantage of providing an estimate for the variance of the outcome, linear growth models have a series of advantages compared to other methods used to explore the association between variables in longitudinal datasets. Compared to a simple OLS estimator, linear growth models allow for taking into account the correlation of individual responses over time. Compared to Fixed Effects models they allow me to determine the effect of time invariant characteristics (e.g. ever being a parent or not) on the outcome variable.

The intuition is the following. I observe a group of individuals at different stages over their life course. Thus I am able to compute average levels of job satisfaction for each individual (across age) or for each age group (across individuals), alongside an overall grand mean. The model assumes that the variation of individual-level and age-level job satisfaction means is random around the grand mean, which yields a random intercept and random coefficients. The variation is described by two variance terms which are estimated through the model. The first variance term characterises individual-level deviations from the group average profile. This is the variation in initial levels of job satisfaction. The second variance term characterises the deviations of each individual trajectory from an overall trajectory.

Because I am interested in how the shape of age-job satisfaction trajectories differ among parents and childless individuals, I interact the age term and a dummy indicating whether an individual is a parent. Moreover, to investigate differences between EG and WG women I run the models separately on the two samples. The SOEP is made up of different samples, some of which contain over-representation of certain populations. Each sample was collected with a different sampling design, so that it is necessary to include survey weights to obtain unbiased estimations. I include cross-sectional survey weights at the level of the person, as these are the weights that the define the different probabilities of each person being in the survey, given the specific SOEP sample they are in. The model is the following:

$$
\begin{aligned}
J_{tj} = & \\
& \beta_{0j} + \gamma P_j + \zeta_{1j} + && \text{(4.1a)}\\
& + \beta_{1j}(1+\theta_{1j}P_j)A_{tj} + \beta_{2j}(1+\theta_{2j}P_j)A_{tj}^2 + \beta_{3j}(1+\theta_{3j}P_j)A_{tj}^3 + && \text{(4.1b)}\\
& + \zeta_{2j}A_{tj} + && \text{(4.1c)}\\
& + \delta X_j^{'} + t + && \text{(4.1d)}\\
& + \varepsilon_{tj} && \text{(4.1e)}
\end{aligned}
$$

where $J_{tj}$ is the level of job satisfaction of individual $j$ at interview of survey year $t$, $A_{tj}$ is the corresponding age, $P_j$ is a time-invariant indicator for whether the respondent is a mother, $X_j^{'}$ is a vector of time invariant covariates, $\zeta_{1j}$ is a random intercept, $\zeta_{2j}$ is a random slope, and $\varepsilon_{tj}$ is the time specific error term. To ease the interpretation of the coefficients the age term is standardised by subtracting the minimum age observed in the sample (16 years old for WG, and 17 years old for EG). [5]

The associations of interest in this chapter are identified as follows. Line (4.1a) defines the intercept of the model. This is made up of three components. $\beta_{0j} + \gamma P_j$ defines the mean intercept, which is equal to $\beta_{0j} + \gamma$ for mothers and $\beta_{0j}$ for childless women. $\zeta_{1j}$ defines the deviation of woman $j$'s intercept from the mean intercept. The distribution of random effects is the same for mothers and childless women, the intercept is shifted according to whether the woman is a mother or not. The empirical estimate of $\gamma$ corresponds to the difference in job satisfaction between mothers and childless women at the youngest age in the panel (16 years old for WG, and 17 years old for EG).

Line (4.1b) describes the average trajectory for mothers when $P_j = 1$ and for childless women when $P_j = 0$. The age-job satisfaction profile of childless women is given by the sign of the coefficients $\beta_{1j}, \beta_{2j}, \beta_{3j}$; the one of mothers is given by the set of $\beta_{1j}(1+\theta_{1j}), \beta_{2j}(1+\theta_{2j}), \beta_{3j}(1+\theta_{3j})$.

Line (4.1c) identifies the random coefficients, that is a term that allows individuals to differ in their overall rate of growth of job satisfaction. In other words, it identifies the deviation of woman $j$'s slope from the mean slope defined in (4.1b). The distribution of random slopes is the same for mothers and childless women. The terms in line (4.1d) identify a series of

[5] In other words, given that $\tilde{A}_{tj}$ is the age of respondent $j$ at time $t$ in years and that the minimum age at which anyone in the sample is $\min[\tilde{A}_j]$, $A_{jt}$ is defined as $A_{jt} = \tilde{A}_{tj} - \min[\tilde{A}_j]$.

control variables, described in the previous section, and a set of year dummies respectively. The term in line (4.1e) is a time specific error term which allows the outcome $J_{tij}$ to deviate from the perfectly cubic relationship defined by the terms in line (4.1b) (Rabe-Hesketh and Skrondal 2008).

Another interpretation of the model is that we can assume that the sample of women I observe at each age is a random sample of all women who are that age. Therefore, I am interested in estimating the average level of job satisfaction for all women in a given age, as well as the variability of the intercepts and slopes in the population of all women. To make inference about this variability I assume that the random slopes and intercepts have a bivariate normal distribution with zero mean and covariance matrix defined as

$$\Psi = \begin{bmatrix} \psi_{11} & \psi_{12} \\ \psi_{21} & \psi_{22} \end{bmatrix} \equiv \begin{bmatrix} \text{Var}(\zeta_{1j}|X_j) & \text{Cov}(\zeta_{1j},\zeta_{2j}|X_j) \\ \text{Cov}(\zeta_{2j},\zeta_{1j}|X_j) & \text{Var}(\zeta_{2j}|X_j) \end{bmatrix} \tag{4.2}$$

where $\psi_{12} = \psi_{21}$. The interpretation of the variances and covariances is not straightforward (Rabe-Hesketh and Skrondal 2008). However, it is useful to summarise them in the conditional variance of the responses, given by

$$V[J_{it}|A_{it} = x, t = \tau] = \psi_{11} + \psi_{22}x^2 + 2\psi_{21}x + \theta \tag{4.3}$$

where $V[\cdot]$ stands for variance of $J_{it}$ measured at age $x$ and time $\tau$, terms $\psi_{11}$, $\psi_{11}$ and $\psi_{11}$ are defined in (4.2) and $\theta$ is the variance of $\varepsilon_{tj}$ from equation (4.1). The formula in (4.3) is a measure of the variability around the mean of job satisfaction estimated by (4.1) which is due to the variation caused by individuals having random intercepts, random slopes, their correlation and a random component that determines job satisfaction but cannot be observed.

The existence of a covariance between the random slope and the random intercept suggests a relationship between the two, that is a systematic relationship between starting point (random intercept) and rate of growth. If the covariance is negative then individuals who have higher job satisfaction at the beginning of the life course will have a slower growth rate in job satisfaction. In the case of job satisfaction this is reasonable because individuals with low job satisfaction are likely to revise their expectations so as to maximise job satisfaction, while individuals who already experience high levels of job satisfaction are unlikely to modify their expectations. The term estimated in (4.3) is therefore a measure of inequality among women of the same age. Comparing the variance of the outcome at each age gives a measure of the heterogeneity of the work experiences of women. The larger the variance, the more likely women report very high or very low levels of job satisfaction.

### 4.4.1 Endogenous Selection into Employment

Job satisfaction is only observed for workers, and while employment participation is non-random, work attachment may well be a determinant of job satisfaction, so straightforward regression analysis leads to inconsistent estimators of being a mother on job satisfaction. To take into account how endogenous selection into employment drives the results I apply a sample selection estimator for panel data as developed by Wooldridge (2010). In Appendix A (Section 4.8.1) I provide a technical description of the method.

## 4.5 Estimates of Age-Job Satisfaction Trajectories

### 4.5.1 Group Averages

This section discusses the shapes of age-job satisfaction trajectories and how they differ across parents and childless women. I summarise the estimates using graphs. I report full results in Table 4.3 in Appendix B. The discussion focuses on the difference in trajectories

between mothers and childless women.

In Figure 4.9 I report the results for WG and EG respectively. The first striking result from Figure 4.9 is the close resemblance between the age-job satisfaction trajectories of mothers and childless women for WG (panel (b)). However, I find that for some years during the working life (from late 20s until early 40s), EG mothers are more satisfied with work than EG childless women. In terms of the shape of age-job satisfaction trajectories, I do not find that mothers have a U-shaped age-job satisfaction trajectory. Instead it appears that in both regions the relationship is negative or flat for most of the life course.

### 4.5.2 Within-Group Inequality

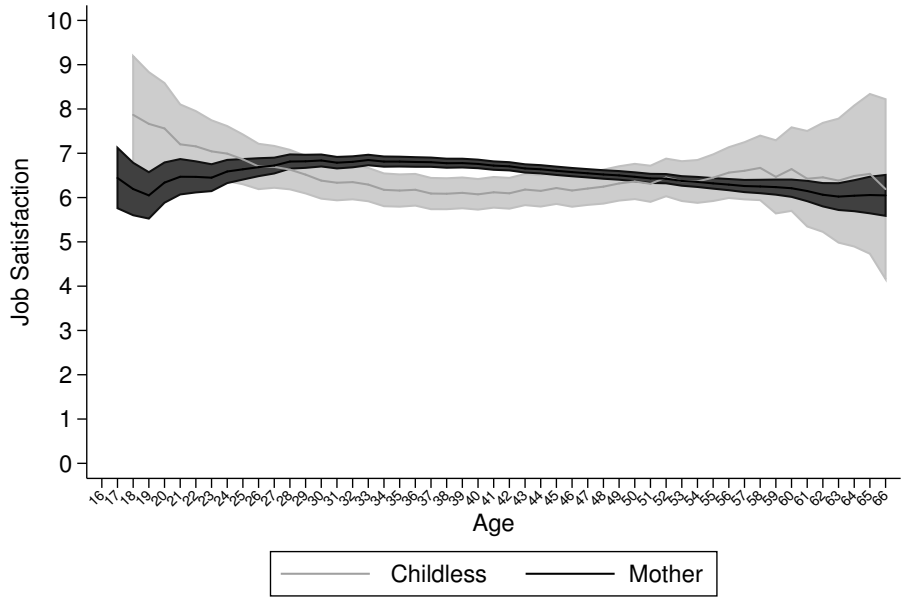
In this section I show how within-group inequality varies across the age range of working life. In Figure 4.10 I chart the inequality-age relationship using the variance of the predicted job satisfaction score for age (computed according to formula (4.3)).

The first notable feature is that for all groups there is a U-shaped relationship between variance and age, and within-group inequality is largest at the beginning and at the end of working life. The large inequality at the beginning of the working life may signify heterogeneity in work expectations at the beginning of the working life.

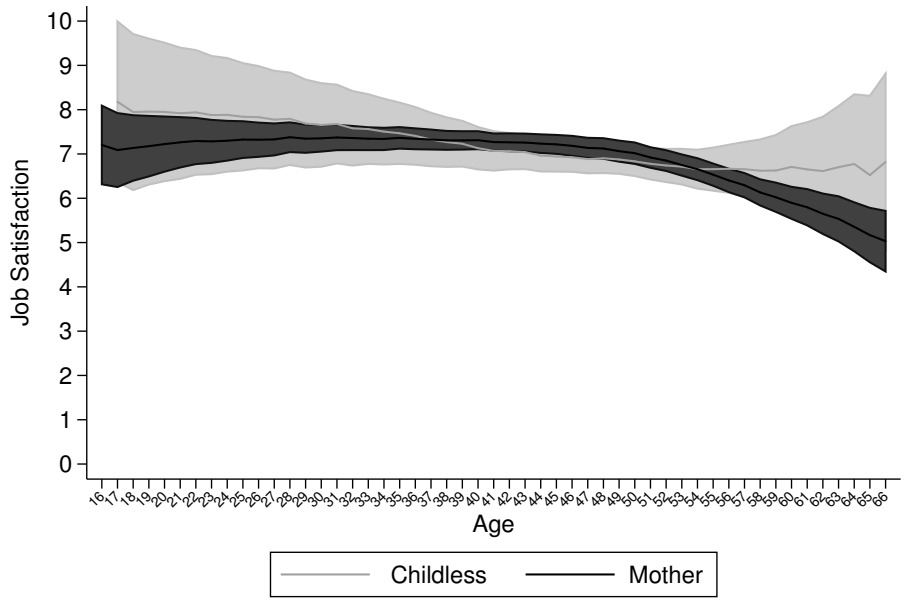
For all groups there is more variation among mothers than childless women at the beginning of the working life, suggesting that this group is more heterogeneous. Considering the end of the working life, the variance is higher for childless women in WG, but lower in EG. Considering mothers in both parts of Germany, the curve for EG mothers is above the one of WG mothers at all ages (Figure 4.10c);this might reflect an uncertain labour market situation

Fig. 4.9 Estimated Average Age-Job Satisfaction Trajectories with 95% Point-wise Confidence Intervals

(a) Eastern Germany




(b) Western Germany




*Notes*: fitted values from linear growth models with cubic terms of age and interactions with parental status dummy (equation (1)). The shaded areas are the 95% confidence intervals. Job satisfaction - vertical axis - is measured on a scale from 0 to 10.

that affected EG women.

Lastly, in Table 4.3 in Appendix B I report the estimates for variances and covariances. For both EG and WG, the variance of the random intercept is large and statistically significant (4.68 for WG and 5.51 for EG). Again, this is indication that, at the beginning of the working life, there is large variation in starting levels of job satisfaction. The covariance between random slope and random intercept is negative and statistically significant. This was expected, because individuals who start with a lower level of job satisfaction tend to have a higher growth in job satisfaction due to revisiting expectations. The variance of the random slope is also statistically significant and positive, although the size is extremely small for both WG and EG (0.006 for WG and 0.007 for EG). This suggests that the rate of growth of job satisfaction over the life course is heterogeneous, although differences are modest in magnitude.

## 4.6 Sensitivity Analysis

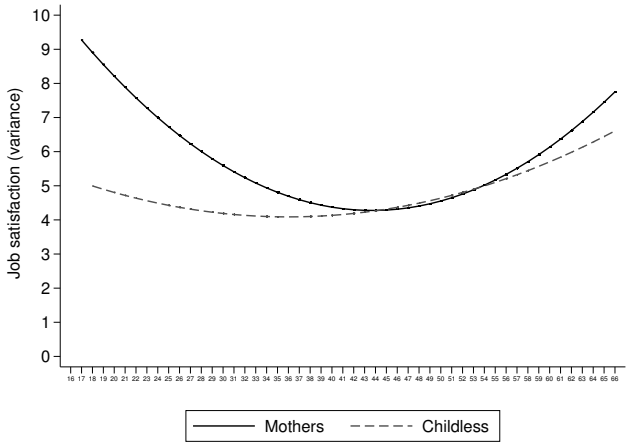
### 4.6.1 Births after 1990

To check the robustness of the results to worries that employment attitudes are endogenous because they are measured after the birth of the first child, I run the models on a sub-sample made up of all childless women and women who have their first child after 1990 (the first wave in which employment attitudes are recorded). By doing so, the analysis sample reduces significantly in size. After conditioning for covariates availability, I have a sample of 12,349 person-years for WG (761 women), and 2,699 for EG (194 women). Moreover, given that only women giving birth from 1990 onwards are considered, the average age of the sample is lower, making it difficult to extrapolate the results to older ages. For this reason, for this sub-sample I only produce graphs up to age 50, instead of 66. The graphs of predicted

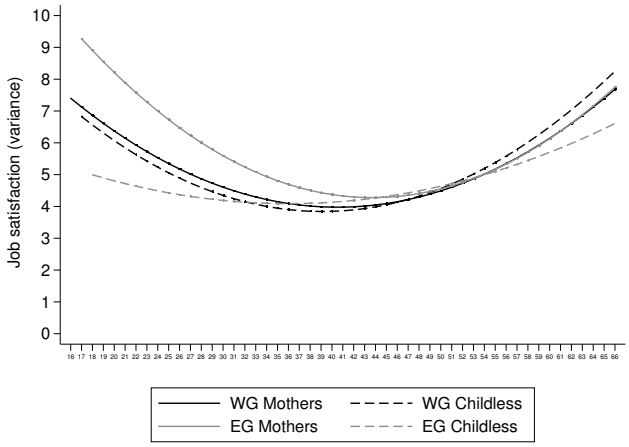
Fig. 4.10 Estimated Variance of Job satisfaction Scores by Parental Status

(a) Western Germany


(b) Eastern Germany




(c) EG and WG Compared




*Notes*: plot of estimated variance from linear growth models with cubic terms of age and interactions with parental status dummy, age at first job, whether born in Germany, work attitudes variables, occupation in first job, education. The variances are computed applying equation (3).

job satisfaction scores are in Figure 4.11. The results are qualitatively unchanged, with little difference between childless women and mothers in WG and childless women being significantly less satisfied than mothers in EG.

### 4.6.2 The Role of Endogenous Selection into Employment

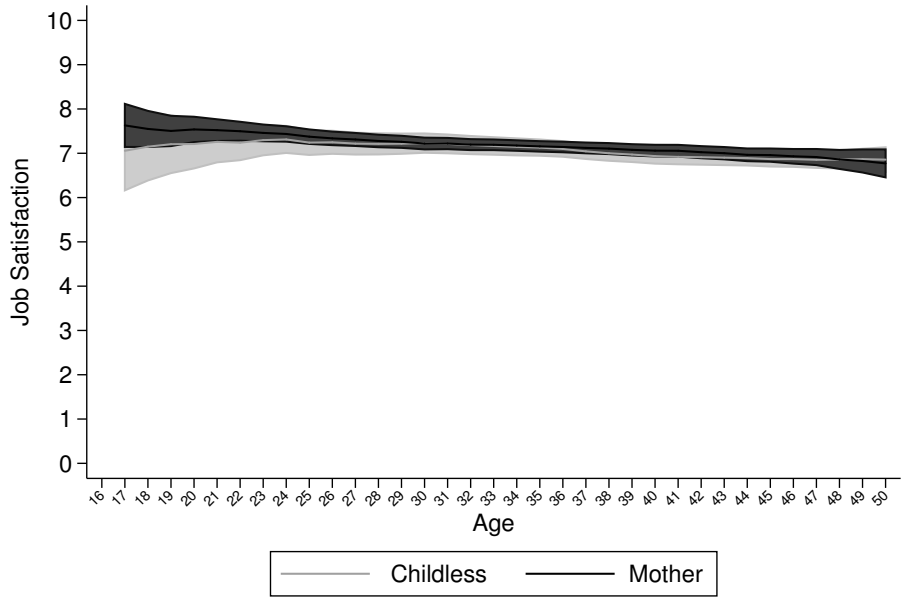
In this section I discuss whether applying selection correction estimators changes the results from the previous section. In section 4.3.2 I explained that because employment participation is non-random and childless women and mothers differ substantially in terms of their work histories, the estimation of equation (4.1) without correction for endogenous sample selection may lead to an inconsistent estimation of the relationship between motherhood and job satisfaction.

In the rest of the analysis I do not use linear growth models. The reason is that sample selection estimators for hierarchical models are not yet well defined. It is beyond the scope of this chapter to develop such estimators. The goal of this section is to assess the existence of endogeneity bias, and this can be done with more simple models that do not involve random coefficients. However, this implies that the size of the coefficients between the models in section 4.5 and this section cannot be directly compared. Second, for ease of exposition, now I consider a quadratic model for age, rather than a cubic one.

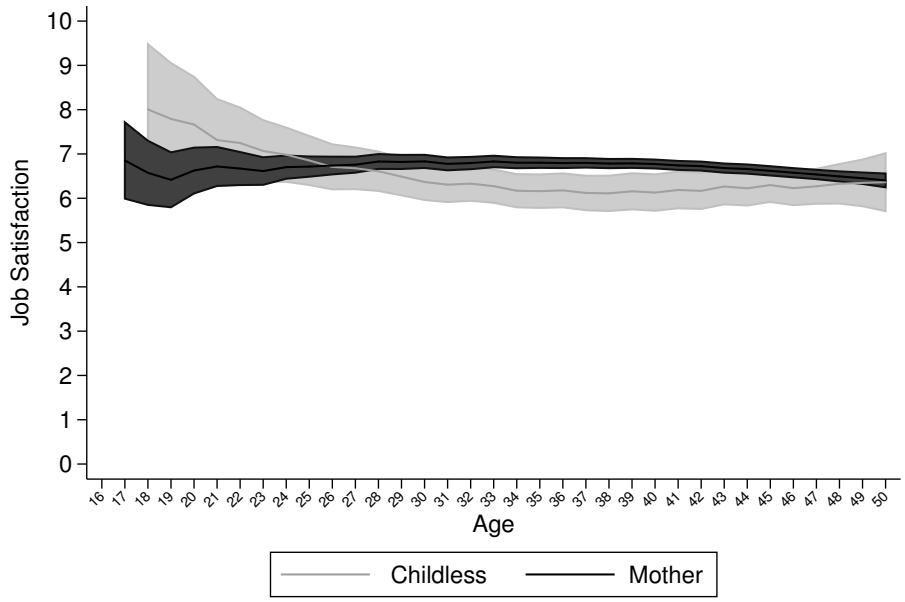
The results are reported in Section 4.8.3 Appendix A. For WG there is not strong evidence that endogenous selectivity is an issue until age 45, but there is some evidence for this afterwards. There is some weak evidence that endogenous selectivity is an issue among EG across the entire life course. When there is evidence of endogenous selection (the coefficient of the Inverse Mills ratio is significant) the sign is negative, suggesting that the determinants of non-participation in employment are also the factors determining low job satisfaction.

Fig. 4.11 Estimated Average Age-Job Satisfaction Trajectories for Mothers Giving Birth after 1990 and Childless Women with 95% Point-wise Confidence Intervals

(a) Western Germany




(b) Eastern Germany




*Notes*: fitted values from linear growth models with cubic terms of age and interactions with parental status dummy (equation (1)). The shaded areas are 95% confidence intervals. Job satisfaction - vertical axis - is measured on a scale from 0 to 10.

Thus, a simple regression would overestimate the relationship between age and job satisfaction, suggesting that at each age the differences in job satisfaction between mothers and childless women estimated in the linear growth models are larger than in reality. This is expected because it is a well-known fact that individuals with low job satisfaction tend to quit employment.

Another expected finding is that endogenous sample selection bias is stronger in WG than in EG. Due to the lower participation rate of WG women and the more conservative gender attitudes, one might expect that the group of women in employment be at each point in time more selective. Especially around childbearing age, one would expect that only a small share of women with particularly high work attachment would remain at work. Although higher propensity to be in paid employment is associated with higher job satisfaction scores, there is no evidence that endogenous selection into employment completely explains the relationship between job satisfaction and parental status. In other words, even taking into account that childless women are more likely to be in employment at each age and the relationship between propensity of being in employment and job satisfaction, the associations estimated in section 4.5.1 remain valid.

## 4.7 Discussion and Conclusions

The main results of this chapter can be summarised as follows. Motherhood does not matter *per se* for levels and trajectories of job satisfaction. If this were true then I would have expected to find a similar shape of age-job satisfaction trajectories in EG and WG, with mothers being less satisfied than childless women. However, motherhood does matter in interaction with employment opportunities. This is evident in the motherhood job satisfaction gap in EG. While mothers were able to deal with the shortage of employment opportunities by becoming inactive or taking up non-career jobs, childless women could not develop

professionally as they would have been able to do under the GDR. Job satisfaction levels of EG mothers might not have been negatively affected because there were relatively more job opportunities for women seeking part-time jobs or marginal employment.

Because one of the hypotheses of this chapter was that motherhood would be associated with a decrease in job satisfaction, finding no difference in job satisfaction trajectories in WG and finding that childless women are more satisfied than mothers in EG, is essentially a negative finding. One possible explanation for EG is the labour market conditions experienced by women in the time frame considered. I will elaborate more on this in the remainder of the section. For WG, the lack of a negative association between motherhood and job satisfaction may be because although motherhood makes life balance more difficult, children compensate this effect because they enhance mothers' well-being (Carlson et al. 2006, Greenhaus and Powell 2006, Nelson et al. 2014). However, I am unable to test this mechanism directly.

Although motherhood does not correlate with levels of job satisfaction, it does imply more variation in job satisfaction scores at the beginning of the working life (before 40). This may be because the group of mothers and their work experiences are more heterogeneous. This heterogeneity is confirmed in the descriptive analysis of this chapter where I showed that for instance in WG while nearly 80% of childless women started their employment in a professional job, mothers' occupations tend to be more heterogeneous, with a higher percentage in the public sector and also in non-professional jobs. More mothers than childless women end up in jobs with low (or very high) work satisfaction when they are younger than 40. This can be partly explained by a large variation across sectors and employers in terms of work-family balance policies (e.g. Peus 2005, Brenke 2016). In particular, there is still lack of awareness about work-life issues, which are not perceived as important by employers (Stolz 2010). Implementation is patchy because smaller firms – which are prevalent in

Germany – do not believe they have enough resources to set up structures to help employers combine work and care, but larger firms have implemented successful practices (e.g. Peus 2005). Moreover, the scarcity of childcare facilities (public and private) implies that children have to be taken care of mostly in the house. The years before a woman turns 40 are therefore the years when women have the most desire for flexibility. The fact that work-family policies and regulations are still patchy explains why there is large variation in job satisfaction at this time.

While socialisation determines expectations towards employment, and the wish to work, the labour market and policy environments determine whether these expectations can be met. In cases where women desire to be in gainful employment but are faced with high levels of unemployment and obstruction, they are likely to be very dissatisfied with their jobs. This theoretical prediction is confirmed in the data by the large and persisting difference in job satisfaction scores between EG and WG women.

This chapter also reveals that there is a strong link between policies and well-being with long-standing consequences. Upon reunification the German authorities imposed on the EG population a set of policies that were based on a gender model different from the prevalent one. The discrepancy between the incentives created by policies based on a traditional gender model and the prevalent wish of women to be in gainful employment depressed levels of job satisfaction, especially among childless women. The striking result is that these consequences are still visible now, 30 years after the unification has taken place.

Lastly, I found evidence that not controlling for the change in propensity of being in employment at each age, leads to overestimating the relationship between age, parenthood and job satisfaction. However, the severity of endogenous selection bias is not big enough to

qualitatively change any of the estimated associations. Thus, when the propensity is taken into account the differences in job satisfaction between mothers and childless women is smaller, although still significant. The role of endogenous selection into employment is such that women with low job satisfaction have lower likelihood to be in employment at each age. I also found that although in WG the role of endogenous selection is more severe towards the end of the life course, in EG it is not strongly associated with age, suggesting that for this group private life events may not be a major factor in determining the composition of the sample of employed women. Rather, the strong propensity of dissatisfied women to leave the labour market is consistent with the loss of jobs for women in the time frame considered. Lumley (1995) estimates that about 600,000 mothers left the labour market because of the lack of appropriate childcare facilities to support the combination of work and family. Beyer (1992) reports that about 55% of the officially unemployed in EG were women. Thus, women were pushed out of employment by the lack of suitable jobs.

This chapter has numerous data-related limitations. Job satisfaction is a categorical ordered variable, while I have modelled it as a continuous construct. Although numerous literature (Ferrer-i Carbonell and Frijters 2004, Van Praag and Ferrer-i Carbonell 2008b) supports this approach, one should be cautious in interpreting concepts as the mean and variance of job satisfaction.

The differences in job satisfaction between EG and WG are large and long-standing. Although I have interpreted these differences in terms of the different objective conditions of women from the two regions, another hypothesis is that women in EG and WG interpret and express job satisfaction in different ways. This argument has further validity in light of cross-section studies showing that different societies have different set points in subjective well-being, and indeed former communist countries tend to report lower levels of well-being

(e.g. Diener et al. 1995, Veenhoven 2012).

Lastly, the method applied in this chapter to model endogenous selection into employment allows for selection on unobservables. However, it relies on full parametrisation of the selection process and if the selection equation is misspecified the method may have limited power in detecting bias. Nevertheless, thanks to the richness of SOEP data I have been able to model the participation of women using their employment history and attitudinal values. In particular, being able to model employment participation conditional on employment history is crucial to satisfy the assumptions of the model because the unobserved determinants of employment at each point in time are correlated.

In spite of the data-related limitations, the chapter contributes to the literature of job satisfaction by highlighting that biographical events *per se* do not have long-lasting consequences on job satisfaction, but the lack of suitable employment opportunities associated with the needs arising by one's demographic condition will have long-lasting consequences. Future studies may be interested in investigating if this prediction is true for other life events. This chapter has also highlighted that the role of socialisation is crucial in understanding workers' expectations and their job satisfaction, in conjunction with the employment opportunity structure. Future studies may be interested in assessing whether there are similar findings for other countries that underwent policy changes that were not in line with prevalent social attitudes. Lastly, the findings of this chapter bring attention to the long-lasting consequences on well-being of the German reunification. Given that convergence in well-being has not been achieved, it is recommended that scholars keep monitoring the development of the Eastern *ländern* so that policies can be targeted to this part of Germany.

# 4.8 Appendix A

In this section I describe a procedure to correct for endogenous sample selection bias when panel data are available. The discussion draws on Wooldridge (2010) and Semykina and Wooldridge (2010).

## 4.8.1 Model

I am interested in estimating the following equation

$$y_{it} = x_{it1}\beta + c_{i1} + u_{it1} \qquad t = 1, ..., T \qquad \text{(A1 Primary equation)}$$

where $x_{it1}$ is a vector of explanatory variables, $c_{i1}$ are the unobserved individual effects, and $u_{it1}$ is the idiosyncratic error. The primary equation is only observed when $s_{it} = 1$, where $s_{it}$ is defined as

$$s_{it} = 1[x_{it}\delta + c_{i2} + u_{it2}] \qquad t = 1, ..., T \qquad \text{(A2 Selection equation)}$$

where $1[\cdot]$ is the indicator function, $x_{it}$ is the set of all exogenous variables at time $t$, $c_{i2}$ are the individual fixed effects and $u_{it2}$ is the idiosyncratic error. It should be noted that $x_{it1}$ from the primary equation is a subset of $x_{it}$ from the selection equation.

I suspect that a simple OLS estimation of the primary equation will lead to a biased estimate of $\beta$ because there are reasons to believe that $corr(u_{it1}, u_{it2}) \neq 0$. This situation describes the problem of endogenous sample selection bias, which also affects the analysis in this chapter. The primary equation identifies a regression of job satisfaction on age, parenthood and other control variables. The selection equation identifies the likelihood that a woman is in employment. The unobservable determinants of job satisfaction are likely to be

also the determinants of being in employment, as I have explained in the chapter.

The method proposed by Wooldridge (2010) and Semykina and Wooldridge (2010) consists in modelling parameters $c_{i1}$ and $c_{i2}$ making use of the Chamberlain result. The intuition behind the Chamberlain result is that it is possible to decompose any unobserved time constant parameter between a portion that is correlated with the average of the observed factors and the random variation around this average. Following the Chamberlain result I model the individual factors in the selection equation $c_{i2}$ as

$$c_{i2} = \bar{x}_i \xi + a_{i2} \tag{A3}$$

where $a_{i2}|x_i \sim N(0, \sigma_a^2), t = 1, ..., T$ and $\bar{x}_i \equiv T^{-1} \sum_{t=1}^{T} x_{it}$. The interpretation is that $c_{i2}$ is related to $x_i$ only through the time averages of the variables $x_{it}$, and the remainder $a_{i2}$ is independent of $x_i$. The Chamberlain result allows me to rewrite the selection equation as

$$s_{it} = 1[x_{it}\delta + \bar{x}_i \xi_t + v_{it2}] \tag{A4}$$

where $v_{it2}|x_i \sim N(0, 1 + \sigma_a^2), t = 1, ..., T$ and $v_{it2} = a_{i2} + u_{it2}$. Equation A4 is the Chamberlain version of the selection equation.

Similarly, turning to the primary equation, I impose that the expected value of the individual fixed effects from the primary equation ($c_{i1}$) is a linear function of $x_i$ and $v_{it2}$ and apply the law of iterated expectations to derive a reduced form.

$$E(c_{i1}|x_i) = E(E(c_{i1}|x_i, v_{it2})|x_i) = E(x_i\pi + \phi_{t1} v_{it2}|x_i) = x_i\pi + E(v_{it2}|x_i) = x_i\pi \equiv \bar{x}_i\pi \tag{A5}$$

Lastly, it is necessary to make an assumption on the correlation between the unobservables of the primary and selection equations $u_{it1}$ and $v_{it2}$. This is a standard assumption that follows from the joint normality of ($u_{it1}$, $v_{it2}$) when the vector is independent of $x_i$.

$$E(u_{it1}|x_i, c_{i1}, v_{it2}) = E(u_{it1}|v_{it2}) = \rho_t v_{it2} \tag{A6}$$

Given these assumptions I can rewrite the primary equation as

$$E(y_{it}|x_i, v_{it2}) = x_{it}\beta + \bar{x}_i\pi + \rho_t v_{it2} \tag{A7}$$

Conditioning for the selection equation this becomes

$$E(y_{it}|x_i, v_{it2}, s_{it} = 1) = x_{it}\beta + \bar{x}_i\pi + \rho_t E(v_{it2}|x_i, s_{it} = 1) \tag{A8}$$

where the term $E(v_{it2}|x_i, s_{it} = 1)$ can be computed from the probit calculation of A4 as $\lambda(x_{it}\delta_t^a + \bar{x}_i\xi_t^a)$, where $\delta_t^a \equiv \frac{\delta_t}{\sqrt{1+\sigma_a^2}}, \xi_t^a \equiv \frac{\xi_t}{\sqrt{1+\sigma_a^2}}$, and $\lambda(\cdot)$ denotes the inverse Mills ratio. Equation A8 allows for a consistent estimation of $\beta$.

### 4.8.2 Empirical Implementation

In practical terms the procedure suggested implies the following steps. I estimate $T$ probit equations (one for each age) by Correlated Random Effects (CRE), including each time dependent variable and its time average (equation A4). I run 46 regressions for the WG sample (age 20 to 66) and 43 for the EG one (age 23 to 66). The dependent variable is the indicator for whether the woman is in paid employment at age $t$. The predicting variables are: whether the woman lives with a child at that point in time, whether married, education, work attitudes (importance of earnings, importance of job success), dummy variables for

whether she was employed at age $t-1$ and $t-2$. I also include the individual time averages of the time varying variables. A special case are the lagged employment indicators. A simple individual-level average of lagged employment over all time periods cannot be used because it would lead to using current and future employment as an instrument for current employment. For this reason, I only include the average of past values of lagged employment at each age. For instance, for the selection equation at age 35, I only include the individual-level average of the employment lags between age 18 and 34 (for employment at time $t-1$). It is important to note that the availability of the employment history is crucial in order to be able to predict the woman's employment status. This is because they are a proxy of the unobservable determinants of labour supply. The use of lagged variables reduced the sample size because I am unable to estimate results for the first two time periods a woman is in the sample.

Second, I compute the inverse Mills ratio from all the probit regressions. The inverse Mills ratio is defined as

$$\hat{\lambda} = \frac{\phi(s_{it})}{\Phi(s_{it})} \tag{A9}$$

where $\phi(\cdot)$ is the standard normal density function, and $\Phi(\cdot)$ is the standard normal cumulative distribution function. I create a time variant variable with the IMRs computed from the cross-sectional estimations of the selection equations.

Third, I estimate a pooled OLS regression with time varying covariates, their individual-level time averages and the interactions of the IMRs with each age, making sure to correct the variance for general heteroskedasticity and for the first stage estimation. This can be done applying a panel bootstrap, where the re-sampling is done using the cross-section units. The sign of the coefficient for $\hat{\lambda}$ can be interpreted in the following way: a negative coefficient indicates that factors that make participation more likely tend to be associated with lower

levels of job satisfaction. In other words, if the coefficient is negative and significant then the estimation of the primary equation without sample correction overestimates the relationship between age and job satisfaction.

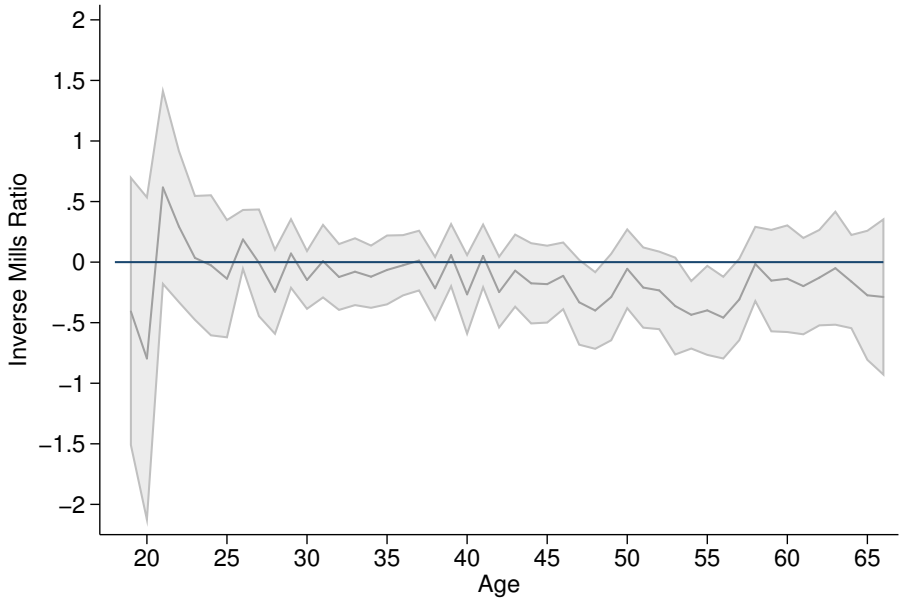
### 4.8.3 Estimation

The first evidence of selection is given by the sign and significance of the coefficient for the IMRs when estimating the primary equation. In Figure 4.12 I have plotted the inverse Mills ratios for EG and WG. The horizontal axis corresponds to age. For the WG sample I find that the IMRs become statistically significant and negative after age 45. For EG I find there are statistically significant and negative IMRs across the life course, especially in the late 20, early 40s and after age 50.

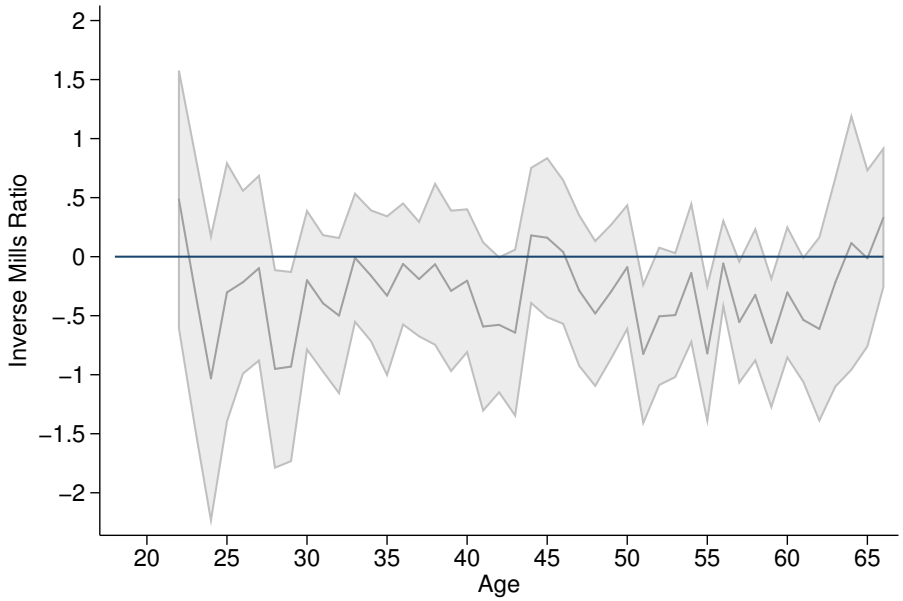
A second approach is to compare age-job satisfaction trajectories with and without controls for sample selection in order to assess whether the existence of selection bias is strong enough to modify the trajectories. In Figures 4.13 and 4.14 I report the plots of age-job satisfaction trajectories differencing between EG and WG and whether they are from a regression with or without controlling for selection. For WG I have already found in section 4.5 that there are minimum differences between mothers and childless women; when controlling for endogenous sample selection these differences become even smaller. For EG differences in job satisfaction between mothers and childless women remain even when controlling for endogenous selection, however they become smaller.

Fig. 4.12 Estimated Inverse Mills Ratios from a Set of Cross-Sectional Probit Regressions

(a) Western Germany



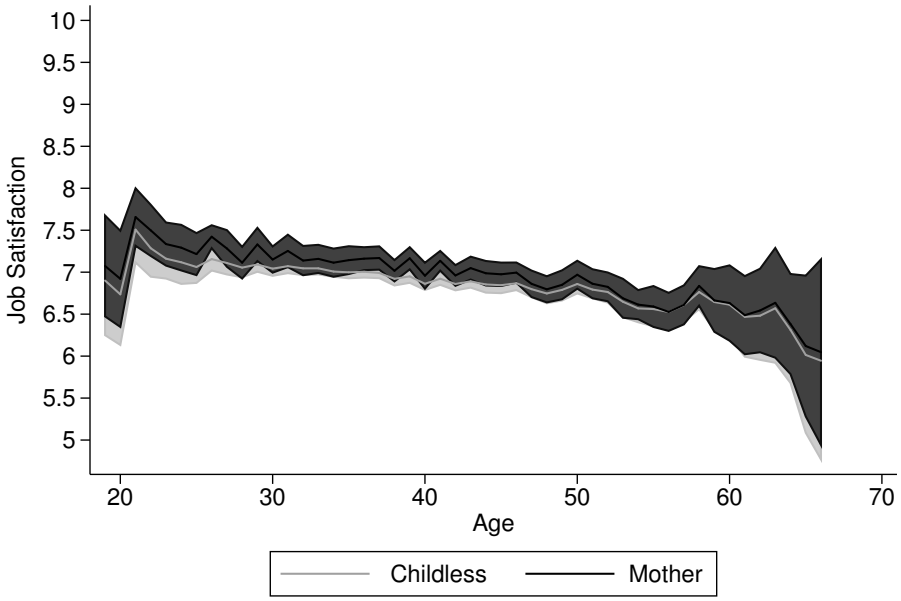

(b) Eastern Germany



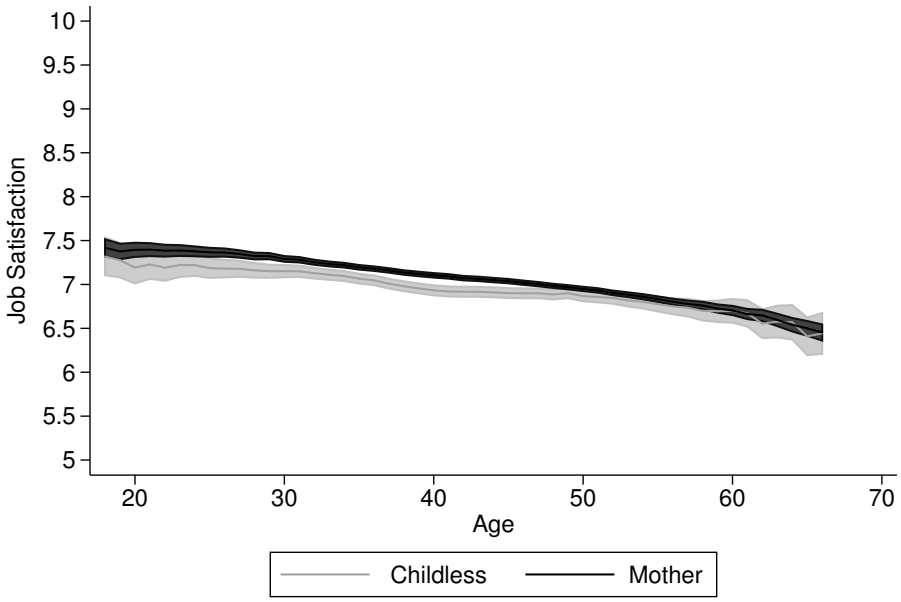

*Notes*: plot of the coefficients of the Inverse Mills Ratio from a pooled OLS equation estimated applying Wooldridge (2010)'s estimator. The model is a job satisfaction equation with age, parental status dummy, interaction between age and parental status, age at first job, whether born in Germany, work attitudes variables, occupation in first job, education, IMR and interaction between IMR and age. The model also contains individual averages for time varying covariates. The formula for Inverse Mills Ratio and full model specification are in Appendix A Section 4.8.2.

