Job Mobility in Germany's segmented labour market: How does the quality of part-time work affect transitions to standard employment?

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This paper focuses on the transitions from part-time employment to standard employment or inactivity in Germany. In the last decades, Germany's labour market has become segmented, with a growth in atypical employment like part-time work. The case of marginal part-time work is especially interesting because of its distribution in the low-pay sector. Using data from the German Socio-Economic Panel (GSOEP, 2003–2017), this paper explores which job quality aspects impact the transition from regular and marginal part-time work to full-time work or inactivity. Job quality is measured by further training, skill match, wage and length of contract. The product limit estimator shows the survival time of employees, and the exponential transition rate model shows the effects of job quality on the transition rate. The expectation is that employees with high-quality jobs are more likely to move to the first segment of the labour market. The results display a heterogeneous picture in terms of regular and marginal part-time work. High job quality is more likely to help regular part-time workers to move to full-time work than marginal part-time workers. Further training has a significant positive effect on the transition to standard work for both part-time statuses. Nonetheless, marginal part-time work seems to keep employees in the labour market group known as outsiders.

1. Introduction

Work trajectories in Western democracies are becoming increasingly atypical (Häusermann and Schwander 2010). Atypical employment is a well-known cause of social and economic disadvantage in the labour market. At the individual level, it is associated with precariousness and downward mobility, such as the transition to unemployment or the low-pay sector. Since the 1990s, Germany has experienced a growth in non-standard employment and flexicurity of the labour market due to labour market policies introduced. A segmented labour market is described as a division between a core of standard employment and a marginal, flexible segment (Eichhorst and Marx 2011). Standard employment in the core is characterised by long working hours, more than 35 hours of work per week, open-end contracts and high social protection with a complete integration into the social security

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system. Workers in these jobs are also called labour market insiders. In contrast, workers who are called labour market outsiders work shorter hours in part-time jobs and have fixed-term contracts (Keller and Seifert 2012).

The development of the second segment of the labour market and the shift away from the male breadwinner model has created precarious dynamics for employees in terms of monetary and social security aspects (Brülle et al. 2019). The differentiation between downward and upward mobility should not only be explored by examining the effects of atypical jobs or desirable standard employment; it should also be explored using the dimensions of job quality that affect part-time job holders' transition to the first segment of the labour market.

Labour market segmentation in Germany has been predominately characterised by the growth of part-time employment Due to the aspiration for reconciliation between paid work and unpaid work across Europe, part-time work has been increasing. The Netherlands have the highest rate of part-time employment in the European Union. In 2018, 46% of the Dutch worked part time. Of these part-time workers, 74% were women (Eurostat 2019a). Women in the Netherlands are much more likely to enter the labour market than German women. Additionally, Dutch part-time workers are less likely to leave part-time employment. The quality of part-time work in the Netherlands is higher than that of Germany and other European countries (Wielers and Raven 2013). For example, the wage penalties for part-timers relative to full-timers are lower, and they are fully integrated in the social security system (Muffels et al. 2008).

After 2003, marginal part-time employment rose in Germany from about 6.0 million employees to 7.7 million in 2018, which is a growth of almost 25%. About 2 million of these workers engaged in marginal part-time work as additional income to supplement their main job (Statistics of the Federal Employment Agency 2018). From 2003 to 2004, the percentage growth of marginal part-time workers increased about more than 10%. In the following years, the percentage growth was 1–2%. Only in the year 2015 did Germany's labour market experience a decline of 1.17% in marginal part-time workers compared to the year before (Figure 1). In sum, Germany is one of the European labour markets with a higher incidence of part-time employment (Figure 2). This justifies the selection of my case study. In Germany, a large share of part-time workers are women (Figure 3).

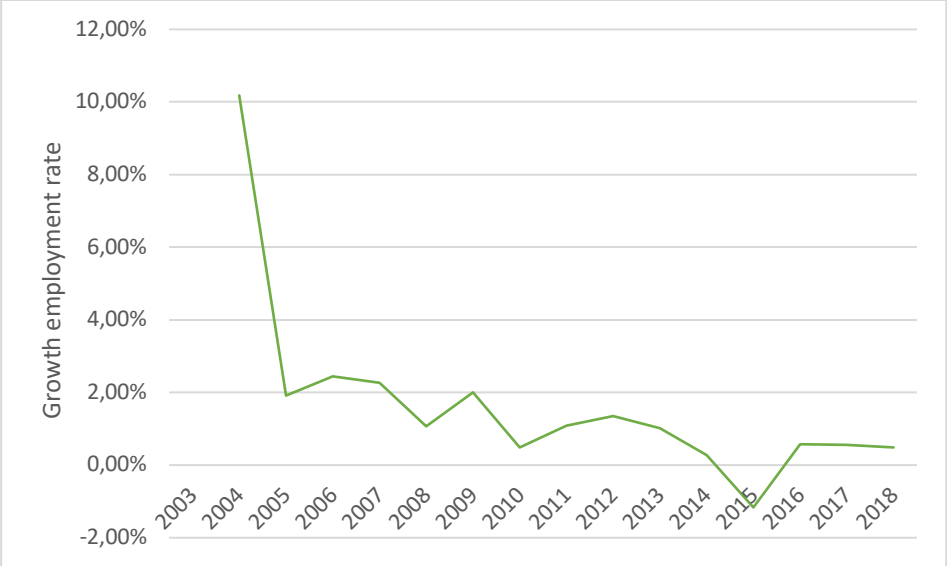

Figure 1: Growth of marginal part-time employment per year in Germany in %.
Source: Statistics of the Federal Employment Agency (2018), own visualisation.

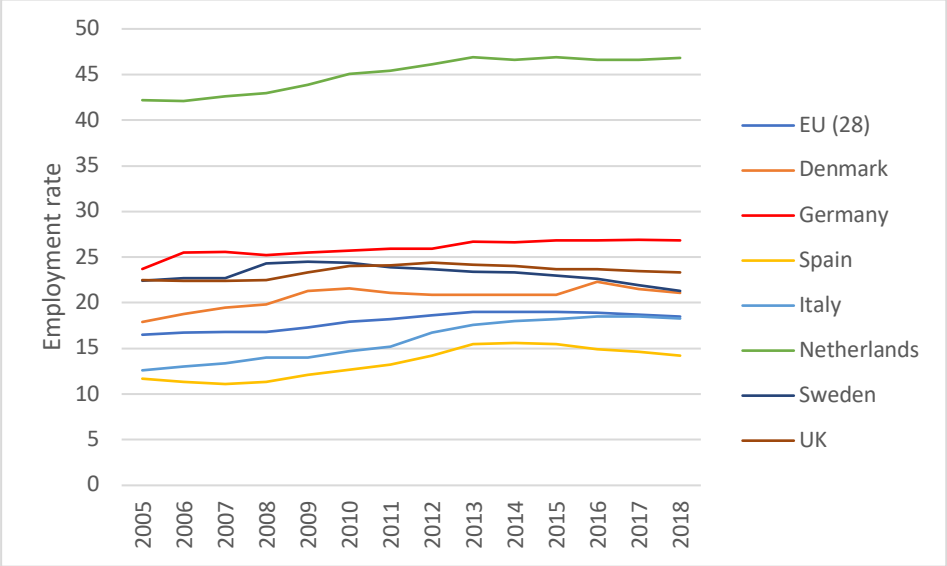

Figure 2: Regular part-time employment rate across European countries
Note: From 20 to 64 years of age, percentage of total employment.
Source: (Eurostat 2019a), own visualisation.