Fig. 4.13 Estimated Age-Job Satisfaction Trajectories with Sample Selection correction - Western Germany

(a) WG - Sample Selection Correction



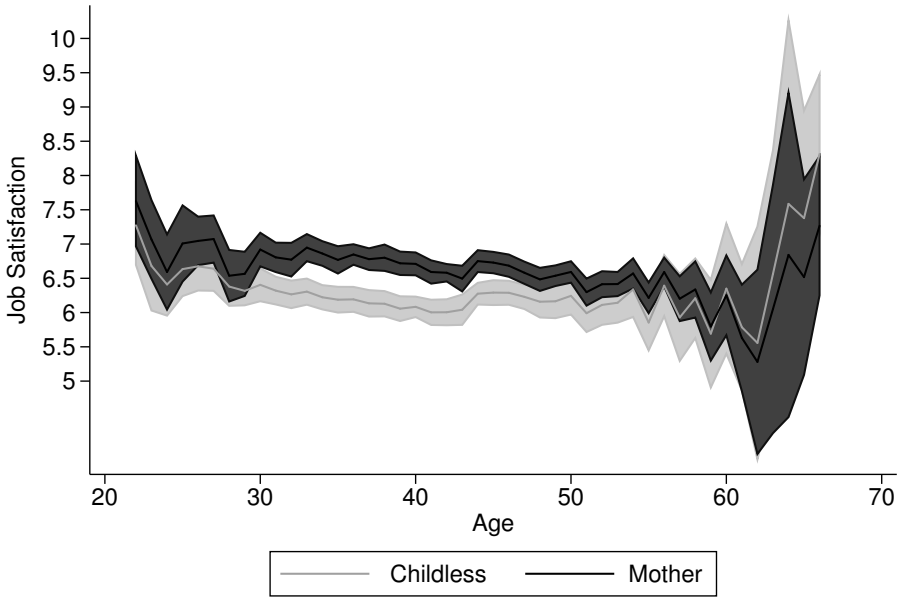

(b) WG - No Sample Selection Correction



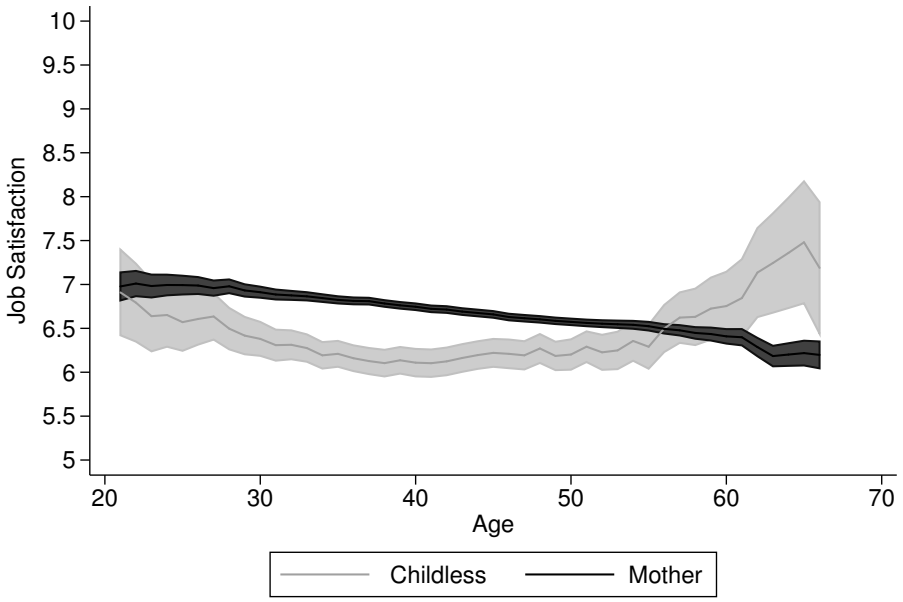

*Notes*: plot of fitted values for job satisfaction from a pooled OLS equation estimated applying Wooldridge (2010)'s estimator. The model for panel (a) is a job satisfaction equation with age, parental status dummy, interaction between age and parental status, age at first job, whether born in Germany, work attitudes variables, occupation in first job, education, IMR and interaction between IMR and age. The model for panel figures (b) excludes the IMR and its interaction terms. The model also contains individual averages for time varying covariates. The full model specification is in Appendix A Section 4.8.2.

Fig. 4.14 Estimated Age-Job Satisfaction Trajectories with Sample Selection Correction - Eastern Germany

(a) EG - Sample Selection Correction




(b) EG - No Sample Selection Correction




*Notes*: plot of fitted values for job satisfaction from a pooled OLS equation estimated applying Wooldridge (2010)'s estimator. The model for panel (a) is a job satisfaction equation with age, parental status dummy, interaction between age and parental status, age at first job, whether born in Germany, work attitudes variables, occupation in first job, education, IMR and interaction between IMR and age. The model for panel (b) excludes the IMR and its interaction terms. The model also contains individual averages for time varying covariates. The full model specification is in Appendix A.

## 4.9 Appendix B

Table 4.3 Linear Growth Model Estimation of Job Satisfaction

| | WG $\frac{\beta}{\sigma}$ | EG $\frac{\beta}{\sigma}$ |
|---|---|---|
| Age | 0.056 | -0.187* |
| | (0.096) | (0.105) |
| $Age^2$ | -0.004 | 0.006 |
| | (0.004) | (0.005) |
| $Age^3$ | 0.005 | -0.006 |
| | (0.006) | (0.007) |
| Mother | -0.759 | -2.090** |
| | (1.112) | (0.840) |
| Age X Mother | 0.002 | 0.304*** |
| | (0.099) | (0.114) |
| $Age^2$ X Mother | 0.003 | -0.010** |
| | (0.004) | (0.005) |
| $Age^3$ X Mother | -0.008 | 0.01 |
| | (0.006) | (0.007) |
| Age At First Job | -0.003 | -0.011 |
| | (0.016) | (0.020) |
| Born In Germany | 0.32 | 0.238 |
| | (0.200) | (0.360) |
| Medium Education | -0.061 | 0.082 |
| | (0.166) | (0.135) |
| High Education | 0.411 | 0.316** |
| | (0.254) | (0.147) |
| Self Employed | 0.384 | 0.311 |
| | (0.708) | (0.261) |
| White Collar | 0.421** | 0.122 |
| | (0.201) | (0.091) |
| Civil Servant | 0.514* | 0.752 |
| | (0.287) | (0.506) |
| Job Success | | |
| Important | -0.139 | -0.12 |
| | (0.265) | (0.089) |
| Less Important | -0.116 | -0.454*** |
| | (0.297) | (0.147) |
| Unimportant | -0.185 | -0.781* |
| | (0.492) | (0.428) |
| Earnings | | |

| | | |
|---|---|---|
| Important | -0.121 | 0.247*** |
| | (0.155) | (0.087) |
| Less Important | 0.079 | 0.259 |
| | (0.258) | (0.226) |
| Unimportant | -1.341 | -2.526*** |
| | (1.063) | (0.409) |
| Year Fixed Effects | | |
| 1985 | -0.115 | |
| | (0.089) | |
| 1986 | -0.256** | |
| | (0.100) | |
| 1987 | -0.386*** | |
| | (0.112) | |
| 1988 | -0.529*** | |
| | (0.127) | |
| 1989 | -0.656*** | |
| | (0.138) | |
| 1990 | -0.640*** | |
| | (0.152) | |
| 1991 | -0.748*** | -0.973*** |
| | (0.167) | (0.105) |
| 1992 | -0.544*** | -0.578*** |
| | (0.178) | (0.092) |
| 1993 | -0.851*** | -0.542*** |
| | (0.194) | (0.096) |
| 1994 | -1.050*** | -0.689*** |
| | (0.208) | (0.096) |
| 1995 | -1.104*** | -0.787*** |
| | (0.220) | (0.103) |
| 1996 | -0.954*** | -0.762*** |
| | (0.232) | (0.103) |
| 1997 | -1.216*** | -0.763*** |
| | (0.246) | (0.100) |
| 1998 | -1.202*** | -0.708*** |
| | (0.254) | (0.103) |
| 1999 | -1.236*** | -0.701*** |
| | (0.267) | (0.101) |
| 2000 | -1.145*** | -0.675*** |
| | (0.271) | (0.104) |
| 2001 | -1.139*** | -0.723*** |
| | (0.279) | (0.108) |
| 2002 | -1.227*** | -0.859*** |
| | (0.293) | (0.113) |

| | | |
|---|---|---|
| 2003 | -1.236*** | -0.820*** |
| | (0.296) | (0.114) |
| 2004 | -1.286*** | -0.920*** |
| | (0.306) | (0.118) |
| 2005 | -1.342*** | -1.009*** |
| | (0.308) | (0.121) |
| 2006 | -1.234*** | -0.987*** |
| | (0.320) | (0.121) |
| 2007 | -1.466*** | -1.035*** |
| | (0.323) | (0.132) |
| 2008 | -1.214*** | -0.947*** |
| | (0.323) | (0.130) |
| 2009 | -1.463*** | -0.854*** |
| | (0.340) | (0.133) |
| 2010 | -1.232*** | -1.029*** |
| | (0.331) | (0.144) |
| 2011 | -1.289*** | -0.769*** |
| | (0.334) | (0.144) |
| 2012 | -1.261*** | -0.746*** |
| | (0.339) | (0.142) |
| 2013 | -1.191*** | -0.632*** |
| | (0.344) | (0.151) |
| Intercept | 7.741*** | 8.429*** |
| | (1.018) | (0.952) |
| Variance (Age) | 0.006 | 0.007 |
| | (0.000) | (0.001) |
| Variance (Intercept) | 4.68 | 5.51 |
| | (0.371) | (0.560) |
| Covariance (Age, Intercept) | -0.14 | -0.17 |
| | (0.011) | (0.018) |
| Variance (Residuals) | 2.61 | 3.156 |
| | (0.050) | (0.080) |

# Chapter 5

# The Relationship Between Parental Leave Duration and Job Satisfaction of Mothers: Evidence from a Quasi-Experiment in Germany

## 5.1 Introduction

Improvement of work-family balance is a common aim of family policies (Esping-Andersen 2009, Blum 2010). A key element thought to improve work-family balance is the length of maternal leave that mothers are allowed to take: it is assumed that a longer paid and job-protected leave gives mothers a realistic choice between work and caring, because by compensating them for the opportunity cost of childbearing, it allows them to choose the optimal time of return to work. Empirical literature on female labour supply has shown that expansions of leave (paid or unpaid) delay return to paid employment, lending validity to this assumption (e.g. Schönberg and Ludsteck 2007, Lalive and Zweimüller 2009, Kluve and

Tamm 2013).

Previous research has shown that longer leave duration is associated with higher life satisfaction, reduction in depressive symptoms and improvements in overall health of mothers. Although availability of maternal leave rights increases labour supply of women, longer leave duration significantly reduces return to work. Additionally extended maternal leave duration reduces wages of mothers, especially in the short term, while it is associated with mothers working longer weekly hours (for a review of the literature with focus on the context of this chapter see Table 5.7 in Appendix B). Unlike other studies that are concerned with leave expansions, I consider the effects of a reduction in maternal leave. A reduction in maternal leave duration creates incentives for mothers to return to the labour market quickly but its effect on maternal well-being may depend on many external factors. A shorter maternal leave, for instance, may impact on maternal well-being depending on the availability of formal or informal childcare, or reduced and flexible working schedules. Duration of maternal leave is associated with numerous well-being and labour market outcomes of mothers. In this chapter, I analyse the effect of a reduction in maternal leave on job satisfaction.

Two observations motivate this chapter. Job satisfaction is commonly used as an outcome in assessing family-balance policies, and it is an established finding that these policies have a positive effect on job satisfaction (e.g. Butts et al. 2013). However, there is no empirical evidence on the relationship between maternal leave duration and job satisfaction. This is regrettable because government interventions in maternal leave policy are justified on the grounds of improving the combination of work and family for women. Thus, empirical evidence on the association between job satisfaction and maternal leave duration may confirm whether duration of maternal leave does correlate with work-life balance, as is assumed by

policy makers (e.g. Galtry and Callister 2005).

The second motivation is that previous studies have extensively documented "hard" labour market outcomes of changes in maternal leave duration, but little attention has been paid to "soft" outcomes. Quantitative outcomes on effects of maternal leave expansions include decrease in wages, depreciation of human capital and skills, delay in return to paid work and higher likelihood of withdrawing from the labour market (e.g. Adda et al. 2016). However, we do not know how mothers have interpreted these changes and what impact they have had on subjective levels of well-being. The combination of hard and soft outcomes provides a better description of the experience of motherhood.

Estimating the causal effects of parental leave duration on job satisfaction is prone to reverse causality problems because mothers decide on the length of leave based on observable and unobservable characteristics. Duration of maternity leave is in large part a matter of personal attitudes and orientation towards family and work, which are a large component of job satisfaction as well. Thus, in an observational study it is difficult to tease out the direction of causality: work-oriented women might be more satisfied with their jobs, and at the same time opt for shorter breaks from work. To establish a robust association, it is ideal to consider an exogenous variation in maternity leave, which is not correlated with the determinants of job satisfaction.

To assess the effect of a reduction in maternal leave length on job satisfaction I exploit the 2007 parental leave reform that took place in Germany. Before 2007 a means-tested benefits system with flat monthly monetary benefits was in place with a maximum benefits duration of 24 months. Estimates of the share of women who were eligible for this benefit range between 50% and 75%: virtually all eligible mothers applied for and received the benefits. Among

them, the great majority (90%) of mothers received the benefits for the maximum duration of 24 months. In 2007, the grand coalition government of CDU/CSU and SPD in Germany introduced a universal system of parental leave regulation (*Elterngeld*) (see Blum 2010 for a description of the policy process). The new benefit involved an income replacement of 67% of the mother's net income the preceding calendar year with a minimum payment of € 300 and capped at € 1,800 per month and a maximum benefits duration of 12 months. Unlike the pre-2007 system, all mothers became eligible for parental leave benefits under *Elterngeld*. Therefore, for mothers who were eligible for the pre-2007 benefits, *Elterngeld* constituted a reduction of benefits duration of 12 months.

In this chapter I focus on this subpopulation only, because it is only for this group that a counterfactual can be identified. [1] *Elterngeld* was introduced within a short timeframe and women who gave birth in the first months of 2007 would not have known that there would be a change in benefits when they conceived their children. This fact creates an exogenous variation in maternity leave duration. Thus, the treatment group is all women who gave birth after January 1st 2007, and their counterfactual is estimated from women who gave birth before and including December 31st 2006. The identifying assumption is that these women are identical in all observable and unobservable ways, apart from the different timing of birth. I apply a two-sample-two-stage-least-square estimator using data from SOEP and Panel Analysis of Intimate Relationships and Family Dynamics. This tool allows me to estimate a Local Average Treatment Effect of each one-month reduction in maternity leave on job satisfaction for the subpopulation of compliers.

The analytical strategy has some implications for the generalisation of the findings. The German government justified the reform with the aim of making the combination of work and

[1] The implication is that high-income mothers are not the focus of this analysis and results should not be generalised to this group.

childbearing easier for women, with an explicit target to highly-qualified, well-off mothers (Blum 2010). In other words, the biggest policy change was extending maternity leave benefits to high-income women who would not have passed the means test in the pre-2007 system. The generosity for this group of mothers was strongly increased. However, the focus of this chapter is mothers for whom the reform implied a reduction in length of paid leave, although the variation in overall generosity of benefit is ambiguous. [2] While the choice of the sample is justified by the research design, the empirical analysis can be considered an assessment of the change in policy focus away from targeting low income families. The reform may achieve its objectives in terms of increasing female labour supply (e.g. Spieß and Wrohlich 2008, Kluve and Tamm 2013), but it is unclear whether the well-being of mothers who were not the target of the new policy has suffered relative to the pre-2007 system.

I analyse EG and WG separately, two settings with different public childcare facilities, employment opportunities for mothers and varying attitudes regarding women's employment (e.g. Hanel and Riphahn 2012, Kluve and Tamm 2013). Public childcare is much more widely available in EG, because of the legacy of the socialist regime. The level of economic development is more advanced in WG than in EG and the restructuring of the labour market after the German reunification reduced employment opportunities for women in EG which lasts until today (e.g. Schaeper and Falk 2003, Hanel and Riphahn 2012). In spite of this, EG women maintain a strong orientation towards the combination of work and family (e.g. Dawn Metcalfe et al. 2005). Childcare availability, employment opportunities for mothers and attitudes towards employment may determine both the timing of return to the labour market for women, and their ability to combine work and family. For all these reasons, I am going to estimate the effect of a reduction in parental leave duration on job satisfaction

[2] Some scholars have argued that mothers can be divided between "ambiguous", "unambiguous losers" and "winners" of the reform ( Kluve and Schmitz 2014).

separately for EG and WG mothers.

The remainder of this chapter is organised as follows. In section 5.2, I describe the 2007 parental leave reform; in section 5.3, I discuss the mechanisms through which the introduction of the reform itself and the variation in leave duration can affect job satisfaction of mothers. In section 5.4 I describe the identification strategy. In section 5.5 I outline the data and measures used in the analysis. In section 5.6 I report the results. Section 5.7 concludes.

## 5.2 The 2007 Parental Leave Reform in Germany

In Table 5.1 I report a schematic summary of the main changes in benefits generosity and duration between the pre-2007 system (*Erziehungsgeld*) and *Elterngeld*. *Elterngeld* modified the incentives to return to the labour market differently for women of different socio-economic groups (Kluve and Tamm (2013) discuss this in detail). The *Elterngeld* reform can be seen as part of a trend of German policy makers to stimulate female labour market participation (one of the lowest among north European countries) and to make childbearing more attractive for mothers with a working career, to cope with low fertility rate. [3] The reform explicitly aimed to increase incentives to re-enter the labour force and to allow women with a working career to combine work and childrearing by compensating them of the opportunity cost of children (Parliament 2006).

The new parental benefit came into effect on January 1st 2007, after a rather quick legislative process. The first discussion on the reform took place in the government in May

[3] Although fathers are entitled to a share of the parental leave and as part of the *Elterngeld* reform they can claim 2 "daddy months" which increase the total amount of leave per household to 14 months, in this chapter I will focus on the part of parental leave that mothers take up. For this reason, I will use interchangeably the terms "maternity" and "parental" leave.

2006, and it was agreed upon by the Parliament in September 2006. The speed at which the reform was implemented means that children born in the first few months of 2007 were already conceived at the time that the reform was ratified and makes it an ideal natural experiment (Kluve and Tamm 2013).

Table 5.1 Differences between *Erziehungsgeld* and *Elterngeld*

| | *Erziehungsgeld*<br>Before December 31, 2006 (included) | | *Elterngeld*<br>After January 1, 2007 (included) |
|---|---|---|---|
| Type of benefits | Flat rate with two options | | Proportion of previous maternal earnings |
| Coverage | Means tested | | Effectively universal |
| Eligibility | Mother is eligible if household yearly net income is lower than € 30,000 if married, and € 23,000 if single | | Mother is eligible if household gross yearly income is lower than € 500,000 if married, and € 250,000 if single |
| Job protected leave | 3 years | | 3 years |
| | Option 1 | Option 2 | |
| Uptake † | 66% | 10% | almost 100% |
| Monthly benefits | € 300 | € 450 | 67% of pre-birth earnings * |
| Duration of benefits | 24 months | 12 months | 12 months |
| Minimum per month | € 300 | € 450 | € 300 |
| Maximum per month | € 300 | € 450 | € 1,800 |

*Notes*: † as a percentage of the total population of women, as estimated by Kluve and Tamm (2013). * of the average of total income during 12 months before birth.

### Changes in Benefits Duration

The *Elterngeld* reform replaced a means tested benefit system with a universal earnings-related maternity benefit system. Although the job-protected unpaid leave period remained unchanged at 3 years after birth of the child, the reform changed the duration of paid leave. In particular, under the new system the maximum period of benefits was reduced from 24 months to 12 months for women who were previously eligible for *Erziehungsgeld* (about 70% of the population of mothers according to some estimates: Kluve and Tamm (2013)) and was increased from 0 months to 12 months for women who were not previously eligible for the means tested benefits.

### Changes in Benefits' Monetary Value

Although it is easy to summarise the net changes in terms of benefits duration, it is more difficult to estimate the net monetary changes for different groups of women due to the introduction of *Elterngeld*. Huber (2015) estimated that the average amount of benefits is higher under the new regulation. However, this aggregate statistic masks large heterogeneity: about 39% of families would receive lower total monetary benefits under *Elterngeld* than under *Erziehungsgeld*, while 8% of families would receive the same total monetary benefits (Huber 2015, p. 38).

The group of women who experienced a reduction in benefits length and a reduction or no variation in monetary benefits were named the "unambiguous losers" of the reform by Kluve and Schmitz (2014). Huber (2015) finds that they are predominantly women from the lower end of the income distribution. Moreover, they are younger, more likely to have a migrant background, to be EG, unmarried, low educated and to be employed on a part-time basis (Huber 2015, p. 10). A second group of mothers received in total higher monetary benefits under *Elterngeld*, but were allowed to claim them for fewer months: for this group there is

an ambiguous effect of the reform. Lastly, the "unambiguous winners" of the reform are mothers that receive the new and generous benefit but would not have received any benefit under the old, means-tested regulation.

**Application for this Chapter**

In this chapter I focus on the "ambiguous" and "unambiguous losers" of the reform: these groups correspond to all women whose household income would make them eligible for *Erziehungsgeld* (less than €32,000). Compared to the situation under *Erziehungsgeld*, these women experienced a reduction in the length of leave under *Elterngeld*. The variation in overall benefits income due to the reform is heterogeneous among this group of women: mothers who had a pre-birth net household income between €20,000 and €30,000 are those with the biggest income gains (up to €10,000 in total); mothers with total pre-birth incomes lower than €20,000 experienced the largest income loss (up to €4,200 in total). [4] However, income gains in this group are modest compared to the "unambiguous winners" who experienced income gains up to over €20,000. Therefore, compared to their pre-2007 situation, the group of mothers I analyse in this chapter experienced a large decrease in the duration of paid parental leave but only a moderate or null variation in overall benefits income. This group makes up the majority of mothers in Germany: Kluve and Tamm (2013) estimate they represent about 70% of all mothers. [5]

## 5.3 Causal Mechanisms

Because the *Elterngeld* reform aimed at giving women a real choice between work and family by compensating for the opportunity cost of having a child, the well-being of working

[4] Huber (2015) reports a useful graph of changes in overall benefit amounts under *Erziehungsgeld* and *Elterngeld* (page 39).

[5] In Appendix D I describe how the estimation sample differs from the population of mothers and from the subgroup of mothers excluded from the analysis.

mothers is a central goal of this policy change.

Job satisfaction is a measure of workplace well-being which takes into account how much one's preferences over work are fulfilled. Viewing job satisfaction from the lens of discrepancy theory, job satisfaction is maximised when there are no mismatches between desired and attained employment characteristics (Chapter 3). The *Elterngeld* reform reduced the maximum duration of paid leave, so that mothers had incentives to return to work sooner. Previous research shows that shorter breaks are associated with feelings of having returned to work too soon, and an increase in desires for shorter work hours and more flexible schedules (e.g. Baxter 2008, Drago et al. 2009). Based on this, job satisfaction would decrease because women would find their employment arrangements did not match their preferences when returning to work. Furthermore, Felfe (2012) using German data shows that shorter breaks are associated with lower likelihood of changing employer, thus less possibility of sorting into family friendly jobs, which would also decrease job satisfaction.

However, Kluve and Schmitz (2014) show that as a consequence of the introduction of *Elterngeld* employers rewarded women by increasing job quality, which includes accommodating the number of hours worked and the flexibility of the schedules. It is therefore likely that job satisfaction increased precisely because mothers' preferences over employment characteristics have been better met. However, it is not clear to what extent this mechanism is valid for the group of mothers in this chapter. Questions of job quality may be less relevant for this group because they have a poorer socio-economic background than the general population on average and may already work in lower quality jobs. For this group, considerations of work-life balance may be more relevant.

A shorter leave implies that women need to find childcare sooner. Although childcare in Germany is inexpensive and publicly provided, there is scarcity of places, especially for the youngest children: in 2006 and 2007 only 18% of children aged 0-3 received any form of formal childcare in Germany (Eurostat 2016). Spieß et al. (2003) showed that lower income German families are the least likely to use day care, suggesting there are barriers to access of day care services for these families (e.g. Van Lancker and Ghysels 2013). A shorter maternity leave may worsen the work-life balance for women if they cannot secure appropriate childcare services. To sum up, all these channels predict that a reduction in maternal leave length reduces job satisfaction for the women analysed in this chapter.

Furthermore, my research design forces me to consider some mechanisms that are not theoretically part of the relationship between duration of maternity leave and job satisfaction, but which might determine variations in job satisfaction for the group of mothers analysed in this chapter. I provide two examples to clarify this idea.

For example, consider Heidi, a woman who falls in the "unambiguous losers" group and has a baby on January 1st 2007. She is aware that the benefit period is now shortened, and that she will experience an income loss as a result of the reform. Consider now Hedwig, a woman who would also fall in the "unambiguous losers" group based on her household income, but she has a baby on December 30th 2006 so that she is subject to the means-tested benefit. When Heidi returns to work 12 months after giving birth she realises that Hedwig is going to receive benefits for an additional 12 months. She may feel unhappy about this and that she should not be made return to work so soon, becoming dissatisfied with her job. Hedwig returns to work 24 months after having a baby; she feels happy that she is back to work and that she did not have to return as quickly as Heidi, and her satisfaction with work may be heightened by this comparison. In other words, Heidi is less happy because

comparing herself to Hedwig she feels like she has lost from the introduction of the new benefits system. This example shows that regardless of the actual variation in leave duration, there can be job satisfaction differences between the treated group and the control group because of peer effects, that are independent of the fact that women spend less time out of the labour market under the *Elterngeld*.

Differences between treated and control groups in job satisfaction may also arise because of dissatisfaction with the policy itself in the eyes of the "unambiguous losers". Previous literature showed that expectations regarding state provision are a central factor in determining reaction to policies (e.g. Kangas and Rostgaard 2007). Germany has a history of generous maternal leave regulation: from 1992 mothers were entitled to 36 months of job-protected leave and on average mothers stay out of the labour market 33 months after childbirth. This system safeguarded the "breadwinner model" and the role of mothers as primary caregivers. The *Elterngeld* was a radical shift from previous policy lines and the reduction of 12 months of benefit duration may appear as a strong decrease in generosity. To clarify, consider all women like Heidi in the example before, who are aware they lost from the reform. Feelings of unfairness may heighten their dissatisfaction with having been made return to work earlier, thus feeding into their job dissatisfaction. In other words, job satisfaction levels among treated women may be artificially low because of dissatisfaction with the introduction of the policy.

Therefore, the change in parental leave policy might have affected not only treated but also untreated mothers directly because women may compare themselves to their previous selves and to their peers. Previous research has shown that subjective well-being variables are greatly influenced by inter- and intra-personal comparisons. Thus, it is possible that the policy change had a direct effect on job satisfaction of women, regardless of the actual

changes in leave duration brought about by the policy. In the rest of the chapter I will call these mechanisms the "reform channel". They are explanations for differences in job satisfaction between treated and control groups that are not due to changes in duration of maternity leave, but to the introduction of the new policy.

## 5.4 Identification Strategy

To estimate the causal effect of parental leave duration on job satisfaction I calculate two-sample-two-stage-least-squares (TS2SLS) estimates of the impact of returning to work a month earlier after childbirth on job satisfaction.

### Intuition

The intuition behind a TS2SLS is similar to that of an Instrumental Variable (IV). The basic set-up is that I want to compare job satisfaction levels of women who take different lengths of maternity leave. However, choice of maternity leave length is likely to be correlated with determinants of job satisfaction. Thus, a simple correlation between job satisfaction and duration of maternity leave would not tell us whether decreasing duration of maternity leave would increase/decrease job satisfaction.

Thus, I look for a situation where women had to take up a different length of maternal leave than they had previously planned or expected, so that I reduce the risk that actual duration of leave is correlated with determinants of job satisfaction. This situation is created by the 2007 *Elterngeld* reform. A woman who had a child immediately after the 2007 reform would have taken 24 months of leave if she had instead given birth before January 1st 2007; however, she is only allowed to take 12 months. The difference in job satisfaction levels between mothers who gave birth before and after January 1st 2007 is due to the fact that women affected by the reform took a shorter leave (*ceteris paribus*). Women who gave birth

before December 31st 2006 represent the "counterfactual" because I assume that treated women would have behaved similarly to untreated ones, if they had not been affected by the reform.

However, it is not enough to simply compare average job satisfaction levels of these groups. This is because this difference is based on the assumption that all women reduced their length of leave by the same amount. However, some women, for instance, actually may have taken the same amount of leave regardless of the policy system. It would be incorrect to attribute any variation in job satisfaction to changes in leave of this group of women. Thus, I divide the difference in job satisfaction level by the average reduction in leave caused by the reform. This is equivalent to scaling the aggregate job satisfaction difference by individual contributions of durations. Women who do not behave differently after the reform contribute 0, while other women contribute according to how many fewer months they stayed at home compared to the counterfactual group. I interpret the resulting estimator as the average job satisfaction differences caused by a decrease in duration of maternity leave for each one-month reduction of maternity leave.

**Econometric Properties**

The TS2SLS allows for combination of more than one sample. Traditionally, researchers use a TS2SLS when faced with a missing variable problem: because a survey may not provide all variables of interest, but these variables may be available from other sources, a TS2SLS is a convenient tool to obtain consistent estimates with sample moments that are drawn from different samples (Angrist and Krueger 1992).

In my case, the justification for using TS2SLS is not a missing item problem, but rather considerations of sample size. General use surveys like the SOEP are not designed for the

analysis of populations as specific as mine; the sample sizes for these groups are rather small. Thus, to increase precision of my estimates I take advantage of the fact that both SOEP and PAIRFAM have collected information on the population of mothers I analyse, and I combine the sample moments from these surveys to produce more precise estimates.

The TS2SLS has many analogies with a Two Sample IV (TSIV). However, compared to a TSIV it is more asymptotically efficient and it remains consistent when two samples are differently stratified. [6]

**Local Average Treatment Effect**

The TS2SLS provides an estimation of the Local Average Treatment Effect (LATE). This is the effect of a one month change of maternity leave duration on job satisfaction for the compliers.

In Table 5.2 I show that it is possible to divide the population of mothers into four groups according to their behaviour following the 2007 policy change in maternity leave duration, compared to their behaviour if they had a baby before the reform. Mothers who are compliers are those who react to the policy in an expected way: they take the maximum amount of leave under each policy regime. Never takers and always takers do not react to the policy change. Defiers react to the policy change, but in exactly the opposite way expected.

Because it is impossible to observe a woman in both states, it is impossible to identify exactly the four groups. Nevertheless, it is possible to estimate the share of compliers. To do so, I construct an indicator for whether a woman's duration of leave was less than 24 months and regress this on the treatment indicator for whether the woman gave birth to a baby after January 1st 2007. The estimated coefficient is the share of compliers: this is 20% in EG and

[6] See Appendix A for more information on TS2SLS estimators.

1% in WG. The small share of compliers for WG implies that care should be given to the external validity of the results. More substantively, this is an indication that the reform may not have been successful in reducing the length of leave for this group of mothers, as only 1% of mothers take a leave shorter than 24 months after January 2007 than before.

Table 5.2 Classification of Compliers, Never Takers, Always Takers and Defiers

| Paid leave | Length of maternity leave under *Erzieunghsgeld* 24 months | Length of maternity leave under *Elterngeld* 12 months |
|---|---|---|
| Compliers | 24 months | 12 months |
| Never takers | 24 months | 24 months |
| Always takers | 12 months | 12 months |
| Defiers | 12 months | 24 months |

Two assumptions need to hold for the TS2SLS to produce effects that can be interpreted in a causal way.

**Monotonicity**

The monotonicity assumption requires that there are no defiers. In other words, there are no mothers who would always take 12 months of leave when 24 were offered and always take 24 months of leave when only 12 are offered. This seems reasonable because given that there are no changes in job-protected leave duration (which remains stable at 3 years), I expect women to react to the economic incentives built into the *Elterngeld* benefit. It is worth noting that it is not a problem if there are some always taker and never taker women in the sample (i.e. someone who would always take 12 or 24 months regardless of the policy regime); however, a causal effect of a reduction in parental leave is not defined for them. Moreover, the fact that I observe women taking a 24 month leave when only 12 months are paid (*Elterngeld*) is not necessarily a violation of the monotonicity assumption, which would

instead imply that these women always took a 12 month leave when 24 months are paid (*Erziehungsgeld*). It is most likely that women who take longer leaves than the duration of benefit are never takers.

**Exclusion Restriction**

The only channel through which the introduction of *Elterngeld* affects job satisfaction is through the variation in leave duration. In other words, the introduction of the *Elterngeld* had no direct effect on job satisfaction, nor on variables that are determinants of job satisfaction. There are two main threats to this assumption.

The *Elterngeld* reform changed the amount of monetary benefits, and not only the duration of those benefits. Huber (2015) and Kluve and Tamm (2013) observe that women who were not previously eligible for *Erziehungsgeld* benefits (thus not included in my sample) are the ones who obtain the largest monetary gain from the reform. Women who were previously eligible for means tested benefits would receive an amount of benefits similar to that under *Erziehungsgeld* or slightly higher/lower. I follow two strategies to check the validity of my analysis against this assumption. First, I am going to control for pre-birth household income in the models in order to isolate the relative effects of income and duration on job satisfaction. Second, I am going to estimate heterogeneous effects for the subgroup of mothers according to their household income before having a baby. Because I know that those in the lower tail of the income distribution were the most likely to lose from the reform, I can have an idea of the role of income in mediating the effect of the change in leave duration.

The second possible threat to the exclusion restriction is the direct effect of the introduction of the reform on job satisfaction. In section 5.3 I have discussed that the introduction of *Elterngeld* may have a direct effect on job satisfaction (independent of the increase in

generosity) if there are peer effects. In section 5.6.2 I run a series of specification checks to assess the severity of this channel.

### 5.4.1 Model Specification

To compute the TS2SLS, I estimate two equations and use moments from these equations to produce my estimator. In particular, the TS2SLS estimator is the ratio of two coefficients: the numerator is the coefficient that identifies the Intention to Treat (ITT) [7], while the denominator is a coefficient from the first stage equation. The set of three equations is:

$$J_{it} = \alpha_0 + \beta_0 EL_i + \beta_t A_{it} + \theta EL_i A_{it} + \gamma_0 X_{it} + \varepsilon_{0i} \tag{5.1}$$

$$D_i = \alpha_1 + \beta_1 EL_i + \beta_2 M_i + \gamma_1 X_i + \varepsilon_{1i} \tag{5.2}$$

$$J_{it} = \delta + \frac{\theta}{\beta_1} D_i \tag{5.3}$$

In all equations $i$ indicates mother-birth, $t$ is the time dimension expressing the order of interview before and after the birth of the child, $J_{it}$ is job satisfaction measured any time within 5 years before and after the birth of the child, $EL_i$ is a time invariant indicator which identifies mothers that were affected by the 2007 reform (the treated group), $A_{it}$ indicates post-birth observations, $EL_i A_{it}$ is the interaction between these two variables, $D_i$ is duration of leave at the time of return to the labour market measured for mothers who have returned within 5 years from the birth of the child, $M_i$ is a set of 11 birth month dummies that indicate the month of birth of the target child, $X_i$ is a set of time-invariant and pre-birth variables: the order of birth of the target child, the age at birth of the mother and the level of education of the mother measured the year before giving birth.

[7] The Intention to Treat in this context is the effect of the reform on job satisfaction, regardless of the fact that some women did not vary their duration of leave and are therefore "not treated".

Equation (5.1) allows estimating the Intention to Treat ($\theta$), equation (5.2) allows estimating the first stage ($\beta_1$), and equation (5.3) is the TS2SLS estimator. The TS2SLS estimator is the ratio of the ITT over the first stage. To compute standard errors for the TS2SLS I follow the approach of Dustmann and Schönberg (2012) and apply the Delta method. The ITT should be interpreted as the average difference in post-birth job satisfaction level between mothers affected by the reform and those not affected. The first stage is interpreted as the average difference in realised duration of leave for mothers who give birth after January 1st 2007 compared to mothers who gave birth before December 1st 2006, net of seasonal variations in parental leave uptake.

To estimate the ITT I follow Havnes and Mogstad (2011) and Baker et al. (2008) and use the Difference-in-Difference (DID) approach. I prefer a DID approach rather than a simple OLS estimator because while a simple OLS regression would compare mothers affected by the reform and those who were not affected, a DID estimator allows me to introduce an additional comparison term, that is mothers affected by the reform before they had a baby. Moreover, there is empirical evidence about the seasonality of births: mothers who give birth in each particular month are different from mothers who give birth in other months of the year (Buckles and Hungerman 2013, Karimi et al. 2012). A DID approach together with month indicators allows me to control for seasonality effects.

The equation for the first stage is modelled after Karimi et al. (2012), Liu and Skans (2010) and Huber (2015). It is of course impossible to measure duration of maternity leave before a woman had a child, so that a DID approach is not feasible for the first stage. The strategy adopted instead is a simple linear regression of months of maternity leave on the treatment indicator, controlling for some relevant pre-treatment factors as well as month indicators.

### 5.4.2 Hypothesis

In Section 5.3 I have discussed the expectations regarding the associations between *Elterngeld*, job satisfaction and duration of maternity leave. The first prediction is that the *Elterngeld* led to variations in job satisfaction. In terms of the parameters of the model, this is equivalent to a test on $\theta$ coefficient in equation 5.1 (Hypothesis 1). If I were to reject the null hypothesis in Hypothesis 1, then I would conclude that women affected by the *Elterngeld* have significantly different levels of job satisfaction than women who were not affected.

$$\textbf{Hypothesis 1} : H_0 : \theta = 0, H_a : \theta \neq 0$$

Another prediction concerns the relationship between *Elterngeld* and duration of maternity leave. I expect women affected by *Elterngeld* to increase the duration of maternity leave. This is equivalent to testing for significance of parameter $\beta_1$ in equation 5.2 as expressed in Hypothesis 2.

$$\textbf{Hypothesis 2} : H_0 : \beta_1 = 0, H_a : \beta_1 \neq 0$$

Lastly, I expected that the change in duration of maternity leave due to *Elterngeld* led to variations in job satisfaction. This is equivalent to testing for significance of parameter $\frac{\theta}{\beta_1}$ in equation (5.3) (Hypothesis 3).

$$\textbf{Hypothesis 3} : H_0 : \frac{\theta}{\beta_1} = 0, H_a : \frac{\theta}{\beta_1} \neq 0$$

## 5.5 Data Structure and Measures

I use longitudinal SOEP data to estimate the ITT, while I combine SOEP and PAIRFAM data to create a cross sectional dataset to estimate the first stage.

**SOEP**

The SOEP is a longitudinal panel representative of German households which started in 1984. The latest available version at the time of writing contains data up to 2013. The advantage of the SOEP for my research question is that it contains information on job satisfaction for every wave, before and after the birth of the child; there is detailed information regarding the background of each respondent including household income, and lastly the calendar files of the SOEP allow me to reconstruct employment history of respondents on a monthly basis. The main disadvantage is that sample sizes are small for subgroups of the population (i.e. mothers who give birth in a specific time frame).

**PAIRFAM**

The PAIRFAM is a longitudinal study which started in 2008 and it contains annual survey data from a random sample of 12,400 respondents from three birth cohorts (1971-73, 1981-83, 1991-93) and their partners. Although the PAIRFAM survey started after the year of interest in my analysis, it contains detailed information regarding the birth and employment history for all respondents. Thus, I am able to identify mothers who gave birth in the years 2006 and 2007 and the length of maternity leave after the birth of each of the children. This information is comparable to that collected in the SOEP.

### 5.5.1 Longitudinal Data for the Estimation of the ITT

The estimation of equation (5.1) requires longitudinal data. The analysis sample for equation (5.1) contains women who gave birth to their first, second, third or fourth child between January 1st 2006 and December 31st 2007. [8] I observe these women for a maximum of 10 interviews, 5 before and 5 after the birth of the child included in the analysis. Therefore I use

[8] Between January 1st 2005 and December 31st 2008 when performing sensitivity analysis.

information from 2001 to 2012. [9] About 33% of the women are observed continuously for 10 interviews; the remaining women are observed continuously for any spell between 2 and 9 interviews: hence I have an unbalanced sample. I estimate that the share of women lost over the 5-year period since the birth of the child is 35.1%, however there is no strong evidence that attrition creates selection in this sample (see Appendix C.1). [10] I only retain observations for which there are at least two valid interviews, one before and one after the birth of the child.

The unit of observation should more precisely be considered a woman-birth: each birth of different parity represents a different row in my dataset. Some women give birth more than once during this time frame. There are three possible cases. A woman gives birth to one child within 12 months before the reform, and to one child within 12 months after the reform. In this case, I only retain the cases of birth that occurred after the reform. 43 observations (women-birth) are excluded because of this reason. If a woman gives birth to one or more children after the reform all observations are retained and all births are considered treated. Likewise, if a woman gives birth to one or more children before January 1st 2007 then all observations are retained and coded as controls. There are 24 sets of twins and triplets born in this time frame. In these cases, I only retain one observation for each set because job satisfaction data is not child-specific, but date-specific; thus retaining both births would lead to double counting of mothers of twins. To respect the nested data structure and to account for the fact that some mothers appear more than once, I cluster standard error at the individual mother level throughout the analysis.