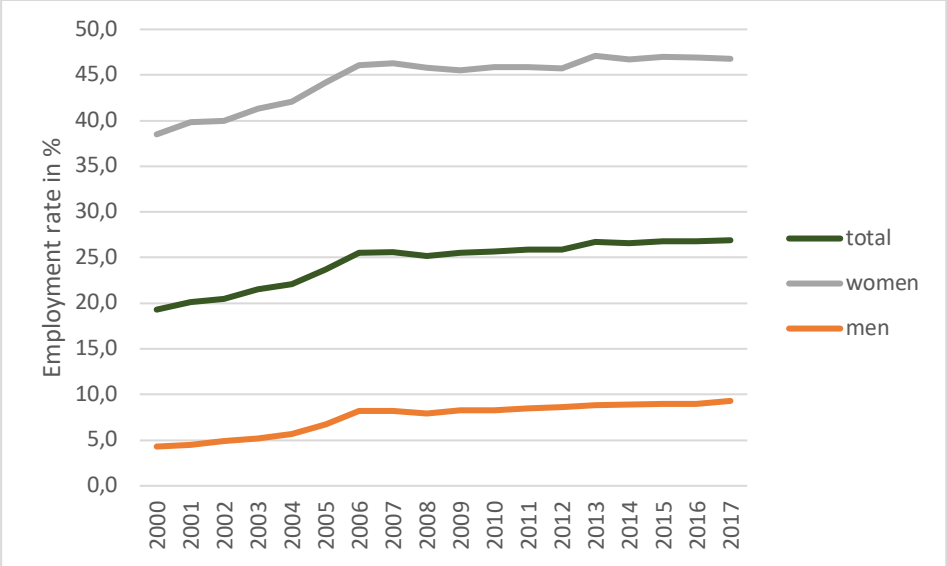

Figure 3: Regular part-time employees in Germany separated by gender.
Source: Eurostat (2019a).

2. Theoretical Background

2.1. Institutional-Based Approaches

There are numerous ways to deregulate employment protection. First, regulation across the wide labour market, or second, only at the margin (Noelke 2015). Employment protection deregulation has the primary result of promoting employment at the margin (e.g., Esping-Anderson 1990; Noelke 2015; Polavieja 2005). In the case of Germany, this deregulation has taken place at the margin (Eichhorst and Tobsch 2013). Because Germany experienced a deregulation of atypical work, such as fixed-term contracts and part-time work, labour market activity is expected to increase due to easier access to the labour market among youth and less skilled workers (King and Rueda 2008). A deregulation of the labour market reduces firms' difficulties with firing workers due to lower employment protection. Employers are thus more likely to hire employees with a higher risk of mismatch because they can fire them easily. By getting rid of inefficient workers, firms can reduce their labour costs (Breen 2005). The labour market also becomes more flexible and employees at the margin have better chances to switch to employment with better protection. Thus, it should be easier for young people with little or no labour market experience and individuals who are not able to work long working hours to enter the labour force. Due to the gap in employment protection legislation between insiders and outsiders, these individuals remain in the second segment of the labour market. The larger the gap between the protection of outsiders and insiders, the higher the social inequality because transitions to the first segment are more challenging.

The distinction between outsider and insider as indicated by working contracts is too simplistic. It needs to be taken into account that labour supply is highly stratified by factors like education, class, access to networks, family responsibilities, age, geographic

circumstances and discrimination (Rubery and Piasna 2017, 56). Atypical employment is associated with labour market disadvantages (Mückenberger 1985/2016) because workers in these employment arrangements are not fully integrated into the social security system, and employment is not stable like in standard employment. However, there are some advantages to atypical employment; for example, labour market flexibility allows individuals to change jobs more easily for better employment relationships (Gensicke et al. 2010, 179) and prevents long-term job mismatches.

Part-time employment increases opportunities for women to re-enter the labour market after birth and maternity leave (Kelle, Simonson and Gordo 2017). Firms could also benefit from the easy provision of part-time employment. Additionally, firms can be flexible and extend the second segment of the labour market to female workers in atypical employment (Goldthrop 1985). Transitions to the core labour market are greatly dependent on policies related to taxation, childcare and families. In other words, women's opportunities to move to the primary segment of the labour market are affected by and dependent on these particular policies, which can either create or break barriers at the individual and household level. Reilly and Bothfeld (2002) used the concept of the transitional labour market, which was created by Gazier, Gautié (2009) and Schmid (2002) to describe how active labour market policies (ALMPs) build an institutional bridge for moving between the core and the periphery. The authors tested the transition from part-time jobs to all other employment relationships between 1991 and 1995 using GSOEP data. They compared the UK and Germany and found that only a small portion of women moved from part-time to full-time employment. They showed that human capital has a significant positive effect on the transition to full-time employment, and the exclusionary impact of part-time work is greater than what the integration approach claims. Part-time workers who had had a full-time job before were twice as likely to move to full-time jobs afterwards, regardless of the welfare regime.

In socio-democratic regimes, public sectors are larger and thus provide women with more opportunities to change employment than in conservative welfare regimes. Additionally, conservative welfare regimes with high protection for standard employment show a strong preference for protecting labour market insiders, who are typically men (Esping-Anderson 1990). Using event history analyses of the transition of women from part-time to full-time work and labour market dropout in the UK, Denmark and France in the years 1994 to 2001, Gash (2008) found that British mothers were less likely to move to full-time work than childless women. The UK has a liberal welfare state that is not characterised by strong women-friendly policies like maternal leave and public childcare. Gash described how on the one hand, women have less preference for full-time work because they want to combine paid work with family responsibilities; on the other hand, women are forced to choose either paid employment or family responsibilities. Gash pointed out that in those three countries, policies influence women's decisions to change between segments of the labour market.

Women's labour supply is shaped by behaviour and historical performance. For example, female cohorts who needed to work in manufacturing in Germany during the second

world war were more likely to participate in the labour market afterwards (Quack 1992). Therefore, part-time employment should be regarded as an integratory effect. Nonetheless, the theory of female labour market discrimination holds true. Discrimination occurs in the field of wage and career opportunities. Part-time workers are seen as a periphery workforce that employers can hire during critical cyclical times. Female part-time workers are associated with low training aspirations, frequent job changes and low salary expectations. Thus, firms segregate gender-specific staff into full-time male workers and part-time female workers (Quack 1992).

Wolf (2014) argued that the stereotype of part-time workers is that they have lower labour market attachment, are less productive and are less flexible. Giesecke (2009) found that wages were low among female part-time workers, especially in West Germany. Various empirical studies have shown that atypical workers have lower wages than employees in standard employment (see for e.g. Gornick and Bardasi 2000; Hirsch 2005; Own 1978; Wolf 2014). Part-time workers earn less because they work less hours and experience wage penalties. In other word, part-time workers have lower hourly wages than full-time workers for the same work. They are more often at risk of ending up in in-work poverty (Brülle et al. 2019; Wolf 2014). Individuals with weak labour market positions have fewer chances for positive job mobility; for example, employees with fixed-term contracts are more likely to be hired for fixed-term employment in the future than standard employees (Gebel and Giesecke 2009). The field of atypical employment is well-studied, but most of the research has focused on temporary employment and its consequences (e.g., Baccaro and Benassi 2016; Baranowska and Gebel 2010; Brülle 2013; Gebel and Giesecke 2009; Mertens, Gash and Mcginnity 2007; Polavieja 2005). Insufficient attention has been given to part-time employment.

2.2. Individual-Based Approaches to the Dynamics of Part-Time Work

The theoretical approach to the dynamics of part-time work is supported by the concepts of integration and exclusion. The integrational approach claims that part-time work provides individuals with the opportunity to leave wedlock-dependent social security by affording their own basis of existence. Jobs with reduced working hours allow employees with children to integrate into the labour market. In contrast, the exclusionary approach argues that part-time employment negatively affects individual's social security. In conservative welfare systems, women obtain their social security through the full-time employment of their husbands. Social dynamics of modernisation, like changes in the core family model and cuts to standard employment, produce social risks among individuals who fall short of the male breadwinner-based social security system. Single people and atypical employers cannot be covered by family-based institutional protection, and women are more often dependent on standard employment to receive social security. Due to this, women are subject to labour market disadvantages because of parenting (Quack 1992). Reduced working hours means

earning less, which results in in-work poverty. Wolf (2014) showed that being in long-term part-time employment reduces hourly wages.