[9] When performing robustness checks I include waves 2000-2013. I note here that there are no truncated observations as SOEP contains interviews in 2013, which would be the fifth year after birth for the group of mothers who gave birth in 2008.

[10] In Appendix C I report estimates for the ITT with bespoke longitudinal weights. The results remain substantially unchanged when using weights, but estimates are less precisely estimated. I decide not to report weighted estimates as a main specification because current estimation techniques do not allow the combination of different level weights (longitudinal for the ITT and cross-sectional for the first stage). I only report weighted estimates of the ITT in the appendix to provide an assessment of the role of attrition.

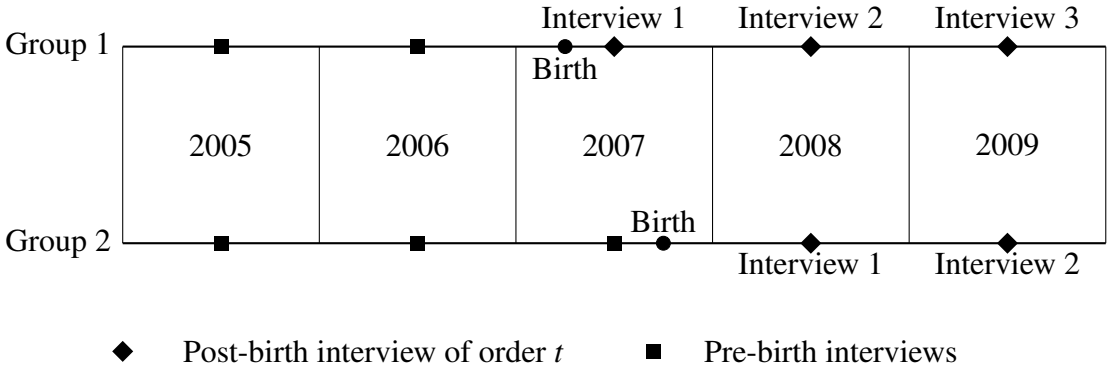
I want to make sure that pre- and post-birth interviews are correctly identified. Because for each calendar year children may be born before or after their mother is interviewed I want to make sure that the interview of that calendar year is correctly identified as being before or after the birth of the child, depending on the day and month of the birth and the interview. For children born in a given calendar year there are two cases: .4.2

- Children born in the months before the interview of that calendar year (group 1): the information collected at the interview is the first post-birth interview
- Children born in the months after the interview of the calendar year (group 2): the information collected at the interview is the last pre-birth interview

To make an example, the interview conducted the second calendar year after the birth of the child is the second post-birth interview for mothers in group 1 and the first post-birth interview for mothers in group 2. All variables are recoded according to this logic, so that the new panel sample is indexed with respect to the number of interviews before and after the birth of the child, regardless of the calendar year in which the interview was conducted. In other words, the time variable in equation (5.2) is not calendar years, but it is an index which represents the order of interviews since (or hence) the birth of the child. The drawing in Figure 5.1 clarifies this approach.

Lastly, I only retain women with net household income for the calendar year preceding the birth of the child lower than €30,000 (see section 5.5.3. for definitions), because this is the eligibility criteria for means tested benefits. The final sample selection criterion is the availability of variables for job satisfaction, education, household income and age at birth. After retaining only observations for which all variables are available, I have an estimation sample of 75 women-birth for EG and 157 women-birth for WG. The sample sizes are rather small; estimations are likely to be rather imprecise. However, this sample size is comparable

Fig. 5.1 Diagram Explaining Recoding of Time Index




*Notes:* Mothers in group 1 are those whose children were born before the interview of the reference year. Mothers in group 2 are those whose children were born after the interview of the reference year. For example, if an interview happened on June 1, 2006 a mother would be in group 1 if she had a baby in the months January to May, or in group 2 if she had a baby in the months June to December.

to other *Elterngeld* studies (e.g. Maeder 2014).

In Appendix D I describe the main differences between the estimation sample and the overall population of mothers and the subgroup of mothers excluded from the analysis because they do not fulfil the eligibility criteria for the means tested benefits. Compared to the overall population, the mothers in my sample are younger, less likely to be high educated, poorer and more likely to be EG. So the estimates of my analysis should not be generalised to the entire population of mothers.

### 5.5.2 Cross Sectional Data for the Estimation of the First Stage

I combine data from SOEP and PAIRFAM to construct a cross sectional dataset of women-birth. For each observation, I record the total number of months spent in maternity leave at the return to paid employment within 5 years of childbirth. In particular, this sample contains the same women-births from the SOEP as the previous sample, and in addition the sample of mothers from PAIRFAM. The selection criteria are the same as for the previous sample: I

include mothers who give birth to a child between January 1st 2006 and December 31st 2007 and in cases in which a woman gives birth to more than one child before and after the reform I only retain the births after the reform. After conditioning for the availability of duration variables I am left with 431 women births, 199 from PAIRFAM data and 232 from SOEP data.

### 5.5.3 Measures

#### Job Satisfaction

Job satisfaction is measured on a 0-10-point scale, where 0 corresponds to the respondent being extremely dissatisfied with their job, while 10 with being extremely satisfied with their employment.

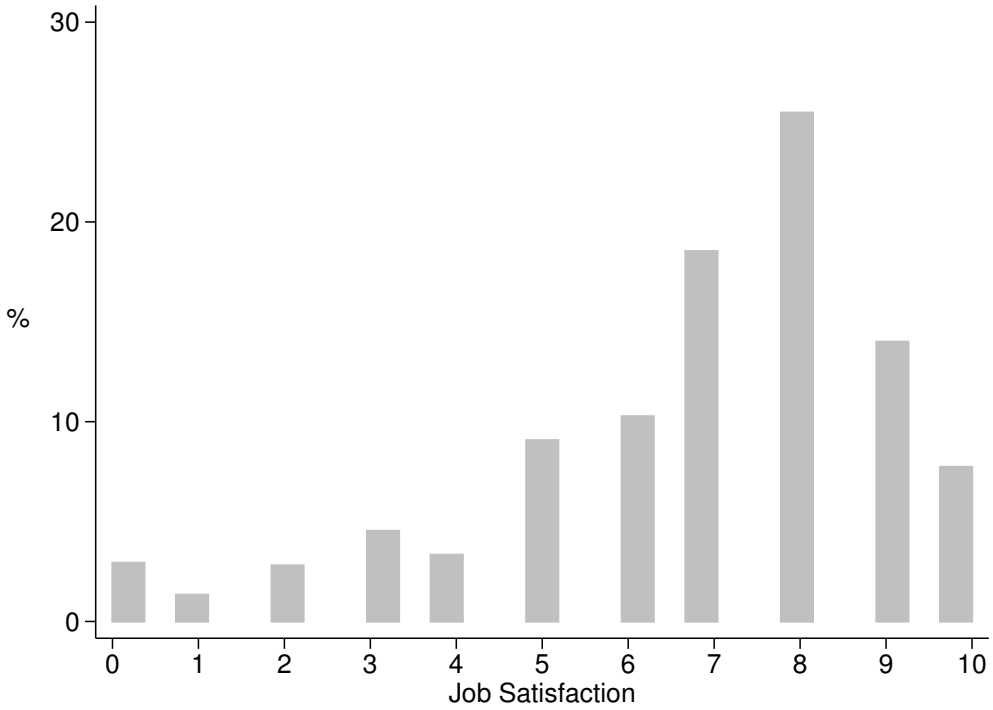
In Figure 5.2 I report two histograms which show the distribution of job satisfaction measures for the two samples. Around 25% of respondents from both regions report a job satisfaction level of 8, and 75% of women in EG and 80% in WG report a job satisfaction level between 5 and 10.

#### Duration of Leave

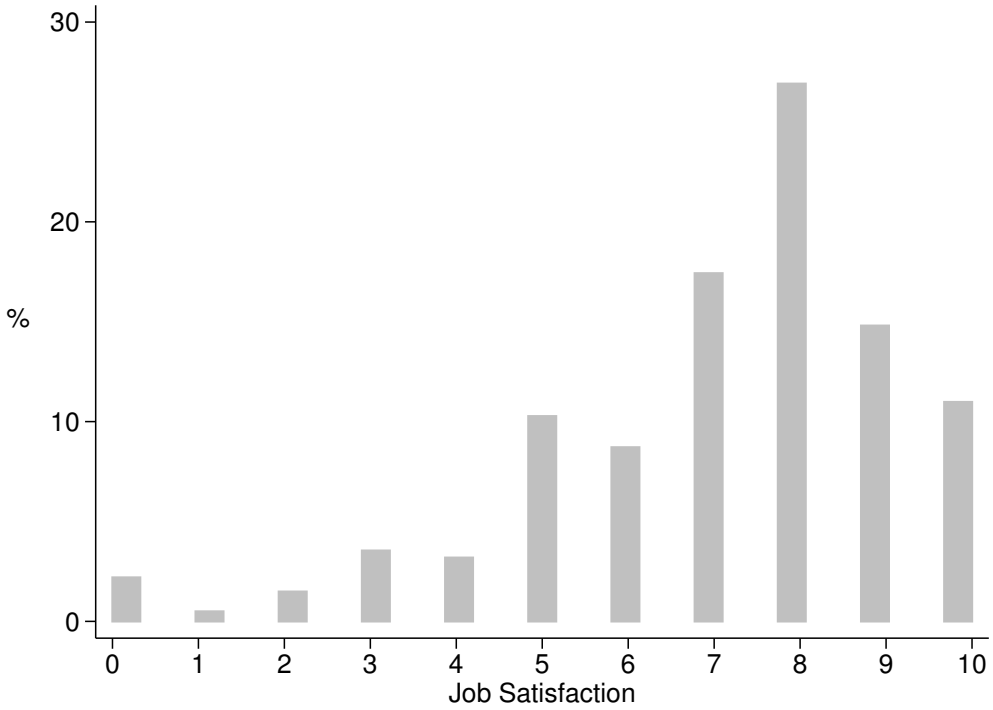
I assume that spells of maternal leave begin at the moment of birth of each child. Although women are entitled to maternity leave starting from the sixth week preceding the birth of the child, setting the duration clock to start at the month of birth of the child makes the measures of leave more comparable across women. The reason is that in my sample there are some women who give birth to their second or third child, and might already be in parental leave before the birth of the target child. The focus of my study is the time to return to work from birth of the target child. Thus, the duration variable measures the number of months that a woman declares to have spent in maternity leave from the month of birth of the target child

Fig. 5.2 Distribution of Job Satisfaction

(a) Eastern Germany




(b) Western Germany



until the month she returns to work.

The original items measuring duration of leave differ in the SOEP and in PAIRFAM. In the SOEP maternity leave duration information is available from calendar variables. In each wave individuals are asked to give their activity status for each month of the preceding calendar year. To construct duration of maternity leave, I sum the number of months a woman states to have been in maternity leave. Since activity status is self-reported, and given that women can report more than one activity for each month, it is likely that the duration variable is measured with error. In particular, 75 respondents (15% of the sample) report not having been in maternity leave any months. This is not possible as by law women have to take 8 weeks of paid leave after birth for public health reasons. Thus I recode these observations to 2 months, which is the minimum leave allowed by German law. The variable contains many missing values (134, 30% of the final sample). The missing values originate for different reasons. One reason is that the mother does not return to work within 5 years of the birth of the child (78 respondents, 58% of the missing observations), another reason is attrition (37 respondents, 28% of the missing observations), or some are missing due to item non response, as the mother has not reported her monthly labour market status.

In PAIRFAM I construct the duration variable from the event history calendar. Mothers are asked to list what activity they had been doing each month since they were 18 years old. For each activity they are required to state the months and year in which it started and ended. Mothers who have maternity leave spells that started between January 1st 2006 and December 31st 2006 belong to the control group, mothers who have maternity leave spells starting between January 1st 2007 and December 31st 2007 belong to the treatment group.

### Eligibility for *Erziehungsgeld*

I am able to compute exact eligibility with SOEP data because it contains income data, but I have to proxy it with PAIRFAM data as it does not contain income variables.

To compute eligibility from the SOEP I construct my own measure of annual gross income. This strategy is to obtain an income base that corresponds to that used in the means-test. I create this measure by summing income from wages, salary, self-employment income, income from second job and unemployment benefits. Following Huber (2015) I do not consider income from rent, interest or dividends. [11] The income used in the means test is annual household income after taxes; however, information on deductibles and tax brackets is not available, so I am unable to compute the exact amount of net annual household income. Following the approach of Kluve and Tamm (2013) I take the income threshold in gross income to be €40,400 for married mothers and €31,200 for single mothers. [12]

Kluve and Tamm (2013), using data from two German health insurance funds (therefore not representative of the German population), show that about 75% of mothers were eligible for *Erziehungsgeld*. I estimate that 60% of the observations in my sample fulfil the eligibility criteria for the means tested benefits. Neither Kluve and Tamm nor I are able to compute exact eligibility due to the lack of information on deductibles and tax brackets, thus both computations are an approximation. Moreover, Kluve and Tamm's data are not representative of the German population but, as stated by the authors, more likely to over-represent individuals already targeted by the *Erziehungsgeld* regulation (Kluve and Tamm 2013, p. 994). Maeder (2014) using PAIRFAM data cannot compute exact eligibility but she proxies it with partners' education and marital status. Maeder (2014) finds that about 50% of the

[11] Huber (2015) uses the SOEP and estimates that 90% of households do not have income from renting and/or dividends and the contribution of these sources of income to *Erziehungsgeld* is quite low.

[12] According to the authors these figures correspond to having a net annual household income lower than €30,000 for married mothers, and lower than €23,000 for single mothers.

respondents were eligible for *Erziehungsgeld* according to her definition. Thus, I believe that my 60% is realistic given that I am able to obtain a more precise estimation than Maeder's and that my sample is representative of the German population and not over-representing low income individuals as Kluve and Tamm (2013)'s sample does.

To compute eligibility for PAIRFAM data I follow a similar approach as Maeder and use education and marital status in order to proxy eligibility. I consider a woman ineligible for *Erziehungsgeld* if she has a high level of education and is married. [13] In all other cases she is eligible. This leads to the exclusion of 129 respondents (out of 489).

**Education**

I construct the education measure using the Comparative Analysis of Social Mobility in Industrial Nations (CASMIN) classification. In particular, I define a respondent to have a low level of education if they have not completed elementary education, or they have general elementary school or basic vocational qualifications. I assign a medium level of education to respondents that have completed intermediate general qualifications, intermediate vocational qualifications, general maturity certificate (*Abitur*) or vocational maturity certificate. This level of education corresponds to schooling including either maturity certificates obtained via vocational secondary education or maturity level certificates from general tracks that are supplemented by additional vocational qualifications. To aid interpretation, this level is obtained if respondents have a diploma that is required for admission to university, or they have completed a course of study that certifies them as skilled professionals. I recode all higher levels of education as high level of education; these include lower and higher tertiary education (university education).

[13] My approach is more conservative than Maeder (2014)'s because I only consider highly educated mothers, while Maeder considers medium and low educated partners. However, I believe that a woman's level of educational attainment rather than her partner's is a stronger predictor of her own labour supply decisions.

In cases when the CASMIN variable is missing I impute the education variable using information from the number of years of schooling a respondent has completed. Less than 10 years of education correspond to a low level of education, between 11 and 13 to medium level of education, and values higher than 13 correspond to a high level of education. However, 25 observations remain with missing education values (2.3% of the sample). In order not to lose these observations I assign them a value of 0 for each of the education categories and I introduce a dummy variable identifying the missing values (Allison 2002).

### 5.5.4 Descriptive Statistics

Table 5.3 shows means for covariates and background variables for the sample derived from the SOEP, broken down by whether the respondents have been affected by treatment status. The only statistically significant mean differences are for first births among EG women and for medium levels of education for WG women. Among EG women, 68% of treated women give birth to their first child, but only 39% of untreated women give birth to their first child. Among WG women, 76% of treated women have medium education, but only 51% of untreated women have medium education. There is no obvious reason for these differences; nevertheless, in all the models I control for birth order and education. The samples are balanced on all other covariates.

Although there are no reasons to expect that mothers who give birth a few months away from each other be different in terms of socio-economic characteristics, Tamm (2013) shows that some mothers managed to delay the delivery of the child so that they would benefit from the *Elterngeld*. However, this phenomenon happened on a small scale and women who did manage to postpone delivery were most likely to be well-off and to not have been eligible to means tested benefits (hence not included in my analysis sample). Nevertheless, I will run some sensitivity checks in sections 6.2 and 6.4.

Table 5.3 Means of Sample Characteristics by Treatment Status for the SOEP Component of the Data

| | EG | | | | WG | | | |
|---|---|---|---|---|---|---|---|---|
| | Treated | Control | Difference | Significance | Treated | Control | Difference | Significance |
| Age at Birth | 26.73 | 26.95 | -0.21 | | 29.30 | 28.28 | 0.03 | |
| | (1.17) | (1.23) | (1.71) | | (1.23) | (0.63) | (1.38) | |
| Education | | | | | | | | |
| Low Education † | 0.25 | 0.20 | 0.05 | | 0.20 | 0.34 | -0.14 | |
| | (0.11) | (0.08) | (0.14) | | (0.07) | (0.08) | | |
| | | | | | | (0.10) | | |
| Medium Education † | 0.68 | 0.78 | -0.10 | | 0.76 | 0.51 | 0.24 | ** |
| | (0.12) | (0.09) | (0.15) | | (0.07) | 0.07 | (0.10) | |
| High Education † | 0.06 | 0.01 | 0.05 | | 0.04 | 0.11 | -0.07 | |
| | (0.05) | (0.01) | (0.05) | | (0.02) | (0.05) | (0.05) | |
| Order of Birth | | | | | | | | |
| First Baby | 0.68 | 0.39 | 0.29 | * | 0.39 | 0.56 | -0.17 | |
| | (0.09) | (0.12) | (0.16) | | (0.08) | (0.07) | (0.11) | |
| Second Baby | 0.20 | 0.41 | -0.20 | | 0.48 | 0.35 | 0.13 | |
| | (0.07) | (0.14) | (0.15) | | (0.09) | (0.07) | (0.11) | |
| Third Baby | 0.08 | 0.13 | -0.05 | | 0.10 | 0.04 | 0.07 | |
| | (0.07) | (0.08) | (0.11) | | (0.04) | (0.02) | (0.05) | |
| Fourth Baby | 0.04 | 0.07 | -0.03 | | 0.03 | 0.05 | -0.03 | |
| | (0.04) | (0.07) | (0.08) | | (0.02) | 0.03 | (0.04) | |
| Gross Income* † | 13,401 | 19,183 | -5,782 | | 15,477 | 19,048 | -3,572 | |
| | (2,907) | (2,411) | (3,806) | | (2,171) | (1,625) | (2,722) | |
| Married † | 0.12 | 0.18 | -0.06 | | 0.58 | 0.47 | 0.11 | |
| | (0.05) | (0.10) | (0.11) | | (0.09) | (0.08) | (0.13) | |
| Observations | 75 | | | | 157 | | | |

*Notes*: mean estimates computed on estimation sample using cross section weights. † observed the year before birth of the child. * annual household income in Euro. Standard error in parentheses.
*Source*: SOEP. Author's calculations.

## 5.6 Results

### 5.6.1 Effect of the 2007 Parental Leave reform on Job Satisfaction

In this section I estimate the ITT, that is the effect of the 2007 reform on job satisfaction. I estimate the ITT via equation (5.1). In Table 5.4 I report the summary of the results of estimation of equation (5.1) for the sample of mothers who gave birth between 2006 and 2007. The full estimates are in Appendix B. In column (1) I report the results for mothers from EG and in column (2) for mothers from WG. Standard errors are clustered at the individual mother level.

I interpret the estimates in Table 5.4 as the average difference in job satisfaction between mothers who gave birth to a child in 2007 and those who gave birth in 2006 net of initial differences between the two groups and the confounding effects of age at birth, month of birth of the child, birth order, monthly household income (logarithm) and education of the mother. The figures in Table 5.4 suggest that there is a strong and positive effect among WG women and a strong and negative effect among EG women. In Figure 5.3 I plot the ITT as a function of the number of interview after childbirth. For both EG and WG the significant effect is driven by job satisfaction levels at the third year after birth (and to some extent the second year).

The estimated treatment effects for both EG and WG are very large considering the nature of the outcome variable. Job satisfaction is measured on a scale from 0 to 10, so a decrease of 1.142 (column 1) corresponds to a decrease of 10% in job satisfaction. It is useful to compare the estimated results with findings from other literature looking at the determinants of subjective well-being measures. Stutzer and Frey (2006) using a sample of married and single people from the SOEP show that the life satisfaction difference between employed and unemployed people is 1.01, while between married and single people is 0.3. The correlation

Table 5.4 The Impact of the Introduction of *Elterngeld* Benefits on Job Satisfaction up to Five Years After Birth, Difference-in-Difference Estimates

| | EG<br>(1) | WG<br>(2) |
|---|---|---|
| After Birth of the Child | 0.934* | -0.625** |
| | (0.49) | (0.32) |
| Received *Elterngeld* | 0.639 | 0.306 |
| | (0.52) | (0.25) |
| After Birth of Child X received *Elterngeld* | -1.142** | 0.877** |
| | (0.57) | (0.40) |
| Second Baby | 0.388 | 0.077 |
| | (0.42) | (0.21) |
| Third Baby | 0.765 | 0.362 |
| | (0.80) | (0.32) |
| Fourth Baby | -0.026 | -0.803 |
| | (1.10) | (0.84) |
| Age at Birth | 0.002 | 0.003 |
| | (0.08) | (0.02) |
| Medium Education | 0.662 | 0.229 |
| | (0.74) | (0.25) |
| High Education | 1.244 | 0.864* |
| | (1.32) | (0.45) |
| Missing Education | 1.313 | 0.347 |
| | (1.06) | (0.59) |
| Monthly Income (logarithm) | 0.003 | -0.017 |
| | (0.08) | (0.03) |
| Constant | 5.728*** | 6.40*** |
| | (1.73) | (0.81) |
| Month Dummies | ✓ | ✓ |
| Observations | 359 | 725 |
| Mother Births | 75 | 157 |

*Notes*: the table reports difference-in-difference estimates of the impact of *Elterngeld* reform on job satisfaction. The figures correspond to coefficient $\theta$ in equation (3). Standard errors are clustered at the individual mother level and reported in parentheses. The sample for column (1) consists of all mothers who gave birth between January 2006 and December 2007 and lived in EG; for column (2) all mothers who gave during the same time frame but lived in WG.

*** significant at the 1% level.

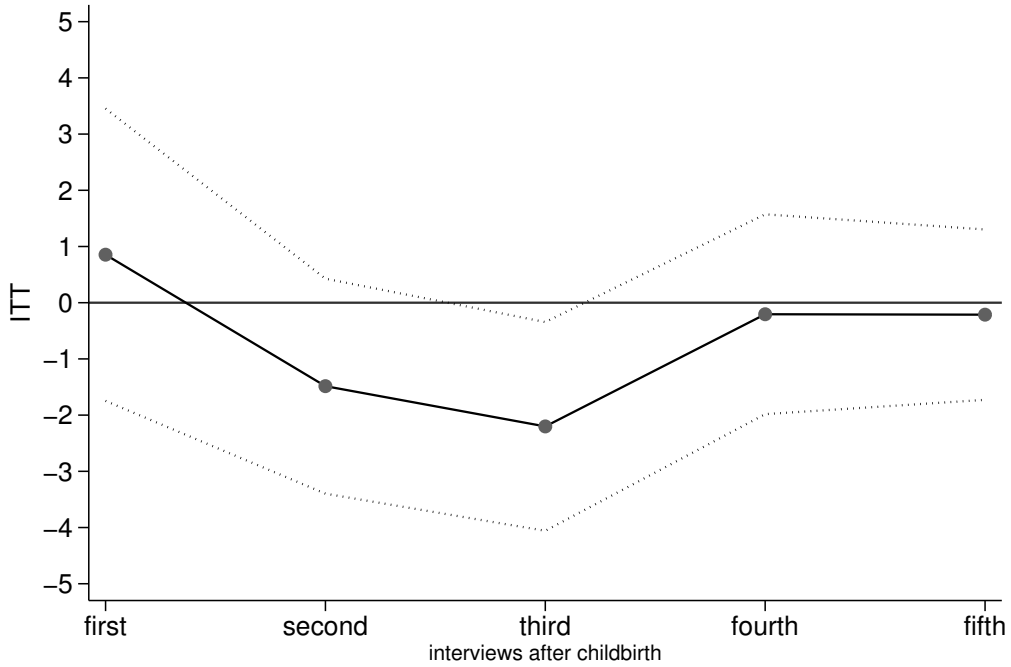
** significant at the 5% level.

* significant at the 10% level.

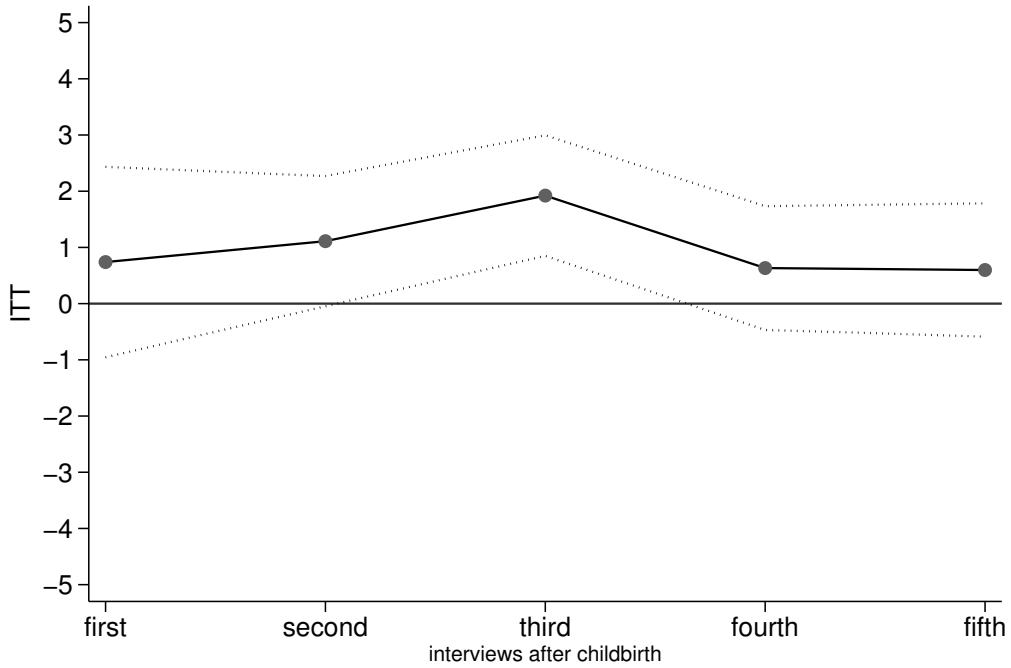
*Source*: SOEP. Author's calculations.

Fig. 5.3 Intention to Treat Effect as a Function of the Number of Interview after Birth

(a) Eastern Germany




(b) Western Germany




*Notes*: the figure shows the plot of the intention to treat effects for each interview after childbirth. The ITT are obtained from an equation like (3), where instead of one dummy variable for each observation after the birth of the child ($A_{it}$), I include a set of five dummy variables for each of the interviews. The ITT are the interactions between each of the dummy variables and variable $EL_i$. The dotted lines depict the 90% confidence interval. The sample consists of all mother-births between 2006 and 2007.
*Source*: SOEP. Author's calculations.

between income (log) and life satisfaction is usually around 0.10 (e.g. Stutzer and Frey 2006, Powdthavee 2010), which means that a 100% increase in income is associated with an increase in life satisfaction of 0.03. A similar calculation can be done with the estimates of this chapter. For the EG sample I find that the correlation between income (log) and job satisfaction is 0.003, which implies that an increase in income of 100% leads to an increase of 0.001, which is very small compared to the variation of 1.142 due to the *Elterngeld*.

To assess the appropriateness of a DID approach I discuss the validity of the parallel trends assumption. In Figure 5.4 I plot the average levels of job satisfaction for each year before and after the birth of the child up to 5 years before and after for treated (solid line) and control observations (dashed line) with 90% confidence interval (dotted line). In Figure 5.4(a) I report the results for EG and in Figure 5.4(b) for WG. Ideally I would expect the trends of job satisfaction to be similar between treated and control groups before the child is born, but I would expect a jump in job satisfaction after the birth of the child for treated women, and no jump for untreated women.

The plot of Figure 5.4(b) shows that the parallel trends assumption holds for WG because the trends in job satisfaction before the child was born were similar between treatment and control group. The treatment group experiences an increase in job satisfaction as a consequence of the birth of the child. The plot in Figure 5.4(a) for EG is problematic because it shows diverging trends in job satisfaction between treated and untreated mothers in the 5 years before having a child. EG non-treated women experienced an increase in job satisfaction during the years before the birth of the child, but treated women didn't. This seems to be a violation of the parallel trends assumption and makes it difficult to interpret the variation in job satisfaction after the birth of the child. Nevertheless, it should be noted that the point-wise averages for EG are estimated very imprecisely due to the small sample

size and the confidence intervals are very large, so that at each point in time there are no statistically significant differences in job satisfaction between treated and untreated women.

One additional fact is worth noting from the graphs. In Figure 5.4(b) for WG I note that there is a positive jump in job satisfaction for treated women, but a negative jump for untreated women. This is consistent with the idea that there is a "reform channel" (section 5.3). In other words, women who were not subject to the *Elterngeld* regulation may nevertheless be affected by the introduction of the reform (in terms of job satisfaction) because they compare themselves to other women who receive more generous benefits.

### 5.6.2 Sensitivity Analysis of the ITT Estimates

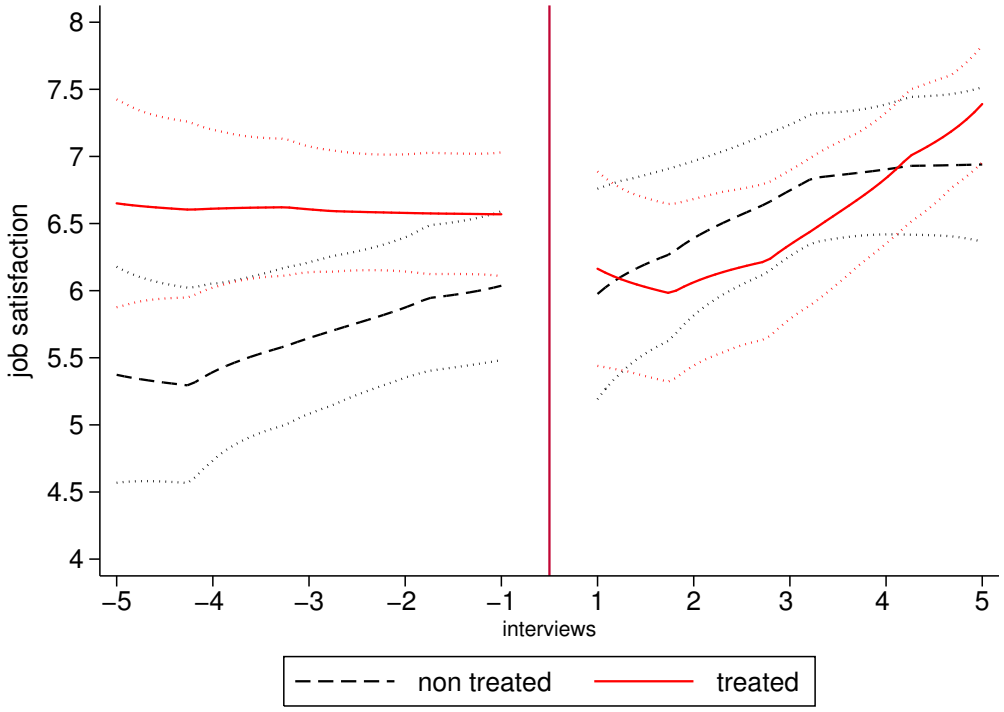
I run a series of sensitivity checks to assess the robustness of the results to model specification.

In the main specification, I selected mothers who gave birth within 12 months either side of January 1st 2007. In technical terms, I have chosen a bandwidth of 12 months. I want to check that the significance and magnitude of the estimated effects are not dependent on the size of the chosen bandwidth. In Figure 5.6 in Appendix B I plot the estimated effects as a function of the bandwidth. A smaller bandwidth implies a smaller sample size and loss of precision in the estimation. I allow the bandwidth to vary between 3 and 23 months. In the specification with the smallest bandwidth I only include mothers giving birth between October 2006 and March 2007, while in the specification with the largest bandwidth I include the period between January 2005 and December 2008.

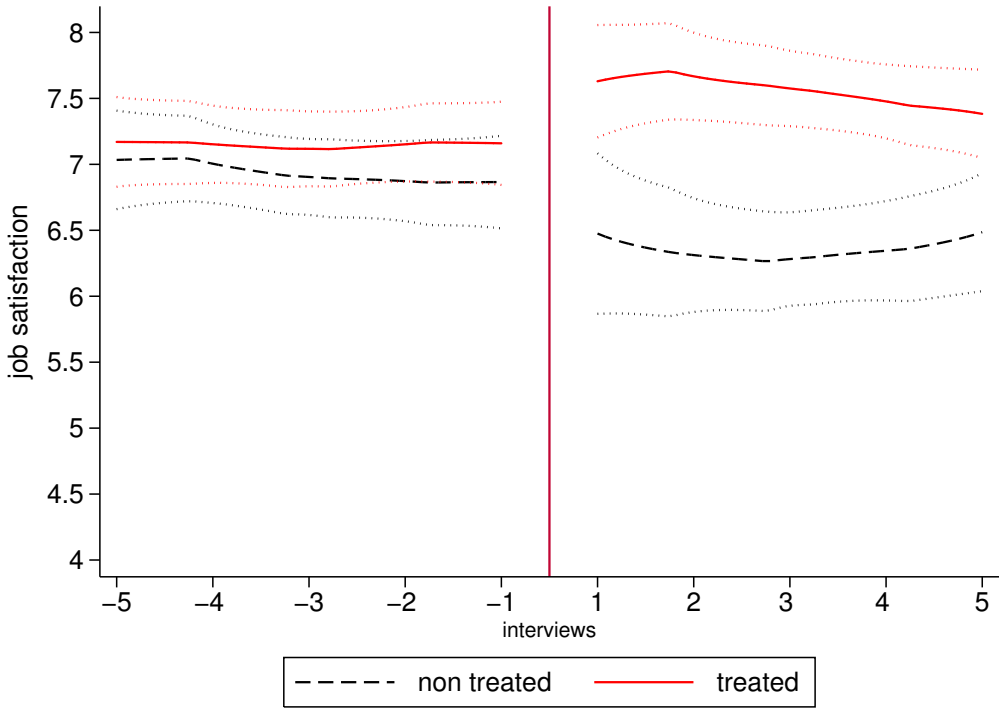
For WG (panel b) the precision of estimates varies; the direction of the effects but size of the point estimates is independent of the choice of bandwidth. For EG (panel a), for

Fig. 5.4 Observed Average Job Satisfaction Scores Five Year Before and After the Birth of the Child Separately for Treatment and Control Group with 90% Point-wise Confidence Intervals

(a) Eastern Germany




(b) Western Germany




*Notes*: the figure shows the trend in job satisfaction five years before and after the birth of the target child for EG mothers (a) and WG ones (b). The solid and dashed lines show results from local polynomial regressions with bandwidth 2. The solid lines depicts the average job satisfaction for mothers who fell under the *Elterngeld* policy regime, while the dashed line represents average job satisfaction for mothers who fell under the *Erziehungsgeld* policy. The dotted lines depict the 90% confidence interval. The sample consists of all mother-births between 2006 and 2007.
*Source*: SOEP. Author's calculations.

observations beyond 13 months the point estimate reduces in size. This lends some validity to the comparison effect channel. The introduction of the reform decreased job satisfaction for women who gave birth in 2007 (compared to those giving birth in 2006), because they perceived they lost from the reform. When they conceived their child they expected to receive *Erziehungsgeld* benefits, and some of their colleagues and peers would have been subject to means tested benefits: hence, the comparison between themselves and other peers may be the reason for the decrease in job satisfaction. However, the introduction of the reform did not decrease job satisfaction for women who gave birth in 2008 (compared to those who gave birth in 2005 and 2006) because they did not perceive to lose out from the reform: they conceived their children in 2007 when the *Elterngeld* was already in place, thus they were aware of what benefits were available to them, and the majority of their peers and colleagues were also subject to *Elterngeld* rules.

As a further robustness check, I exclude the observations around the cut-off (I exclude December 2006 and January 2007). I do this with two aims: first, according to Tamm (2013) some mothers managed to postpone giving birth until January 2007 so by excluding births in December 2006 and January 2007 I would exclude these observations. Secondly, in section 5.3 I have explained that a reform channel may be at work. The reform channel should be stronger the closer the women are to the cut-off for the reasons explained before. The results are in Table 5.8 in Appendix B. The results remain substantially unchanged, although the precision of the estimates is lower due to the smaller sample size.

In section 5.5.3 I explained that the computation of eligibility for *Erziehungsgeld* is complicated and my computation is an approximation of actual eligibility. Because previous authors have estimated that the eligible share of mothers is around 75%, I use an alternative definition of eligibility: women who belong to the first two terciles of the annual household

gross income distribution during the year before the birth of the child are eligible. This choice increases the sample size for WG but decreases it for EG. The results are in Table 5.9 in Appendix B. The results remain qualitatively unchanged: the point estimates for both WG and EG are marginally larger and still statistically significant. For WG the point estimate is 0.97 instead of 0.89 and now becomes statistically significant at 1%; the point estimate for EG is -1.37 instead of -1.14 and remains statistically significant at 5%.

I want to make sure that the variation in job satisfaction is due to the introduction of the reform rather than other factors that may have happened in the months around the reform. To test this, I run placebo treatment regressions. I estimate equation (5.1) but I change the date at which the reform was implemented and thus I change the composition of the sample of treated mothers. For example, I pretend that the reform happened in June 2006, instead of January 2007 and so on for all months between June 2006 and December 2006. Thus, all mothers who give birth after each placebo threshold onwards are "treated" regardless of whether they were actually affected by the *Elterngeld* reform or not. I would expect no significant placebo effects for all months before January 2007 because no reform was introduced then. In Figure 5.7 in Appendix B I report the estimated placebo treatment effects for all placebo months from January 2006 until December 2006. None of the placebo effects are significant, reassuring us that the variation in job satisfaction we observe among women who gave birth in January 2007 and the months afterwards is due to the introduction of *Elterngeld*, and not other confounding factors.

Lastly, because of heterogeneity in monetary gains in the analysis sample, it is difficult to tease out to what extent the variation in job satisfaction is due to changes in monetary benefits, rather than duration. Huber (2015) computed that all women with household income lower than €20,000 experienced monetary losses or no change in overall benefit transfer.

Thus, in Table 5.10 I report estimates of the ITT for the two subgroups of women who had net household income lower than €20,000 in the year preceding birth of the child, and all women with household income higher than this figure (including "unambiguous winners" who are excluded from the main specification). The results are quite revealing because they show that the effects estimated are indeed driven by the "unambiguous losers", that is women with income lower than €20,000. Although the sample sizes for the higher income women are larger I find no statistically significant effects, and the size of the ITT is also smaller (-0.21 for EG and 0.26 for WG). The ITT for the small subgroups of "unambiguous losers" are larger in magnitude and remain statistically significant (-1.9 for EG and 0.94 for WG), although they are quite imprecisely estimated. This check shows that monetary gains played little role in explaining job satisfaction of women at the return to work, rather I observe most variation in job satisfaction among women who had monetary loss and reduction in maternity leave length.

### 5.6.3 Effect of the 2007 Parental Leave Reform on Leave Duration

In this section I estimate the effect of the introduction of the *Elterngeld* on the duration of maternity leave (in months) between childbirth and the fifth year after the birth of the child, for mothers who returned to work. Before providing causal estimates of the relationship between *Elterngeld* and maternity leave duration, I report some descriptive results.

In Figure 5.5 I report cumulative proportion of mothers who have returned to work by duration of maternity leave. The solid curve represents women who gave birth to a child in 2007, while the dashed grey curve identifies women who gave birth in 2006. The vertical axis represents the probability of having returned to the labour market at each of the months identified by the horizontal axis, or alternatively the share of women who have returned. EG women have significantly reduced the length of leave after 12 months as a consequence of

the 2007 parental leave reform. In particular, by the 13th month after childbirth over 50% of women who were subject to the *Elterngeld* regulation returned to work compared to around 30% of women who were subject to *Erziehungsgeld*. For these mothers the probability of returning to work is higher at each point in time compared to women who were under the previous policy. For WG I do not find such straightforward evidence. By the 13th month after childbirth only about 30% of mothers had returned to employment regardless of the policy regime. These plots contain women who do not return to work within 5 years, and I identify these observations as censored. These are reflected on the fact that not 100% of women have returned to work by the 60th month from childbirth. Under both policy regimes about 3% of EG and 5% of WG mothers do not return to work by the fifth year. The introduction of *Elterngeld* has not changed this figure. However, these descriptive graphs cannot take into account the confounding effect of seasonality and might also be driven by an overall trend in reduction of leave length.

Thus, in order to obtain a more precise estimate of the effect of *Elterngeld* on actual leave duration I estimate equation (5.2). The results are in Table 5.5. [14] Because the sample sizes for this part of the analysis are small I consider two sample specifications: in panel A I report the results for mothers giving birth in 2006 and 2007, while in panel B I also include mothers who gave birth in 2005 and 2008. The main advantage of considering the larger sample is that the estimations are more precise. Another advantage is that since the role of seasonality is important and I include month of birth indicators, considering four calendar years rather than two allows me to extrapolate the effect of seasonality better.

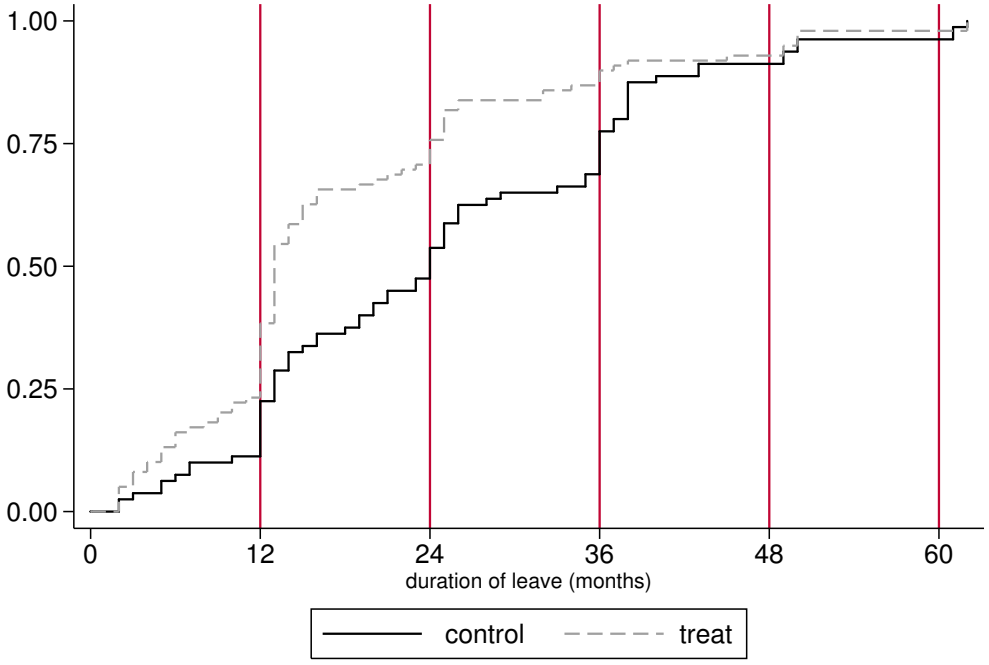
For EG the point estimates for panels A and B go in the same direction and have similar magnitude at around 7 months. For WG none of the point estimates are significant. In the smaller sample this is because of a large standard error: the point estimate is 2.02, but the

[14] In Appendix B Table 5.11 I report the results separately for SOEP and PAIRFAM.

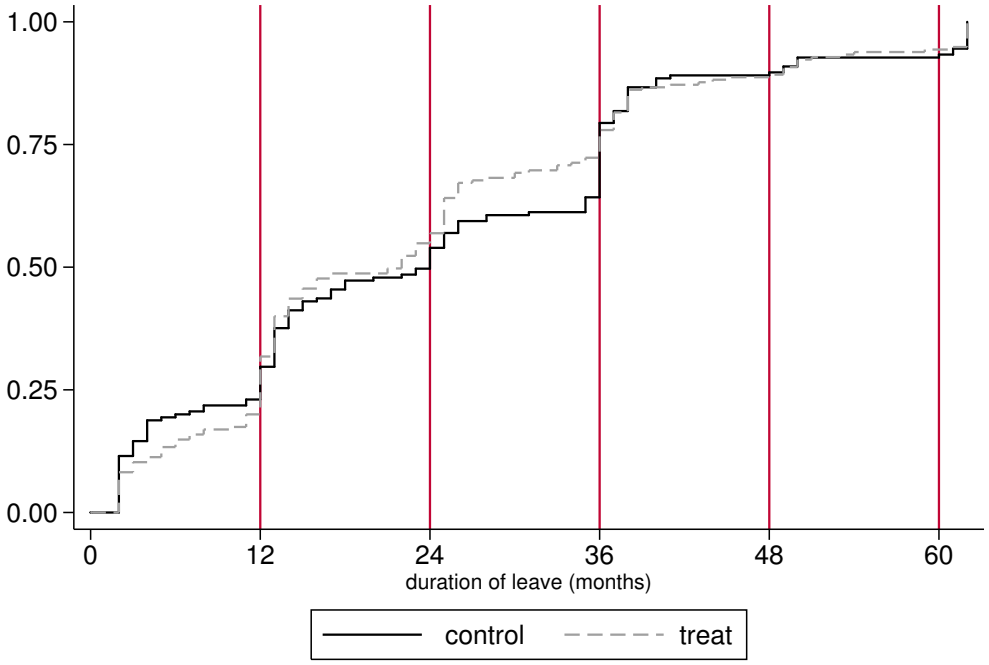
standard error is 2.42. In the larger sample the point estimate is close to 0, suggesting no variation in maternity leave duration was caused by the reform. I conclude that the reform had no significant effect on the average length of maternal leave for women who were previously eligible for *Erziehungsgeld* in WG; the reform reduced parental leave duration of mothers by on average about 7 months in EG.

Fig. 5.5 Cumulative Proportion of Mothers who Have Returned to Paid Employment by Duration and Treatment Status

(a) Eastern Germany




(b) Western Germany




*Notes*: the figure shows the cumulative proportion of mothers who have returned to employment by duration since the birth of the target child. The solid line depicts mothers who gave birth in 2007 (treated), and the dashed grey line mothers who gave birth in 2006 (untreated). The sample consists of all mother-births between 2006 and 2007.
*Source*: SOEP and PAIRFAM. Author's calculations.

Table 5.5 Parental Leave Reform and Actual Duration of Leave at the Return to Work

| Time Frame: | A: Jan 2006 - Dec 2007 | | B: Jan 2005 - Dec 2008 | |
|---|---|---|---|---|
| | EG | WG | EG | WG |
| | (1) | (2) | (1) | (2) |
| Child Born under *Elterngeld* | -7.441* | 2.018 | -6.950*** | -0.773 |
| | (3.81) | (2.42) | (2.11) | (1.73) |
| Second Baby | 11.945*** | 5.023* | 9.392*** | 8.478*** |
| | (3.85) | (2.83) | (2.55) | (1.99) |
| Third Baby | 4.548 | 2.796 | 9.681*** | 1.084 |
| | (6.15) | (3.03) | (3.65) | (2.31) |
| Fourth Baby | 19.363 | 8.663 | 5.739 | 1.205 |
| | (14.57) | (14.63) | (7.73) | (8.32) |
| Age at Birth | -0.157 | -0.222 | 0.307 | -0.052 |
| | (0.48) | (0.23) | (0.28) | (0.20) |
| Medium Education | -1.303 | -3.527 | -3.6 | -1.937 |
| | (4.92) | (3.77) | (3.26) | (2.82) |
| High Education | -2.105 | -6.947 | -7.321* | -6.281 |
| | (7.24) | (6.04) | (4.29) | (4.16) |
| Missing Education | -17.606*** | -0.715 | -17.191*** | 4.838 |
| | (6.33) | (4.03) | (4.55) | (5.80) |
| Pairfam | -6.095* | 6.370*** | -0.932 | 4.059** |
| | (3.40) | (2.41) | (2.15) | (1.85) |
| Constant | 26.232** | 20.172** | 13.921* | 18.393*** |
| | (12.32) | (7.87) | (7.79) | (6.72) |
| Month Dummies | ✓ | ✓ | ✓ | ✓ |
| Observations | 96 | 216 | 187 | 371 |

*Notes*: the table contains DID estimates of the impact of the 2007 parental leave reform on duration of parental leave at the return to work for all mothers who have returned to employment within 5 years of birth of the child. Column (1) contains estimates for women who were residing in EG when they had the baby. Column (2) contains results for WG n women. In panel A the treatment group consists of mothers who gave birth in 2007, while the control group is made up of mothers who gave birth in 2006; while in panel B the treatment group is made up of mothers who give birth in 2007 or 2008, and the control group of mothers giving birth in 2005 or 2006. Robust standard errors clustered at individual level in parentheses.
*** significant at the 1% level. ** significant at the 5% level * significant at the 10% level.
*Source*: SOEP and PAIRFAM. Author's calculations.

### 5.6.4 Sensitivity Analysis for the First Stage

In Figure 5.8 in Appendix B I report the plot of the estimates of average treatment effects as a function of the bandwidth. This is to check that the direction of the estimated effects is not dependent on the size chosen to estimate the results in Table 5.5. The plots show that the direction and size of the treatment effect is robust to the choice of bandwidth (for bandwidths larger than 6 months). [15]

To check whether the estimates are picking up an existing decreasing trend in leave duration, I run placebo treatment regressions (Figure 5.9 in Appendix B). The plot contains the estimated average placebo treatment effects when I pretend that the treatment happened any months between January 2006 and December 2006. None of the estimated placebo treatments are significant except the one for December 2006 in WG. Given that there is not a statistically significant effect for WG, it is difficult to interpret the significance of the placebo treatment.

### 5.6.5 The Effect of a Reduction in Leave Duration on Job Satisfaction

In this section I compute the effect of variation in parental leave duration on job satisfaction. I apply equation (5.3) and derive TS2SLS estimators. This is the average change in job satisfaction for each month variation of maternity leave duration due to introduction of the new parental leave legislation. I report the results in Table 5.6. To compute the standard errors, I apply the Delta method.

WG women experience a large and statistically significant increase in job satisfaction as a consequence of the introduction of *Elterngeld*, but a non-significant decrease in leave duration: I conclude that variations in leave duration are unlikely to be a mechanism for

[15] For smaller bandwidths the sample sizes are too small and it is not possible to draw conclusions on them.

changes in job satisfaction as the first stage is not significant. The opposite is true for EG women, as I find that a large and significant decrease in leave duration is associated with a large decrease in job satisfaction. In particular, for each month less of leave job satisfaction reduces by 0.164 points.

Table 5.6 TS2SLS Estimates of the Impact of Parental Leave Duration on Job Satisfaction

| | | EG | WG |
|---|---|---|---|
| (1) | Intention-to-treat | -1.14** | 0.887** |
| | | (0.55) | (0.40) |
| *N* | | 259 | 725 |
| (2) | First stage | -6.97*** | 2.02 |
| | | (1.99) | (2.31) |
| *N* | | 187 | 216 |
| (3) | TS2SLS | 0.164* | 0.440 |
| | | (0.09) | (0.55) |

*Notes*: I report ITT estimates of the introduction of *Elterngeld* on job satisfaction (row 1 which corresponds to row 3 of Table 5.4). I then display first-stage estimates of the impact of the reduction in benefits duration on the number of months the mother was out of employment during the first 60 months after birth of the child (row 2 which corresponds to row 1 of Table 5.4). I finally report TS2SLS estimates of being out of employment one month less in the first 60 months after childbirth on mother's job satisfaction at the return to paid employment, which I obtain by dividing the intention-to-treat estimates by the first stage estimates. Standard errors for the TS2SLS estimates are obtained using Delta method and reported in parentheses.
*** significant at the 1% level.
** significant at the 5% level.
* significant at the 10% level.
*Source*: SOEP and PAIRFAM. Author's calculations.

## 5.7 Discussion and Conclusions

The *Elterngeld* reform increased job satisfaction in WG and decreased it in EG. Maeder (2014) finds the same result using life satisfaction. The job satisfaction decrease in EG is paired with a large decrease in parental leave duration, suggesting that the shortening in

leave duration led to the decrease in job satisfaction. The negative association between leave duration and job satisfaction is consistent with the idea that length of leave is a family-balance policy and a reduction in leave makes the combination of family and work more difficult.

The strong increase in job satisfaction experienced by WG mothers is not paired by any statistically significant variation in leave duration, so the explanation for this increase lies somewhere else. There are different competing explanations for why there was an increase in job satisfaction in WG, but not in EG. Women in WG are more likely to experience income gains because of the reform, because they have higher pre-birth incomes than EG women: thus, the increase in job satisfaction may be explained by an income effect. However, because I only looked at women who were previously eligible for means tested benefits, the income gains for this sub-sample were modest. WG women may have valued other unmeasured aspects of the reform: for instance, they may have valued having been given more choice over work and family, or they may have experienced an increase in job quality as a consequence of the reform. Increases in job quality may have been possible in WG but not in EG due to under-development of the EG labour market: for instance, women in EG are faced with higher underemployment, average wages are lower (even the statutory minimum wage is lower in EG than in WG) and job insecurity is higher (Weinkopf 2014).

Although I have attempted to answer a general question – what is the relationship between maternity leave length and job satisfaction? – I have answered it examining a specific context. In particular, Germany is different from other countries in terms of a legacy of low maternal employment, generous leave and low support to families. Germany is also not a homogeneous country, as a divided history of nearly 45 years has left marks that are still visible today. The fact that EG is generally poorer, less economically developed and has higher unemployment than WG, is crucial to explain different patterns in the relationship between parental leave

duration and job satisfaction. Infrastructures in support of families and working mothers are more developed in EG. However, it is interesting to note that widespread availability of childcare facilities in EG does not necessarily seem to compensate for shorter paid leaves.

Moreover, I have exploited a policy change and predicted the existence of "reform channels". The external validity of the findings may be limited because of these reform channels. I tested this channel in section 5.6.2 and found that it may be a possible explanation for the pattern observed for EG, but not WG. In other words, I cannot be sure that if reduction in maternity leave duration was brought about by something other than an *Elterngeld* type reform, I would observe a similar decrease in job satisfaction.

Furthermore, although the question on the relationship between leave length and job satisfaction refers to all mothers, I have answered it looking at a subgroup of mothers with specific characteristics (Appendix D): young, low educated, with lower incomes and disproportionately more likely to be single mothers. These features are exacerbated in the EG sample. This observation has clear implications for the meaning and external validity of the findings of this chapter.

Concerning the external validity, the findings cannot be generalised to all German mothers. Thus, the findings of this chapter are not an assessment of the effect of the *Elterngeld* reform as a whole. The *Elterngeld* reform aimed at making the combination of career and family easier, by targeting the generosity of the system to well-off mothers. It is unclear how this policy objective applies to the group of mothers analysed in this chapter: these mothers may be less concerned with making a career, than with making a living. Therefore, the findings of this chapter cannot be interpreted against the policy objective of the reform, as this is not clearly defined for this group of mothers. Rather, the findings of this chapter

should be interpreted against the shift in policy focus away from income support targeted to low-income families. From 2007, the group of mothers represented in this chapter was no longer the main beneficiary of government parental support: this chapter shows how mother's well-being was impacted by this shift. Although the composition of the analysis sample limits the external validity of the findings, it makes for an interesting working hypothesis which would allow for generalising the results of my study to other countries: the interplay between socio-economic background, employment opportunity of mothers and reduction in duration of leave may be a particularly detrimental combination for the well-being of mothers.

Although these results provide a first indication of the so far unexplored connection between parental leave duration and job satisfaction, my estimates should be treated with caution for two reasons. First, they are based on small sample sizes. Although finding a significant result in such a small sample is a suggestion that the effect in the population may be even stronger, the results are very sensitive to the composition of the sample.

Second, the reform changed the composition of working mothers, so that a remark is in place when comparing average levels of job satisfaction before and after the introduction of the *Elterngeld*. My identification strategy consists in comparing "the same type of women" affected by different regimes. However, due to the nature of the job satisfaction variable (which is only observed for working individuals) the identification strategy would properly work only if the same types of women are in employment under both policy regimes. In other words, the estimates are unbiased only if the probability that a woman is in employment at each point in time is 1) independent of whether she has been affected by the reform or not and 2) independent of job satisfaction. Statement 1) is clearly violated because by construction the introduction of the new benefits aims at changing the incentives to return to work quicker. There are reasons to believe that statement 2) is also unlikely to hold because numerous

empirical studies show a strong link between job satisfaction and participation in the labour market (e.g. Freeman 1978, Akerlof et al. 1988, Warr 1999, Clark 2001, Lévy-Garboua et al. 2007, Clark et al. 2012, Böckerman and Ilmakunnas 2012, Oswald et al. 2014, Bryson et al. 2015). This is a phenomenon that scholars name endogenous selection into employment.

This observation may be a contributing factor to the pattern observed for WG under specific circumstances but not for EG. Consider the following thought experiment to exemplify: in WG, before 2007 all mothers returned to work at the end of the 24-months period, regardless of their satisfaction with work; after 2007, only very satisfied mothers returned to work at the end of the benefits period at 12 months, but less satisfied mothers may have still delayed the return to the labour market. [16] Thus, on average women who gave birth after the reform appear more satisfied than mothers who gave birth before 2007, although this is due to the changes in sample composition only. Because I observe no significant variation in maternity leave duration in WG, this mechanism is valid only if some women reduced their duration of leave and others increased it, so that the weighted average remained the same as before the reform: this seems unlikely to have happened. In section 5.4 I estimated the share of compliers in WG and showed that the extremely small share of compliers for WG is due to a high share of women who simply did not react to the reform. Thus, the most likely explanation for the non-significant variation in leave duration in WG is that women did not change their behaviour after the reform. Moreover, this mechanism cannot explain the pattern in EG, because mothers after the reform are on average less satisfied with their work, contradicting the theoretical prediction on the relationship between job satisfaction and labour supply behaviour. These considerations suggest that although endogeneity of job satisfaction to employment behaviour is theoretically a relevant factor in explaining the relationship between maternity leave duration and job satisfaction, it is unlikely to be a threat

[16] Reminding ourselves that the job-protected leave remained at 36 months, and assuming that these women could afford not being in paid employment.

to the internal validity of the findings of this chapter.

In conclusion, while the study has some methodological limitations it provides further evidence of the profound impact of the 2007 parental leave reform in Germany. This study is also the first empirical attempt to link maternal leave duration and job satisfaction. It is surprising that this question has received such little attention so far, given the emphasis on maternal well-being and the large variation in maternity leave policies across countries and time. Although the findings are tentative due to data limitations, this chapter suggests that at least for EG mothers a reduction in the duration of paid maternity leave leads to a decrease in job satisfaction. Even given the same level of income, EG mothers are worse off than WG mothers: they are more likely to not have a partner, they face higher levels of unemployment and they tend to have children at an earlier age. This is a suggestion that socio-economic status (beyond income) is a key component explaining the negative relationship between duration of leave and job satisfaction. This result should be combined with other findings from parental leave scholars to understand how maternity leave policies can be designed to fulfil mothers' preferences over combining life and work.

# 5.8 Appendix A

## Two-Sample-Two-Stage-Least-Squares Estimator

The TS2SLS estimator was first introduced by Angrist and Krueger (1992), who refer to it as an instrumental variable with moments from two samples (TSIV). The rationale for using this estimator is that it is often the case that a single dataset may not contain the full set of dependent variables, instruments and endogenous variables (Angrist and Pischke 2009). This estimator allows us to estimate the first and second stages based on different samples. The requirements for an unbiased estimator are that both samples are drawn from the same population and in principle all variables *could* have been drawn from each of the populations sampled in the two datasets (Angrist and Krueger 1992). Until Inoue and Solon (2010) published their recent article, numerous empirical researchers have applied a TS2SLS as a computationally convenient variant of a TSIV, without drawing a distinction between the two estimators. [17] However, Inoue and Solon note that while IV and 2SLS are identical in the case of a single sample, they are numerically distinct in the two-sample context. In particular, Inoue and Solon show that the TS2SLS estimator is more asymptotically efficient than the TSIV estimator. In section 5.4.1 I defined the TS2SLS estimator in equation (5.3). If the assumptions of exclusionary restriction and monotonicity hold, then (5.3) identifies a weighted average of local average treatment effects (see Angrist and Pischke 2009).

# 5.9 Appendix B

## Additional Figures and Tables

[17] Among others, Björklund and Jäntti 1997, Jappelli et al. 1998, Currie and Yelowitz 2000, Dee and Evans 2003.

Table 5.7 Review of Literature on Parental Leave Duration, Well-being and Labour Market Outcomes of Mothers

| Outcome | Description | Examples |
|---|---|---|
| Life satisfaction | Longer maternity leave duration increases life satisfaction in Germany. However, cross-county variations in life satisfaction are not explained by statuary leave duration. Looking at variations in leave duration caused specifically by *Elterngeld* studies find that life satisfaction increased in West Germany, but decreased in East Germany. | Frey and Stutzer (2003), Pezzini (2005), Chapple et al. (2010), Myrskylä and Margolis (2013), Maeder (2014) |
| Maternal health | Longer maternity leave duration is associated with reduction in depressive symptoms, and improvements in overall health. | Chatterji and Markowitz (2004) , 2012, Baker and Milligan (2008), Liu and Skans (2010), Avendano et al. (2015), Aitken et al. (2015) |
| Labour supply | The presence of maternity leave legislation increases employment of women. However, the positive effect of maternity leave diminishes as leave duration increases and extended parental leave significantly reduces the return to work. Studies that look at the effect of *Elterngeld* find that it had no impact on the long-run participation rates, but it did have an effect on the timing of return to work with women less likely to return to work within 12 months of childbirth. Moreover, the effects are heterogeneous and East German women accelerated their return to work quicker than West Germans. | Jaumotte (2003), Pronzato (2009), Ondrich et al. (1996), Schönberg and Ludsteck (2007), Lalive and Zweimüller (2009), Kluve and Tamm (2013) , Schönberg and Ludsteck (2014) |
| Wages | Longer maternity leave duration leads to a reduction in wages, where the short term reduction is particularly large. However, there is heterogeneity in terms of occupations: women in highly skilled jobs experience relatively larger decreases in wages than women in low skilled occupations. | Ondrich et al. (2002), Buligescu et al. (2009), Gupta et al. (2008), Waldfogel (1998), Akgunduz and Plantenga (2013) |
| Work hours | Longer leave duration leads to an increase in weekly hours worked. | Akgunduz and Plantenga (2013), Rossin-Slater et al. (2013), Baum and Ruhm (2016), Spieß and Wrohlich (2008), Kluve and Schmitz (2014) |

Table 5.8 The Impact of the Introduction of *Elterngeld* Benefits on Job Satisfaction up to Five Years After Birth, DID Estimates for a Sample Excluding Mothers Giving Birth to a Target Child Between December 2006 and January 2007

| | EG<br>(1) | WG<br>(2) |
|---|---|---|
| After Birth of Child | 1.097** | -0.753** |
| | (0.53) | (0.33) |
| Received *Elterngeld* | 1.062** | 0.235 |
| | (0.50) | (0.25) |
| After Birth of Child X received *Elterngeld* | -1.469** | 1.008** |
| | (0.62) | (0.41) |
| Second Baby | 0.369 | 0.037 |
| | (0.46) | (0.21) |
| Third Baby | 0.95 | 0.403 |
| | (0.84) | (0.32) |
| Fourth Baby | 0.928 | -0.759 |
| | (1.20) | (0.94) |
| Age at Birth | -0.007 | -0.002 |
| | (0.08) | (0.03) |
| Medium Education | 0.532 | 0.325 |
| | (0.70) | (0.26) |
| High Education | 1.194 | 0.744 |
| | (1.34) | (0.50) |
| Missing Education | 1.191 | 0.35 |
| | (1.09) | (0.55) |
| Monthly Income (logarithm) | 0.024 | -0.033 |
| | (0.08) | (0.03) |
| Constant | 5.911*** | 6.960*** |
| | (1.74) | (0.83) |
| Month Dummies | ✓ | ✓ |
| Observations | 328 | 678 |
| Mother Births | 66 | 147 |

*Notes*: the table reports difference-in-difference estimates of the impact of *Elterngeld* reform on job satisfaction for a sample of mothers giving birth between January 2006 and November 2006 and February 2007 and December 2007. The figures correspond to coefficient $\theta$ in equation (3). Standard errors are clustered at the individual mother level and reported in parentheses. The sample for column (1) is all mothers from EG; for column (2) is all mothers from WG. *** significant at the 1% level.** significant at the 5% level.* significant at the 10% level.
*Source*: SOEP. Author's calculations.

Table 5.9 The Impact of the Introduction of *Elterngeld* Benefits on Job Satisfaction up to Five Years After Birth when Eligibility to *Erziehungsgeld* is Defined as Belonging to the First and Second Terciles of the Household Income Distribution, DID Estimates

| | EG<br>(1) | WG<br>(2) |
|---|---|---|
| After Birth of Child | 0.980* | -0.632** |
| | (0.50) | (0.27) |
| Received *Elterngeld* | 0.784* | -0.252 |
| | (0.46) | (0.26) |
| After Birth of Child X received *Elterngeld* | -1.366** | 0.986*** |
| | (0.57) | (0.36) |
| Second Baby | 0.204 | 0.211 |
| | (0.41) | (0.21) |
| Third Baby | 0.201 | 0.609 |
| | (0.66) | (0.37) |
| Fourth Baby | -1.142 | -1.063 |
| | (0.87) | (0.89) |
| Age at Birth | 0.011 | 0.004 |
| | (0.08) | (0.02) |
| Medium Education | 0.627 | 0.273 |
| | (0.66) | (0.25) |
| High Education | 0.997 | 0.762** |
| | (0.98) | (0.38) |
| Missing Education | 0.538 | 0.249 |
| | (0.83) | (0.48) |
| Monthly Income (logarithm) | 0.026 | -0.014 |
| | (0.08) | (0.03) |
| Constant | 5.565*** | 6.665*** |
| | (1.61) | (0.75) |
| Month Dummies | ✓ | ✓ |
| Observations | 369 | 842 |
| Mother Births | 73 | 175 |

*Notes*: the table reports difference-in-difference estimates of the impact of *Elterngeld* reform on job satisfaction. The figures correspond to coefficient $\theta$ in equation (3). Standard errors are clustered at the individual mother level and reported in parentheses. The sample for column (1) consists of all mothers who gave during the same time frame and resided in EG; for column (2) all mothers who reside in WG. Eligibility to *Erziehungsgeld* is proxied by belonging to the first and second terciles of the household income distribution for the calendar year before the child was born. *** significant at the 1% level.** significant at the 5% level.* significant at the 10% level. *Source*: SOEP. Author's calculations.

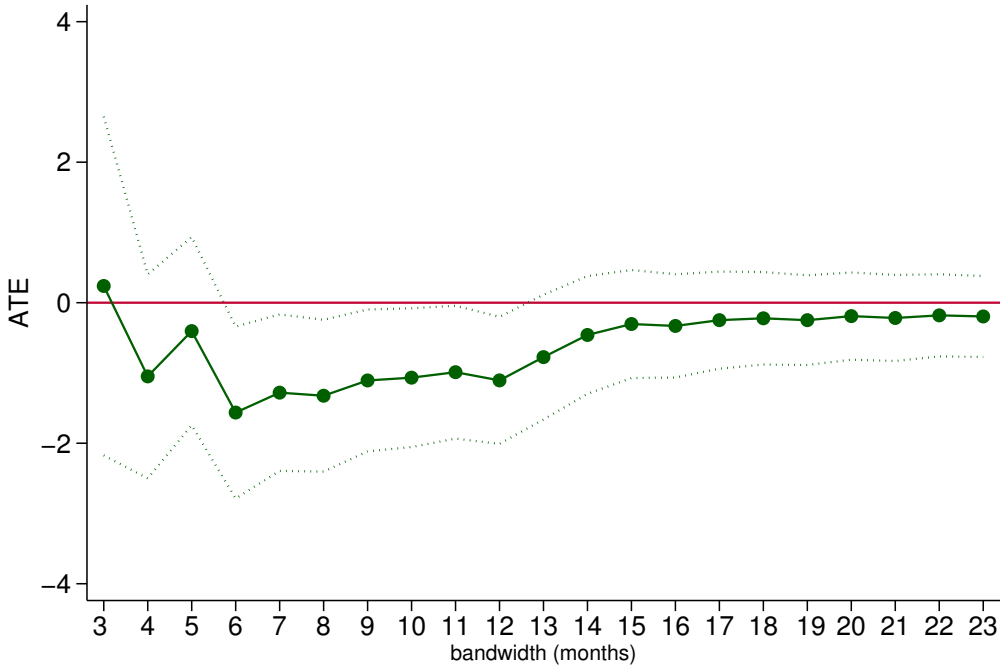
Table 5.10 The Impact of the Introduction of *Elterngeld* Benefits on Job Satisfaction up to Five Years after Birth, DID Estimates for (1) Women with Pre-Birth Net Household Income Lower than €20,000 and (2) Women with Pre-Birth Net Household Income Higher than €20,000, DID estimates

| | EG | | WG | |
|---|---|---|---|---|
| | (1) Household income <€20,000 | (2) Household income >€20,000 | (1) Household income <€20,000 | (2) Household income >€20,000 |
| After Birth of Child | 1.06 | 0.41 | -0.64 | -0.19 |
| | (0.76) | (0.35) | (0.35) | (0.22) |
| Received *Elterngeld* | 0.66 | 0.3 | 0.5 | -0.34 |
| | (0.80) | (0.49) | (0.29) | (0.27) |
| After Birth of Child X *Elterngeld* | -1.90* | -0.21 | 0.94* | 0.26 |
| | (0.79) | (0.48) | (0.44) | (0.32) |
| Second Baby | -0.78 | 0.796** | 0.09 | -0.01 |
| | (0.47) | (0.28) | (0.23) | (0.22) |
| Third baby | 0.01 | -0.33 | 0.37 | -0.07 |
| | (0.79) | (0.73) | (0.41) | (0.47) |
| Fourth Baby | -2.73* | | 0.03 | -2.37* |
| | (1.30) | | (0.66) | (1.11) |
| Age at Birth | 0.1 | -0.05 | 0.01 | -0.01 |
| | (0.10) | (0.06) | (0.02) | (0.03) |
| Medium Education | 0.06 | 1.908** | 0.15 | 0.74* |
| | (0.84) | (0.57) | (0.27) | (0.33) |
| High Education | 2.29* | 2.21*** | 0.61 | 0.7 |
| | (1.00) | (0.56) | (0.49) | (0.37) |
| Missing Education | -0.09 | | 0.18 | 1.098* |
| | (0.94) | | (0.91) | (0.53) |
| Monthly Income (logarithm) | -0.04 | 0.2 | 0 | -0.11** |
| | (0.09) | (0.23) | (0.03) | (0.04) |
| Constant | 5.11** | 4.28 | 5.82*** | 8.39*** |
| | (1.74) | (2.58) | (0.82) | (0.90) |
| Month Dummies | ✓ | ✓ | ✓ | ✓ |
| Observations | 242 | 249 | 531 | 856 |
| Mother Births | 50 | 43 | 116 | 156 |

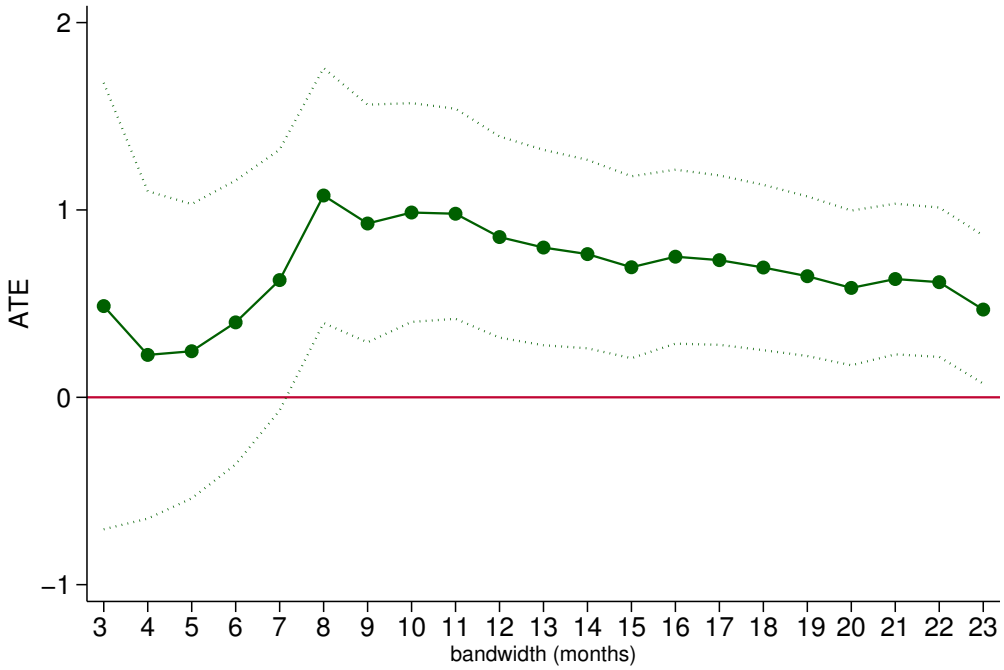
*Notes*: the table reports difference-in-difference estimates of the impact of *Elterngeld* reform on job satisfaction. The figures correspond to coefficient $\theta$ in equation (3). Standard errors are clustered at the individual mother level and reported in parentheses. *** significant at the 1% level.** significant at the 5% level.* significant at the 10% level. *Source*: SOEP. Author's calculations.

Fig. 5.6 Intention to Treat Effects as a Function of the Size of Bandwidth

(a) Eastern Germany



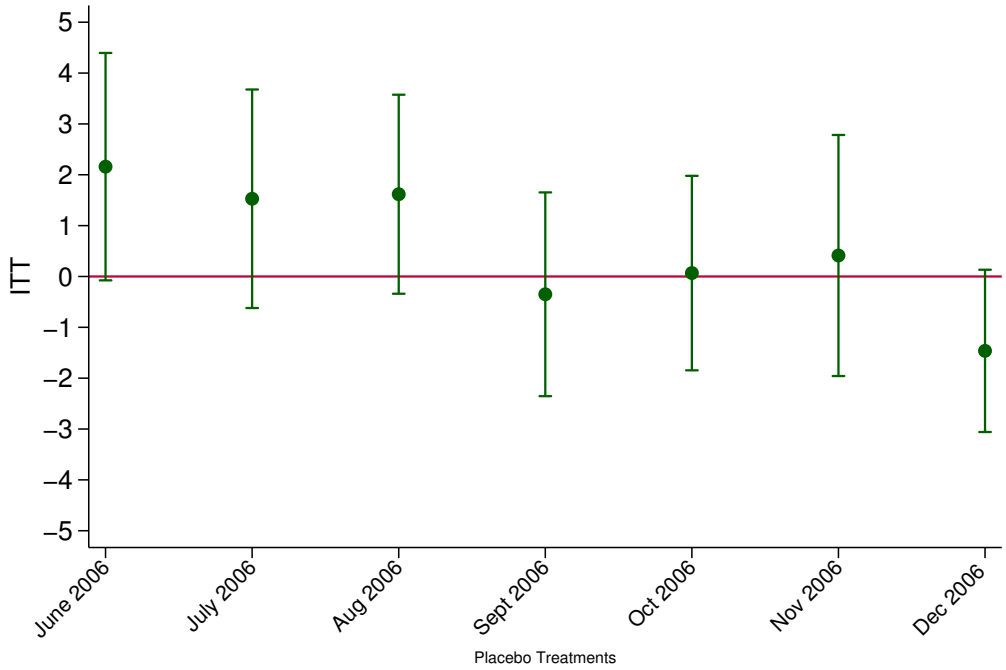

(b) Western Germany



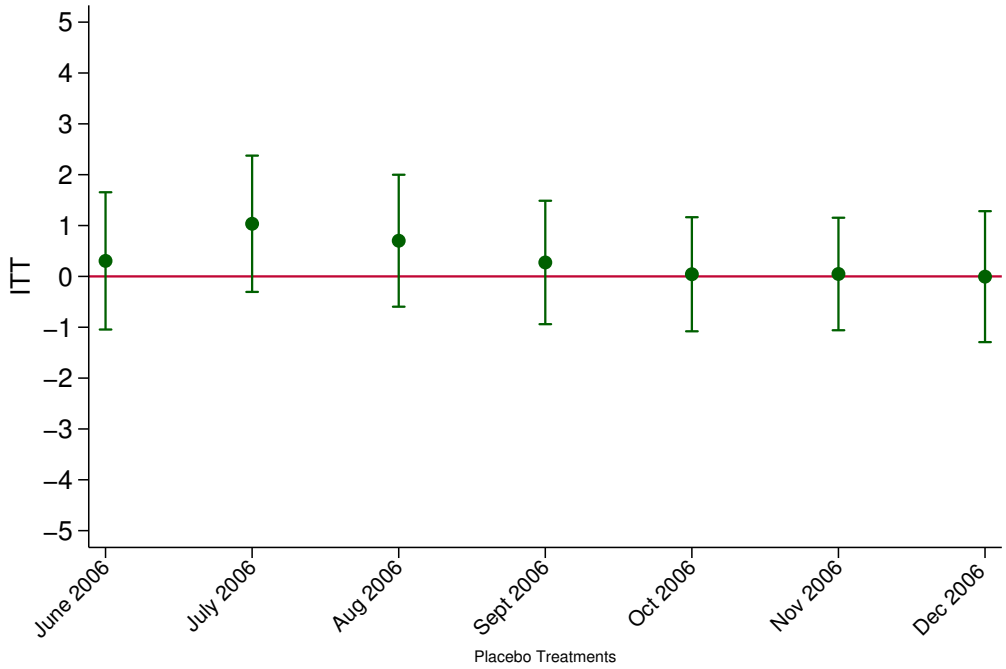

*Notes*: I plot the treatment effects from equation 3 (coefficient $\theta$) as a function of the size of the bandwith. The bandwith is allowed to vary from 3 months before and after January 2007 until 23 months before and after January 2007. The dotted lines depict the 90% confidence interval. *Source*: SOEP. Author's calculations.

Fig. 5.7 Intention to Treat Effects when Treatment is Simulated to Happen on the 1st of each Month between January 2006 and December 2006

(a) Eastern Germany




(b) Western Germany




*Notes*: the plot depicts the point estimate and 90% confidence interval for placebo treatments. I estimate the placebo treatments from equation (3) by allowing the treatment to happen on the first of each month between January 2006 and December 2006. The estimated treatment effects correspond to coefficient $\theta$ in equation (3). Panel (a) contains result for EG mothers, and panel (c) for mothers in WG. *Source*: SOEP. Author's calculations.

Table 5.11 Parental Leave Reform and Actual Duration of Leave at the Return to Work

| *Dataset:* | SOEP | | | | PAIRFAM | | | |
|---|---|---|---|---|---|---|---|---|
| *Time frame:* | A: Jan 2006 - Dec 2007 | | B: Jan 2005 - Dec 2008 | | A: Jan 2006 - Dec 2007 | | B: Jan 2005 - Dec 2008 | |
| | EG | WG | EG | WG | EG | WG | EG | WG |
| | (1) | (2) | (1) | (2) | (1) | (2) | (1) | (2) |
| Child Born under *Elterngeld* | -13.5** | 1.82 | -8.0** | -1.26 | -1.5 | 2.17 | -4.23* | -0.87 |
| | (5.37) | (4.50) | (3.23) | (2.87) | (4.95) | (2.40) | (2.40) | (1.87) |
| Second Baby | 17.9** | 10.1** | 13.9*** | 14.0*** | 3.17 | 3.18 | 4.05 | 3.78 |
| | (6.92) | (4.70) | (3.97) | (3.19) | (3.95) | (3.63) | (2.63) | (2.68) |
| Third Baby | -4.024 | 2.827 | 7.661 | -0.016 | 8.105 | 2.314 | 6.852 | 2.162 |
| | (10.34) | (5.53) | (5.80) | (3.88) | (12.07) | (3.55) | (4.61) | (2.86) |
| Fourth Baby | | 17.87 | 2.388 | 4.941 | 22.6** | | 10.42 | 2.81 |
| | | (17.31) | (6.38) | (11.47) | (8.89) | | (9.39) | (11.65) |
| Age at Birth | 1.43* | -0.64* | 1.59*** | -0.239 | -1.06** | 0.019 | -0.671** | -0.116 |
| | (0.85) | (0.37) | (0.39) | (0.34) | (0.46) | (0.27) | (0.28) | (0.22) |
| Medium Education | -5.724 | -4.522 | -10.2** | -3.501 | -0.056 | -0.266 | 1.429 | 2.104 |
| | (7.89) | (5.53) | (5.03) | (3.90) | (6.33) | (4.16) | (3.93) | (3.38) |
| High Education | -15.975 | -4.664 | -21.2*** | -5.981 | -2.12 | -3.932 | -0.096 | -3.419 |
| | (18.84) | (11.53) | (7.51) | (6.79) | (7.97) | (6.20) | (4.61) | (4.91) |
| Missing Education | -18.11 | 6.556 | -21.5*** | 4.606 | | | | |
| | (11.13) | (6.49) | (6.83) | (5.91) | | | | |
| Constant | -11.9 | 37.0*** | -14.1 | 28.1** | 42.1*** | 13.2* | 31.2*** | 18.5*** |
| | (21.78) | (13.20) | (12.30) | (11.54) | (10.20) | (7.26) | (6.53) | (6.58) |
| Month Dummies | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Observations | 50 | 95 | 97 | 173 | 46 | 121 | 90 | 198 |

*Notes*: the table contains DID estimates of the impact of the 2007 parental leave reform on duration of parental leave at the return to work for all mothers who have returned to employment within 5 years of birth of the child. Column (1) contains estimates for women who were residing in EG when they had the baby. Column (2) contains results for WG women. In panel A the treatment group consists of mothers who gave birth in 2007, while the control group is made up of mothers who gave birth in 2006; while in panel B the treatment group is made up of mothers who give birth in 2007 or 2008, and the control group of mothers giving birth in 2005 or 2006. Robust standard errors clustered at individual level in parentheses. *** significant at the 1% level. ** significant at the 5% level * significant at the 10% level.
*Source*: SOEP and PAIRFAM. Author's calculations.

# 5.10 Appendix C

## Decribing the Analytical Sample

In this section I describe the analysis sample in greater detail. I will consider the following aspects: attrition, and differences in sample composition between EG and WG.

### Attrition

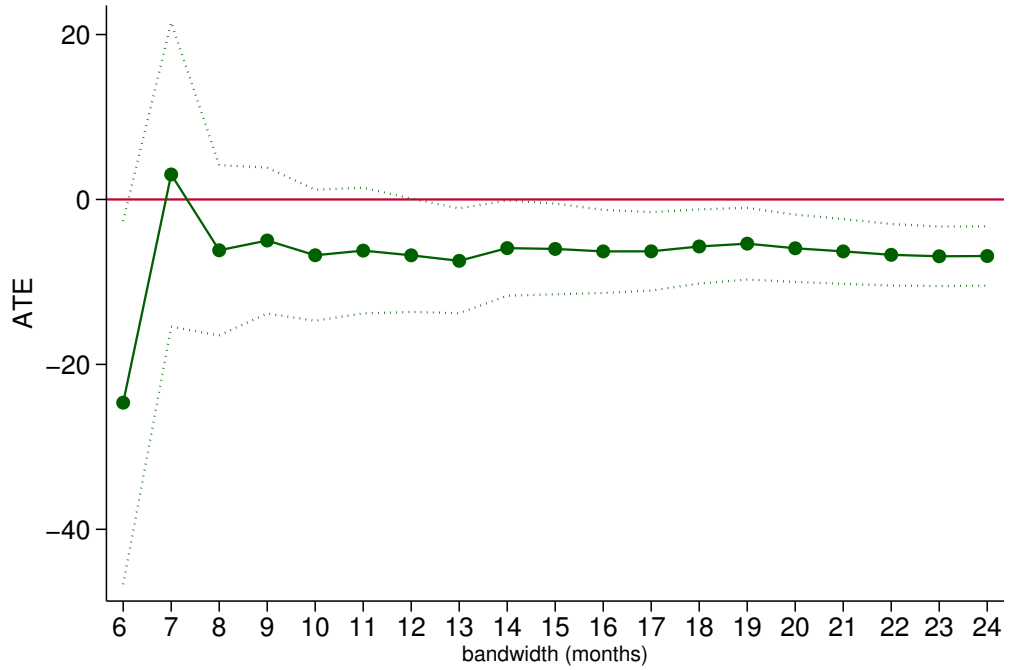
In this section I assess the seriousness of attrition in my estimation sample from the moment I observe a women give birth until the fifth interview after childbirth. I compute overall attrition rates and I investigate whether there is selective attrition. I also report ITT estimates computed using bespoke longitudinal weights, and show that the conclusions are unchanged when using weights.