Brehmer and Seifert (2008) clearly pointed out that atypical employment does not have to be precarious, and even standard employment can be precarious under certain conditions. Because of this, the timespan plays a role in the definition of precarious atypical employment. Transitional problems, such as short employment periods and irregular precarity of employment relationships, do not have a large effect on the life course (Kraemer 2008). Additionally, individual preferences should be considered in the determination of precariousness. The assumption that all individuals aspire to standard employment is controversial. Persons with social responsibilities like parenting are likely to value free time more than monetary gain. In this sense, these groups voluntarily choose jobs with reduced working hours (Brehmer and Seifert 2008; Gensicke et al. 2010). Borowczyk-Martins and Laté (2016) determined that involuntary part-time work decreases individual welfare by a quarter to a third of a percentage point in lifetime consumption. It is difficult to identify job transitions of voluntary part-time workers as social exclusion. Furthermore, precariousness depends on the living conditions of the household (Brehmer and Seifert 2008, 505). Additionally, there are different types of atypical employment. Brehmer and Seifert (2008) distinguished between atypical and standard employment by taking reduced hours and fixed-term contracts into account. Therefore, fixed-term full-time employment belongs to the category of atypical work. Atypical employment is not only a matter of working reduced hours.

Nonetheless, long periods of part-time work significantly affects the transition to full-time employment and is associated with downward mobility (Quack 1992). Employees who work part time for more than 10 years will have a high probability of permanently reduced hours (Muffels et al. 2008).

3. The Case of Germany

3.1. The Special Case of Marginal Part-time Work (Mini Jobs)

Although the social welfare programs of 2003 (Hartz IV reforms) instituted marginal part-time employment as the German government's new strategy (Steiner and Jacobebbinghaus 2003), marginal part-time work had been introduced in Germany as early as the 1970s (Voss and Weinkopf 2012). ALMPs caused deregulation of atypical employment, especially for long-term unemployed people, agency workers and *minijobers* (marginal part-time workers). The Hartz reforms were intended to shift the labour market from a human capital-orientated market to a high employment active labour market. With stronger job search monitoring and harder sanctions on unemployment benefits, ALMPs tried to push long-term unemployed citizens into work. One of the most important changes to unemployment benefits was the replacement of unemployment assistance and social assistance with

Arbeitslosengeld II (Unemployment Benefit II). This benefit covers the unemployed and working poor by complementing wages up to the living wage. For marginal part-time workers, the 15 hours limit was removed. These workers were forced to accept low wages because of the compensation by the new unemployment benefit Hartz IV. As a result, the core of the labour market suffered from flexibilisation because collective bargaining and unionisation decreased while firms' use of employee exit options increased (Eichhorst and Marx 2011, 79-80). Table 1 gives an overview about the labour market reforms since 1990.

Table 1: Sequences of reforms since the early 1990s

	Until autumn 1998	*Autumn 1998 – autumn 2001*	*Early 2002 – autumn 2005*	*Autumn 2005 – autumn 2009*
Government composition	Christian Democrats/ Liberals	Social Democrats/ Green Party	Social Democrats/ Green Party	Christian Democrats/ Social Democrats
Core Dismissal protection	General stability with only minor reforms	Re-regulation	General stability, with only minor reforms	General stability
Internal flexibility	Emergence of plant-level concessions	Progressive internal flexibility (working time, wage moderation) due to plant agreements		
Margin	Initial deregulation	Partial re-regulation (fixed term jobs, marginal jobs, self-employment)	New phase of stronger deregulation and flexibility (Mini jobs, agency work, activation)	Re-regulation (minimum wages)
Unemployment	Growing	Falling	Growing	Falling
Standard jobs	Decline	Stagnation	Decline	Modest growth
Atypical jobs	Modest growth	Modest growth	Strong growth	Strong growth

Source: Eichhorst and Marx (2011), 80.

The Hartz IV reforms increased the rate of marginal part-time employment due to labour market flexibilisation. The income tax exemption was intended to give the unemployed an incentive to take up marginal part-time employment. These special legal circumstances for marginal part-time employment can only be found in Germany. This is why Germany constitutes an optimal case for the study of marginal part-time employment.

The main target population of the Hartz IV policy reforms were those with low skills, little earning potential and who were unemployed (Caliendo, Kuenn and Uhlendorff 2012; Steiner and Wrohlich 2005, 92). Marginal part-time employment is often called a low-wage trap (Diekmann and Voss 2004) because of its special taxation; in 2009, about 90% of marginal part-time employment was in the low-wage sector.

3.2. Legality of Marginal Part-Time Work

Germany provides an opportunity for analysis of part-time employment because of social polarisation between different types of part-time workers. Regular part-time jobs can be easily distinguished from marginal part-time ones. They differ not only in the number of working hours but also in legal taxation regulations. Whereas regular part-time employment is covered by the same tax laws and social contributions as full-time work, marginal part-time work is income tax free and only partially or not at all integrated in the social security system. Marginal part-time work is defined as part-time work with an income below 450 Euros per month. Employees with marginal part-time contracts are not entitled to health and nursing insurance or unemployment insurance, and they only have marginal entitlement to receive a pension scheme (Minijobzentrale 2016). Usually, marginal part-time workers receive their social security through their spouse or an unemployment agency (Bäcker 2007).

Marginal part-time workers are covered by the statutory ban on discrimination in the same way as regular part-time workers. Therefore, hourly wages should not be affected by holding a marginal part-time employment contract. Nevertheless, companies illegally pay marginal part-time workers less than regular part-time workers. The wage disadvantage can be explained by companies' operational practice of deducting employees' part of their social contribution and taxes from the gross wage. The remaining monetary amount is the net wage of the worker. Employers have to pay a 21% lump sum of the employees' net wages. In the case of marginal part-timers, the net wage is equal to the gross wage. The employer has to pay a lump sum of 30% on marginal part-time workers' net wages. In sum, it is more expensive for the employer to hire a marginal part-time worker than a regular part-timer (Voss and Weinkopf 2012).

To bypass this, firms can reduce the wage of the marginal part-time worker to the net level of the regular part-time worker to offset the personal cost of the 30% lump sum. After this, the net wage of the marginal part-timer is equal to the net wage of the regular part-time employee (Voss and Weinkopf 2012). As a result, the salary of marginal part-time workers gets drastically reduced, and the tax-free benefit is compensated by the outlined operational practice.

Several studies have provided evidence of this practice. Students experience a systematic wage deduction of 26%, and adult warehouse workers in marginal employment receive a deduction of 29–33% (Voss-Dahm 2009, 233). The wage deduction in retail is almost half of the gross wage (Benkhoff and Hermet 2008).

Table 2: Comparison of the legal situation of regular and marginal part-time work

	Regular Part-Time	*Marginal Part-Time*
Income tax	taxed	Tax free
Social security		
Health insurance	yes	no
Nursing insurance	yes	no
Unemployed insurance	yes	no
Pension insurance	yes	optional
Ban of discrimination	covered	covered
Employees contributions	Income tax + social contributions	Gross wage = net wage
Employers contribution	21% of worker's net wage + half of social contribution	30% of worker's net wage

Source: Voss and Weinkopf (2012).

Germany's health insurance system covers an insured worker's spouse and children. Unmarried marginal part-time workers need to be registered at the employment agency to receive health insurance because no health insurance is provided by marginal part-time work. Thus, the unemployment agency[4] provides the health insurance for these workers. Two-thirds of marginal part-time workers are female (Voss and Weinkopf 2012). Therefore, marginal part-time work favours women's low labour market participation and gender-specific labour market segmentation. Couples are financially favoured by tax regulations if only one person in the household has a high salary. In that way, couples achieve the best monetary result if one household member is working at home unpaid or working marginally while the partner is working full-time.

Working reduced hours generates human capital losses. It is often argued that part-time work can be a stepping stone to standard employment. According to Gensicke et al. (2010), unemployed workers who have worked marginal part-time jobs before have the lowest probability of transitioning from unemployment to standard employment. Only 17% of part-time workers managed to transition to standard employment, in contrast to 27% of fixed-term employees and 34% of agency workers. Only 9% of marginal part-time workers managed to transition to full-time employment. The authors pointed out that these results can be explained by workers' preferences. With increasing age, the probability of moving to standard employment decreases. The authors connected this with the assumption that older workers have more health issues and thus are less likely to move to full-time employment, which is mentally and physically more intensive than part-time work.