The percentage of women lost over the 5-year period is 35.1% for both the EG and WG samples. Attrition is problematic if it results in a change in the sample composition. In Table 5.11 I report mean estimates for background variable at each interview after the birth of the child. The role of attrition in modifying the sample composition is different in EG and WG. In WG I note that mothers who are married, have high education and higher average incomes are more likely to remain in the sample by the fifth interview. On the other hand, in EG it is mothers with low education who are more likely to remain in the sample. Attrition does not create changes in sample composition with respect to age and proportion of mothers with medium education. Overall, the role of attrition is not severe in changing the composition of the sample with respect to observable characteristics.

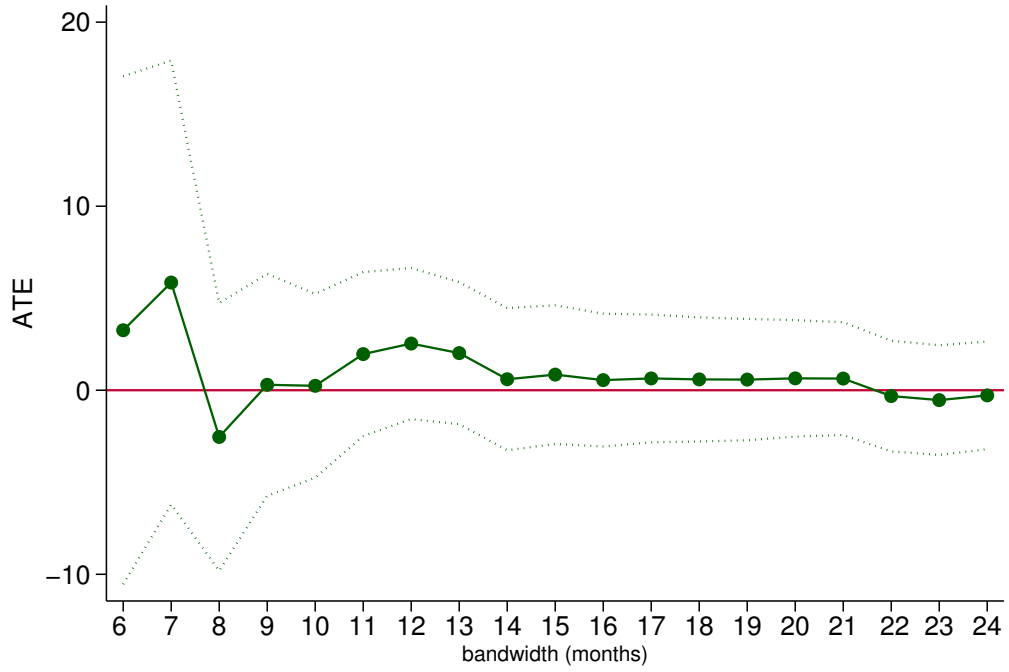
I construct bespoke longitudinal weights by modelling the probability of having a valid interview at time $t+1$ given that the woman had a valid interview at time $t$, using probit

Fig. 5.8 Treatment Effect for the Introduction of *Elterngeld* on the Duration of Maternity Leave as a Function of the Bandwidth

(a) Eastern Germany



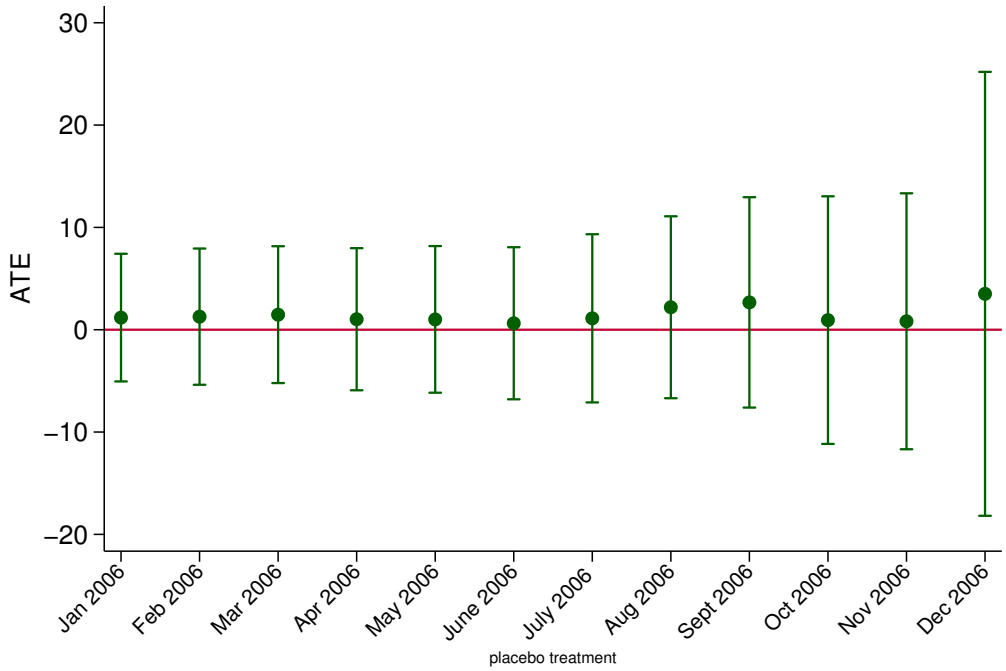

(b) Western Germany



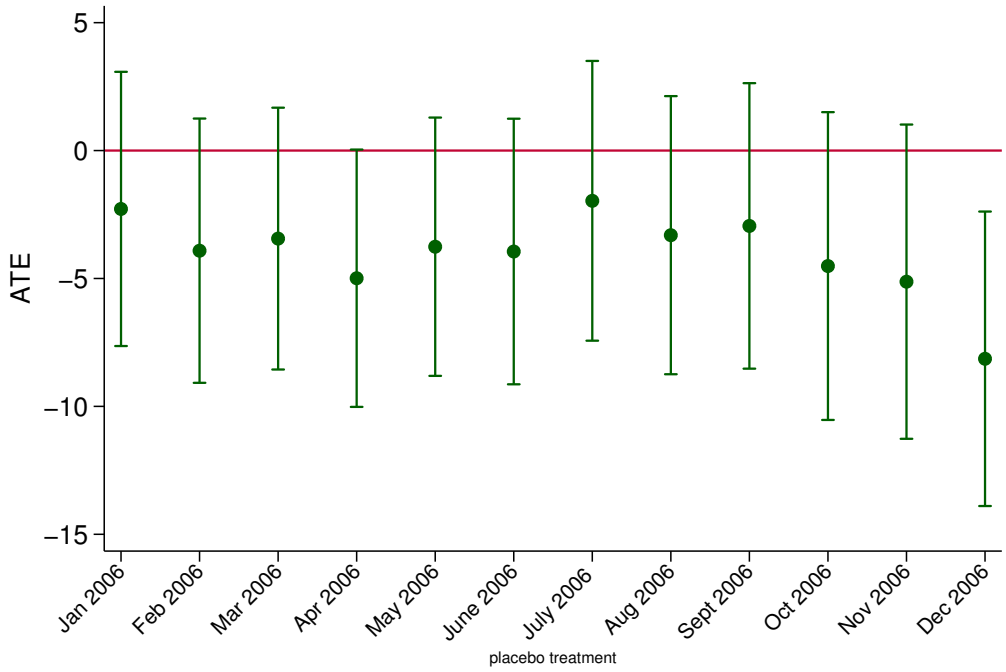

*Notes*: I plot the treatment effects from equation (2) (coefficient $\beta_1$) as a function of the size of the bandwidth chosen to define the estimation sample. The bandwidth is allowed to vary from 6 months before and after January 2007 until 23 months before and after January 2007. The plots are based on the sample of mothers who fullfill the criteria for means tested benefits. In panel (a) I report the results for EG mothers, in panel (b) for WG mothers. Each model contains controls for month of birth, mother education, birth order and age of mother.
*Source*: SOEP and PAIRFAM. Author's calculations.

Fig. 5.9 Average Marginal Effects for the Introduction of *Elterngeld* on Number of Months away from Paid Employment when Treatment is Simulated to Happen on the 1st of Each Month between January 2006 and December 2006

(a) Eastern Germany




(b) Western Germany




*Notes*: the plot depicts the point estimate and 90% confidence interval for placebo treatments. I estimate the placebo treatments from equation (2) by allowing the treatment to happen on the first of each month between January 2006 and December 2006. The estimated treatment effects correspond to coefficient $\beta_1$ in equation (2). The plots are based on the sample of mothers who fullfill the criteria for means tested benefits. Panel (a) contains result for EG mothers, and panel (b) for mothers in WG.
*Source*: SOEP and PAIRFAM. Author's calculations.

regressions. I then construct the weight for each individual equal to the inverse of the probability predicted from the regression. The results of the ITT estimation using these bespoke weights are in Table 5.12. The results are substantially unchanged, although the coefficients are less precisely estimated.

Table 5.12 Change in Sample Composition between First and Fifth Interview After Childbirth

| | First interview | Second interview | Third interview | Fourth interview | Fifith interview |
|---|---|---|---|---|---|
| EG | | | | | |
| Low education | 0.21 | 0.23 | 0.23 | 0.24 | 0.27 |
| | (0.41) | (0.42) | (0.42) | (0.43) | (0.44) |
| Medium education | 0.73 | 0.71 | 0.72 | 0.7 | 0.67 |
| | (0.45) | (0.46) | (0.45) | (0.46) | (0.48) |
| High education | 0.04 | 0.045 | 0.03 | 0.037 | 0.041 |
| | (0.20) | (0.21) | (0.18) | (0.19) | (0.20) |
| Age | 27.61 | 27.47 | 27.47 | 27.3 | 27.04 |
| | (4.01) | (4.07) | (4.08) | (4.18) | (4.06) |
| Income | 19,912 | 20,234 | 20,201 | 19,845 | 20,305 |
| | (12,213) | (12,284) | (12,099) | (12,218) | (12,346) |
| Married | 0.26 | 0.26 | 0.28 | 0.28 | 0.25 |
| | (0.44) | (0.44) | (0.45) | (0.45) | (0.43) |
| Observations | 70 | 66 | 62 | 54 | 48 |
| WG | | | | | |
| Low education | 0.33 | 0.33 | 0.33 | 0.31 | 0.31 |
| | (0.47) | (0.47) | (0.47) | (0.46) | (0.47) |
| Medium education | 0.56 | 0.56 | 0.55 | 0.57 | 0.57 |
| | (0.50) | (0.50) | (0.50) | (0.50) | (0.50) |
| High education | 0.075 | 0.073 | 0.08 | 0.09 | 0.09 |
| | (0.26) | (0.26) | (0.27) | (0.28) | (0.29) |
| Age | 29.16 | 29.14 | 28.9 | 29.26 | 29.68 |
| | (5.25) | (5.47) | (5.55) | (5.42) | (5.46) |
| Income | 20968 | 20255 | 20735 | 20842 | 21258 |
| | (12032) | (11919) | (11745) | (12043) | (11894) |
| Married | 0.64 | 0.63 | 0.67 | 0.68 | 0.72 |
| | (0.48) | (0.48) | (0.47) | (0.47) | (0.45) |
| Observations | 160 | 150 | 137 | 129 | 113 |

Table 5.13 The Impact of the Introduction of *Elterngeld* Benefits on Job Satisfaction up to Five Years after Birth, DID Estimates with Bespoke Longitudinal Weights

| | EG<br>(1) | WG<br>(2) |
|---|---|---|
| After Birth of the Child | 1.02* | -0.60* |
| | (0.58) | (0.35) |
| Received *Elterngeld* | 0.59 | 0.34 |
| | (0.56) | (0.28) |
| After Birth of the Child X *Elterngeld* | -1.02 | 0.84* |
| | (0.73) | (0.44) |
| Second Baby | 0.95* | -0.07 |
| | (0.49) | (0.23) |
| Third Baby | 0.16 | 0.16 |
| | (1.07) | (0.36) |
| Fourth Baby | 0.95 | -0.83 |
| | (1.31) | (0.80) |
| Age at Birth | -0.07 | 0.02 |
| | (0.09) | (0.03) |
| Medium Education | 1.29* | 0.26 |
| | (0.71) | (0.28) |
| High Education | 2.66* | 0.61 |
| | (1.37) | (0.52) |
| Missing Education | 2.51** | 0.62 |
| | (1.21) | (0.59) |
| Monthly Income (logarithm) | 0.06 | -0.01 |
| | (0.11) | (0.03) |
| Constant | 6.39*** | 5.99*** |
| | (1.90) | (0.84) |
| Month Dummies | ✓ | ✓ |
| Observation | 359 | 725 |
| Mother Births | 75 | 157 |

*Notes*: the table reports difference-in-difference estimates of the impact of *Elterngeld* reform on job satisfaction. The figures correspond to coefficient $\theta$ in equation (3). Standard errors are clustered at the individual mother level and reported in parentheses. The sample for column (1) consists of all mothers who gave during the same time frame and resided in EG; for column (2) all mothers who reside in WG. *** significant at the 1% level.** significant at the 5% level.* significant at the 10% level. *Source*: SOEP. Author's calculations.

**Differences in Sample Composition Between EG and WG**

The main analysis of this chapter shows that there are large differences in terms of the relationship between maternity leave duration and job satisfaction between EG and WG. Moreover, the *Elterngeld* reform had opposite effects on job satisfaction and maternity leave duration in the two parts of the country. It is therefore essential to describe the sample composition for EG and WG separately to interpret the results of the chapter (Table 5.13).

There are significant differences between the EG and WG sample in terms of the proportion of women with a medium level of education, age and marital status. In particular, the EG sample contains a larger share of medium educated women than the WG sample. EG mothers are younger than WG ones and more likely to be unmarried. In particular, while the majority of mothers in WG are married (62%), only 25% of EG mothers are married when they give birth. Although EG mothers have lower household income than WG, the difference is not statistically significant.

Table 5.14 Differences in Sample Composition Between EG and WG

| | EG | WG | Difference | Significance |
|---|---|---|---|---|
| Low education | 0.22 | 0.32 | 0.099 | |
| | (0.05) | (0.04) | (0.06) | |
| Medium education | 0.73 | 0.57 | -0.155 | ** |
| | (0.05) | (0.04) | (0.07) | |
| High education | 0.04 | 0.07 | 0.034 | |
| | (0.02) | (0.02) | (0.03) | |
| Age at birth | 27.79 | 29.02 | 1.23 | * |
| | (0.50) | (0.41) | (0.70) | |
| Income | 19,564 | 20,657 | 1,093 | |
| | (1,505) | (934) | (1,757) | |
| Married | 0.25 | 0.62 | 0.38 | *** |
| | (0.05) | (0.04) | (0.07) | |
| Observations | 74 | 174 | | |

## 5.11 Appendix D

### Describing the Population of Mothers in Germany

My estimation sample is a particular subgroup of the population of mothers. To interpret the results, it is important to describe how this subgroup differs from the overall population of mothers and other subgroups excluded from the analysis.

In Table 5.14 I report descriptive statistics for (A) the total sample of mothers giving birth to a child in 2006 and 2007, which given the nature of SOEP data is representative of the corresponding population of mothers, (B) the sub-sample of mothers who did not fulfil the eligibility requirements for the means tested benefits (regardless of whether they were under the old policy regime or not), and (C) the estimation sample. For each sample I report the results broken down by EG and WG.

Some of the findings from Table 5.14 are expected. The estimation sample is on average poorer and lower educated than the total population of mothers and the non-eligible mothers. Still, there also some unexpected findings. First of all, women in the estimation sample are younger, more likely to be single and more likely to be from EG. Not only they are less likely to be high educated and more likely to be low educated, but they are also more likely to have a medium level of education.

Table 5.15 Comparison Between Estimation Sample, Population and non Eligible Mothers

| | A: All Mothers | | B: Not Eligible Mothers | | C: Analysis Sample | |
|---|---|---|---|---|---|---|
| | EG | WG | EG | WG | EG | WG |
| | (1) | (2) | (1) | (2) | (1) | (2) |
| Low education | 0.17 | 0.22 | 0.04 | 0.12 | 0.21 | 0.32 |
| | (0.38) | (0.41) | (0.21) | (0.32) | (0.41) | (0.47) |
| Medium education | 0.68 | 0.55 | 0.52 | 0.57 | 0.73 | 0.57 |
| | (0.47) | (0.49) | (0.51) | (0.49) | (0.45) | (0.50) |
| High education | 0.13 | 0.2 | 0.44 | 0.3 | 0.04 | 0.07 |
| | (0.34) | (0.40) | (0.51) | (0.46) | (0.19) | (0.26) |
| Age at birth | 28.63 | 30.48 | 31.34 | 32.4 | 27.8 | 29.02 |
| | (4.50) | (5.52) | (4.14) | (4.59) | (4.29) | (5.36) |
| Income | 29,295 | 39,124 | 61,651 | 63,885 | 19,239 | 20,659 |
| | (23,296) | (27,074) | (21,241) | (22,122) | (12,058) | (11,890) |
| Married | 0.26 | 0.64 | 0.3 | 0.68 | 0.25 | 0.62 |
| | (0.44) | (0.48) | (0.47) | (0.47) | (0.43) | (0.49) |
| Eligible | 0.76 | 0.58 | | | | |
| | (0.49) | (0.43) | (0.50) | | | |
| Observations | 97 | 367 | 23 | 193 | 74 | 174 |

# Chapter 6

# Marital Dissolution and Job Satisfaction Trajectories: The Case of Western Germany

## 6.1 Introduction

One well-established finding in the subjective well-being literature is that in the years before men separate from their partners their level of subjective well-being falls, although this variation is only temporary and their well-being levels rebound over time. In some cases, levels of subjective well-being return to similar levels to pre-separation creating no long lasting effects of separation on subjective well-being, as in the case of Germany (Clark et al. 2008a, Lucas 2005, Gardner and Oswald 2006), the United Kingdom (Clark and Georgellis 2013), and Australia (Frijters et al. 2011). In other cases, well-being levels rebound and reach even higher levels than pre-separation, as in Switzerland (Anusic et al. 2014) and South Korea (Rudolf and Kang 2015). However, while we know what happens to trajectories of life satisfaction around the time of union dissolution, it is less clear what happens to domain-specific well-being of men, such as job satisfaction. This is regrettable because

separation has numerous financial, economic and psychological consequences which may be particularly detrimental for job satisfaction.

The financial consequences of union dissolution for men have been extensively analysed for multiple countries (Tach and Eads 2015, Amato 2000, 2010, Gardner and Oswald 2006, Tavares and Aassve 2013, Kalmijn 2005, Andress et al. 2006, Altenhofen et al. 2008, Hungerford 2001, Jenkins 2008, Holden and Smock 1991). There is a great deal of heterogeneity in the financial consequences of divorce for men: while most studies show that the majority of men experience an increase in income and living standard on average (e.g.Burkhauser et al. 1990, Andress et al. 2006, Jenkins 2008), there is also evidence that a sizeable share of men experience higher likelihood of taking up a job of low occupational status (McManus and DiPrete 2001). Men may lose social capital and benefits from specialisation that may have supported their careers (Kalmijn 2005). However, there is less research about more general workplace well-being measures. This is regrettable because how well individuals are able to function at work is a key determinant of how well individuals cope with divorce (Casey 2013, p.619).

I fill this gap by documenting the shape of men's job satisfaction trajectories around the time of union dissolution. I conceptualise job satisfaction as a measure of how well workers' needs from employment are met by their jobs. Thus, variations in job satisfaction trajectories around the time of union dissolution can be interpreted as an indication of how well individuals' jobs fit into the lives of newly separated men. In particular, decreases in job satisfaction may indicate a lack of fit between the man's job and his new family situation, whereas increases in job satisfaction may be interpreted as work assuming an increased importance, possibly as a compensation effect or buffer against lower well-being in the

private sphere of life.

Many commentators have noted that it is not possible to talk about union dissolution as an event happening at one point in time. Instead, union dissolution is a process which develops over many years, and the date in which the co-residence ends is only one of the many steps that partners go through when splitting. For this reason, I adopt a longitudinal approach, and document job satisfaction trajectories for working men up to three years before and after the end of the co-residence with the partner. This enables me to analyse how men's job satisfaction changes after a marital split and whether it returns to pre-event levels in the long run (the adaptation hypothesis). Many researchers have used a similar approach to investigate anticipation and adaptation to life events in subjective well-being measures, and the majority of them have used the SOEP as I do (Lucas et al. 2003, Lucas 2005, Diener et al. 2006, Stutzer and Frey 2006, Zimmermann and Easterlin 2006, Lucas 2007).

WG is a particularly interesting country in which to study the relationship between union dissolution and job satisfaction trajectories because there is a combination of a high divorce rate with strong negative consequences of divorce (Daly 2000, Kalmijn 2010). At the same time, the incidence of cohabitations has increased steadily in the last 30 years (Nazio and Blossfeld 2003). Cohabitations have distinct features in WG: they are not legally recognised, they are short-lived, they are a prelude to marriage and they infrequently involve a resident child. In other words, in WG marriage and cohabitations are two distinct family forms that imply different degrees of economic dependence between partners. Thus, while I describe union dissolution as the process of split of a couple, regardless of their formal marital status, I also consider marital and non-marital splits separately to reflect the fact that marriages are unlike unmarried cohabitations in WG.

In EG the meaning and incidence of cohabitations is very different: in EG cohabitations are more frequent than in WG, they are an alternative to marriage rather than a prelude to it and there is a high rate of non-marital childbearing (Nazio and Blossfeld 2003, Klärner 2015). For these reasons, it is not possible to analyse WG and EG together, and analysing EG by itself is impractical, as the sample size for EG is small. Hence, I focus on WG only in this chapter.

The multiple mechanisms that link union dissolution to job satisfaction trajectories are described in section 6.2. To map trajectories of job satisfaction around the time of union dissolution I estimate fixed effects regressions with leads and lags marital status variables (section 6.3) using a sample of men from the SOEP who stop living together with their partners any time between 1985 and 2013 (section 6.4). I find that there is no anticipation of union dissolution in terms of job satisfaction, but there is a temporary boost in job satisfaction after union dissolution that lasts up to three years. After that, there is complete adaptation; this pattern is driven by dissolutions of legal marriages, as there is little variation of job satisfaction around the time of dissolution of cohabitations (section 6.5). The conclusions of this chapter highlight the central role of work in individuals' lives (section 6.6).

## 6.2 Background

The main mechanism through which the loss of a partner may affect job satisfaction is via a redefinition of the role that employment pays in men's lives. Previous research has found that when experiencing the loss of a valued partner men may compensate by attaching more value to another identity, e.g. developing and cultivating their own identity as a worker is a buffer (Simon 1997, Tavares and Aassve 2013). Career success can protect against stress associated with divorce (Casey 2013). When one's identity as a relationship partner is challenged, it can be helpful to get esteem and confidence by embracing a work identity. That renewed sense

of identity can translate into job satisfaction and performance gains.

The need for increased financial security can lead employees to become more productive and work harder to keep a job that is more important under stressful economic circumstances. This mechanism is what psychologists describe as the strategy of "compensation". Sirgy (2012) describes compensation as the process by which individuals, seeking to maximise subjective well-being, manipulate the salience of domains: "when they feel dissatisfied in one life domain they deflate the importance of that domain and inflate the importance in other life domains in which they have experienced dissatisfaction. Doing so prevents the overall loss of satisfaction (...) Therefore, experiencing satisfaction in one life domain compensates for the lack of satisfaction in another." (page 89)

Marital stability is crucial for psychological well-being (Carr and Springer 2010, Hughes and Waite 2009, Margelisch et al. 2015). Research has found that stress levels increase in the period prior to separation but return to baseline levels within 2 years of separation (Booth and Amato 1991, Hetherington and Kelly 2003). Studies looking at life satisfaction find that there is anticipation to divorce, and well-being level decrease in the lead up to the event (Clark 2016). This is consistent with the idea of union dissolution as a process during which factors such as uncertainty, conflicts and negotiations with a partner start much earlier than the date of residential change. This literature supports the use of the anticipation-adaptation framework to describe trajectories of job satisfaction around the time of union dissolution. There may be anticipation if partners change their attitudes towards employment in advance of the upcoming split. Thus, given the concept of job satisfaction used, a boost in job satisfaction around the time of union dissolution, including anticipation effects, is consistent with men attaching more importance to work as a life dimension.

However, there may be large individual variation in terms of the exact timing and extent to which they develop stress because of union dissolution. Key factors are the extent to which men anticipate the break-up to occur and whether they initiated the separation. If the dissolution was unexpected, there is little room for anticipation effects. Unfortunately, data on whether break-ups are expected is rarely available. Poortman (2005) is the only quantitative study looking at unexpected divorces, finding that around 23% of divorces in the Netherlands were fully or rather unexpected. [1] This figure suggests that the majority of union dissolutions are anticipated in advance of the date of split. In Germany – as well as in other Western countries – women initiate legal proceedings associated with divorce more often than men (Emmerling 2005). Previous studies have found that individuals who initiate the separation, compared to those who do not want the relationship to end, tend to be better adjusted in the post-separation period (Kitson and Holmes 1992, Gray and Silver 1990, Wang and Amato 2000). Amato (2000) suggests that individuals who initiate divorce have different trajectories of divorce adjustment from those of their partners. In particular, those who initiate divorce tend to experience distress before divorce rather than after.

Studies on divorced men have repeatedly found that material economic well-being of men increases after separation in all Western countries; they experience an increase in income and standard of living (Duncan and Hoffman 1985, Peterson 1996, Andress et al. 2006, Aassve et al. 2007, Jenkins 2008, Bröckel and Andreß 2015). However, divorce is associated with an increase in the risk of becoming downwardly mobile and disabled (McManus and DiPrete 2001, Kraft 2001, Kalmijn 2005). While no study has formally tested the mechanisms for this association, some explanations involve a weakening of men's attachment to the labour market caused by men no longer benefiting from role specialisation after divorce, and the loss of a partner as social capital that would be beneficial to the man's career by offering support

[1] The question in the survey "Divorce in the Netherlands – 1998" used by Poortman (2005) was a retrospective one: "Did the decision to break up come unexpectedly or did you see it coming?" Respondents could choose from the following options: fully unexpected, rather unexpected, rather expected and fully expected.

and advice and encouraging him to invest in his career (Blossfeld and Drobnic 2001, Kalmijn 2005). These mechanisms would be consistent with a decrease in job satisfaction trajectories after union dissolution because problems with career progression, as well as deterioration of mental and physical well-being, may hinder men in obtaining satisfying jobs and working conditions.

To sum up, there are no clear theoretical predictions regarding men's trajectories of job satisfaction around union dissolution. While some factors suggest an increase in job satisfaction (e.g. compensation hypothesis) others suggest a decrease (e.g. career progression problems). To complicate the issue further, the mechanisms are likely to have different intensity and relevance according to whether the dissolution happens in a marriage or in a cohabitation.

### Marriage versus Cohabitation

The consequences of union dissolution for job satisfaction may be different for married and cohabiting men because the end of a legal marriage is more disruptive than the end of an unmarried cohabitation. This is because of differences in the legal regulation around them and the degree of economic and emotional dependence between partners.

In Germany the legal framework surrounding marital unions favours legal marriage over cohabitation. *De facto* couples are not recognized in German law, so unless the partners have signed a private agreement there is no legal liability on either partner to provide for the other upon dissolution of the relationship. [2]

In WG, cohabitation is a family form that young couples adopt to test their compatibility, rather than a substitute for marriage (Köpper 2011). Couples in WG adhere to traditional

[2]However, if the couple has children alimony may be paid.

family formation patterns, having a below EU average rate of non-marital childbearing (about 23% of all births in 2014). It is often the case that when cohabiting couples have children, they get married (Blossfeld and Drobnic 2001, Nazio and Blossfeld 2003, Huinink 1995). As a consequence, cohabitations are short-lived. The average length of a cohabitation is 3 years; after this, most cohabitations either turn into marriage or dissolve (Kiernan 2003).

Previous research shows that there is a lower level of commitment in cohabiting unions than in marriages and a lower degree of economic dependence between partners (Nock 2001). For example, cohabitators are more likely to keep their money separate, regardless of their employment status (Heimdal and Houseknecht 2003). Pahl (1995) argues that money can be seen as a tracer for other aspects of couples' lives together, especially the power relationship between them. While living with someone may be considered a source of emotional support regardless of the formal marital status, some authors have argued that emotional support is stronger in marital than cohabitational unions because some individuals still attach a specific value to being someone's spouse (Cherlin 2004). All these considerations suggest that a marital split is more disruptive than a cohabitation split. When married partners break up they have financial obligations towards each other – which is not the case for unmarried cohabitations – and they lose a strong source of financial and emotional support. Thus, the impact of union dissolution on job satisfaction should be stronger for marital splits than dissolutions of unmarried cohabitations.

## 6.3 Methods

I analyse the data with fixed effect regression models introducing leads and lags of marital status variables that allow me to pick up the presence of anticipation and adaptation. This method is widely used in the literature on the effect of life events on subjective well-being (Gardner and Oswald 2006, Lucas 2007, Clark et al. 2008a, Oswald and Powdthavee 2008,

Powdthavee 2010, Di Tella et al. 2010, Powdthavee 2011, Georgellis et al. 2012, Clark and Georgellis 2013). This method requires longitudinal data.

The time dimension is measured only at interview dates, which occur approximately 12 months apart. For this reason, I refrain from talking about years, but rather talk about interview dates. The date when co-residence ends happens between two interviews, so it is not possible to talk about "the exact time period in which union dissolution happened". Rather, I am going to talk about the interviews immediately before and after union dissolution. I estimate a regression of the form

$$\begin{aligned} J_{it} =& \alpha + \beta_{-3}U_{it-3} + \beta_{-2}U_{it-2} + \beta_{-1}U_{it-1} + \beta_0 U_{it} + \beta_1 U_{it+1} + \beta_2 U_{it+2} + \beta_3 U_{it+3} + \\ &+ \gamma X_{it-1} + \nu_i + t + e_{it} \end{aligned} \tag{6.1}$$

where for individual $i$ and interview $t$, $J_{it}$ represents job satisfaction, and $X_{it-1}$ is a vector of standard controls (lagged of one interview), $\nu_i$ are the individual fixed effects, $t$ are year dummies and $e_{it}$ is an error term. Standard errors are robust and clustered at individual level in order to adjust for serial correlation and heteroskedasticity.

Instead of controlling for marital status at interview $t$, I introduce a set of leads and lags of marital status. Following the intuition of Lucas (2007), this is equivalent to splitting the sample into groups according to the time to or since the event. In particular, all separated men are split up in four groups: those who have been separated 0-1 years ($U_{it} = 1$), 1-2 years ($U_{it+1} = 1$), 2-3 years ($U_{it+2} = 1$) and 3 years or more ($U_{it+3} = 1$). The regression coefficients corresponding to these groups are used to test for adaptation. Because equation (1) includes individual fixed effects adaptation is tested for by comparing job satisfaction of those who have been separated for example for 2-3 years to the scores of the same individuals

in the first year of separation. In terms of the parameters of the model, I identify adaptation in the following way:

- **No adaptation to separation**: $\beta_k$ k=0,1,2,3 are all roughly the same size [3]
- **Some adaptation to separation**: later values of $\beta_k$ k=0,1,2,3 are smaller in absolute value than earlier values
- **No adaptation to separation**: later values of $\beta_k$ k=0,1,2,3 are smaller in absolute value than earlier values and some of the later values are not statistically significant from 0

In other words, there is no adaptation if job satisfaction levels are just as high (low) the first year of separation than the second and so on. There is some adaptation if levels of job satisfaction are higher (smaller if the effect is negative) closer to the beginning of the separation than later. The set of $\beta_k$ coefficients maps out adaptation to separation for those who do not re-partner, because to construct the variables $U$, I condition on marital status at interview $t$ and if a man re-partners, he is dropped from the sample. For example, if a man separates and remains single for two interviews and re-partners in the third interview, then the sequence of $U$ variables is, $U_{it} = 1$, $U_{it+1} = 1$, $U_{it+2} = missing$, $U_{it+3} = missing$. This is equivalent to right-censoring the observations.

To test for anticipation, I follow a similar approach and split men in three groups: those who will start a separation in the next 0-1 years ($U_{it-1} = 1$), 1-2 years ($U_{it-2}$) and 2-3 years ($U_{it-3}$). The omitted category is those who are in an intact partnership and will not separate in the next three years. In terms of the parameters of the model, I identify anticipation in the following way:

[3] The statement does not imply a joint test of significance, but indicates the pattern of the coefficients

- **No anticipation to separation**: $\beta_k$ k=-1, -2, -3 are each not statistically significant from 0 [4]

- **Anticipation to separation**: later values of $\beta_k$ k=-1, -2, -3 are larger in absolute value than earlier ones

There is no anticipation to separation if there are no variations in job satisfaction leading up to separation, and there is anticipation if levels of job satisfaction tend to be higher (or smaller if there is a negative effect) the closer the individual is to separation.

Finally, vector $X_{it-1}$ contains time varying variables, lagged of one interview. In all models I control for age, household income (logarithm), length of time spent working in the same job in months, maximum education level achieved, whether respondent lives with a child under 16, region and country dummies.

**Selection Issues**

Men do not enter marriages and cohabitations at random, and at the same time union dissolution does not happen at random. Thus, different types of people may be observed entering a cohabitation than a marriage. [5] Moreover, those couples that split up may have particular attributes that differentiate them from those who do not separate. One obvious reason why some couples split up is because they are unhappy with their relationship. However, not all unhappy couples split up (Booth et al. 1986, Heaton and Albrecht 1991, Terling-Watt 2001).

There are many demographic and socio-economic factors that affect the probability of splitting up. For example, individuals with high levels of education are more likely to

[4] The statement does not imply a joint test of significance, but indicates the pattern of the coefficients.

[5] Given the discussion in the previous paragraphs and relevant literature, in WG cohabitants are younger than married individuals, less likely to have children and less educated (e.g. Nazio and Blossfeld 2003, Blossfeld and Mills 2001). However, they will also differ in terms of unobservable factors.

have stable unions than those with lower education levels (Amato 2010), while differences in education, income and other demographic characteristics between partners increase the risk of union dissolution (Amato 2010, Guven et al. 2012, Tonković Grabovac et al. 2015). However, there may also be unobservable factors that affect the probability of splitting up.

I follow two strategies to address selection issues. First, I apply fixed effects estimators; time-invariant selection factors (e.g. personality traits) are controlled for when using fixed effects estimators. Second, I control for some key observable factors that theory predicts being associated with entry into marital union rather than unmarried cohabitation and/or union dissolution. All variables are lagged of one time period. Not all of the factors that determine selection into marital status and union dissolution can be observed and therefore controlled for. For this reason, none of the associations estimated in this chapter can be given a causal interpretation; rather they provide a description of job satisfaction trajectories around the time of union dissolution.

Lastly, another source of selection comes from attrition. Attrition may originate from two sources: non-employment and drop-out from the survey. Job satisfaction is only measured for individuals in employment. Because union dissolution determines to a certain extent employment status it is possible that men who are employed when married become non-employed when divorced or vice-versa (Kraft 2001, Kalmijn 2005). Thus, a comparison of job satisfaction levels between individuals in intact unions and not may be spurious because different types of people are employed when divorced than married, and the determinants of employment are unobservable and likely to be correlated with job satisfaction. Moreover, a before-after comparison of job satisfaction for those who experience union dissolution also does not solve the problem because the effect is identified only for those who are employed

both before and after.

In a similar fashion, union dissolution may be associated with a change in job or occupation, especially if union dissolution leads to geographical relocation. This is problematic because previous empirical studies have found a honeymoon effect when starting new jobs, so that variations in trajectories around job satisfaction may be due to job changes rather than union dissolution (Boswell et al. 2009).

Although empirical studies have found a systematic relationship between union dissolution and non-employment for men, the effect sizes are rather modest (Kraft 2001, Kalmijn 2005). Moreover, literature on divorce risk finds no labour supply effect: that is, men who are at higher risk of divorce do not change their labour supply (Papps 2006). This should be contrasted with findings for women, which show that marital instability and divorce risk increase women labour supply (Johnson and Skinner 1986, Sayer and Bianchi 2000, Bargain et al. 2012, Özcan and Breen 2012). Thus, the extent to which endogenous selection into employment may bias the estimation of trajectories of job satisfaction around union dissolution for men is small. Yet, it is not possible to dismiss the existence of endogenous selection into employment, and job satisfaction trajectories should be interpreted keeping in mind the confounding effect of endogenous selection into employment.

Previous studies have shown that attrition among separating men is particularly high (Burkhauser et al. 1990, Jarvis and Jenkins 1999, Jenkins 2008). Attrition is problematic if unobserved characteristics associated with attrition are also correlated with job satisfaction changes; if this is the case, attrition introduces bias in the estimates of job satisfaction trajectories. My method to control for selective attrition is to apply survey longitudinal

weights. In section 6.4.1 I describe the attrition rate in the sample, issues of representativeness and the weights used in the analysis.

## 6.4 Data

I use a sample of male respondents from the SOEP, an annual household survey representative of German households. I use all seven SOEP samples, including refreshment and boost samples to maximise analysis sample size. The samples have been collected following different sampling frames and some of them target specific populations (e.g. sample G oversamples households with high incomes, sample D only contains households where at least one member moved from abroad to Germany since 1984). The general purpose cross-sectional weights take into account the sampling designs. My sample selection criteria are the following.

First, I only consider all survey years publicly available at the time of writing (1984–2013). Second, I only use respondents from WG. Because incidence, meaning and prevalence of marriage and cohabitation are different in EG and WG, it is unwise to pool them. Moreover, data for EG respondents were only collected from 1990, so that the panel for this population is shorter and the number of separations observed for this sample is not large enough to guarantee appropriate statistical power. Thirdly, I am interested in comparing job satisfaction of men who experienced union dissolution with that of the same men when they were in a partnership. Thus, I select all male respondents who were already in a union in 1984 or formed a union at any point between 1984 and 2012. [6]

[6] Those who had separated before 1984 are not included in my sample. In case of respondents who formed a union I drop the person-years before the formation of the union.

To define whether respondents are in a union, I use responses to a question that asks whether they share their dwelling with a steady partner. This definition is independent of the legal marital status and it is self-reported. I decide to base the definition of union dissolution on co-residence rather than legal marital status for two reasons. First, legal marital status in the SOEP does not allow me to identify cohabiting respondents. Second, I believe that defining union dissolution as the moment when respondents stop sharing living arrangements is more appropriate than the formal change in legal marital status. Previous literature supports this decision by stating that divorce is the result of a process rather than a point in time, and thus considering the moment when partners stop sharing their dwelling as the moment of union dissolution is more appropriate than the moment when the divorce papers have gone through (Amato 2000, Casey 2013).

Lastly, because job satisfaction is defined only for working individuals, I retain all men who worked at least one wave before union dissolution and one wave after. However, waves in which they worked need not to be consecutive. It is necessary to have at least two data points for each individual in order to apply longitudinal estimation methods (described in section 6.4).

After applying these selection criteria, I obtain an analysis sample of 9,709 respondents (70,776 person-years) for whom I have valid job satisfaction data at each interview. Among these, 1,085 experience dissolution of their partnership; 691 experience the dissolution of a marital union, while the remaining 439 experience the dissolution of an unmarried cohabitation. This is an unbalanced longitudinal sample. Individuals are observed for a minimum of two to a maximum of 29 waves. Waves may not be consecutive; if someone is out of employment for one wave they are not included in the analysis sample for that wave but are

Table 6.1 Means of Outcome and Explanatory Variables

| | Union Dissolution (1) | Marital Dissolution (2) | Cohabitation Dissolution (3) | Intact Union (4) |
|---|---|---|---|---|
| Job Satisfaction | 6.91** | 6.92 | 6.84* | 7.1 |
| | (0.09) | (0.11) | (0.15) | (0.01) |
| Age | 41.17*** | 42.63*** | 38.32*** | 44.4 |
| | (0.45) | (0.44) | (1.00) | (0.06) |
| Income (logarithm) | 10.63** | 10.59*** | 10.67 | 10.68 |
| | (0.23) | (0.003) | (0.05) | (0.002) |
| Length with Firm | 10.6*** | 12.37*** | 7.01*** | 14.42 |
| | (0.37) | (0.44) | (0.51) | (0.06) |
| Lives with Child$^{\dagger}$ | 0.50*** | 0.63** | 0.18*** | 0.68 |
| | (0.2) | (0.02) | (0.02) | (0.003) |
| *Education* | | | | |
| Low$^{\dagger}$ | 0.14 | 0.16 | 0.11 | 0.13 |
| | (0.01) | (0.34) | (0.02) | (0.002) |
| Medium$^{\dagger}$ | 0.53 | 0.50* | 0.53 | 0.55 |
| | (0.02) | (0.03) | (0.04) | (0.003) |
| High$^{\dagger}$ | 0.32 | 0.33 | 0.35 | 0.32 |
| | (0.003) | (0.02) | (0.04) | (0.003) |

*Notes*:$^{\dagger}$ denotes dummy variables, so corresponding figures are estimated proportions. Remaining variables are continue and figures are estimated means. All figures computed using survey weights.*** 1%, ** 5%, * 10% indicate statistical significance compared to column (4).

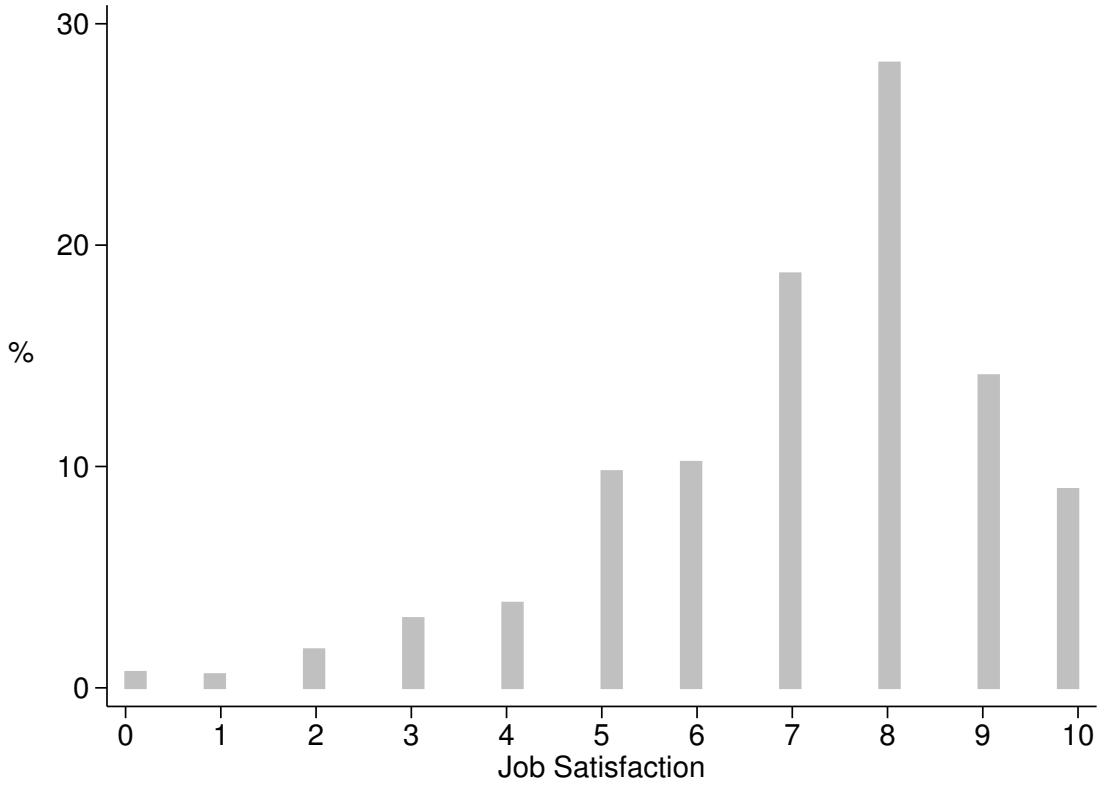
re-included when they return. Therefore, this is an unbalanced sample.

### 6.4.1 Characteristics of the Sample

In this section I describe the analysis sample in terms of basic demographic and socio-economic variables. In Table 6.1 I report descriptive statistics. For men who do not experience union dissolution the descriptive statistics are computed using all person-years (column 4). For men who experience union dissolution, the statistics are computed using only the observation for the interview immediately before union dissolution (column 1 for total,

column 2 for marital splits and column 3 for splits of unmarried cohabitations). In the first row I also report average job satisfaction scores, which is the outcome variable. In Figure 6.1 I report the distribution of job satisfaction for this sample. Nearly 30% of respondents report a job satisfaction level of 8, and about 20% a level of 7, with the remaining respondents reporting a level between 5 and 10. Only 10% of respondents report a level below 5.

Fig. 6.1 Distribution of Job Satisfaction




The variables in Table 6.1 are the control variables used in the main models. The variables are defined in Table 6.2. I chose control variables that are known predictors of union type, union dissolution and job satisfaction. I already discussed the education and socio-economic gradient in union type in section 6.2. Some studies find that the presence of children is a significant factor determining union dissolution, as couples who have children are less

likely to split, although this is not true for all contexts (Lillard and Waite 1993, Vuri 2003). Nevertheless, to take into account possible effects of fertility on marital dissolution, I include a control for whether the man was living with a child before he split up. Lastly, the time spent in the same job gives a measure of tenure, as well as being a significant predictor of lower job satisfaction (Boswell et al. 2009).

Table 6.2 Description and Level of Measurement of Outcome and Explanatory Variables

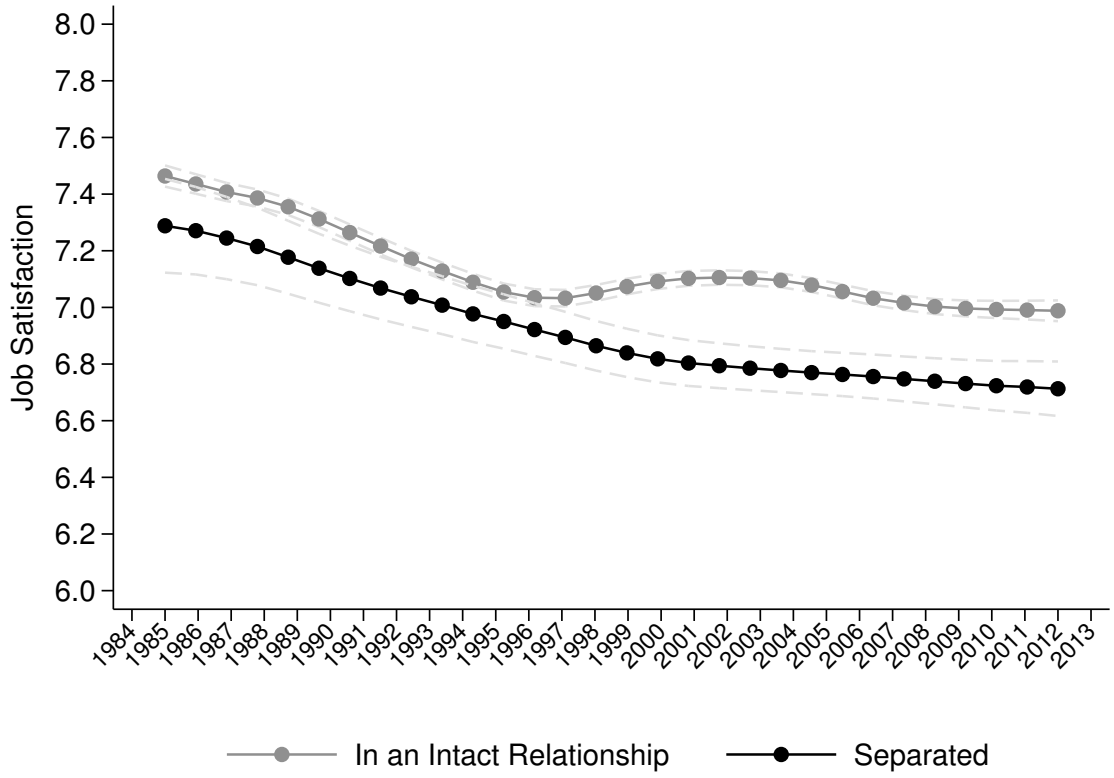
| Name of Variable | Type of Variable | Description | Range |
|---|---|---|---|
| Job Satisfaction | Outcome | Answer the question: “How satisfied are you today with the following areas of your life? Your work." | 0-10 |
| Age | Explanatory | Age in years at the time of interview | 16-65 |
| Income | Explanatory | Equivalent household net income of previous year in 2013 prices (logarithm) | 0 - 15 |
| Length with firm | Explanatory | Variable generated from the answer to question: “How long have you been employed in your present job? If you are self-employed, how long have you been doing this work?" Figures are in years. | 0-51.6 |
| Education | Explanatory | Variable recoded from the ISCED classification variable for the highest level of education achieved at the time of interview. The recoding is as follows: low education includes categories “in school”, “inadequate” and “general elementary”; medium education includes “middle vocational” and “vocational plus abitur”; high education includes “higher vocational” and “higher education”. | 0-2 |
| Lives with a Child | Explanatory | Variable recoded from a variable recording the household typology of the respondent. I define a man living with a child if he is a single parent, or in a couple with children less than 16 or in a couple with children older than 16, or in a couple with children less than 16 and older than 16. A man does not live with a child if he is in a one-person household or in a couple without children. | 0-1 |

The first and most notable feature of the data is that those who split up are on average younger than those in intact couples. Other differences may be explained by the age difference itself: compared to men in an intact partnership, separating men are less likely to live with a child younger than 16, have lower average household income and have spent less time continuously working for the same employer. However, the distribution of education attainment is very similar.

There are also differences between men separating from a legal spouse and those separating from an unmarried partner. Men who have been married are older, have higher incomes, have longer job tenure and are more likely to have a child. However, there are no notable differences in education levels. Lastly, men in intact unions have higher job satisfaction than separated men.

To investigate this bivariate association further, in Figure 6.2 I report average levels of job satisfaction for each survey year broken down by marital status. The line for "Separated" represents all those who report not living with anyone at time $t$, but who lived with a partner at some $s < t$. Men in intact couples report higher levels of job satisfaction than those who have experienced a union dissolution, and the difference is stronger after 1996. For both groups there is a clear downward trend in job satisfaction. The decrease in job satisfaction in the late 1980s and 1990s is well-known. It has been observed in many western countries, although no author has found an explanation for it (Jürges (2003) for WG, Hanglberger and Merz (2015) for Germany, Blanchflower and Oswald (1999) for the USA, Green and Tsitsianis (2005) for Britain). In my analysis I include year dummies, to take into account time variations that are independent of marital status.

Fig. 6.2 Average Job Satisfaction Level by Marital Status with 95% Pointwise Confidence Interval, 1985-2013




*Notes*: The plots are obtained via kernel-weighted local polynomial regressions. The dashed lines represent 95% pointwise confidence intervals. The line for the "Separated" represents all those who report not living with anyone at time $t$, but who lived with a partner at some $s < t$. There is no point estimate for 1984 because by contruction all men in the analysis sample who had a valid interview in 1984 were in an intact couple.

### 6.4.2 Attrition

I estimate that a man who is separated has 2% lower probability of participating in the survey at the next interview than a man who is in an intact partnership. [7] Considering that the normal wave-on-wave attrition rate in the SOEP is between 5 and 7% (Kroh et al. 2015), separating men are substantially more likely to drop out of the survey than married men (they have a drop-out probability between 7 and 9%).

To investigate further, I apply the method suggested by Wooldridge (2010) that consists of estimating two job satisfaction fixed effects regression on the lead and the lag of a selection indicator and baseline controls (Table 6.3 in the Appendix). If the lead dummy is significant then the levels of job satisfaction among those who remain in the survey for the successive wave tend to be significantly different than the levels of men who drop out of the survey. Also, if the lag dummy is significant, then those who have just entered or re-entered the survey have significantly different levels of job satisfaction than those who were already present.

I find that the lead dummy is statistically significant and positive, suggesting that selective attrition is such that levels of job satisfaction are overestimated if attrition is not addressed. In simpler words, individuals with high levels of job satisfaction are more likely to remain in the sample. The lag dummy is only borderline significant and it has quite small magnitude (minus 0.061). I would interpret this as a survey design effect, that is newly-recruited participants are likely to answer systematically differently from participants who have already taken part

[7] I run a linear probability model for whether the respondent has a valid interview at time $t+1$ controlling for whether the individual is separated at time $t$, year dummies and background variables (living with a child, income, education, year and region of residence). I estimate a linear probability model instead of applying estimators for binary variables (logistic or probit) because it allows for a more straightforward interpretation of the regression coefficient as a difference in probabilities. The coefficient for the separation variable can be interpreted as the effect of being separated rather than in an intact partnership on the probability of taking part in the SOEP the successive year. Because the coefficient is negative (-0.02) and statistically significant, I conclude that being separated has an independent and negative effect on the probability of successful follow up.

in the survey for more than one year.

Another substantive issue is whether the men in my sample are representative of all men who experience a union dissolution in WG. Given the selection criteria I have applied, the men in my sample are by definition in employment. Further analysis reveals that in the analysis sample there is an under-representation of low-educated, marginally employed and low-income men. [8]

The standard method for controlling for attrition bias is to use an appropriate sample weight. The SOEP longitudinal individual weights are the inverse of the product of two predicted probabilities: the probability of unsuccessful follow-ups and the probability of refusal (Kroh et al. 2015). These weights therefore represent the probability of staying in the SOEP in $t+1$ based on observable characteristics measured in $t$. I use these weights in the analysis, although they are general purpose weights, so not necessarily appropriate for this application. [9] Moreover, they are based on observable characteristics, thus they are unable to address selective attrition that is due to unobservable factors.

## 6.5 Trajectories of Job Satisfaction around the Time of Union Dissolution

In this section, I report estimates for trajectories of job satisfaction around the time of union dissolution. The results are summarised by graphs of estimated $\hat{\beta}$ coefficients. I report tables

[8] On average, household income of men who are included in the sample is €9,000 higher than men who are not included.

[9] Jenkins (2008) highlights that using general purpose weights leads to systematically excluding cases for later waves in case of long panels. He calculated individual-specific weights to estimate income trajectories around the time of union dissolution.

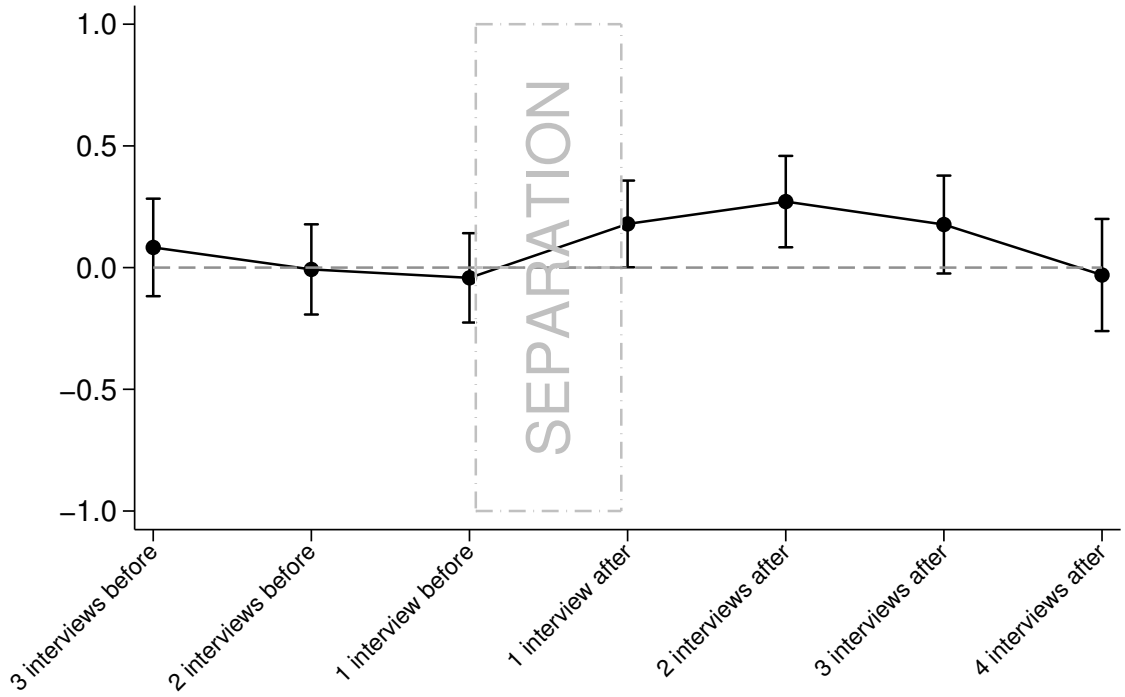
of estimates from the fixed effects regressions in the appendix (Table 6.4).

The dashed horizontal line at 0 represents no change in job satisfaction. The vertical bars around each point correspond to the point-wise 95% confidence interval. The six points of each graphs are the estimated coefficients $\hat{\beta_{-3}}$ to $\hat{\beta_3}$, and correspond to interview times. The horizontal line represents time before and after union dissolution. The shaded area with the caption "SEPARATION" indicates that union dissolution happened at any point between the two interviews enclosed by that area.

Figure 6.3 shows the graph for all men who experience union dissolution. There is no evidence of anticipation, as none of the estimated coefficients $\beta_k, k = -3, -2, -1$ are significantly different from 0. There is a temporary boost in job satisfaction that lasts up to 3 interviews after the divorce. However, the effect dissipates in the longer run, and $\beta_4$ is no longer statistically significant. This pattern indicates that there is full adaptation to separation. As an illustration, considering an man who in an intact union expressed job satisfaction level of e.g. 7, he expressed this same level of job satisfaction 3, 2 and 1 interviews before union dissolution. The interview after union dissolution he expressed a level of job satisfaction of 7.26, the second interview after his level of job satisfaction increased to 7.33, the third interview after he expressed about 7.25 and lastly returned to the earlier level of 7 by the fourth interview after union dissolution.

The estimated effects are quite large, but the associated standard errors are also sizeable. According to literature using subjective well-being outcomes, effects of the magnitude of around 0.3 are considered large (Stutzer and Frey 2006). For example, the marginal effect of having been separated for 0-1 years is 0.26 (significant at 1% level). Based on the estimated parameters in the model, this is equivalent to increasing annual income by over 600,000%

Fig. 6.3 Average Trajectory of Job Satisfaction for Three Interviews Before and After Union Dissolution for the Full Analysis Sample with 95% Pointwise Confidence Intervals




*Notes*: Plot of estimated coefficients $\hat{\beta_{-3}}$ to $\hat{\beta}_3$. The shaded area with the caption "SEPARATION" indicates that union dissolution happened at any point between the two interviews enclosed by that area.

(over 6,000 times)!

In section 6.2 I hypothesised that the effects of union dissolution on trajectories of job satisfaction are stronger for those who split from a marriage rather than a cohabitation. In Figures 6.4(a) I report the plot for those who split from a marriage and in Figure 6.4(b) for those who split from a cohabitation. The hypothesis is not rejected; for divorced men I find that the trajectories of job satisfaction follow the similar pattern highlighted before and although there is no evidence for anticipation, there is a strong and temporary boost in job satisfaction, followed by full adaptation.

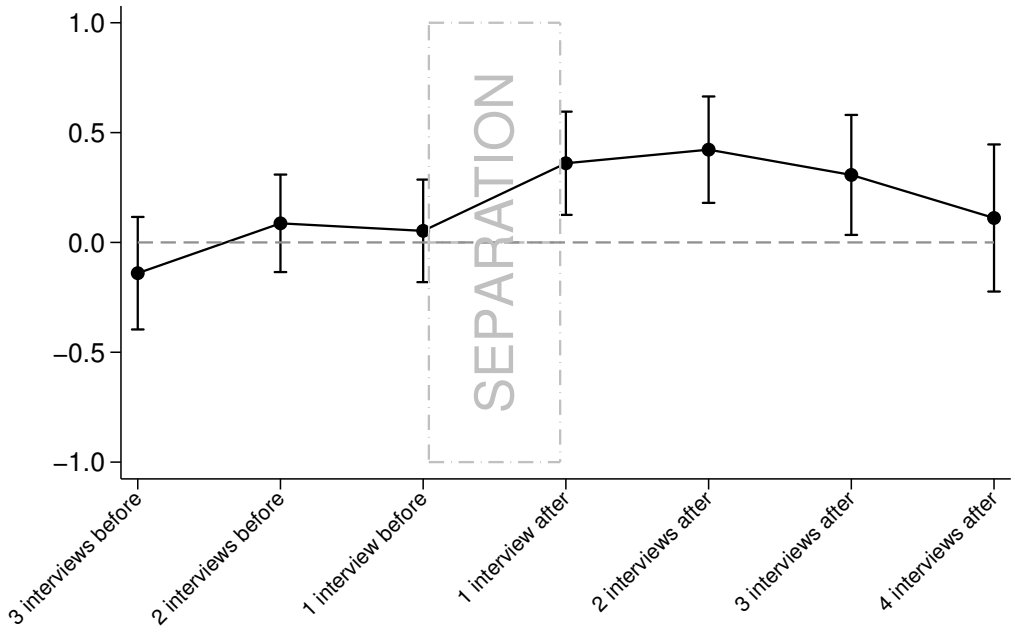
The similarity of the pattern is because the majority of splits are marital splits. However, there is no evidence of variation in job satisfaction around the time of union dissolution for men who were in an unmarried cohabitation. I find a strong and significant effect of being 3 interviews away from union dissolution for cohabiting men. This effect is extremely large and significant at 1% level. However, I would not interpret it as an anticipation effect. In fact, in section 6.2 I reported that unmarried cohabitations in WG last on average 3 years, so it is difficult to interpret any effect for being over 3 interviews before cohabitation split. The estimated marginal effect may rather be picking up the beginning of an unmarried cohabitation.

### 6.5.1 Robustness Check

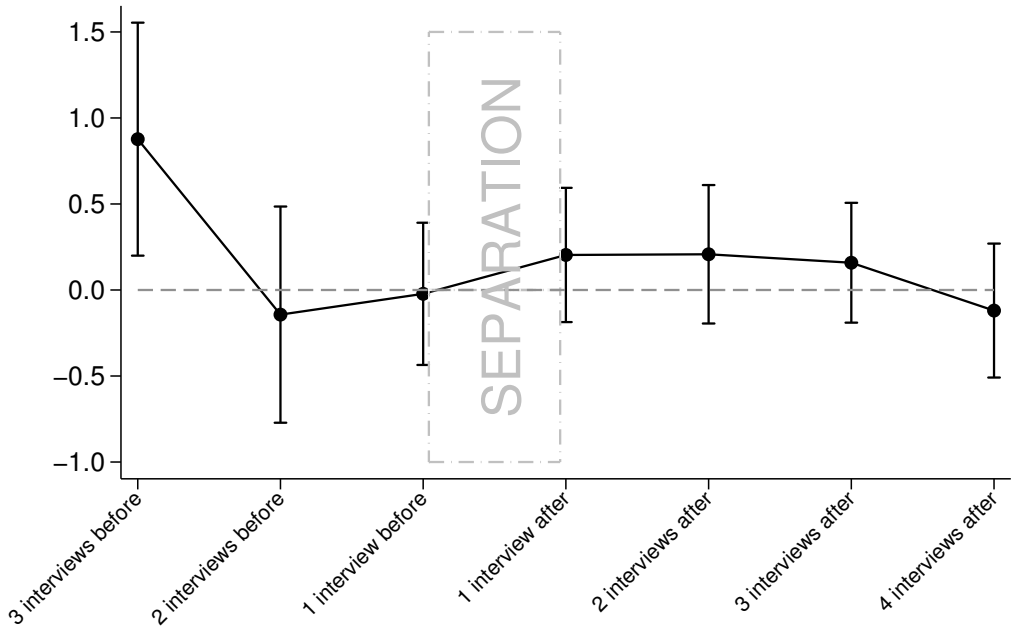
In section 6.2 I stressed that if men change jobs as a result of union dissolution the trajectories of job satisfaction around the time of union dissolution may be due to a change in job rather than end of a partnership (Table 6.5 in the Appendix). In Figure 6.5 I report a plot of job satisfaction trajectories around the time of union dissolution for men who change jobs at any point in time between 3 interviews before and after union dissolution, and those who

Fig. 6.4 Average Trajectory of Job Satisfaction for Three Interviews Before and After Union Dissolution for the Subsamples of Married and Cohabiting Respondents with 95% Pointwise Confidence Intervals

(a) Marital Splits




(b) Cohabitation Splits




*Notes*: As for fig. 6.2.

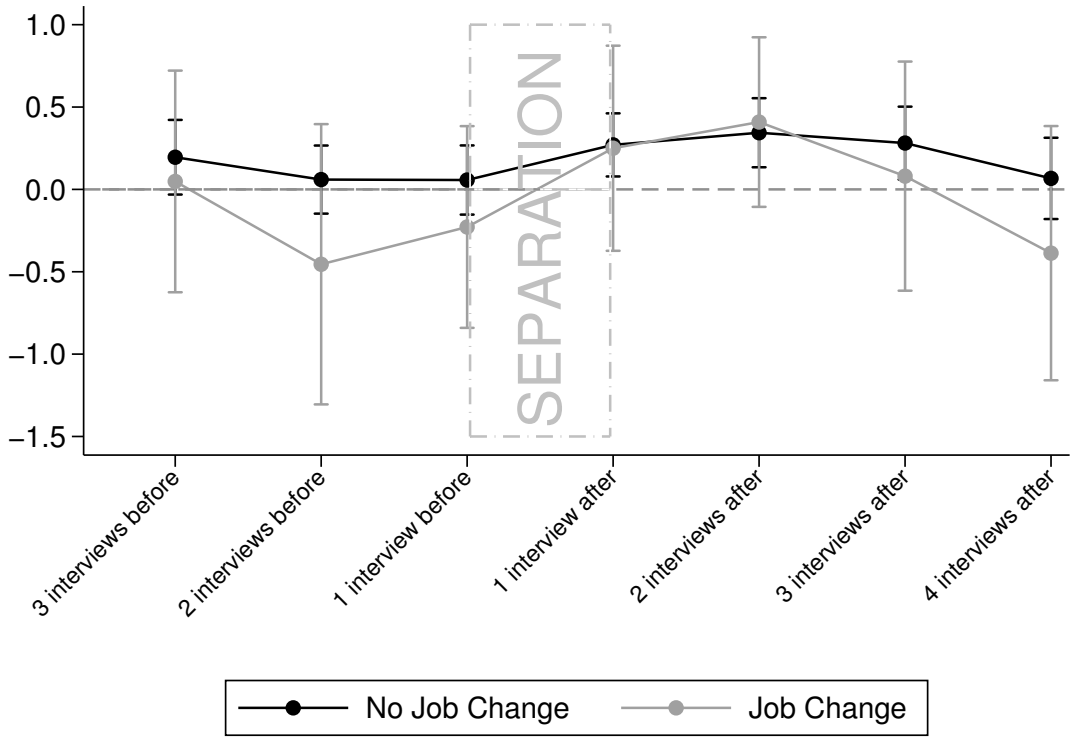
experience union dissolution but do not change jobs. By construction, I consider only job changes that do not lead to non-employment at the next wave. However, because I use annual data, these men may experience short spells of non-employment that last less than the in-between waves period.

There is no evidence that job satisfaction trajectories around union dissolution differ between those who change jobs and those who do not. Thus, it seems like the temporary boost in job satisfaction around the time of union dissolution is not due to changes in jobs. It should be kept in mind that the analysis sample is small and only a small proportion of men change jobs. [10]

In section 6.3 I highlighted that the risk group considered so far was the group of men in an intact union. However, not all men will experience union dissolution in their lifetime. Thus, one may argue that it is not interesting to estimate the effect of divorcing for the subgroup of the population that will not divorce. Hence, one may argue that instead of using all men in an intact union as a risk group, a more appropriate risk group would be men who are going to experience a union dissolution at some point. Because the fixed effects estimate exploit within-person variation, I expect that excluding men who do not separate has no effect on the leads and lags coefficients. However, men who do not separate do contribute to the baseline estimation of the explanatory variables. Thus, as a robustness check I restrict the sample to only men who experience union dissolution and estimate equation (6.1). The sample is now smaller, as I consider only the 8,484 person-years that correspond to men who experienced a union dissolution. The results are in Figure 6.6 and as expected they are qualitatively identical to the main results. The size of the coefficients is only marginally smaller, which may be explained by the reduction in sample size. The estimates for control

[10] In the three waves before union dissolution about 8% of men changed job between each of the waves. Between the interview immediately before union dissolution up to the third interview after union dissolution about 14% of men changed jobs between each wave.

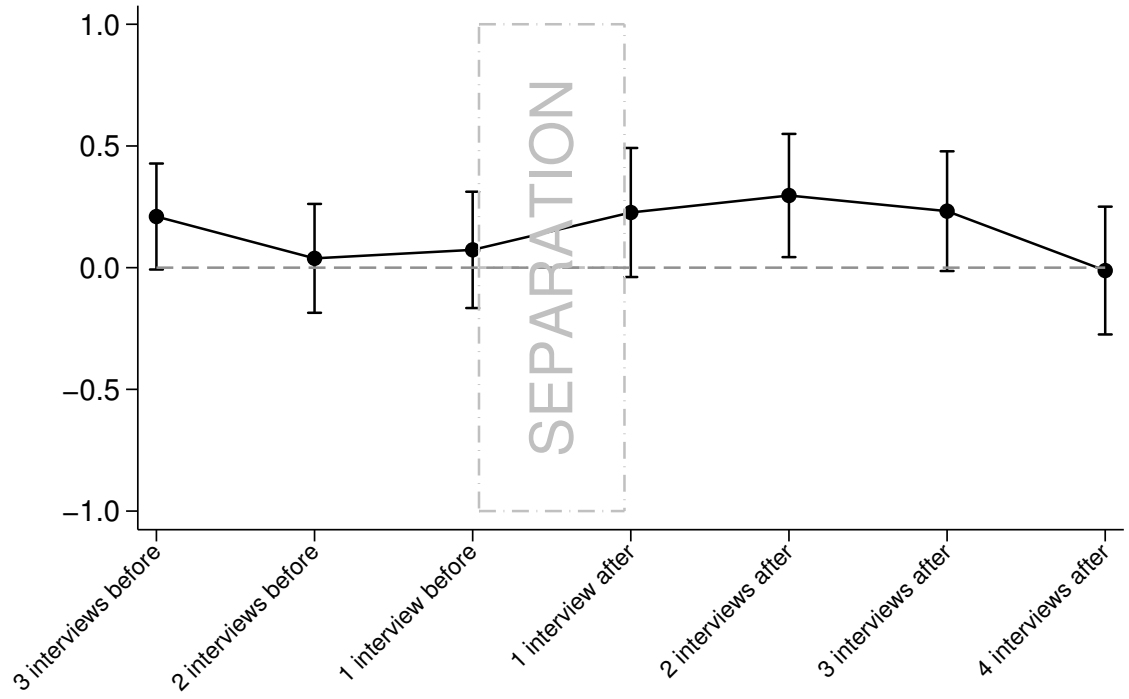
Fig. 6.5 Average Trajectory of Job Satisfaction for Three Interviews before and after Union Dissolution by Job Change Status with 95% Pointwise Confidence Intervals




*Notes*: As for fig. 6.2.

variables also remain similar. The estimated intercept is however smaller, which is an expected finding given the descriptive statistics showing that men who do not experience union dissolution have higher average levels of job satisfaction.

Fig. 6.6 Average Trajectory of Job Satisfaction for Three Interviews before and after Union Dissolution only for Men who Split Up with 95% Pointwise Confidence Intervals




*Notes*: As for fig 6.2.

## 6.6 Discussion and Conclusions

There is empirical evidence that on average job satisfaction of men rises after marital dissolution, while dissolution of an unmarried cohabitation does not bring about variations in job satisfaction trajectories. However, the rise is temporary and there is complete adaptation of job satisfaction to separation. There is no evidence of anticipation. The results are not

explained by job changes around the time of union dissolution.

Previous work on trajectories in life satisfaction around the time of divorce systematically finds a decrease in happiness and life satisfaction during the lead up to divorce, and either partial or full adaptation thereafter (e.g. Clark et al. 2008a). The main difference in results between this literature and mine is that men's job satisfaction does not decline in the years before separation, unlike their life satisfaction. The two findings may seem at odds for those who consider job satisfaction as a component of overall life satisfaction. However, my findings are consistent with a different interpretation of job satisfaction that is a measure of the fit of one's job in one's life. Qualitative studies already report that work is used as a coping mechanism for men undergoing a divorce (Casey 2013). Therefore, the short-term positive boost in job satisfaction following a divorce suggests that a mechanism of compensation may be at work. If divorcees interpret divorce as a failure in one life dimension, and may attach more importance to work, emphasising positive rewards coming from their employment, that would translate in higher job satisfaction. In terms of the framework of this study (chapter 3), men's expectations towards their jobs may change because of separation. For instance, men may value the social aspect of working life more after divorce, because their private life can no longer fulfil needs for social interactions. This may increase job satisfaction, if workplace dynamics are able to satisfy this need.

One methodological remark regarding this interpretation is that the increase in job satisfaction may be real or may be generated by over-reporting of job satisfaction by divorced men, following the same psychological mechanism of compensation. Nevertheless, the key message is that work has a protective effect for men and its salience in adults' lives is stronger at times of personal difficulties.

Although a cross sectional comparison of job satisfaction levels between married and separated men reveals that divorced men have lower job satisfaction, divorce is associated with a temporary increase in job satisfaction. One plausible explanation of why the cross sectional findings differ from the longitudinal analysis is to consider the inter-temporal dimension of job satisfaction. Some further mechanisms may be at work in explaining long-term variations in job satisfaction trajectories for divorced men. In particular, I have described the empirical finding that divorced men are more likely to become downwardly mobile (McManus and DiPrete 2001, Kraft 2001, Kalmijn 2005). If these mechanisms do not appear within 3 years of divorce but later on, then they could explain why at each point in time divorced men have lower job satisfaction than married men.

The trajectories of job satisfaction I have estimated should be considered upper bound estimates of average job satisfaction trajectories. This is because individuals with low job satisfaction are more likely to drop out of the estimation sample, so men who experienced a decrease in job satisfaction during union dissolution are more likely not to be included in the sample than men who experienced an increase.

In addition, results cannot be generalised to men of lower socio-economic background. This is because there is an under-representation of low educated, marginally employed and low-income men in my sample. This is important because these men are the group most likely to suffer negative economic consequences of union dissolution, and lower work attachment, and may also not benefit from the compensation mechanism that is consistent with the main results.

The SOEP is the best source of data available for estimating job satisfaction trajectories around the time of union dissolution, due to the large sample size, length and measurement

of job satisfaction. Although other data sources have larger cross-sectional samples than the SOEP (e.g. Understanding Society in the UK surveys about 30,000 households and 50,000 individuals), they are not yet long enough to allow following individuals for 10 consecutive interviews, and the recording of job satisfaction is on shorter, less precise scales. Although future research may be interested in investigating variations in job satisfaction for other countries, comparative results are difficult because other data sources would lead to less precise estimates.

At the same time, the strict data requirements for estimating job satisfaction trajectories imply that it is not possible to estimate them for subgroups of men, even with an excellent data source like the SOEP. This is regrettable because men with low work attachment were not included in my analysis sample, yet they are an interesting subgroup for policy makers.

## 6.7 Appendix

Table 6.3 Test for Selection

| | Lead equation (1) | Lag equation (2) |
|---|---|---|
| Lead selection dummy | 0.573*** | |
| | (0.05) | |
| Lag selection dummy | | -0.061* |
| | | (0.03) |
| Separated 2-3 years hence | 0.127 | 0.126 |
| | (0.12) | (0.12) |
| Separated 1-2 years hence | -0.007 | 0.009 |
| | (0.11) | (0.11) |
| Separated within a year | 0.025 | 0.027 |
| | (0.11) | (0.11) |
| Separated 0-1 years | 0.289** | 0.264** |
| | (0.10) | (0.10) |
| Separated 1-2 years | 0.262* | 0.336** |
| | (0.11) | (0.11) |
| Separated 2-3 years | 0.239* | 0.256* |
| | (0.12) | (0.11) |
| Separated 3-4 years | 0.04 | -0.006 |
| | (0.13) | (0.13) |
| Age | -0.009 | -0.029*** |
| | (0.01) | (0.01) |
| Household income (logarithm) | 0.01 | 0.04 |
| | (0.04) | (0.04) |
| Length of time at the same job | -0.020*** | -0.021*** |
| | (0.00) | (0.00) |
| Medium education | 0.042 | -0.009 |
| | (0.12) | (0.12) |
| High education | 0.069 | -0.003 |
| | (0.15) | (0.15) |
| Lives with a child | 0.032 | 0.064 |
| | (0.04) | (0.04) |
| Constant | 7.755*** | 9.002*** |
| | (0.37) | (0.35) |
| Region dummies | ✓ | ✓ |
| Time dummies | ✓ | ✓ |
| N | 65,125 | 70,776 |

*Notes*: All control variables are lagged of one time period. Estimated via individual fixed effects regressions. Robust and individual level clustered standard errors in parentheses. Fixed effects regressions estimated with longitudinal SOEP weights. Statistical significance: *** 1%, ** 5%, * 10%.

Table 6.4 Fixed Effects Job Satisfaction Estimates

| | Union Dissolution (1) | Marital Dissolution (2) | Cohabitation Dissolution (3) | Change in Risk Group (4) |
|---|---|---|---|---|
| Separated 2-3 years hence | 0.128 | -0.037 | 0.689** | 0.124 |
| | (0.12) | (0.14) | (0.29) | (0.12) |
| Separated 1-2 years hence | 0.012 | 0.106 | -0.377 | 0.001 |
| | (0.11) | (0.13) | (0.27) | (0.11) |
| Separated within a year | 0.029 | 0.066 | -0.073 | 0.025 |
| | (0.11) | (0.13) | (0.22) | (0.11) |
| Separated 0-1 years | 0.263*** | 0.366*** | 0.152 | 0.251** |
| | (0.10) | (0.12) | (0.20) | (0.10) |
| Separated 1-2 years | 0.333*** | 0.407*** | 0.168 | 0.321*** |
| | (0.11) | (0.13) | (0.21) | (0.11) |
| Separated 2-3 years | 0.248** | 0.272* | 0.164 | 0.255** |
| | (0.11) | (0.14) | (0.18) | (0.11) |
| Separated 3-4 years | -0.011 | 0.079 | -0.153 | -0.017 |
| | (0.12) | (0.17) | (0.20) | (0.13) |
| Age | -0.032*** | -0.033*** | -0.032*** | -0.033*** |
| | (0.00) | (0.00) | (0.00) | (0.01) |
| Household income (logarithm) | 0.033 | 0.032 | 0.040 | 0.018 |
| | (0.04) | (0.05) | (0.05) | (0.10) |
| Length of time at the same job | -0.021*** | -0.021*** | -0.021*** | -0.031*** |
| | (0.00) | (0.00) | (0.00) | (0.01) |
| Medium education | -0.009 | -0.022 | 0.019 | -0.173 |
| | (0.12) | (0.13) | (0.13) | (0.26) |
| High education | -0.006 | -0.031 | 0.019 | -0.049 |
| | (0.15) | (0.15) | (0.15) | (0.39) |
| Lives with a child | 0.058 | 0.067* | 0.057 | 0.011 |
| | (0.04) | (0.04) | (0.04) | (0.11) |
| Constant | 9.105*** | 9.096*** | 9.385*** | 7.568*** |
| | (0.34) | (0.35) | (0.34) | (0.88) |
| Region dummies | ✓ | ✓ | ✓ | ✓ |
| Time dummies | ✓ | ✓ | ✓ | ✓ |
| Person-years | 70,776 | 68,188 | 64,547 | 8,484 |

*Notes*: All control variables are lagged of one time period. Robust and individual level clustered standard errors in parentheses. Fixed effects regressions estimated with longitudinal SOEP weights. Statistical significance: *** 1%, ** 5%, * 10%.

Table 6.5 Fixed Effects Job Satisfaction Estimates with Interactions with Job Change Dummy

| Main Effects | | Interactions | |
|---|---|---|---|
| Separated 2-3 years hence | 0.12 | Separated 2-3 years hence X Change in job | 0.02 |
| | (0.12) | | (0.39) |
| Separated 1-2 years hence | 0.05 | Separated 1-2 years hence X Change in job | -0.41 |
| | (0.11) | | (0.44) |
| Separated within a year | 0.05 | Separated within a year X Change in job | -0.28 |
| | (0.11) | | (0.31) |
| Separated 0-1 years | 0.25** | Separated 0-1 years X Change in job | 0.04 |
| | (0.11) | | (0.31) |
| Separated 1-2 years | 0.32*** | Separated 1-2 years X Change in job | 0.08 |
| | (0.11) | | (0.27) |
| Separated 2-3 years | 0.26** | Separated 2-3 years X Change in job | -0.23 |
| | (0.11) | | (0.36) |
| Separated 3-4 years | 0.03 | Separated 3-4 years X Change in job | -0.47 |
| | (0.12) | | (0.41) |
| Change in job | 0.407*** | | |
| | (0.04) | | |
| | Control variables | | |
| Age | -0.03*** | Household income (logarithm) | 0.05 |
| | (0.001) | | (0.04) |
| Length of time in the same job | -0.02*** | Lives with a child | 0.06* |
| | (0.004) | | (0.04) |
| Medium education | -0.01 | High education | 0.002 |
| | (0.12) | | (0.14) |
| Constant | 8.92*** (0.35) | | |
| Region dummies | ✓ | | |
| Time dummies | ✓ | | |
| Person-Years | 70,776 | | |

*Notes*: All control variables lagged of one time period. Robust and individual level clustered standard errors in parentheses. Fixed effects regressions estimated with longitudinal SOEP weights. Statistical significance: *** 1%, ** 5%, * 10%.

# Chapter 7

# Conclusions

In this chapter, I briefly summarise the results of the empirical chapters and discuss how the results of this thesis contribute to our understanding of job satisfaction measures, of the general model relating family and job satisfaction (Chapter 3) and of the relationship between work and family. Finally, I discuss the limitations of my work and the implications for data collection and policy. Also, I consider the implications of my work for future research.

## 7.1 Summary of Findings

The results of chapter 4 – Life Course Trajectories of Job Satisfaction for German Women – were unexpected. I showed that there are no differences in life course trajectories of job satisfaction between mothers and childless women in WG, but EG childless women are significantly less satisfied with work than mothers for most of their working life. The results are consistent with a situation of skills mismatches created by the reconstruction of the labour market in EG after reunification.

In Chapter 5 — The Relationship between Parental Leave Duration and Job Satisfaction of Mothers: Evidence from a Quasi-Experiment in Germany — I exploit the 2007 parental leave reform in Germany (*Elterngeld*) to estimate how the reduction in length of maternity leave affects job satisfaction at the return to work. I find that the reduction in the length of maternity benefits brought about a reduction in job satisfaction at the return to work for EG mothers. For WG, I find that the introduction of the new benefits system led to an increase in job satisfaction. However, for WG I was not able to empirically confirm the hypothesis that the reduction in maternal leave length was the cause of the increase in job satisfaction because there was no significant decrease in maternity leave duration after the introduction of the *Elterngeld* reform.

In Chapter 6 — Marital Dissolution and Job Satisfaction Trajectories: The Case of Western Germany — I found that union dissolution temporarily increases job satisfaction for men, but has no long-term effect (complete adaptation). Moreover, there is no anticipation of union dissolution in terms of job satisfaction. These findings suggest that work for men is likely to be a buffer against stressful events in their private lives.

### 7.1.1 Linking Theory to Empirical Findings

In Chapter 3 I suggested a model that links family context to job satisfaction. I postulated that job satisfaction is related to expectations about what the job should be like, and that expectations are partly related to changes in family context. It is useful at this point to recall the main equations that express this concept.

$$J = a + z(d) \tag{7.1}$$

$$= a + z(-\delta[A - D]) \tag{7.2}$$

$$= a + z(-\delta[A - h(P)]) \tag{7.3}$$

where $J$ is job satisfaction of representative individual $j$, $A$ is the observed amount of the only employment characteristic, $D$ is the desired amount of the same characteristic and cannot be observed, $P$ is a vector of factors relating to individual $j$'s family context and $z(\cdot)$ is a decreasing function.

Chapters 4 through 6 have assessed the empirical relationship between family context and job satisfaction, and their findings can shed light on the validity and structure of the model proposed.

The model predicts that in the long run individuals seek to maximise job satisfaction by reducing discrepancies in work factors. In all chapters I found that there are no long lasting effects of changes in family context on job satisfaction. Hence, this lends some validity to the idea of the model that individuals act towards maximising job satisfaction by changing expectations about work ($D$) and/or working conditions ($A$).

In Chapter 4 I found that motherhood does not affect job satisfaction in the long run in WG. This seems to contradict the assumption that there is a relationship between expected working conditions and family context. However, a study like the one in Chapter 4 is not particularly apt at testing this hypothesis because it predicts that in the long run women adapt to changes in the family structure, which is what I have found. Indeed, studies looking at short term variations in job satisfaction around the time of birth find a negative effect of childbirth on job satisfaction (Georgellis et al. 2012). This lends validity to the assumptions that women change expectations regarding their jobs when they have a new child and struggle to adapt quickly to the new situation.

Moreover, the lack of association between age, motherhood and job satisfaction in Chapter 4 brings attention to possible compensating mechanisms. In the full model many factors $d$ contribute to job satisfaction. For example, motherhood may lead to a desire for more flexibility and improve organisation skills. An increased need for flexibility would decrease job satisfaction in the short term if flexibility is not easily obtained, but better organisation skills may increase job satisfaction by reducing discrepancy between the level of performance she expects and manages to achieve. If this were the case, then we may not observe any variation in job satisfaction.