The loss of human capital depends on the groups being compared. Working reduced hours lowers skills in comparison to full-time work, but it increases human capital in

[4] Even with a marginal part-time job, individuals can be registered at the unemployment agency. Marginal part-time work cannot guarantee the living wage. Therefore, the unemployment agency is monetary supporting people with low income to hedge a proper live.

comparison to non-employment. Caliendo, Kuenn and Uhlendorff (2012) investigated the impact of marginal part-time employment on the duration of job employment and job quality in Germany. The authors studied individuals receiving unemployment benefits who were employed in marginal part-time jobs and searching for a new employment relationship. The results showed that marginal part-time employment helps workers to find a more stable employment relationship and increases the job finding probability after one year. A significant positive effect on the transition to standard employment could be found for individuals who had their marginal part-time job in the same sector as their previous job. The authors found that the re-entrance of the long-term unemployed to employment is probably not affected by marginal part-time jobs but by other determinants like human capital before the job loss or network changes while working a marginal part-time job.

Women's labour participation differs greatly between East and West Germany. Before the reunification, women were integrated into employment by the socialistic regime. Because the provision of public childcare was higher in East Germany, those mothers enjoyed greater maternity leave benefits. Furthermore, institutions provided women with long working hours. In contrast, West Germany was characterized by a conservative welfare regime with gender-specific work. Therefore, female labour market participation was lower in West Germany than in East Germany. The West German state also did not support public child care. Nevertheless, that does not mean that gender inequality was low in East Germany. The gender pay gap was the same and occupational segregation was high in both East and West Germany (Rosenfeld, Trappe and Gornick 2004).

After the collapse of the Soviet Union, the West German welfare regime took over the old socialistic territories that belonged to Germany. After the reunification, the unemployment rate increased dramatically in eastern Germany because it did not have a well-developed manufacturing infrastructure like the western past of the country. Female labour market participation among the eastern German population decreased, but not to the same low level found in western Germany. For western German women, part-time work became more important, and the concept of women's salaries being supplemental to men's full-time salaries was promoted (Table 2 Rosenfeld, Trappe and Gornick 2004, 108).

3.3. Quality of Work

Instead of simply categorizing employment into three types (marginal, regular part-time and full-time), this paper distinguishes between the quality dimensions of part-time work. High quality jobs offer chances for human capital growth, which makes it easier for workers to move to the first segment of the labour market. Additionally, high job quality increases workers' satisfaction and decreases the motivation to move to another job or another segment of the labour market.

Several frameworks for the measurement of job quality exist, and all of them are based on political agreements on decent work. For example, the International Labour Organisation's

(ILO) definition from 1999 of decent work is built on the ideas of social protection, social dialogue, rights at work and gender equality (Aleksynska et al. 2019, 9). This framework works at the international level. In 2001, the European Council agreed on the implementation of the Laeken indicators to define job quality. These indicators provide the measurement of poverty (Sebastian, Jan-philipp and Ralf 2011). The latest work, the 2010 Organisation for Economic Co-operation and Development (OECD) job strategy (OECD 2014, 2018), focused on three determinants: earnings, labour market security and the quality of the working environment. This framework has been used in influential studies like the Working Condition Survey. The following six dimensions of job quality are included in the Working Condition Survey (Eiffe, Parent-Thirion and Biletta 2018):

1. Physical environment: degree of physical risks for the employees at work
2. Social environment: workers' experience of supportive social behaviour
3. Working time quality: duration and flexibility of working time arrangements
4. Work intensity: pressure on the worker
5. Skills and discretion: employees' opportunities for autonomy and applying their skills
6. Prospects: job security and opportunities for future career moves due to vocational training

In this paper, the dimensions of skills, jobs security and salary are used to measure job quality. The goal of statistical tests is to discover *which* of these quality dimensions affects the transitions from part-time work to standard employment or inactivity and *how*. According to the human capital theory, better qualified workers are more likely to experience continued employment (Becker 1991). Highly qualified workers are more likely to transition from part-time to full-time work (Reilly and Bothfeld 2002). Therefore, part-time jobs with further training and skill matching should promote transitions to the first segment of the labour market. Training opportunities for marginal part-time workers are not as good as those for regular part-time workers, and full-time workers are more likely to participate in training than part-time workers. The lowest chances for training are experienced by marginal part-time workers in the trade sector. Additionally, this is the sector with the highest share of marginal part-time workers. Bellmann et al. (2012) showed that participating in training is associated with educational level. Thus, workers with a higher level of education are more likely to participate in further training. This is explained by the greater learning aspiration among higher educated workers and companies' likelihood to invest in employees with better capabilities. Because marginal part-time workers often perform tasks that do not require high qualifications, further training is less important for them. Other findings have shown that marginal part-time workers are often not informed about further training opportunities (Leibniz Institute for Economic Research 2012). Bellmann et al. (2012) showed that marginal part-time workers are the most unsatisfied group in regards to further training. However, 64% of marginal part-time workers are satisfied with their employers' training provisions.

Job insecurity has a central place in the labour market segmentation theory and the discussion of work quality. In the second segment of the labour market, job insecurity is connected to poor quality of job tasks (Paugam and Zhou 2007). Additionally, employers are less likely to invest in workers with insecure jobs, which are mainly distributed in the second segment of the labour market. In secure jobs, employees have more opportunities to develop their skills and make the transition to full-time employment. Individuals who change jobs frequently are associated with low skills and poor work aspirations. Paugam and Zhou (2007) discovered that out of Great Britain, Spain, Denmark, France, Germany and Sweden, the correlation between job quality and job security was the strongest in Germany. The authors traced this back to the high polarisation of the German labour market.

Low paid jobs are connected with low skills. However, wage differences between work contracts can also be caused by discrimination. The stereotype of part-time workers is that they are not dedicated to their work and are less productive and less flexible. In companies with more part-time workers, these stereotypes tend to be fewer. An OECD study (2010) about part-time work showed that the average wage of part-time workers in countries with a high share of part-time employment was lower. Male part-time workers are especially likely to experience wage cuts because full-time work is the common social norm among this group. Men who are working part-time do not fit therefore in common social concept of the male-breadwinner model. These men are more often discriminated at work (Bell and Freeman 2001).

Because of the large segmentation between regular and marginal part-time jobs, *it is hypothesised that marginal part-time workers are less likely to transition to standrd work than regular part-time workers*. Germany's dual vocational training system is designed to qualify and integrate young people into the labour market (Reilly and Bothfeld 2002). Therefore, the German labour market is characterised by skilled workers. The polarisation of atypical jobs must be taken into account to distinguish between standard and atypical employment. *Therefore, it is hypothesised that individuals in high-quality part-time work are more likely to move to the first segment of the labour market than individuals in low-quality part-time work.*

4. Methodological Approach

4.1. Data

The Socio-Economic Panel (SOEP) survey is conducted yearly among a representative sample of the German population. Every year since 1984, 15,000 households and about 25,000 individuals have been surveyed using the same questionnaire. The SOEP allows researchers to study stability and changes in living conditions of individuals because of the dataset's wide range of variables in the fields of sociology and political science. Since 1990, the SOEP has also included East Germany (German Institute for Economic Research [DIW]

2019). This thesis analyses data from 2003 to 2017. Marginal part-time jobs increased greatly in 2003 after the Hartz IV reforms.

The dependent variable has already been coded by the DIW and demonstrates if the individual is a full-time, regular part-time or marginal part-time worker or is unemployed. The respondents were asked whether they worked regular part-time or marginal part-time (under 450 Euros per month) jobs. The independent variable is the transition rate from regular/marginal part-time work to standard employment or inactivity. This variable was not provided by the SOEP but rather it had to be calculated from the raw data. The control variables are education (Casmin classification), professional status (most recent EGP value according to Erikson, Goldthorpe and Portocarero)[5], age, region of residence, firm size, marital status, number of children and sectors (NACE[6] Rev 2 at the one-digit level). For simplification, the 21 NACE categories were combined into 10 categories (see Aleksynska et al. 2019).