The findings of Chapter 5 offer some insight on the functional form of $z(\cdot)$. I found that shortening of parental leave duration led to job satisfaction declines for EG women and I explained this in terms of EG women having lower quality jobs, more insecure labour market and worse working conditions. This suggests that $z(\cdot)$ may be different according to different levels of $A$. For lower level of $A$ a given discrepancy $A - D$ may have stronger impact on job satisfaction than for higher levels of $A$. This may also be consistent with the findings of Chapter 4 that childless women are less happy with their jobs than mothers in EG, given the lower quality jobs in which childless women self-select in EG.

The findings of Chapter 6 suggest that family context may not only affect $D$ but indeed it may create "new dimensions" contributing to job satisfaction. In terms of the parameters of the model, this implies that for some time periods and factors, $z(\cdot)$ is a function mapping to $\emptyset$. For instance, before divorcing men may not have had an expectation about the social aspect of their job. However, after they separate they realise that social interactions at work do matter to them and they have an expectation about it, which contributes to job satisfaction. This intuition suggests that family context may not only affect existing expectations about

what a job should be, but also creates new ones.

The empirical findings offer some insights on the relationship between expected working conditions ($D$) and family context ($P$), but more work is needed to develop a full understanding of the model. In particular, a useful direction in this sense, would be to focus on short term studies of life events on job satisfaction, and subgroup analysis of these associations to capture possible heterogeneity in the way expectations on what a job should be are formed and affected by changes in family context. Another step towards a better understanding of the model would be to isolate possible factors that are particularly relevant for subjective well-being and assess what the role of family change may be in affecting them.

## 7.2 Towards a Better Understanding of Work, Family and Job Satisfaction

The main conclusion of this thesis is that job satisfaction is affected by family events. However, in many ways the nature of associations between job satisfaction and family context is quite unexpected.

Motherhood is associated with a wage penalty and narratives about career sacrifices of mothers abound in academic literature and media outlets; however, motherhood does not *per se* affect job satisfaction. If anything, mothers are happier at work than non-mothers. Everyday narratives depict divorce as a largely negative event with spill-overs in all life dimensions. However, men become more satisfied with their jobs when they separate.

The message of this thesis is that reality is complex. The unexpected results of this thesis show that the academic and human tendency of categorising events as "positive" and "nega-

tive" is a poor description of the real experience of individuals. The use of "soft outcomes" such as job satisfaction can greatly contribute to the perception and characterisation of life events and their consequences for well-being.

Work and family studies are attractive because for the majority of people these are the two most salient dimensions of adult life. No unique hypothesis regarding the relationship between work and family was confirmed with this thesis. It appears that work was a buffer against negative family life events for men (Chapter 6), spill-over between work and family seems to explain lower job satisfaction of women returning to work after childbirth (Chapter 5), and children may have an enhancing role for women's job satisfaction (Chapter 4).

My findings may appear unexpected only because of common pre-conceptions of the relationship between work and family. For instance, it may appear surprising that mothers are no less satisfied with work than childless women. To blame is the widely held view that talking about interrelationships between work and family is essentially talking about work-life balance, and that work-life balance is all about managing work hours. There is more to the work-life relationship than work-life balance, and work-life balance is more than just working schedule problems.

The stereotypical protagonist of work-life balance studies is a middle-class time-squeezed mother in a dual-earner household (Warren 2015). The assumption of work-life balance studies is that women want flexible low paid work because this is most compatible with their family responsibilities (O'Connor 1998). In this literature, the work-life balance problem boils down to how to make sure women (rarely men) are able to plan their leisure and care responsibilities around hours of paid work. However, work-life balance is more than working

hours (Lewis et al. 2007, Ruth Eikhof et al. 2007, Özbilgin et al. 2011).

Problems combining work and family are present across the entire social class spectrum, and may not only be about working hours. For example, Warren et al. (2009) and Warren (2015) find that, for working class men and women, economic precariousness is at the core of work-life balance problems. Therefore, the inability of planning ahead because of lack of job security is detrimental to workers' well-being, as much as inflexible schedules. The findings of Chapter 5 can be interpreted from this perspective. Women from a lower socio-economic background experienced a decrease in job satisfaction due to a reduction in the length of statutory paid maternity leave duration in EG but not in WG. Women in WG have in general better quality jobs, so that a reduction in maternity leave duration, which could have potentially heightened difficulties combining work and family, did not actually decrease job satisfaction. However, mothers in EG, who have on average jobs with lower job quality and are exposed to higher job insecurity, experienced a decrease in job satisfaction.

Work-family relationships are more than just work-life balance. Other aspects of the relationship between work and family include but are not limited to conflict and enrichment. For instance, in Chapter 4 I find that mothers are no less satisfied than childless women. From a work-family balance perspective this finding is puzzling because childless women are more likely to have control over their schedules than mothers. However, from a different perspective, family may be an enriching factor: having children may enhance quality of life at work (Greenhaus and Powell 2006). However, the distinction between the terms of work-family balance, conflict and enrichment and related terms remains underdeveloped and empirically unsubstantiated (Carlson et al. 2006). Developing a new theory of work-family relationships is beyond the scope of this thesis. Nevertheless, my findings may be used to demonstrate that using a broader range of outcomes to describe the relationship between

family and employment is a fruitful practice.

Another way in which my work contradicts the general view of work and family relationships is that the literature on work and family is too much about having family, with little interest in how not having a family affects work life. When studies look at the relationship between family and outcomes as income, working hours or occupations, the focus is always on having a family, so that expressions as "wage motherhood penalty" for women and "wage marriage premium" for men have become widespread. By overlooking the perspective of those who do not have a family we may be missing an important component of well-being.

Consider for instance the case of a married and an unmarried man. One may be tempted to think that the only difference between the two is that one has a spouse and the other does not. However, this view ignores the possibility that the unmarried man may want to have a spouse. This wish may directly affect the unmarried man's well-being at work. This was indeed the case for Chapter 6, where I found that newly separated men compensated not having a partner any more with an increase in job satisfaction. In other words, having a family – whether in the form of having children or being married – has an independent value in the eye of many people, and the absence of family is a concern for well-being. There is no shortage of literature on childlessness and "lack of family" and their effect on psychological outcomes (Beckman and Houser 1982, Marks 1996, Umberson and Williams 1999, Jeffries and Konnert 2002, DePaulo 2014), but these factors are rarely studied in association with workplace well-being (Engler et al. 2011). Job satisfaction is an excellent outcome measure for studying the consequences of lack of family because it captures the importance of employment relative to other factors in life.

### 7.2.1 Job Satisfaction: An Obsession of Some Lucky Few?

One potential criticism of my thesis and research on job satisfaction in general is that worries about job satisfaction are worries of only a few privileged workers. This statement is true in at least two ways.

First, I conceptualise job satisfaction as the result of choice. Individuals choose where and how to work based on their preferences. However, individuals are limited in their choices by constraints, which in turn depend on their resources. Cultural, material and economic resources amplify the range of choices and remove constraints to choice. Well-off, educated workers can more easily chose jobs according to their preferences than workers with fewer resources. Thus, a well-off worker can more easily trade off other work aspects with job satisfaction than a less well-off one.

Second, the discourse on job satisfaction in the media is essentially geared towards middle-class professionals. For instance, since I have started researching job satisfaction, a large number of TED [1] talks have appeared about happiness at work, the meaning of work, productivity, motivation etc. One of the speakers, American entrepreneur Scott Dinsmore, founded an organisation called "Live your Legend – Change the World by Doing What You Want", committed to maximising their clients' job satisfaction by matching them to their ideal jobs. The case studies that they describe often involve people quitting their jobs, and moving on to an entirely different career. It goes without saying that there is a large share of the population that simply cannot afford quitting their jobs to follow inspiring careers. "Live your legend" is only one example of how issues of job satisfaction are described in the media. The focus on career success with little regard for financial security and the argument that happiness should be the only driver of work motivation may alienate parts of the population

[1] An American non-profit organisation devoted to spreading ideas, usually in the form of short talks (https://www.ted.com/).

that do not have the means of making career switches based on job satisfaction alone.

It is easy to see how discourses on job satisfaction appear to be relevant only to a specific set of workers: professionals, educated and with enough economic resources. However, with my thesis I show that job satisfaction can be used to describe the experience of diverse social groups and that job satisfaction correlates with measures of disadvantage. Because social and institutional constraints play a major role in determining job satisfaction, average levels of job satisfaction matter for everyone. In other words, although some groups of workers do not have outlets to voice their job (dis)satisfaction and would not prioritise it compared to other job values, their job satisfaction still matters and should be used to describe their experience at the workplace.

Job satisfaction is not just an obsession of some lucky few but a useful measure that reflects both opportunities and constraints at the workplace. I discuss this point making references to the results of Chapter 4, as this is the one that most clearly illustrates my argument. In Chapter 4 I found that in terms of job satisfaction being a mother does not put you on a different trajectory from not having children, although what women look for in a job and their career choices differ according to whether they have children or not. Other factors interact with motherhood to explain long-term trajectories of job satisfaction. Two of these factors are employment norms (which are individual factors but also the result of socialisation) and the availability of job opportunities. I have used these two factors to explain how childless women in EG report significantly lower levels of job satisfaction than mothers for most of their working life. The implication for the interpretation and use of job satisfaction is that norms are heterogeneous across social groups, as well as job opportunities. Women in EG could not have switched jobs to find a more rewarding one because they faced high insecurity and unemployment. This insight potentially opens up the use of job

satisfaction as a measure of disadvantage in the labour market, rather than as a measure of self-fulfilment for a small privileged group of workers.

## 7.3 Limitations

I discussed limitations of methods, concepts and data in the relevant sections in each chapter. In this section, I discuss limitations that are common to all chapters.

I have assumed throughout the thesis that job satisfaction is a valid and reliable measure of well-being. I argued that job satisfaction can have a particular interpretation based on discrepancy theory. However, is the measure of job satisfaction provided in the SOEP, and in all major surveys, appropriate for this interpretation? This question is very difficult to answer.

The difficulty in establishing validity of job satisfaction items is due to the non-existence of a validation concept of "real" job satisfaction against which to validate measures of job satisfaction. Psychologists have studied the validity of job satisfaction measures in terms of its correlation with future behaviours: job satisfaction predicts employees' engagement, firm performance, turnover and absenteeism (Sandvik et al. 1993, Judge et al. 2001, Harter et al. 2002, Van Saane et al. 2003, Richter et al. 2013). If job satisfaction were purely random then we would not expect any correlation with behaviours. But what exactly job satisfaction measures is unfortunately still elusive (Clark 2015).

From the point of view of measurement, job satisfaction measures have been criticised on grounds of inconsistency and inaccuracy. In particular, answers to survey questions about job satisfaction may be influenced by factors that have little to do with well-being: some of these factors are cognitive (e.g. phrasing of the question), relate to social desirability (e.g. respon-

dents say what they think is expected of them), or exogenous changes (e.g. weather) (for a review see Kristensen and Westergaard-Nielsen 2007). Kristensen and Westergaard-Nielsen (2007), looking at correlations between different job satisfaction instruments collected in the same survey, found that consistency is rather high. When respondents were asked to state the satisfaction with their occupation and with their jobs separately, 80% of respondents reported the same value or the immediately adjacent value to both questions.

However, such reliability tests are not available for the SOEP, as only one scale of job satisfaction is collected. In 2006, the SOEP team ran a methodological pretest for some measures of well-being (but not job satisfaction). They split the total sample in two random groups and asked subjective well-being questions in different formats to the two groups to test reliability and validity. This experiment showed that in spite of rather high consistency between scales of different magnitude, the choice of scale can be decisive for empirical applications. For example, the strength of the relationship between income and satisfaction with income is much stronger when using an 11-point scale for satisfaction than a 7-point scale. A similar pretest experiment may be carried out for job satisfaction measures by the SOEP team. The results may be used to assess the validity of known correlations between job satisfaction and work factors.

One definite drawback of job satisfaction measures in the SOEP is that they are only collected annually. Empirical evidence on job satisfaction provided by this thesis and elsewhere shows that short-term fluctuations in job satisfaction tend to be larger than long-term ones. Personal life events happen on a relatively short time scale: pregnancy lasts 9 months; separation may be unexpected or happen over a period of only a few months. Although it is desirable to have quarterly job satisfaction data, the cost of collecting job satisfaction more

frequently in the context of longitudinal surveys such as the SOEP is large.

Other surveys are more apt to collect job satisfaction data on a quarterly basis. For instance, the Labour Force Survey (LFS) is a rotating panel survey collecting information on various aspects of employment. Each respondent is interviewed for five successive waves at three-monthly intervals and 20% of the sample is replaced every quarter. However, the LFS does not contain a measure of job satisfaction that is comparable to the one in major surveys and it does not contain very detailed information regarding the respondents' background and life circumstances. Thus, given the current data landscape, there are trade-offs between being able to follow the same individual for many years, having comprehensive background information and having job satisfaction data more frequently than on a yearly basis. Given these trade-offs, whenever possible researchers should triangulate empirical findings with a data source that has more frequent collection of job satisfaction items.

A frequent criticism of my work is that because selection into employment is not random, effects cannot be generalized to everyone (i.e. working and not working people) and effects cannot be trusted. This observation is not correct, because it confuses "sample selection bias" with "endogeneity bias" (for definitions see Chapter 1).

In my work, I do not claim nor aim to generalise effects to every individual. Rather, I make inference to the working population: this is a clearly defined, identifiable and interesting population. Selection into employment would affect the generalisability of findings, but not their reliability. Hence, because I do not aim to generalise findings beyond the population of workers, I do not consider selection into employment a limitation of my work.

However, I am concerned with endogenous selection into employment, which results from the fact that job satisfaction is endogenous to employment behaviour. Endogenous selection into employment is a threat to the internal validity of my analysis. In Chapter 4 I was able to confirm for the first time that women who have a lower propensity of being in employment are also more likely to have low levels of job satisfaction. This confirms the endogeneity of job satisfaction to labour supply decisions, although the severity of it does not appear to be large enough to impact on the main conclusions of Chapter 4. Nevertheless, the assumptions on which this estimator is based are unrealistic; they require the researcher to be able to model completely employment behaviour with observed data. Moreover, by construction, to predict employment, one has to rely on data of people with long employment spells. In panel data, the more waves one is employed, the larger is the contribution to the estimation. This means that those with very low attachment to the labour market are under-represented.

In short, is endogenous selection actually so severe and estimators so unreliable that studies on family context and job satisfaction cannot be trusted? On the one hand, this would explain the dearth of studies on this topic. On the other hand, historical considerations suggest that if that was the case in the past, it is less likely to be the case for now and the future.

OECD (2014) data show that there has been a gender convergence in terms of participation into employment. Thus, in the past researchers worried about only women with "high-wage" characteristics being in employment, but now the evidence is that women have increased their engagement in the labour market, making researchers question whether endogeneity issues of this type are an outdated concept in Western labour markets (Dolado et al. 2016).

New trends seem to be more pressing and likely to change the priority of labour market researchers. For instance, men's participation in the labour market has decreased in the last few decades. For example, in the UK in 1971 about 92% of men were in employment, while this figure was 76% in 2013 (Office for National Statistics 2013). The decrease in male labour force participation is coupled by an increase in non-regular employment (OECD 2014). Thus, it is a fact that now more people experience insecurity and instability in the labour market. This means that while in the past jobs tended to be rigid and people kept the same position for many years, now young workers change jobs many times and experience short spells of inactivity before they land a more stable occupation. This means that instead of being concerned about endogeneity of job satisfaction to participation into paid employment, we should rather worry about inequalities in work access and their consequences for well-being.

In conclusion, rather than treating the population of workers as a whole and assume that motivations to work are homogeneous, we should focus on subgroups of workers that have different attachment to the labour market and employment histories. This consideration would make the preoccupation with endogenous employment selection of secondary relevance. Rather, thinking along these lines opens up a new line of research for job satisfaction scholars, because workers with patchy labour market history have so far largely been ignored in this literature.

## 7.4 Implications

### 7.4.1 For Data Collection

One implication for data collection is that it would help researchers validate theories of job satisfaction if contextual questions were asked alongside job satisfaction measures. The questions could be modelled on the Work Orientation modules of the International Social

Survey Programme (ISSP). In these modules, respondents were asked to state how important the following job aspects are: job security, high income, good opportunities for advancement, an interesting job, independence, helping other people, usefulness to society and control over work pattern. More aspects could be added to this list, including for instance how well the workers' skills fit their job and whether workplace family policies are satisfactory (Clark 2015). Moreover, a similar set of questions may be asked about aspects of life outside of the workplace which may be contributing to job satisfaction. A set of questions of this type in a longitudinal survey would be extremely useful to researchers because it would allow them to study how the importance of job aspects varies as life events evolve, and how the contribution of non-work-related factors to job satisfaction vary over the life course. In Appendix A I suggest a set of questions modelled on this approach.

In all large surveys job satisfaction is asked only if the respondent is in paid employment. Although job satisfaction does require a notion of work, I contest the point that work is only work if it is paid. There is a case for broadening the concept of work when asking about job satisfaction. For instance, people who decide not to participate in paid employment because of full-time caring responsibilities are not included in the current target population for job satisfaction. Yet, their work plays a major role in a household economy, and it also plays a similar role as paid employment in individuals' lives in terms of amount of time and effort. Instead of asking satisfaction with paid work only, surveys may introduce a question on satisfaction with one's main activity, regardless of whether it is waged or not.

Together with a question on satisfaction with one's main activity, it would be ideal to have a set of questions to better understand decisions to return to paid employment after childbearing. At the moment, this decision is poorly understood. There are several studies quantifying how the share of women who do not return to paid work after having children varies accord-

ing to, for instance, childcare costs (Klerman and Leibowitz 1990), children's age (Leibowitz et al. 1992), family policies (Rønsen and Sundström 2002), workplace characteristics (Lalive and Zweimüller 2009) and grandparents' involvement (Posadas and Vidal-Fernandez 2013). However, there is a shortage of data to study the psychological processes that lead women to quit their jobs first and to re-enter later, while a more systemic approach is needed to understand such a complex decision (Grether and Wiese 2016). From a statistical point of view, data of this type would also help qualify the role of endogeneity of job satisfaction (and other variables) to labour supply decisions.

At the moment, in the SOEP questionnaire there is a variable asking for reasons why an individual quit their job or changed their occupation. The possible answers are: place of work closed, own resignation, dismissal, mutual agreement, temporary contract expired, reached retirement age, leave of absence and business closed down. Over 30% of respondents choose own resignation. This variable used to allow respondents to choose childcare, but this option has been discontinued since 1990. The categories at the moment do not accommodate for a decision based on family reasons. Possible further categories may be: suitable care services for children are not available or affordable, family related reasons, health related reasons (including mental health) or job was not meeting my needs.

Moreover, there are no specific questions for those who were on a childbearing related break and returned to work. There is a general question asking all those who do not have a paid employment what are the reasons for wanting to return to work. The only three possible answers are: earn money, other reasons and both about the same. More options may be added to aid an analysis of the return to work after childbearing. For instance, additional options may be: "I am financially secure, but want to return to work" or "I desire the social contacts available through work".

### 7.4.2 For Policy

Policy practitioners use job satisfaction as a monitoring device for labour market and job quality. Based on my findings, I suggest an additional role for job satisfaction as a policy planning tool and also advocate some improvements in the current use of job satisfaction in policy.

As a monitoring device, job satisfaction is collected to monitor job quality and to keep employers accountable. However, my work exposes some drawbacks in the way in which job satisfaction data is used. Firstly, fluctuations in job satisfaction carry more information than levels, given that job satisfaction reacts quickly to personal changes. Fluctuations can be measured in two main ways: either recording job satisfaction more frequently (costlier), or by including retrospective questions regarding variations in job satisfaction within a time period (more inaccurate).

Second, aggregate job satisfaction data is difficult to interpret. The usual interpretation is in terms of job quality (Cabrita and Perista 2007) but I have shown that this is not necessarily the most correct one. It is common to show disaggregate data in terms of some basic demographics and economic variables such as age, gender, managerial status and income. The results of this thesis suggest that other variables should also be included. Parental and marital status is potentially important for short-term fluctuations, and may be particularly relevant for certain professions (e.g. female dominated professions such as teaching and nursing).

Lastly, the use of well-being concepts in policy planning is relatively new, and there is no established way of targeting policies to well-being or of conducting cost-benefit analysis using well-being measures other than income (Layard 2006, O'Donnell et al. 2014). Debates on this issue are currently being held in many high-profile places: in July 2015 the UN General Assembly advocated greater priority for policies that promote happiness; the UN

has been producing the World Happiness Report since 2012 and the UK government has established a Commission for Wellbeing Policy. It is beyond the scope of this thesis to suggest specific methods of policy evaluation including well-being items as job satisfaction. However, my findings may feed into this debate. First, as the findings of Chapter 4 suggest, labour market policy changes should reflect norms and expectations of people regarding work and gender. Mismatches between these two result in long lasting reduction in well-being. Second, job satisfaction may be used not only as an outcome for labour market policies, but family policies as well, especially those explicitly aiming at improving employment attachment and work-family relations.

## 7.5 Appendix A

In this section I list some survey questions that may be asked as a follow up to a question on job satisfaction. These questions focus on the context that may have led respondents to select a level of job satisfaction.

1. **Job Satisfaction Question**

   On a scale from 0 to 10 where 0 means "totally dissatisfied" and 10 means "totally satisfied", how satisfied are you with your job?

2. **Contextual Question 1: Workplace**

   When thinking about the level of satisfaction you have indicated in question 1, which of the following aspects of your job contribute most to it? Rank the following aspects of your job from 1 to 5 where 1 is the aspect that contributes most to your job satisfaction and 5 is the aspect that contributes least to your job satisfaction.

| | | |
|---|---|---|
| Good pay | Useful to society | Good job security |
| Flexible working schedule | Interesting job | Matches my skills |
| Many opportunities for development | Good communication within workplace | Good support system |
| Family orientated | Many non-monetary benefits (e.g. discount scheme, gym access, pay advances easily available) | Good opportunities for advancement |
| Independence | Helping others | Other (please specify) |

3. **Contextual Question 2: Non-Work Related Factors**

   Thinking of the level of job satisfaction you have indicated in question 1, what other aspects of your life are contributing to it? Choose up to 5 statements that are most relevant for you.

| | | |
|---|---|---|
| Partner/spouse supports me in my job | My children support me in my job | Other family members support me in my job |
| Caring responsibilities for children make it difficult to do my job | Caring responsibilities for partner/spouse make it difficult to do my job | Caring responsibilities for other adults make it difficult to do my job |
| Difficult relationship with partner/spouse make it difficult to do my job | Difficult relationship with children make it difficult to do my job | Financial problems make it difficult to do my job |
| Health problems make it difficult to do my job | Other (please specify) | No aspects of my life contribute to my job satisfaction |

# References


Aassve, A., Betti, G., Mazzuco, S., and Mencarini, L. (2007). Marital Disruption and Economic Well-Being: A Comparative Analysis. *Journal of the Royal Statistical Society: Series A (Statistics in Society)*, 170(3):781–799.

Adda, J., Dustmann, C., and Stevens, K. (2016). The Career Costs of Children. *Journal of Political Economy*, (forthcoming).

Adler, M. A. (1997). Social Change and Declines in Marriage and Fertility in Eastern Germany. *Journal of Marriage and the Family*, 56(1):37–49.

Adler, M. A. (2002). German Unification as a Turning Point in East German Women's Life Course: Biographical Changes in Work and Family Roles. *Sex Roles*, 47(1):83–98.

Aguirre, D., Hoteit, L., Rupp, C., and Sabbagh, K. (2012). Empowering the Third Billion: Women and the World of Work in 2012. Technical report, Booz & Company.

Aitken, Z., Garrett, C. C., Hewitt, B., Keogh, L., Hocking, J. S., and Kavanagh, A. M. (2015). The Maternal Health Outcomes of Paid Maternity Leave: A Systematic Review. *Social Science & Medicine*, 130:32–41.

Akerlof, G. A., Rose, A. K., Yellen, J. L., Ball, L., and Hall, R. E. (1988). Job Switching and Job Satisfaction in the US Labor Market. *Brookings Papers on Economic Activity*, 19(2):495–594.

Akgunduz, Y. E. and Plantenga, J. (2013). Labour Market Effects of Parental Leave in Europe. *Cambridge Journal of Economics*, 37(4):845–862.

Allison, P. D. (2002). Conventional Methods. In *Missing Data (Quantitative Applications in the Social Sciences)*, chapter 3, pages 5 – 12. London, UK: Sage Publications Inc.

Altenhofen, S., Biringen, Z., and Mergler, R. (2008). Significant Family Dynamics Related to Postdivorce Adjustment in Parents and Children. *Journal of Divorce & Remarriage*, 49(1-2):25–40.

Amato, P. R. (2000). The Consequences of Divorce for Adults and Children. *Journal of Marriage and Family*, 62(4):1269–1287.

Amato, P. R. (2010). Research on Divorce: Continuing Trends and New Developments. *Journal of Marriage and Family*, 72(3):650–666.

Andress, H.-J., Borgloh, B., Bröckel, M., Giesselmann, M., and Hummelsheim, D. (2006). The Economic Consequences of Partnership Dissolution – A Comparative Analysis of Panel Studies from Belgium, Germany, Great Britain, Italy, and Sweden. *European Sociological Review*, 22(5):533–560.

Angrist, J. D. and Krueger, A. B. (1992). The Effect of Age at School Entry on Educational Attainment: an Application of Instrumental Variables with Moments from Two Samples. *Journal of the American Statistical Association*, 87(418):328–336.

Angrist, J. D. and Pischke, J.-S. (2009). Two-Sample IV and Split-Sample IV. In *Mostly Harmless Econometrics*. Princeton, NJ: Princeton University Press.

Anusic, I., Yap, S. C. Y., and Lucas, R. E. (2014). Testing Set-Point Theory in a Swiss National Sample: Reaction and Adaptation to Major Life Events. *Social Indicators Research*, 119(3):1265–1288.

Archie, T., Kogan, M., and Laursen, S. L. (2015). Do Labmates Matter? The Relative Importance of Workplace Climate and Work-Life Satisfaction in Women Scientists' Job Satisfaction. *International Journal of Gender, Science and Technology*, 7(3):343–368.

Arnold, F., Freier, R., and Kroh, M. (2015). Political Culture still Divided 25 Years after Reunification? Economic Bulletin 37, Deutsches Institut für Wirtschaftsforschung.

Avendano, M., Berkman, L. F., Brugiavini, A., and Pasini, G. (2015). The Long-run Effect of Maternity Leave Benefits on Mental Health: Evidence from European Countries. *Social Science & Medicine*, 132:45–53.

Baker, M., Gruber, J., and Milligan, K. (2008). Universal Childcare, Maternal Labor Supply, and Family Well-Being. *Journal of Political Economy*, 116(4):709–745.

Baker, M. and Milligan, K. (2008). How Does Job-Protected Maternity Leave Affect Mothers' Employment? *Journal of Labor Economics*, 26(4):655–691.

Bargain, O., González, L., Keane, C., and Özcan, B. (2012). Female Labor Supply and Divorce: New Evidence from Ireland. *European Economic Review*, 56(8):1675–1691.

Bassett, G. (1994). The Case Against Job Satisfaction. *Business Horizons*, 37(3):61 – 68.

Baum, C. L. and Ruhm, C. J. (2016). The Effects of Paid Family Leave in California on Labor Market Outcomes. *Journal of Policy Analysis and Management*, 35(2):333 – 356.

Baxter, J. (2008). Is Money the Main Reason Mothers Return to Work after Childbearing? *Journal of Population Research*, 25(2):141–160.

Baxter, J. and Taylor, M. (2014). Measuring the Socio-Economic Status of Women Across the Life Course. *Family Matters*, 95:62 – 75.

Beblo, M. and Görges, L. (2015). Breaking Down the Wall between Nature and Nurture: An Exploration of Gendered Work Preferences in East and West Germany. Wiso-HH Working Paper Series 26, Universität Hamburg.

Becker, G. S. (1991). *A Treatise on the Family*. Cambridge, MA: Harvard University Press.

Beckman, L. J. and Houser, B. B. (1982). The Consequences of Childlessness on the Social-Psychological Well-Being of Older Women. *Journal of Gerontology*, 37(2):243–250.

Belsky, J. and Kelly, J. (1994). *The Transition to Parenthood: How a First Child Changes a Marriage – Why Some Couples Grow Closer and Others Apart*. New York, NY: Bantam Doubleday Dell Publishing Group, Inc.

Bernal, D., Snyder, D., and McDaniel, M. (1998). The Age and Job Satisfaction Relationship: Does its Shape and Strength still Evade Us? *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 53(5):P287–P293.

Besen, E., Matz-Costa, C., Brown, M., Smyer, M. A., and Pitt-Catsouphes, M. (2013). Job Characteristics, Core Self-Evaluations, and Job Satisfaction: What's Age Got to Do with It? *The International Journal of Aging and Human Development*, 76(4):269–295.

Beyer, M. (1992). The Situation of East German Women in Postunification Germany. In *Women's Studies International Forum*, volume 15 (1), pages 111–114. Elsevier.

Bianchi, S. M. and Milkie, M. A. (2010). Work and Family Research in the First Decade of the 21st Century. *Journal of Marriage and Family*, 72(3):705–725.

Björklund, A. and Jäntti, M. (1997). Intergenerational Income Mobility in Sweden Compared to the United States. *The American Economic Review*, 8(7):1009–1018.

Blanchflower, D. G. and Oswald, A. J. (1999). Well-being, Insecurity and the Decline of American Job Satisfaction. *NBER working paper*, 7487.

Blossfeld, H.-P. and Drobnic, S. (2001). *Careers of Couples in Contemporary Society: From Male Breadwinner to Dual-Earner Families: From Male Breadwinner to Dual-Earner Families*. Oxford, UK: Oxford University Press.

Blossfeld, H.-P. and Mills, M. (2001). A Causal Approach to Interrelated Family Events: A Cross-National Comparison of Cohabitation, Non-marital Conception, and Marriage. *Canadian Studies in Population*, 28(2):409–437.

Blum, S. (2010). Between Instrument Tinkering and Policy Renewal: Reforms of Parental Leave in Germany and Austria. *German Policy Studies*, 6(3):83–118.

Böckerman, P. and Ilmakunnas, P. (2012). The Job Satisfaction-Productivity Nexus: A Study Using Matched Survey and Register Data. *Industrial & Labor Relations Review*, 65(2):244–262.

Booth, A. and Amato, P. (1991). Divorce and Psychological Stress. *Journal of Health and Social Behavior*, 32(4):396–407.

Booth, A., Johnson, D. R., White, L. K., and Edwards, J. N. (1986). Divorce and Marital Instability over the Life Course. *Journal of Family Issues*, 7(4):421–442.

Boswell, W. R., Shipp, A. J., Payne, S. C., and Culbertson, S. S. (2009). Changes in Newcomer Job Satisfaction over Time: Examining the Pattern of Honeymoons and Hangovers. *Journal of Applied Psychology*, 94(4):844 – 858.

Brenke, K. (2015). The Vast Majority of Employess in Germany are Satisfied with their Jobs. DIW Economic Bulletin 32/33, Deutsches Institut fur Wirtschaftsforschung.

Brenke, K. (2016). Home Offices: Plenty of Untapped Potential. DIW Economic Bulletin 8/2016, Deutsches Institut für Wirtschaftsforschung (DIW).

Briar, C. (2004). *Working For Women?: Gendered Work And Welfare Policies In Twentieth Century Britain*. London, UK: UCL Press.

Bröckel, M. and Andreß, H.-J. (2015). The Economic Consequences of Divorce in Germany: What Has Changed since the Turn of the Millennium? *Comparative Population Studies*, 40(3):277 –312.

Brown, A., Charlwood, A., and Spencer, D. A. (2012). Not All that it Might Seem: Why Job Satisfaction is Worth Studying despite it Being a Poor Summary Measure of Job Quality. *Work, Employment & Society*, 26(6):1007–1018.

Brown, G. D., Gardner, J., Oswald, A. J., and Qian, J. (2008). Does Wage Rank Affect Employees' Well-being? *Industrial Relations: A Journal of Economy and Society*, 47(3):355–389.

Bryant, R. and Constantine, M. (2006). Multiple Role Balance, Job Satisfaction, and Life Satisfaction in Women School Counselors. *Professional School Counseling*, 9(4):265–271.

Bryson, A., Forth, J., and Stokes, L. (2015). Does Worker Well-being Affect Workplace Performance? IZA Discussion Paper 9096, Institute for the Study of Labor.

Buckles, K. S. and Hungerman, D. M. (2013). Season of Birth and Later Outcomes: Old Questions, New Answers. *Review of Economics and Statistics*, 95(3):711–724.

Budd, J. W. and Spencer, D. A. (2015). Worker Well-Being and the Importance of Work: Bridging the Gap. *European Journal of Industrial Relations*, 21(2):181–196.

Buligescu, B., De Crombrugghe, D., Menteşoğlu, G., and Montizaan, R. (2009). Panel Estimates of the Wage Penalty for Maternal Leave. *Oxford Economic Papers*, 61(1):35–55.

Burkhauser, R. V., Duncan, G. J., Hauser, R., and Berntsen, R. (1990). Economic Burdens of Marital Disruptions: A Comparison of the United States and the Federal Republic of Germany. *Review of Income and Wealth*, 36(4):319–333.

Butts, M. M., Casper, W. J., and Yang, T. S. (2013). How Important are Work–Family Support Policies? A Meta-Analytic Investigation of their Effects on Employee Outcomes. *Journal of Applied Psychology*, 98(1):1 – 25.

Cabrita, J. and Perista, H. (2007). Measuring Job Satisfaction in Surveys - Comparative Analytical Report. Technical report, European Foundation for the Improvement of Living and Working Conditions.

Card, D., Mas, A., Moretti, E., and Saez, E. (2012). Inequality at Work: The Effect of Peer Salaries on Job Satisfaction. *The American Economic Review*, 102(6):2981–3003.

Carlson, D. S., Kacmar, K. M., Wayne, J. H., and Grzywacz, J. G. (2006). Measuring the Positive Side of the Work–Family Interface: Development and Validation of a Work–Family Enrichment Scale. *Journal of Vocational Behavior*, 68(1):131–164.

Carr, D. and Springer, K. W. (2010). Advances in Families and Health Research in the 21st Century. *Journal of Marriage and Family*, 72(3):743–761.

Casey, S. (2013). Job Performance. In Emery, R. E., editor, *Cultural Sociology of Divorce: An Encyclopedia*. Thousand Oaks, CA: Sage Publications.

Cetre, S., Clark, A. E., and Senik, C. (2016). Happy People Have Children: Choice and Self-Selection into Parenthood. *European Journal of Population*, 32(3):445–473.

Chapple, S., D'Addio, A., and Hoherz, A. (2010). Does birth-related leave make german mothers more satisfied? *Social Policy Division, DELSA, OECD*.

Chatterji, P. and Markowitz, S. (2004). Does the Length of Maternity Leave Affect Maternal Health? NBER Working Paper Series 10206, National Bureau of Economic Research, Cambridge, MA.

Chatterji, P. and Markowitz, S. (2012). Family Leave after Childbirth and the Mental Health of New Mothers. *Journal of Mental Health Policy and Economics*, 15(2):61–76.

Cherlin, A. J. (2004). The Deinstitutionalization of American Marriage. *Journal of Marriage and Family*, 66(4):848–861.

Cinamon, R. G. and Rich, Y. (2002). Gender Differences in the Importance of Work and Family Roles: Implications for Work–Family Conflict. *Sex Roles*, 47(11-12):531–541.

Clark, A. E. (1996). Job Satisfaction in Britain. *British Journal of Industrial Relations*, 34(2):189–217.

Clark, A. E. (1997). Job Satisfaction and Gender: Why are Women so Happy at Work? *Labour Economics*, 4(4):341–372.

Clark, A. E. (2001). What Really Matters in a Job? Hedonic Measurement Using Quit Data. *Labour Economics*, 8(2):223 – 242.

Clark, A. E. (2011). Worker Well-Being in Booms and Busts. In Gregg, P. and Wadsworth, J., editors, *The Labour Market in Winter: The State of Working Britain*, pages 128–143. Oxford, UK: Oxford University Press.

Clark, A. E. (2015). What Makes a Good Job? Job Quality and Job Satisfaction. *IZA World of Labor*, 215.

Clark, A. E. (2016). Adaptation and the Easterlin Paradox. In Tachibanaki, T., editor, *Advances in Happiness Research: A Comparative Perspective*, pages 75–94. Springer Japan, Tokyo.

Clark, A. E., Diener, E., Georgellis, Y., and Lucas, R. E. (2008a). Lags and Leads in Life Satisfaction: A Test of the Baseline Hypothesis. *Economic Journal*, 118(529):F222–F243.

Clark, A. E., Frijters, P., and Shields, M. A. (2008b). Relative Income, Happiness, and Utility: An Explanation for the Easterlin Paradox and other Puzzles. *Journal of Economic Literature*, 46(1):95–144.

Clark, A. E. and Georgellis, Y. (2013). Back to Baseline in Britain: Adaptation in the British Household Panel Survey. *Economica*, 80(319):496–512.

Clark, A. E., Georgellis, Y., and Sanfey, P. (2012). Job Satisfaction, Wage Changes, and Quits: Evidence from Germany. In Polachek, S. W. and Tatsiramos, K., editors, *35th Anniversary Retrospective (Research in Labor Economics, Volume 35)*, chapter 32, pages 499–525. Bingley, UK: Emerald Group Publishing Limited.

Clark, A. E., Kristensen, N., and Westergård-Nielsen, N. (2009). Job Satisfaction and Co-worker Wages: Status or Signal? *The Economic Journal*, 119(536):430–447.

Clark, A. E. and Oswald, A. J. (1996). Satisfaction and Comparison Income. *Journal of Public Economics*, 61(3):359 – 381.

Clark, A. E., Senik, C., and Yamada, K. (2013). The Joneses in Japan: Income Comparisons and Financial Satisfaction. ISER Discussion Paper 866, Institute of Social and Economic Research.

Cooke, G. B., Donaghey, J., and Zeytinoglu, I. U. (2013). The Nuanced Nature of Work Quality: Evidence from Rural Newfoundland and Ireland. *Human Relations*, 66(4):503–527.

Crosby, F. (1982). *Relative Deprivation and Working Women*. Oxford, UK: Oxford University Press.

Currie, J. and Yelowitz, A. (2000). Are Public Housing Projects Good for Kids? *Journal of Public Economics*, 75(1):99–124.

D'Addio, A. C., Eriksson, T., and Frijters, P. (2007). An Analysis of the Determinants of Job Satisfaction when Individuals' Baseline Satisfaction Levels May Differ. *Applied Economics*, 39(19):2413–2423.

Daly, M. E. (2000). *The Gender Division of Welfare: the Impact of the British and German Welfare States*. Cambridge, UK: Cambridge University Press.

Dawn Metcalfe, B., Afanassieva, M., and Loderstedt, K. (2005). East German Women in Management. *Women in Management Review*, 20(5):329–344.

Dee, T. S. and Evans, W. N. (2003). Teen Drinking and Educational Attainment: Evidence from Two-Sample Instrumental Variables Estimates. *Journal of Labor Economics*, 21(1):178–209.

DePaulo, B. (2014). Single in a Society Preoccupied with Couples. In Coplan, R. and Bowker, J., editors, *The Handbook of Solitude: Psychological Perspectives on Social Isolation, Social Withdrawal, and Being Alone*, chapter 17, pages 302–316. Hoboken, NJ: John Wiley & Sons.

Deutsche Welle (2011). Word of the Week. website: http://dw.com/p/Rl7p. (accessed on 22/08/2016).

Di Tella, R., Haisken-De New, J., and MacCulloch, R. (2010). Happiness Adaptation to Income and to Status in an Individual Panel. *Journal of Economic Behavior & Organization*, 76(3):834–852.

Diener, E. (1984). Subjective Well-Being. *Psychological Bulletin*, 95(3):542 – 575.

Diener, E. and Chan, M. Y. (2011). Happy People Live Longer: Subjective Well-Being Contributes to Health and Longevity. *Applied Psychology: Health and Well-Being*, 3(1):1–43.

Diener, E., Lucas, R. E., and Scollon, C. N. (2006). Beyond the Hedonic Treadmill: Revising the Adaptation Theory of Well-Being. *American Psychologist*, 61(4):305.

Diener, E. and Seligman, M. E. (2004). Beyond Money. Toward an Economy of Well-Being. *Psychological Science in the Public Interest*, 5(1):1–31.

Diener, E., Suh, E. M., Smith, H., and Shao, L. (1995). National Differences in Reported Subjective Well-Being: Why Do They Occur? *Social Indicators Research*, 34(1):7–32.

Dolado, J., García-Peñalosa, C., and Tarasonis, L. (2016). The Changing Nature of Gender Selection into Employment: Europe over the Great Recession. Working Paper 20, Aix-Marseille School of Economics.

Dolan, P. and Kahneman, D. (2008). Interpretations of Utility and Their Implications for the Valuation of Health. *The Economic Journal*, 118(525):215–234.

Dorbritz, J. (2010). Kinderzahlen und Lebensformen im West-Ost-Vergleich - Ergebnisse des Mikrozensus 2008. In *Bevölkerungsforschung Aktuell*, volume 31 (1), Wiesbaden. BiB.

Drago, R., Wooden, M., and Black, D. (2009). Who Wants and Gets Flexibility? Changing Work Hours Preferences and Life Events. *Industrial and Labor Relations Review*, 63(3):394 – 414.

Duncan, G. J. and Hoffman, S. D. (1985). Economic Consequences of Marital Instability. In David, M. and Smeeding, T., editors, *Horizontal Equity, Uncertainty, and Economic Well-Being*, pages 427 – 470. Chicago, IL: University of Chicago Press.

Dustmann, C. and Schönberg, U. (2012). Expansions in Maternity Leave Coverage and Children's Long-Term Outcomes. *American Economic Journal: Applied Economics*, 4(3):190–224.

Duvander, A.-Z., Lappegård, T., and Andersson, G. (2010). Family Policy and Fertility: Fathers' and Mothers' Use of Parental Leave and Continued Childbearing in Norway and Sweden. *Journal of European Social Policy*, 20(1):45–57.

Easterlin, R. A. and Plagnol, A. C. (2008). Life Satisfaction and Economic Conditions in East and West Germany Pre-and Post-Unification. *Journal of Economic Behavior & Organization*, 68(3):433–444.

Ekberg, J., Eriksson, R., and Friebel, G. (2013). Parental Leave – A Policy Evaluation of the Swedish "Daddy-Month" Reform. *Journal of Public Economics*, 97:131–143.

Emmerling, D. (2005). Ehescheidungen 2003. *Wirtschaft und Statistik*, 2:97 – 108.