4.2. Operationalisation and Variables

The dependant variable is the transition to open-end full-time employment with (standard employment) or inactivity[7]. Inactivity includes military/community service, maternity leave, unemployment, retirement and people who work in sheltered workshops. Job quality dimensions are the central independent variables in the analysis of transitions from part-time work to standard employment or inactivity.

At the basic level of conceptualisation, defining the positive and negative poles of the variable (job quality) is highly important. Jobs are defined as paid work in socially insured, dependent employment. Thus, self-employed workers were excluded from the analysis. Because the research question focuses on working hours, the categorisations of full-time, regular part-time and marginal part-time were the independent variables of job quality.

At the secondary level of the conceptualisation, the relevant characteristics of the phenomenon of job quality were identified. These characteristics have a causal effect on the dependent variable. Therefore, it is necessary to clarify what characteristics make a job good or bad. At the tertiary level, the empirical indicator needed to be assigned to the job quality characteristics. The following characteristics determinate job quality: earnings, skills/mismatch and prospects.

Hourly wages have the highest comparability. Unfortunately, the SOEP does not provide information about hourly wages. Therefore, the calculation was made by determining

[5] The EGP value is derived from the Standard International Socio-Economic Index of Occupational Status (ISEI) and created by scaling the ISCO-88 classification. It is based on the information about income, education and occupation (DIW 2018). This index was documented by Ganzeboom and Treiman (1996).

[6] NACE is the acronym from the French title "Nomenclature générale des Activités économiques dans les Communautés Européennes" (engl.: Statistical classification of economic activities in the European Communities) (Eurostat 2008).

[7] In the analyses, full-time work means full-time work with open-end contracts.

the gross earnings from the first job and the agreed working time per week. Earnings in the low pay sector are less than two-thirds of the population's median gross income. In 2016, the low pay limit was about 10 Euros per hour (The Institute for Employment Research (IAB) 2018). Jobs with hourly wages less than 10 Euros per hour were categorised as low quality.

Employees in jobs with a skill mismatch cannot improve their acquired skills and are thus losing human capital. The opportunity to apply skills at work was measured using the SOEP variable that indicates whether the individual is working in the occupation he or she was trained for. Employees experience a job mismatch if they work in an occupation that they were not trained for, and thus they were categorised as having a low quality job. Thus, the dimension of job and skill mismatch allowed for analysis of an individualised measurement of job quality.

Workers with open-end contracts have the best prospects because they are able to remain in their workplace long term. Therefore, employees with open-end contracts were categorised as having high-quality jobs.

4.3. Statistical Methods

Event history analysis was used to analyse the transition to full-time work or inactivity. The SOEP is a longitudinal dataset and can be transformed into an event history data structure. With regard to moving from part-time work to full-time work or inactivity, the analyses were based on a two-state model. The destination state was beginning a part-time job (t_1). The end of the episode occurred at time point t_1, when the transition to full-time/inactivity occurred.

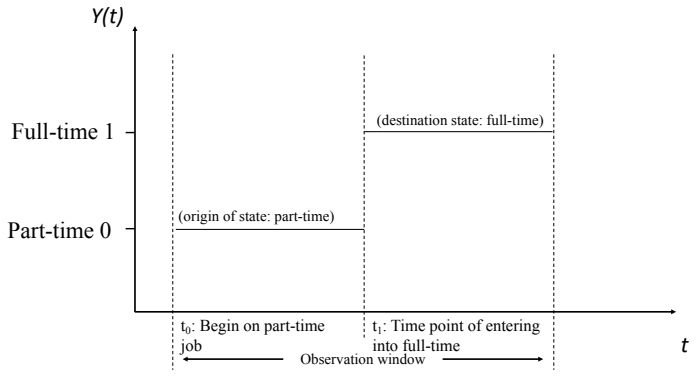

Figure 4: Two-state model of event history data.

The dependent variable (part-time employment) is the transition rate and is timepoint-related to the causal effect. The transition rate offers the probability of change from the origin state to the destination state. The survivor function is an abstraction of the transition rate. It indicates the percentage of the sample that is still at risk of experiencing the event (Blossfeld, Golsch and Rohwer 2007, 31-35).

To determine the difference between the survivor functions for different transitions, for example from regular/marginal part-time to standard employment, the Kaplan–Meier estimator was used. The analysis was segmented by gender due to the large differences in part-time participation between men and women and because the behaviours of some covariates may differ between genders. The Kaplan–Meier estimator allows for the comparison of two or more groups. This statistical method was used for the non-parametric estimation of survivor functions from the timeline date. It is based on the calculation of a risk set at every timepoint where an event occurred (Blossfeld, Golsch and Rohwer 2007, 75).

After testing using the Kaplan–Meier method, the exponential transition rate model provided the effects of job quality on the transition to standard employment or inactivity. According to the constantly falling survivor function, this statistical method is appropriate to estimate effects while controlling for covariates.

5. Results

5.1. Comparing Characteristics of Full-Time and Part-Time Work

Table 3 displays the descriptive results of the distribution of job characteristics based on employment status. Besides demographic variables like age, marital status and education, job quality variables were introduced to see how workers of full-time, regular part-time and marginal part-time jobs were distributed.

Most regular part-time workers were over 35 years of age. Only a small percentage of young people under 25 years was employed on a part-time basis. Young women were especially less likely to be regular part-time workers than men. As age increased, this pattern reversed; women over 35 years of age were more likely to be regular part-time workers than men were. For marginal part-time workers, the age distribution was different. In this case, young individuals were about 10 times more likely to work in marginal part-time jobs than in regular part-time jobs. About 31% of male part-time workers were under 24 years of age. This is three times higher than for regular part-time workers. The proportion of young women in marginal part-time work was eight times higher. With increasing age, the proportion of marginal part-timers grew; more than half of marginal part-timers were over 35 years old. As with regular part-time work, young men and older women were more likely to work marginal part-time jobs.

Most highly educated and managerial positions had full-time employment. As the working hours decreased, employees' educational levels and occupational positions declined. Marginal part-time employees especially had low skills. There was a vast difference between the qualifications of regular and marginal part-time workers. Male marginal part-timers were the lowest educated and skilled group; almost one-third of men in marginal part-time jobs were semi- and unskilled workers, and 41% had no or low degrees. For women, 25% of those

in marginal part-time work were semi- and unskilled workers, and 37% had low or no degrees. Low-qualified individuals were more common in regular part-time work than in full-time employment, and the majority of regular part-time workers had a median skill level.

The comparison of western and eastern Germany showed that in the west, women were more likely to work part time than men. The opposite was true in eastern Germany, where men were more likely to work reduced hours than women. The sample had a higher number of individuals from western Germany because the labour market participation in eastern Germany is much lower. Demographic structures also differ between western and eastern Germany; for example, the population density is lower in eastern Germany (Swiaczny 2015) but the unemployment rate is higher[8]. A large portion of marginal part-time workers were employed in small firms.

Most of the employees in full-time, part-time and marginal part-time jobs were married. This can be traced back to life course developments; labour market participation increases with age, as does the probability of marriage. The number of children in the household reduced labour market participation significantly; individuals with no children had the highest participation rate in all employment forms. Employees are likely to drop out of the labour pool entirely rather than working reduced hours if they have children.

About 83% of full-time employees earned more than 10 Euros per hour. In contrast, only 25% of marginal part-time workers earned more than 10 Euros. Here, the wage penalty for reduced working hours is clearly evident; however, the table displays that a large part of marginal part-time employees work in semi- and unskilled professions, which can affect wages. The skill mismatch is particularly high for marginal part-time workers; more than half of these workers were not employed in the occupation they had trained for. Open-end contracts were often held by full-time workers. Most marginal part-time workers did not have an open-end contract, and they had the highest share of temporary contracts. Only few individuals experienced further training on the job, though it should be noted that with reduced hours, the opportunities for training decrease.

[8]In 2018, the unemployment rate in eastern Germany was between 3.5% and 8.6%, while it was under 3.5% in western Germany (Eurostat 2019b).