Engelbrech, G. and Reinberg, A. (1998). Erwerbsorientierung und Beschäftigungsmöglichkeiten von Frauen in den neunziger Jahren Wirtschaftliche Umstrukturierung und frauentypische Arbeitsmarktrisiken in Ost-und Westdeutschland. In *Beschäftigungsrisiko Erziehungsurlaub*, pages 39–91. Opladen/Wiesbaden, DE: Westdeutscher Verlag GmbH.

England, G. and Whitely, W. (1990). Cross-National Meanings of Working. In Brief, A. P. and Nord, W. R., editors, *Meanings of Occupational Work: A Collection of Essays*, pages 65 – 106. Lexington, MA: Lexington.

Engler, K., Frohlich, K., Descarries, F., and Fernet, M. (2011). Single, Childless Working Women's Construction of Wellbeing: On Balance, Being Dynamic and Tensions Between Them. *Work*, 40(2):173–186.

Esfahani Smith, E. and Aaker, J. L. (2013). Millennial Searches. http://nyti.ms/18it7Hw. (accessed on 22/08/2016).

Esping-Andersen, G. (1990). *The Three Worlds of Welfare Capitalism*. Princeton, NJ: Princeton University Press.

Esping-Andersen, G. (2009). *Incomplete Revolution: Adapting Welfare States to Women's New Roles*. Cambridge, UK: Polity Press.

Ester, P., Braun, M., and Mohler, P. (2006). *Globalization, Value Change, and Generations. A Cross-National and Intergenerational Perspective*. Leiden & Boston: Brill.

European Commission (2001). Employment and Social Policies: A Framework for Investing in Quality. online http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52001DC0313. Communication from the Commission to the Council, the European Parliament, the Economic and Social Committee and the Committee of the Regions.

Eurostat (2016). Formal Childcare by Age Group and Duration - of Each Age Group - EU-SILC Survey. Accessed on October 9, 2016.

Evans, S. (2011). Is the German Insult 'Raven Mothers' Holding Back Women at Work? http://www.bbc.co.uk/news/business-12703897. (accessed on 22/08/2016).

Felfe, C. (2012). The Motherhood Wage Gap: What about Job Amenities? *Labour economics*, 19(1):59–67.

Ferrer-i Carbonell, A. and Frijters, P. (2004). How Important is Methodology for the Estimates of the Determinants of Happiness? *The Economic Journal*, 114(497):641–659.

Fisher, P. (2010). Women and Employment in East Germany: The Legacy of GDR Equality. *Journal of Social Welfare & Family Law*, 32(4):401 – 409.

Freeman, R. B. (1978). Job Satisfaction as an Economic Variable. *American Economic Review*, 68(2):135 – 141.

Frey, B. and Stutzer, A. (2003). Testing Theories of Happiness. Working Paper 147, Institute for Empirical Research in Economics, University of Zurich.

Frijters, P., Johnston, D. W., and Shields, M. A. (2011). Life Satisfaction Dynamics with Quarterly Life Event Data. *The Scandinavian Journal of Economics*, 113(1):190–211.

Frone, M. R., Russell, M., and Cooper, M. L. (1994). Relationship between Job and Family Satisfaction: Causal or Noncausal Covariation? *Journal of Management*, 20(3):565–579.

Galtry, J. and Callister, P. (2005). Assessing the Optimal Length of Parental Leave for Child and Parental Well-Being How Can Research Inform Policy? *Journal of Family Issues*, 26(2):219–246.

Gardner, J. and Oswald, A. J. (2006). Do Divorcing Couples Become Happier by Breaking Up? *Journal of the Royal Statistical Society: Series A (Statistics in Society)*, 169(2):319–336.

Georgellis, Y., Lange, T., and Tabvuma, V. (2012). The Impact of Life Events on Job Satisfaction. *Journal of Vocational Behavior*, 80(2):464 – 473.

Ghazzawi, I. (2011). Does Age Matter in Job Satisfaction? The Case of US Information Technology Professionals. *Journal of Organizational Culture, Communication and Conflict*, 15(1):25.

Godechot, O. and Senik, C. (2015). Wage Comparisons in and out of the Firm. Evidence from a Matched Employer–Employee French Database. *Journal of Economic Behavior & Organization*, 117:395–410.

Goldstein, J. R. and Kreyenfeld, M. (2011). Has East Germany Overtaken West Germany? Recent Trends in Order-Specific Fertility. *Population and Development Review*, 37(3):453–472.

Gorman, E. H. (2000). Marriage and Money The Effect of Marital Status on Attitudes Toward Pay and Finances. *Work and Occupations*, 27(1):64–88.

Gray, J. D. and Silver, R. C. (1990). Opposite Sides of the Same Coin: Former Spouses' Divergent Perspectives in Coping with their Divorce. *Journal of Personality and Social Psychology*, 59(6):1180 – 1191.

Green, F. (2010). Well-Being, Job Satisfaction and Labour Mobility. *Labour Economics*, 17(6):897–903.

Green, F. and Tsitsianis, N. (2005). An Investigation of National Trends in Job Satisfaction in Britain and Germany. *British Journal of Industrial Relations*, 43(3):401–429.

Greenhaus, J. H. and Beutell, N. J. (1985). Sources of Conflict between Work and Family Roles. *The Academy of Management Review*, 10(1):76–88.

Greenhaus, J. H. and Powell, G. N. (2006). When Work and Family are Allies: A Theory of Work-Family Enrichment. *Academy of Management Review*, 31(1):72–92.

Grether, T. and Wiese, B. S. (2016). Stay at Home or Go Back to Work? Antecedents and Consequences of Mothers' Return to Work After Childbirth. In Spitzmueller, C. and Matthews, R. A., editors, *Research Perspectives on Work and the Transition to Motherhood*, pages 105–128. Springer International Publishing, Cham.

Grundig, B. (2008). Why is the Share of Women Willing to Work in East Germany Larger than in West Germany? A Logit Model of Extensive Labour Supply Decision. Working Paper 56, Ifo.

Guest, D. (2008). Worker Well-Being. In Blyton, P., Heery, E., Bacon, N., and Fiorito, J., editors, *Sage Handbook of Industrail Relations*, pages 529 – 547. London, UK: SAGE.

Gupta, N. D., Smith, N., and Verner, M. (2008). The Impact of Nordic Countries' Family Friendly Policies on Employment, Wages, and Children. *Review of Economics of the Household*, 6(1):65–89.

Guven, C., Senik, C., and Stichnoth, H. (2012). You Cannot be Happier than your Wife. Happiness Gaps and Divorce. *Journal of Economic Behavior & Organization*, 82(1):110–130.

Hakim, C. (1996). The Sexual Division of Labour and Women's Heterogeneity. *The British Journal of Sociology*, 47(1):178–188.

Hamermesh, D. (1977). Economic Aspects of Job Satisfaction. In Ashenfelter, O. and Oates, W., editors, *Essays in Labor Market Analysis*, pages 53–72. New York, NY: Wiley.

Hanel, B. and Riphahn, R. T. (2012). The Employment of Mothers - Recent Developments and their Determinants in East and West Germany. *Jahrbücher für Nationalökonomie und Statistik / Journal of Economics and Statistics*, 232(2):146–176.

Hanglberger, D. and Merz, J. (2015). Does Self-employment Really Raise Job Satisfaction? Adaptation and Anticipation Effects on Self-employment and General Job Changes. *Journal for Labour Market Research*, 48(4):287–303.

Hanson, S. L. and Sloane, D. M. (1992). Young Children and Job Satisfaction. *Journal of Marriage and Family*, 54(4):799–811.

Harter, J. K., Schmidt, F. L., Asplund, J. W., Killham, E. A., and Agrawal, S. (2010). Causal Impact of Employee Work Perceptions on the Bottom Line of Organizations. *Perspectives on Psychological Science*, 5(4):378–389.

Harter, J. K., Schmidt, F. L., and Hayes, T. L. (2002). Business-Unit-Level Relationship between Employee Satisfaction, Employee Engagement, and Business Outcomes: A Meta-Analysis. *Journal of Applied Psychology*, 87(2):268.

Havnes, T. and Mogstad, M. (2011). No Child Left Behind: Subsidized Child Care and Children's Long-Run Outcomes. *American Economic Journal: Economic Policy*, 3(2):97–129.

Headey, B. (2008). Life Goals Matter to Happiness: A Revision of Set-Point Theory. *Social Indicators Research*, 86(2):213–231.

Headey, B., Schupp, J., Tucci, I., and Wagner, G. G. (2010). Authentic Happiness Theory Supported by Impact of Religion on Life Satisfaction: A Longitudinal Analysis with Data for Germany. *The Journal of Positive Psychology*, 5(1):73–82.

Heaton, T. B. and Albrecht, S. L. (1991). Stable Unhappy Marriages. *Journal of Marriage and Family*, 53(3):747–758.

Hebson, G., Rubery, J., and Grimshaw, D. (2015). Rethinking Job Satisfaction in Care Work: Looking beyond the Care Debates. *Work, Employment & Society*, 29(2):314–330.

Heimdal, K. R. and Houseknecht, S. K. (2003). Cohabiting and Married Couples' Income Organization: Approaches in Sweden and the United States. *Journal of Marriage and Family*, 65(3):525–538.

Henninger, A., Wimbauer, C., and Dombrowski, R. (2008). Demography as a Push toward Gender Equality? Current Reforms of German Family Policy. *Social Politics: International Studies in Gender, State & Society*, 15(3):287–314.

Hetherington, E. M. and Kelly, J. (2003). *For Better or for Worse: Divorce Reconsidered*. New York, NY: WW Norton & Company.

Hochwarter, W. A., Ferris, G. R., Perrewé, P. L., Witt, L. A., and Kiewitz, C. (2001). A Note on the Nonlinearity of the Age-Job-Satisfaction Relationship. *Journal of Applied Social Psychology*, 31(6):1223–1237.

Hodson, R. (1989). Gender Differences in Job Satisfaction. Why Aren't Women More Dissatisfied? *The Sociological Quarter*, 30(3):385–399.

Holden, K. C. and Smock, P. J. (1991). The Economic Costs of Marital Dissolution: Why do Women Bear a Disproportionate Cost? *Annual Review of Sociology*, 17(1):51–78.

Holst, E. and Wieber, A. (2014). Eastern Germany Ahead in Employment of Women. DIW Economic Bulletin 11, Deutsches Institut für Wirtschaftsforschung (DIW).

Holtzman, M. and Glass, J. (1999). Explaining Changes in Mothers' Job Satisfaction Following Childbirth. *Work and Occupations*, 26(3):365–404.

Huber, K. (2015). Moving to an Earnings-Related Parental Leave System: Do Heterogeneous Effects on Parents Make Some Children Worse Off? SOEPpapers on Multidisciplinary Panel Data Research 791, Deutsches Institut für Wirtschaftsforschung.

Hughes, M. E. and Waite, L. J. (2009). Marital Biography and Health at Mid-Life. *Journal of Health and Social Behavior*, 50(3):344–358.

Huinink, J. (1995). Education, Work, and Family Patterns of Men: The Case of West Germany. In Blossfeld, H.-P., editor, *The New Role of Women: Family Formation in Modern Societies*, pages 247–262. Boulder, CO: Westview Press.

Hungerford, T. L. (2001). The Economic Consequences of Widowhood on Elderly Women in the United States and Germany. *The Gerontologist*, 41(1):103–110.

Inoue, A. and Solon, G. (2010). Two-Sample Instrumental Variables Estimators. *The Review of Economics and Statistics*, 92(3):557–561.

Jappelli, T., Pischke, J.-S., and Souleles, N. S. (1998). Testing for Liquidity Constraints in Euler Equations with Complementary Data Sources. *Review of Economics and Statistics*, 80(2):251–262.

Jarvis, S. and Jenkins, S. P. (1999). Marital Splits and Income Changes: Evidence from the British Household Panel Survey. *Population Studies*, 53(2):237–254.

Jaumotte, F. (2003). Female Labour Force Participation: Past Trends and Main Determinants in OECD Countries. Working Paper 376, OECD Economics Department.

Jeffries, S. and Konnert, C. (2002). Regret and Psychological Well-Being among Voluntarily and Involuntarily Childless Women and Mothers. *The International Journal of Aging and Human Development*, 54(2):89–106.

Jenkins, S. P. (2008). Marital Splits and Income Changes over the Longer Term. In Brynin, M. and Ermisch, J., editors, *Changing Relationships*. London, UK: Routledge.

Jenkins, S. P. (2011). Spaghetti Unravelled: A Model-Based Description of Differences in Income-Age Trajectories. In *Changing Fortunes: Income Mobility and Poverty Dynamics in Britain*, chapter Chapter 7. Oxford, UK: Oxford University Press.

Johnson, W. R. and Skinner, J. (1986). Labor Supply and Marital Separation. *The American Economic Review*, 76(3):455–469.

Judge, T. A., Thoresen, C. J., Bono, J. E., and Patton, G. K. (2001). The Job Satisfaction–Job Performance Relationship: A Qualitative and Quantitative Review. *Psychological Bulletin*, 127(3):376 – 407.

Jürges, H. (2003). Age, Cohort, and the Slump in Job Satisfaction among West German Workers. *Labour*, 17(4):489–518.

Jurik, N. C. and Halemba, G. J. (1984). Gender, Working Conditions and the Job Satisfaction of Women in a Non-Traditional Occupation: Female Correctional Officers in Men's Prisons. *The Sociological Quarterly*, 25(4):551–566.

Kaiser, L. C. (2002). Job Satisfaction: A Comparison of Standard, Non-Standard, and Self-Employment Patterns Across Europe with a Special Note to the Gender/Job Satisfaction Paradox. Working Paper 27, Institute for Social and Economic Research,.

Kaiser, L. C. (2007). Gender-Job Satisfaction Differences across Europe: An Indicator for Labour Market Modernization. *International Journal of Manpower*, 28(1):75–94.

Kalleberg, A. L. and Loscocco, K. A. (1983). Aging, Values, and Rewards: Explaining Age Differences in Job Satisfaction. *American Sociological Review*, 48(1):78–90.

Kalmijn, M. (2005). The Effects of Divorce on Men's Employment and Social Security Histories. *European Journal of Population / Revue Européenne de Démographie*, 21(4):347–366.

Kalmijn, M. (2010). Country Differences in the Effects of Divorce on Well-Being: The Role of Norms, Support, and Selectivity. *European Sociological Review*, 26(4):475–490.

Kangas, O. and Rostgaard, T. (2007). Preferences or Institutions? Work-Family Life Opportunities in Seven European Countries. *Journal of European Social Policy*, 17(3):240–256.

Karimi, A., Lindahl, E., and Skogman Thoursie, P. (2012). Labour Supply Responses to Paid Parental Leave. Working Paper Series 2012 22, IFAU-Institute for Evaluation of Labour Market and Education Policy.

Katzell, R. A. (1964). Personal Values, Job Satisfaction, and Job Behavior. In Borrow, H., editor, *Man in a World of Work*, pages 341–363. Boston, MA: Houghton Mifflin Company.

Kiernan, K. (2003). Cohabitation and Divorce across Nations and Generations. *LSE STICERD Research Paper No. CASE065*.

Kirkpatrick Johnson, M. (2005). Family Roles and Work Values: Processes of Selection and Change. *Journal of Marriage and Family*, 67(2):352–369.

Kitson, G. C. and Holmes, W. M. (1992). *Portrait of Divorce: Adjustment to Marital Breakdown.* New York, NY: Guilford Press.

Klärner, A. (2015). The Low Importance of Marriage in Eastern Germany - Social Norms and the Role of Peoples' Perceptions of the Past. *Demographic Research*, S17(9):239–272.

Klerman, J. A. and Leibowitz, A. (1990). Child Care and Women's Return to Work After Childbirth. *The American Economic Review*, 80(2):284–288.

Kluckhohn, F. R. and Strodtbeck, F. L. (1961). *Variations in Value Orientations*. Evanston, IL: Row, Peterson & Company.

Kluve, J. and Schmitz, S. (2014). Social Norms and Mothers' Labor Market Attachment. IZA Discussion Papers 8115, Institute for the Study of Labor (IZA), Bonn, Germany.

Kluve, J. and Tamm, M. (2013). Parental Leave Regulations, Mothers' Labor Force Attachment and Fathers' Childcare Involvement: Evidence from a Natural Experiment. *Journal of Population Economics*, 26(3):983–1005.

Köpper, K. (2011). *Marriage and Cohabitation in Western Germany and France*. PhD thesis, University of Rostock. (accessed online on 22/08/2016).

Kraft, K. (2001). Unemployment and the Separation of Married Couples. *Kyklos: Internationale Zeitschrift für Sozialwissenschaften*, 54(1):67–88.

Kristensen, N. and Westergaard-Nielsen, N. (2007). Reliability of Job Satisfaction Measures. *Journal of Happiness Studies*, 8(2):273–292.

Kroh, M. (2006). An Experimental Evaluation of Popular Well-Being Measures. Discussion Papers 546, Deutsches Institut für Wirtschaftsforschung.

Kroh, M., Küne, S., and Siegers, R. (2015). Documentation of Sample Sizes and Panel Attrition in the German Socio Economic Panel (SOEP) (1984 until 2014). SOEP Survey Papers: Series C 297, Berlin: DIW Berlin / SOEP.

Kröhnert, S. and Vollmer, S. (2012). Gender-Specific Migration from Eastern to Western Germany: Where Have All the Young Women Gone? *International Migration*, 50(5):95–112.

Krueger, A. and Pischke, J.-S. (1995). A Comparative Analysis of East and West German Labor Markets: Before and After Unification. In *Differences and Changes in Wage Structures*, pages 405–446. Cambridge, MA: National Bureau of Economic Research, Inc.

Lalive, R. and Zweimüller, J. (2009). How Does Parental Leave Affect Fertility and Return to Work? Evidence from two Natural Experiments. *The Quarterly Journal of Economics*, 124(3):1363–1402.

Lawler III, E. E. (1973). *Motivation in Work Organizations.* Monterey, CA: Brooks/Cole Publishing Co.

Layard, R. (2006). Happiness and Public Policy: A Challenge to the Profession. *The Economic Journal*, 116(510):C24–C33.

Leibowitz, A., Klerman, J. A., and Waite, L. J. (1992). Employment of New mMthers and Child Care Choice: Differences by Children's Age. *Journal of Human Resources*, pages 112–133.

Leschke, J., Watt, A., and Finn, M. (2008). Putting a Number on Job Quality? Constructing a European Job Quality Index. Working Paper 2008.03, ETUI.

Leßmann, O. and Bonvin, J.-M. (2011). Job-Satisfaction in the Broader Framework of the Capability Approach. *Management Revue*, 22(1):84–99.

Lévy-Garboua, L. and Montmarquette, C. (2004). Reported Job Satisfaction: What Does it Mean? . *The Journal of Socio-Economics*, 33(2):135 – 151.

Lévy-Garboua, L., Montmarquette, C., and Simonnet, V. (2007). Job Satisfaction and Quits. *Labour Economics*, 14(2):251 – 268.

Lewis, S. and Cooper, C. L. (1999). The Work–Family Research Agenda in Changing Contexts. *Journal of Occupational Health Psychology*, 4(4):382 – 393.

Lewis, S., Gambles, R., and Rapoport, R. (2007). The Constraints of a 'Work–Life Balance' Approach: An International Perspective. *The International Journal of Human Resource Management*, 18(3):360–373.

Lillard, L. A. and Waite, L. J. (1993). A Joint Model of Marital Childbearing and Marital Disruption. *Demography*, 30(4):653–681.

Liu, Q. and Skans, O. N. (2010). The Duration of Paid Parental Leave and Children's Scholastic Performance. *The BE Journal of Economic Analysis & Policy: Contributions to Economic Analysis and Policy*, 10(1):1 – 35.

Locke, E. A. (1969). What is Job Satisfaction? *Organizational Behavior and Human Performance*, 4(4):309–336.

Locke, E. A. (1976). The Nature and Causes of Job Satisfaction. In *Handbook of Industrial and Organisational Psychology*. Chicago, IL: Rand-McNally.

Loscocco, K. A. (1989). The Instrumentally Oriented Factory Worker Myth or Reality? *Work and Occupations*, 16(1):3–25.

Loscocco, K. A. and Kalleberg, A. L. (1988). Age and the Meaning of Work in the United States and Japan. *Social Forces*, 67(2):337–356.

Lu, H., While, A. E., and Barriball, K. L. (2005). Job Satisfaction among Nurses: A Literature Review. *International Journal of Nursing Studies*, 42(2):211–227.

Lucas, R. E. (2005). Time Does Not Heal All Wounds: A Longitudinal Study of Reaction and Adaptation to Divorce. *Psychological Science*, 16(12):945–950.

Lucas, R. E. (2007). Adaptation and the Set-Point Model of Subjective Well-Being: Does Happiness Change After Major Life Events? *Current Directions in Psychological Science*, 16(2):75–79.

Lucas, R. E., Clark, A. E., Georgellis, Y., and Diener, E. (2003). Reexamining Adaptation and the Set Point Model of Happiness: Reactions to Changes in Marital Status. *Journal of Personality and Social Psychology*, 84(3):527 – 539.

Lumley, R. (1995). Labour Markets and Employment Relations in Transition: The Case of German Unification. *Employee Relations*, 17(1):24–37.

Lyubomirsky, S., Sheldon, K. M., and Schkade, D. (2005). Pursuing Happiness: The Architecture of Sustainable Change. *Review of General Psychology*, 9(2):111 – 131.

Maeder, M. (2014). Earnings-Related Parental Leave Benefits and Subjective Well-Being of Young Mothers: Evidence from a German Parental Leave Reform. Working Papers 148, Bavarian Graduate Program in Economics (BGPE).

Margelisch, K., Schneewind, K. A., Violette, J., and Perrig-Chiello, P. (2015). Marital Stability, Satisfaction and Well-Being in Old Age: Variability and Continuity in Long-Term Continuously Married Older Persons. *Aging & Mental Health*, pages 1–10.

Marks, N. F. (1996). Flying Solo at Midlife: Gender, Marital Status, and Psychological Well-Being. *Journal of Marriage and the Family*, 58(4):917–932.

Martin, J., Bynner, J., Kalton, G., Boyle, P., Goldstein, H., Gayle, V., Parsons, S., and Piesse, A. (2009). Strategic Review of Panel and Cohort Studies: Report to the Research Resources Board of the Economic And Social Research Council. Technical report, Longview.

McManus, P. A. and DiPrete, T. A. (2001). Losers and Winners: The Financial Consequences of Separation and Divorce for Men. *American Sociological Review*, 66(2):246–268.

Meglino, B. M., Ravlin, E. C., and Adkins, C. L. (1992). The Measurement of Work Value Congruence: A Field Study Comparison. *Journal of Management*, 18(1):33–43.

Mottaz, C. J. (1985). The Relative Importance of Intrinsic and Extrinsic Rewards as Determinants of Work Satisfaction. *The Sociological Quarterly*, 26(3):365–385.

Muchinsky, P. M. (1978). Age and Job Facet Satisfaction: A Conceptual Reconsideration. *Aging & Work*, 1(3):175 – 179.

Muñoz de Bustillo Llorente, R. and Fernández-Macías, E. (2005). Job Satisfaction as an Indicator of the Quality of Work. *The Journal of Socio-Economics*, 34(5):656–673.

Muñoz de Bustillo Llorente, R., Fernández-Macías, E., Antón, J.-I., and Esteve, F. (2011). *Measuring More than Money. The Social Economics of Job Quality*. Cheltenham, UK: Edward Elgar Publishing.

Myrskylä, M. and Margolis, R. (2013). Parental Benefits Improve Parental Well-being: Evidence from a 2007 Policy Change in Germany. MPIDR Working Paper WP-2013-010, Max Planck Institute for Demographic Research: Rostock, Germany.

Nazio, T. and Blossfeld, H.-P. (2003). The Diffusion of Cohabitation among Young Women in West Germany, East Germany and Italy. *European Journal of Population / Revue européenne de Démographie*, 19(1):47–82.

Nelson, S. K., Kushlev, K., and Lyubomirsky, S. (2014). The Pains and Pleasures of Parenting: When, Why, and How is Parenthood Associated with More or Less Well-Being? *Psychological Bulletin*, 140(3):846.

Ng, T. W. and Feldman, D. C. (2010). The Relationships of Age with Job Attitudes: A Meta-Analysis. *Personnel Psychology*, 63(3):677–718.

Nock, S. L. (2001). The Marriages of Equally Dependent Spouses. *Journal of Family Issues*, 22(6):755–775.

O'Connor, P. (1998). *Emerging Voices: Women in Contemporary Irish Society*. Institute of Public Administration, Dublin.

O'Donnell, G., Deaton, A., Durand, M., Halpern, D., and Layard, R. (2014). *Wellbeing and Policy*. Legatum Institute, London, UK.

OECD (2014). Employment Outlook 2014. Technical report, Organisation for Economic Co-operation and Development, Paris.

Office for National Statistics (2013). Full Report - Women in the Labour Market. Technical report, Office for National Statistics.

Oláh, L. S., Richter, R., and Kotowska, I. E. (2014). The New Roles of Men and Women and Implications for Families and Societies. Working Paper Series 11, Families and Societies.

Olsen, D., Maple, S. A., and Stage, F. K. (1995). Women and Minority Faculty Job Satisfaction: Professional Role Interests, Professional Satisfactions, and Institutional Fit. *The Journal of Higher Education*, 66(3):267–293.

Ondrich, J., Spiess, C. K., and Yang, Q. (1996). Barefoot and in a German Kitchen: Federal Parental Leave and Benefit Policy and the Return to Work after Childbirth in Germany. *Journal of Population Economics*, 9(3):247–266.

Ondrich, J. I., Spieß, C. K., and Yang, Q. (2002). The Effect of Maternity Leave on Women's Pay in Germany 1984-1994. DIW Discussion Papers 289, Berlin: Deutsches Institut für Wirtschaftsforschung (DIW).

Ostner, I. (2010). Farewell to the Family as we Know it: Family Policy Change in Germany. *German Policy Studies*, 6(1):211 – 244.

Oswald, A. J. and Powdthavee, N. (2008). Does Happiness Adapt? A Longitudinal Study of Disability with Implications for Economists and Judges. *Journal of Public Economics*, 92(5):1061–1077.

Oswald, A. J., Proto, E., and Sgroi, D. (2014). Happiness and Productivity. Technical report, University of Warwick.

Özbilgin, M. F., Beauregard, T. A., Tatli, A., and Bell, M. P. (2011). Work–Life, Diversity and Intersectionality: A Critical Review and Research Agenda. *International Journal of Management Reviews*, 13(2):177–198.

Özcan, B. and Breen, R. (2012). Marital Instability and Female Labor Supply. *Annual Review of Sociology*, 38(1):463–481.

Pahl, J. (1995). His Money, Her Money: Recent Research on Financial Organisation in Marriage . *Journal of Economic Psychology*, 16(3):361 – 376.

Papps, K. L. (2006). The Effects of Divorce Risk on the Labour Supply of Married Couples. IZA Discussion Paper 2395, Institute for the Study of Labor.

Parliament, G. (2006). Beschlussempfehlung und Bericht des Ausschusses für Familie, Senioren, Frauen und Jugend. Technical Report 16/2785, Bundestagdruckesache, Berlin.

Patterson, M., Warr, P., and West, M. (2004). Organizational Climate and Company Productivity: The Role of Employee Affect and Employee Level. *Journal of Occupational and Organizational Psychology*, 77(2):193–216.

Peterson, R. R. (1996). A Re-Evaluation of the Economic Consequences of Divorce. *American Sociological Review*, 61(3):528–536.

Peus, C. (2005). Work-Family Balance? The Case of Germany. Technical Report WPC 0025, MIT Workplace Center - Sloan School of Management.

Pezzini, S. (2005). The Effect of Women's Rights on Women's Welfare: Evidence from a Natural Experiment. *The Economic Journal*, 115(502):C208–C227.

Pfau-Effinger, B. (2005). Welfare State Policies and the Development of Care Arrangements. *European Societies*, 7(2):321–347.

Pfau-Effinger, B. and Smidt, M. (2011). Differences in Women's Employment Patterns and Family Policies: Eastern and Western Germany. *Community, Work & Family*, 14(2):217–232.

Poortman, A.-R. (2005). Women's Work and Divorce: A Matter of Anticipation? A Research Note. *European Sociological Review*, 21(3):301–309.

Posadas, J. and Vidal-Fernandez, M. (2013). Grandparents' Childcare and Female Labor Force Participation. *IZA Journal of Labor Policy*, 2(1):14.

Possenriede, D. S. and Plantenga, J. (2014). Temporal and Locational Flexibility of Work, Working-Time Fit, and Job Satisfaction. IZA Discussion Paper 8436, Insitute for the Study of Labor - IZA.

Powdthavee, N. (2010). How Much Does Money Really Matter? Estimating the Causal Effects of Income on Happiness. *Empirical Economics*, 39(1):77–92.

Powdthavee, N. (2011). Anticipation, Free-Rider Problems, and Adaptation to Trade Unions: Re-Examining the Curious Case of Dissatisfied Union Members. *Industrial & Labor Relations Review*, 64(5):1000–1019.

Priem, M. and Schupp, J. (2014). Everyone Happy: Living standards in Germany 25 Years After Reunification. DIW Economic Bulletin 11, Deutsches Institut für Wirtschaftsforschung (DIW).

Pronzato, C. D. (2009). Return to Work After Childbirth: Does Parental Leave Matter in Europe? *Review of Economics of the Household*, 7(4):341–360.

Proudfoot, J. G., Corr, P. J., Guest, D. E., and Dunn, G. (2009). Cognitive-Behavioural Training to Change Attributional Style Improves Employee Well-Being, Job Satisfaction, Productivity, and Turnover. *Personality and Individual Differences*, 46(2):147–153.

Rabe-Hesketh, S. and Skrondal, A. (2008). *Multilevel and Longitudinal Modeling using Stata*. College Station, TX: Stata press.

Richter, D., Metzing, M., Weinhardt, M., and Schupp, J. (2013). SOEP Scales Manual. *SOEP Survey Papers*, 138.

Riza, S. D., Ganzach, Y., and Liu, Y. (2016). Time and Job Satisfaction A Longitudinal Study of the Differential Roles of Age and Tenure. *Journal of Management*, pages 1 – 22.

Roe, R. A. and Ester, P. (1999). Values and Work: Empirical Findings and Theoretical Perspective. *Applied Psychology*, 48(1):1–21.

Rønsen, M. and Sundström, M. (2002). Family Policy and After-Birth Employment Among New Mothers–A Comparison of Finland, Norway and Sweden. *European Journal of Population/Revue Europeenne de Demographie*, 18(2):121–152.

Rose, M. (2003). Good Deal, Bad Deal? Job Satisfaction in Occupations. *Work, Employment & Society*, 17(3):503–530.

Rossin-Slater, M., Ruhm, C. J., and Waldfogel, J. (2013). The Effects of California's Paid Family Leave Program on Mothers' Leave-Taking and Subsequent Labor Market Outcomes. *Journal of Policy Analysis and Management*, 32(2):224–245.

Rudd, E. C. (2000). Reconceptualizing Gender in Postsocialist Transformation. *Gender & Society*, 14(4):517–539.

Rudolf, R. and Kang, S.-J. (2015). Lags and Leads in Life Satisfaction in Korea: When Gender Matters. *Feminist Economics*, 21(1):136–163.

Russell, J. (2013). Rabenmutter: Germany Waging the War for Talent Without Women. Website: https://psmag.com/rabenmutter-germany-waging-the-war-for-talent-without-women-d01a59bb09d8#.hedwjjdvx. (accessed on 22/08/2016).

Ruth Eikhof, D., Warhurst, C., Haunschild, A., Ruth Eikhof, D., Warhurst, C., and Haunschild, A. (2007). Introduction: What Work? What Life? What Balance? Critical Reflections on the Work-Life Balance Debate. *Employee Relations*, 29(4):325–333.

Sainsbury, D. (1999). *Gender and Welfare State Regimes*. Oxford, UK: Oxford University Press.

Sandvik, E., Diener, E., and Seidlitz, L. (1993). Subjective Well-Being: The Convergence and Stability of Self-Report and Non-Self-Report Measures. *Journal of Personality*, 61(3):317–342.

Sayer, L. C. and Bianchi, S. M. (2000). Women's Economic Independence and the Probability of Divorce: A Review and Reexamination. *Journal of Family Issues*, 21(7):906–943.

Schaeper, H. and Falk, S. (2003). Employment Trajectories of East and West German Mothers Compared: One Nation - One Pattern? In Heinz, W. R. and Marshall, V. W., editors, *Social Dynamics of the Life Course : Transitions, Institutions, and Interrelations*. Hawthorne, N.Y.: Aldine de Gruyter.

Schaffer, R. H. (1953). Job Satisfaction as Related to Need Satisfaction in Work. *Psychological Monographs: General and Applied*, 67(14):1 – 29.

Schober, P. and Scott, J. (2012). Maternal Employment and Gender Role Attitudes: Dissonance among British Men and Women in the Transition to Parenthood. *Work, Employment & Society*, 26(3):514–530.

Schönberg, U. and Ludsteck, J. (2007). Maternity Leave Legislation, Female Labor Supply, and the Family Wage Gap. Technical Report 2699, IZA discussion paper.

Schönberg, U. and Ludsteck, J. (2014). Expansions in Maternity Leave Coverage and Mothers' Labor Market Outcomes after Childbirth. *Journal of Labor Economics*, 32(3):469–505.

Schueller, T., Wadswoth, M., Bynner, J., and Goldstein, H. (2012). The Measurement of Well-being: the Contribution of Longitudinal Studies. Technical report, Office for National Statistics.

Semykina, A. and Wooldridge, J. M. (2010). Estimating Panel Data Models in the Presence of Endogeneity and Selection. *Journal of Econometrics*, 157(2):375–380.

Simon, R. W. (1997). The Meanings Individuals Attach to Role Identities and Their Implications for Mental Health. *Journal of Health and Social Behavior*, 38(3):256–274.

Sirgy, M. J. (2012). Compensation. In *The Psychology of Quality of Life - Hedonic Well-Being, Life Satisfaction, and Eudaimonia*, volume 50 (2) of *Social Indicators Research Series*, pages 89–99. Springer Netherlands, Dordrecht.

Skalli, A., Theodossiou, I., and Vasileiou, E. (2008). Jobs as Lancaster goods: Facets of Job Satisfaction and Overall Job Satisfaction . *The Journal of Socio-Economics*, 37(5):1906 – 1920.

Skills Route (2016). http://www.skillsroute.com/. Accessed on 12/08/2016.

Slaughter, A.-M. (2015). *Unfinished Business*. New York, NY: Random House.

Sloane, P. J. and Williams, H. (2000). Job Satisfaction, Comparison Earnings, and Gender. *Labour*, 14(3):473–502.

Socio-Economic Panel (SOEP) (2015). doi: 10.5684/soep.v30. data for years 1984-2013, version 30.

Sousa-Poza, A. and Sousa-Poza, A. A. (2000). Well-Being at Work: a Cross-National Analysis of the Levels and Determinants of Job Satisfaction. *Journal of Socio-Economics*, 2(6):517–538.

Sousa-Poza, A. and Sousa-Poza, A. A. (2003). Gender Differences in Job Satisfaction in Great Britain, 1991–2000: Permanent or Transitory? *Applied Economics Letters*, 10(11):691–694.

Spencer, D. A. (2015). Developing an Understanding of Meaningful Work in Economics: The Case for a Heterodox Economics of Work. *Cambridge Journal of Economics*, 39(3):675–688.

Spieß, C. K., Kreyenfeld, M., and Wagner, G. (2003). Distributional Analysis of Child Care Subsidies in Germany. *European Early Childhood Education Research Journal*, 11(2):159 – 175.

Spieß, C. K. and Wrohlich, K. (2008). The Parental Leave Benefit Reform in Germany: Costs and Labour Market Outcomes of Moving towards the Nordic Model. *Population Research and Policy Review*, 27(5):575–591.

Staw, B. M., Sutton, R. I., and Pelled, L. H. (1994). Employee Positive Emotion and Favorable Outcomes at the Workplace. *Organization Science*, 5(1):51–71.

Stöbel-Richter, Y., Beutel, M. E., Finck, C., and Brähler, E. (2005). The 'Wish to Have a Child', Childlessness and Infertility in Germany. *Human Reproduction*, 20(10):2850–2857.

Stolz, M. L. (2010). Work-Life in Germany. Technical report, Boston College Center for Work & Family.

Stutzer, A. and Frey, B. S. (2006). Does Marriage Make People Happy, or do Happy People Get Married? *The Journal of Socio-Economics*, 35(2):326–347.

Stutzer, A. and Frey, B. S. (2010). Recent Advances in the Economics of Individual Subjective Well-Being. *Social Research*, 77(2):679–714.

Tach, L. M. and Eads, A. (2015). Trends in the Economic Consequences of Marital and Cohabitation Dissolution in the United States. *Demography*, 52(2):401–432.

Tamm, M. (2013). The Impact of a Large Parental Leave Benefit Reform on the Timing of Birth around the Day of Implementation. *Oxford Bulletin of Economics and Statistics*, 75(4):585–601.

Tanturri, M. L., Mills, M., Rotkirch, A., Sobotka, T., Takács, J., Miettinen, A., Faludi, C., Kantsa, V., and Nasiri, D. (2015). State-of-the-Art Report: Childlessness in Europe. Working Paper Series 32, FamiliesandSocieties.

Tavares, L. P. and Aassve, A. (2013). Psychological Distress of Marital and Cohabitation Breakups . *Social Science Research*, 42(6):1599 – 1611.

Terling-Watt, T. (2001). Explaining Divorce: An Examination of the Relationship Between Marital Characteristics and Divorce. *Journal of Divorce & Remarriage*, 35(3-4):125–145.

The Department of Business, Innovation and Skills (2014). Flexible Working Regulations 2014. No. 1398.

The Economist (2008). Working Mothers, Unite! Website: http://www.economist.com/node/11708457. (accessed on 22/08/2016).

The Economist (2009). Suffer the Little Children. Website: http://www.economist.com/node/13888118. (accessed on 22/08/2016).

Tonković Grabovac, M., Salkičević, S., and Löw Stanić, A. (2015). Work Engagement of Dual-Working Couples: Dissimilarity and Its Relation to Both Partners' Well-Being. *Current Psychology*, pages 1–17. doi:10.1007/s12144-015-9326-x.

Turliuc, M. N. and Buliga, D. (2014). Job and Family Satisfaction and Work-family Enhancement. Mediating Processes. *Procedia - Social and Behavioral Sciences*, 159:115 – 119. 5th World Conference on Psychology, Counseling and Guidance, WCPCG-2014, 1-3 May 2014, Dubrovnik, Croatia.

Umberson, D. and Williams, K. (1999). Family Status and Mental Health. In *Handbook of the Sociology of Mental Health*, pages 225–253. New York; London: Kluwer Academic/Plenum Publisher.

Van Lancker, W. and Ghysels, J. (2013). Great Expectations, but how to Achieve them? Explaining Patterns of Inequality in Childcare use Across 31 Developed Countries. Working Papers 1305, Herman Deleeck Centre for Social Policy, University of Antwerp.

Van Praag, B. and Ferrer-i Carbonell, A. (2008a). The Aggregation of Satisfactions: General Satisfaction as an Aggregate. In *Happiness Quantified - A Satisfaction Calculus Approach*, chapter Chapter 4. Oxford, UK: Oxford University Press.

Van Praag, B. M. and Ferrer-i Carbonell, A. (2008b). *Happiness Quantified: A Satisfaction Calculus Approach*. Oxford, UK: Oxford University Press.

Van Saane, N., Sluiter, J., Verbeek, J., and Frings-Dresen, M. (2003). Reliability and Validity of Instruments Measuring Job Satisfaction – A Systematic Review. *Occupational Medicine*, 53(3):191–200.

Veenhoven, R. (2012). Cross-National Differences in Happiness: Cultural Measurement Bias or Effect of Culture? *International Journal of Wellbeing*, 2(4):333 – 353.

Vuri, D. (2003). Propensity Score Estimates of the Effects of Fertility on Marital Dissolution. Economics Working Papers ECO2003/04, European University Institute.

Wagener, D. (2002). Women, Identity and Employment in East Germany. In *East German Distinctiveness in a Unified Germany*, chapter Chapter 8. Birmingham, UK: University of Birmingham Press.

Wagner, G. G., Frick, J. R., and Schupp, J. (2007). The German Socio-Economic Panel Study (SOEP) - Scope, Evolution and Enhancements. *Schmollers Jahrbuch (Journal of Applied Social Science Studies)*, 127(1):139–169.

Waldfogel, J. (1998). Understanding the "family gap" in Pay for Women with Children. *The Journal of Economic Perspectives*, 12(1):137–156.

Wall, G. and Arnold, S. (2007). How Involved is Involved Fathering? An Exploration of the Contemporary Culture of Fatherhood. *Gender & Society*, 21(4):508–527.

Wang, H. and Amato, P. R. (2000). Predictors of Divorce Adjustment: Stressors, Resources, and Definitions. *Journal of Marriage and Family*, 62(3):655–668.

Warr, P. (1999). Well-Being and the Workplace. In Kahneman, D., Diener, E., and Schwartz, N., editors, *Well-Being: The Foundations of Hedonic Psychology*, pages 392–412. New York, NY: Russell Sage Foundation, New York.

Warr, P. (2007). Person-Environment Fit and Work Values. In *Work, Happiness, and Unhappiness*, chapter 13, pages 383–402. Mahwah, NJ: Lawrence Erlbaum Associates.

Warren, T. (2015). Work – Life Balance/Imbalance: The Dominance of the Middle Class and the Neglect of the Working Class. *The British Journal of Sociology*, 66(4):691–717.

Warren, T., Fox, E., and Pascall, G. (2009). Innovative Social Policies: Implications for Work–Life Balance Among Low-Waged Women in England. *Gender, Work & Organization*, 16(1):126–150.

Weaver, C. N. (1980). Job Satisfaction in the United States in the 1970s. *Journal of Applied Psychology*, 65(3):364–367.

Weinkopf, C. (2014). Women's Employment in Germany. Robust in Crisis but Vulnerable in Job Quality. *Revue de l'OFCE*, 0(2):189–214.

White, A. T. and Spector, P. E. (1987). An Investigation of Age-Related Factors in the Age-Job-Satisfaction Relationship. *Psychology and Aging*, 2(3):261–265.

Wooldridge, J. M. (2010). *Econometric Analysis of Cross Section and Panel Data*. Cambridge, MA: MIT press.

Wrohlich, K., Berger, E., Geyer, J., Haan, P., Sengül, D., Spieß, C. K., and Thiemann, A. (2012). Elterngeld Monitor. Politikberatung Kompakt 61, Deutsches Institut für Wirtschaftsforschung.

Zimmermann, A. C. and Easterlin, R. A. (2006). Happily Ever After? Cohabitation, Marriage, Divorce, and Happiness in Germany. *Population and Development Review*, 32(3):511–528.