Table 3: Distribution of job characteristics of full-time, part-time and marginal part-time workers in %.

	Full-time			Part-time			Marginal Part-time		
	Men	Women	All	Men	Women	All	Men	Women	All
Number of cases	89692	42993	132685	5339	40151	45490	5908	15218	21126
Age									
< 24	3.50	5.95	4.30	8.93	1.99	2.81	30.72	16.88	20.75
25 - 34	17.46	21.81	18.87	21.75	13.15	14.16	17.11	17.19	17.17
35 >	79.04	72.24	76.84	69.32	84.86	83.04	52.17	65.93	62.08
Educational Level									
No or lower school qualification	30.09	16.86	25.81	26.78	22.85	23.31	41.00	37.07	38.13
Middle-school qualification	27.60	33.80	29.60	17.14	35.88	33.68	13.03	28.68	24.26
High-school qualification	12.16	14.64	12.97	17.49	16.25	16.40	21.04	18.45	19.23
University degree	28.16	32.34	29.50	35.34	23.49	24.87	19.38	12.18	14.19
Region of Residence									
West Germany	80.00	72.44	77.55	78.67	82.86	82.37	80.65	87.14	85.33
East Germany	20.00	27.56	22.45	21.33	17.14	17.63	19.35	12.86	14.67
Professional status									
Semi- and Unskilled Manual Worker	14.64	7.20	12.23	19.57	10.29	11.37	28.03	24.64	25.54
Skilled Manual Workers	23.28	5.46	17.51	8.97	4.48	5.01	8.18	4.83	5.76
Routine Service and Sales Worker	3.17	14.13	6.72	10.32	24.50	22.84	11.51	30.90	25.49
Routine Clerical Work	6.52	19.68	10.79	8.02	22.14	20.47	3.72	9.88	8.15
Lower Managerial	22.66	32.61	25.88	25.34	27.31	27.07	16.23	13.19	14.07
Higher Managerial	20.58	14.18	18.50	16.09	7.67	8.66	7.36	2.82	4.08
Firm size									
Small (<20)	21.77	22.77	22.09	30.44	29.57	29.68	34.58	46.20	42.91
Middle (20-200)	25.67	26.66	25.99	22.78	26.08	25.68	17.81	18.67	18.43
High (200-2000)	20.40	21.02	20.60	14.89	17.76	17.42	7.82	8.04	7.99
Very high (>2000)	25.86	22.80	24.87	18.45	21.03	20.72	9.19	8.10	8.41
larintal Status									
Married	70.47	49.54	63.65	57.01	72.59	70.74	43.01	63.23	57.49
Not Married	28.88	49.75	35.68	41.79	26.94	28.70	56.06	36.31	41.91

Table 3: Continued…

	Full-time			Part-time			Marginal Part-time		
	Men	Women	All	Men	Women	All	Men	Women	All
Children in household									
Non	51.07	70.28	57.29	59.21	38.70	41.10	65.10	43.21	49.33
1	19.06	17.92	18.69	15.56	27.12	25.77	16.01	21.55	20.00
2	20.11	9.03	16.52	15.04	24.76	23.62	11.00	22.74	19.46
< 3	9.76	2.76	7.49	10.19	9.42	9.51	7.89	12.49	11.20
Sector									
Agriculture	2.23	1.04	1.84	2.25	0.63	0.82	2.61	0.89	1.36
Industry	31.86	16.08	26.74	11.63	8.88	9.20	8.92	7.71	8.05
Construction	9.35	1.40	6.77	4.70	1.64	2.00	4.62	1.16	2.12
Commerce and hospitality	10.00	11.53	10.50	10.94	15.99	15.40	11.87	18.38	16.53
Transport	8.75	7.09	8.22	13.43	5.59	6.52	13.76	10.63	11.51
Financial services	4.76	5.43	4.98	3.71	4.72	4.61	3.11	2.21	2.46
Public administration	9.67	31.44	16.73	23.47	37.58	35.91	13.24	22.03	19.58
Education	18.80	21.86	19.79	22.93	20.46	20.75	22.93	23.29	22.00
Job quality									
Earnings									
> 10 Euros/hour	87.17	76.94	83.76	61.98	70.26	69.49	22.42	26.21	25.45
< 10 Euro/hour	12.83	23.05	16.23	38.02	29.74	30.51	77.58	73.79	74.55
Skill mismatch									
No skill mismatch	66.10	71.31	67.78	33.90	64.27	63.68	46.36	43.08	43.92
Skill mismatch	33.90	28.69	32.22	40.95	35.73	36.32	53.64	56.92	56.08
Contract									
Open-end	91.58	88.40	90.53	71.51	87.50	85.88	62.67	77.67	74.14
Temporary	8.42	11.60	9.47	28.49	12.50	14.12	37.33	22.33	25.86
Training									
Training	1.77	2.19	2.09	2.03	1.97	1.91	0.58	1.28	1.14
No training	98.23	97.81	97.91	97.97	98.03	98.09	99.42	98.72	98.86

Source: GSOEP, 2003–2017, own calculations.

5.2. Comparing Survivor Function of Marginal and Regular Part-Time Workers

The product limit estimator was used to determine the survivor functions of the transition from regular/marginal part-time work to full-time work or inactivity. Longitudinal data were examined to study the duration of part-time status and the proportion of workers who moved out of the part-time category. Figure 5 shows the survivor function for the transition from regular part-time to standard employment separated by gender. Women tended to stay longer in part-time employment than men. After 42 months, about 50% of women managed the transition to standard employment, compared to 22 months for men. Figure 6 displays the transition of regular part-time workers to inactivity. The median survival

time was 35 months for men and 47 months for women. However, the 95% confidence intervals showed no significant differences in the exit to inactivity based on gender. Women were less mobile in part-time work than men, and they were less likely to move up to standard employment. After month 100, the sample did not have enough male individuals who were employed part time and transitioned to inactivity. About 20% of the women in the sample did not experience the transition from part-time employment to inactivity (Figure 6).

The survivor function of the transition from marginal part-time work to standard employment (Figure 7) and inactivity (Figure 8) showed that men in marginal-part time jobs entered standard employment faster than women, and more men overall were able to make the transition than women. In fact, there was a threshold after which the survival rate of women in marginal part-time work no longer decreased (due to the transition to standard employment) (Figure 7). The median survival time of men was 69 months, and 30% of men did not enter standard employment. For women, this number was three times higher; 75% of women did not transition from marginal part-time work to standard employment (Figure 7). As with regular part-time workers, marginal part-time female workers were less mobile than their male counterparts. Figure 8 shows that all individuals transitioned to inactivity after a certain amount of time. After 35 months, 50% of individuals had transitioned to inactivity. Men transitioned to inactivity quicker than women. Additionally, gender differences in Figure 7 is significant, unlike in Figure 6. Thus, while there were no gender differences for the transition of regular part-time workers to inactivity, there was a gender difference for the transition of marginal part-time workers to inactivity. This demonstrates that for women, marginal part-time work has a more exclusionary effect than regular part-time work.

Looking at the results from Figure 5–Figure 8, a notable difference can be observed in the mobility of employees in regular and marginal part-time work. Women seem to become stuck in marginal part-time work more often than men. Also, fewer women made the transition to standard employment, especially those in marginal part-time work. Therefore, women in regular part-time jobs are more likely to move upwards than those in marginal part-time jobs. Hypothesis 1 (H1), which stated that marginal part-time employees are less likely to transition to standard full-time work than regular part-time employees, was confirmed using the Kaplan–Meier method.

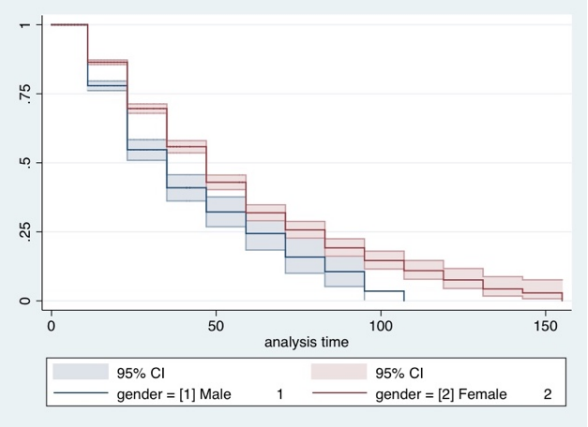

Figure 5: Survivor function for transition from regular part-time work to standard employment by gender (n = 7,416).
Source: GSOEP, 2003–2017, own calculations.

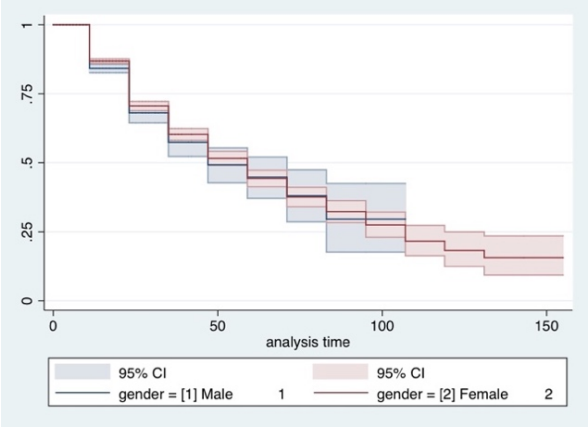

Figure 6: Survivor function for transition from regular part-time work to inactivity by gender (n = 7,416).
Source: GSOEP, 2003–2017, own calculations.

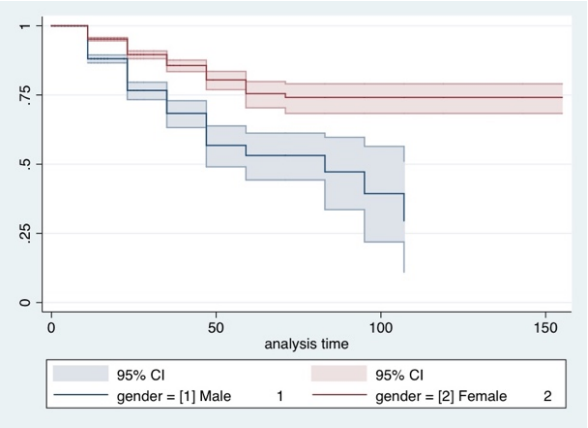

Figure 7: Survivor function for transition from marginal part-time work to standard employment by gender (n = 5,937).
Source: GSOEP, 2003–2017, own calculations.

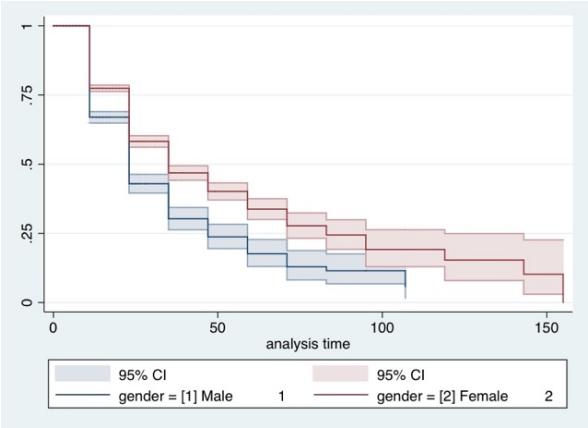

Figure 8: Survivor function for transition from marginal part-time work to inactivity by gender (n = 5,937).
Source: GSOEP, 2003–2017, own calculations.

5.2.1. Training

Figure 9 displays the difference in the survivor function of part-time employees transitioning to standard employment based on further training. Regular part-time workers who received training transitioned to standard employment after approximately 35 months, compared to 47 months for workers who did not receive further training. However, the 95% confidence intervals did not show a significant difference in training levels for regular part-time workers who made the transition to standard employment. Furthermore, the survivor function for women transitioning from regular part-time work to standard employment was significantly different (Appendix B). Women who received training were more likely to enter

full-time employment than women without further training[9]. In the case of marginal part-time workers, the 95% confidence intervals did not show any significant differences based on training (Figure 10). Only about 30% of marginal part-time workers without training transitioned to standard employment, whereas 70% of marginal part-time workers managed a transition upwards with training. The Kaplan–Meier estimator did not show any differences between marginal part-time workers for marginal part-time employees (Appendix E–Appendix H).

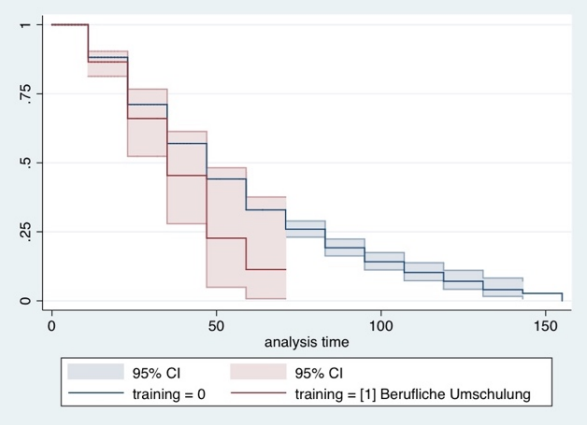

Figure 9: Survivor function for transition from regular part-time work to standard employment by training (n = 7,416).
Source: GSOEP, 2003–2017, own calculations.

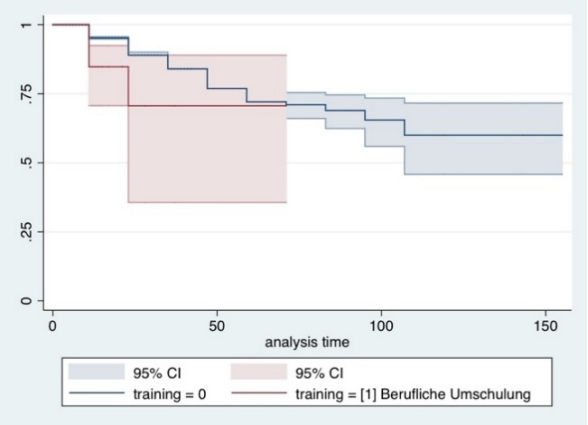

Figure 10: Survivor function for transition from marginal part-time work to standard employment by training (n = 5,937).
Source: GSOEP, 2003–2017, own calculations.

5.2.2. Skill Mismatch

The survivor function for regular part-time employees shows that individuals who were not working in a position with a skill mismatch moved to standard employment faster than those with a skill mismatch (Figure 11). Regular part-time workers with no skill mismatch transitioned to standard employment after an average of 35 months, compared to 47 months for workers in a position with a skill mismatch. In this study, a skill mismatch seemed to have similar effects as training on the probability of regular part-time workers entering standard employment. There were no significant differences in regards to gender or transition to inactivity (Appendix K–Appendix L).

Marginal part-time workers experienced a similar pattern, but for them, the effects of skill mismatch were more dramatic. About 75% of marginal part-time workers with a skill mismatch were unable to move to standard employment (Figure 12). Marginal part-time employees without a mismatch moved to standard employment more quickly, but this still only accounted of 50% of the sample. The 95% confidence intervals showed no significant

[9]All other survivor functions separated for gender and employment transition (to standard employment and inactivity) can be found in Appendix.

effect of mismatch on the transition of marginal part-time workers to standard employment. There were also no significant differences in terms of gender or transition to inactivity (Appendix M–Appendix P).

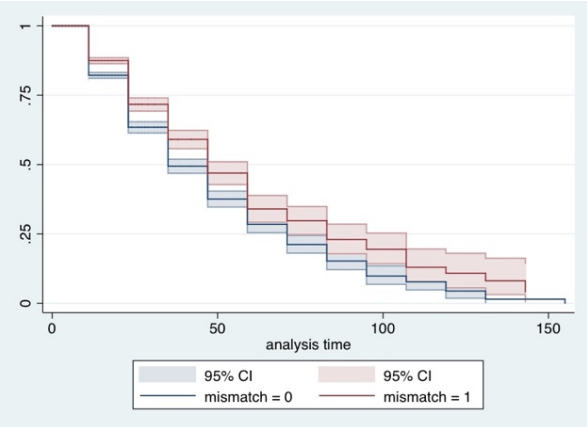

Figure 11: Survivor function for transition from regular part-time work to standard employment by mismatch (n = 7,416).
Source: GSOEP, 2003–2017, own calculations.

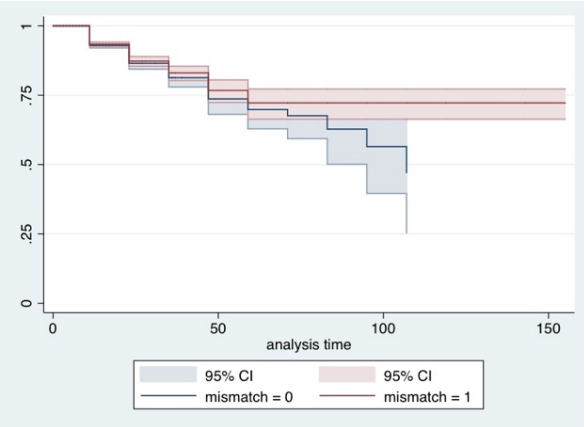

Figure 12: Survivor function for transition from marginal part-time work to standard employment by mismatch (n = 5,937).
Source: GSOEP, 2003–2017, own calculations.

5.2.3. Wages

Regular part-time employees who earn less than 10 Euros per hour were less likely to move to standard employment (Figure 13). Regular part-time workers with higher hourly wages were more likely to have a higher level of education and therefore had greater chances to move to standard employment (see for e.g. Esping-Anderson 2005). Table 3 shows that the highest proportion of highly skilled employees were employed full time. In the case of marginal part-time workers, hourly wage did not play a significant role for the transition to standard work (Figure 14). Based on gender, women in regular part-time work were more likely to transition to standard work if their wage was above 10 Euros per hour than female regular part-time working women who earn less than 10 Euros per hour (Appendix R). Likewise, women and men making more than 10 Euros per hour than female regular part-time working women who earn less than 10 Euros per hour were less likely to transition to inactivity (Appendix S and Appendix T). There were no differences in gender in terms of pay for marginal part-time workers (Appendix U–Appendix X).

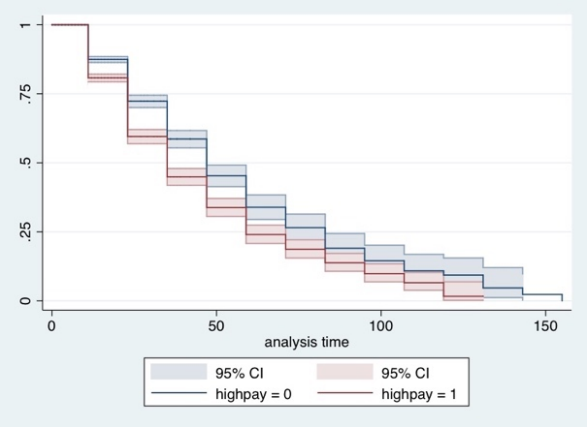

Figure 13: Survivor function for transition from regular part-time work to standard employment by pay (n = 7,416).
Source: GSOEP, 2003–2017, own calculations.

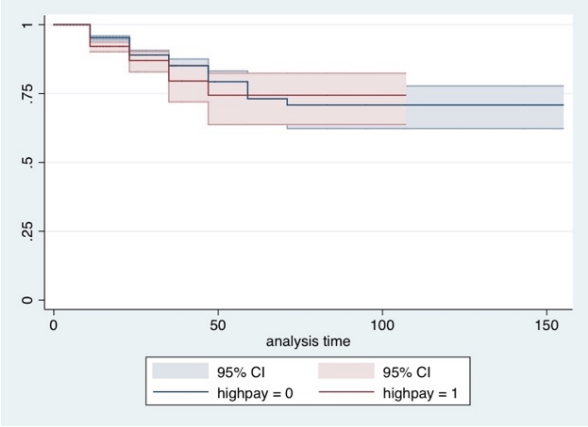

Figure 14: Survivor function for transition from marginal part-time work to standard employment by pay (n = 5,937).
Source: GSOEP, 2003–2017, own calculations.

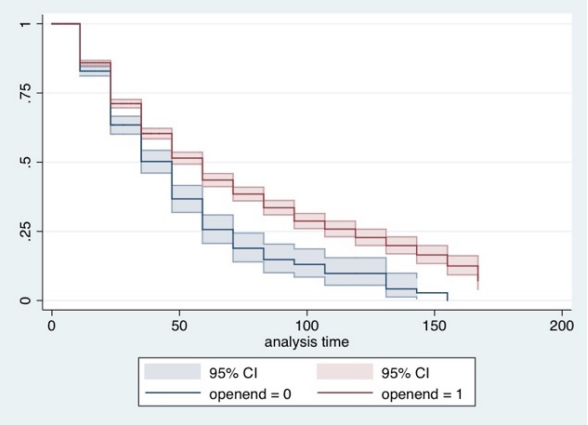

Figure 15: Survivor function for transition from regular part-time work to standard employment by contract (n = 7,416).
Source: GSOEP, 2003–2017, own calculations.

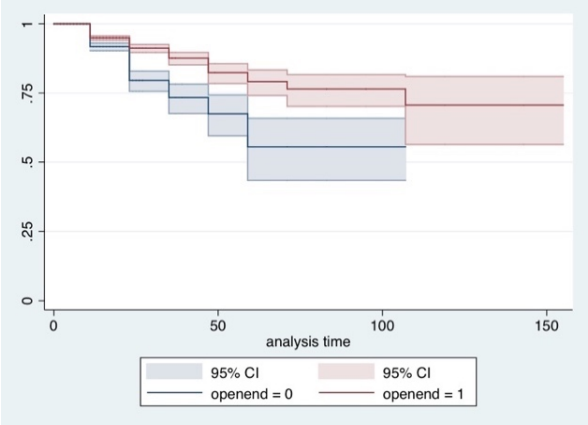

Figure 16: Survivor function for transition from marginal part-time work to standard employment by contract (n = 5,937).
Source: GSOEP, 2003–2017, own calculations.

5.2.4. Contract

The survivor function of regular part-timers showed a faster transition to standard employment for individuals holding temporary contracts (Figure 15). The median duration of individuals with temporary contracts was 47 months compared to 59 months for open-end contracts. Due to labour market flexibilisation theory, workers with temporary contracts are forced to move to the next labour relationship if extension of the contract is not possible. The next job does not have to be another part-time job. In this situation, individuals can choose standard or part-time work. The same pattern was observed for marginal part-time workers; workers with open-end contracts were less likely to move to standard employment (Figure 16). Both men and women in regular part-time jobs with open-end contracts were significantly

less likely to move to standard employment than regular part-time worker with temporary contracts (Appendix X and Appendix Y). The same was observed for the transition to inactivity; men with open-end regular part-time jobs were less likely to enter to inactivity than regular part-time workers with temporary contracts (Appendix AA). There is no significant effect on regular part-time working women by open-end contracts (Appendix BB). In other words, open-end contracts are not explaining the transition to inactivity for women in that case. Furthermore, it is more likely that maternity leave is the reason for inactivity for this group.

In the case of marginal part-time workers, open-end contracts significantly affected the transition to standard employment or inactivity for men and women. Employees in marginal part-time work were more likely to stay in their current employment if they had an open-end contract (Appendix CC–Appendix FF). High-quality jobs with open-end contracts had a negative effect on the transition to the first segment of the labour market and on drop out, especially for marginal part-time workers.

The Kaplan–Meier estimation showed that training, an hourly wage above the low-pay limit and correct match between skill and job duties only affected the transition to standard employment for regular part-time workers, whereas marginal part-time workers were only affected by the presence of temporary contracts. Because of the complexity of and number of variables, Table 4 provides an overview of the Kaplan-Meier results. The survivor function is a descriptive method and does not control for covariates to estimate the true effect of job quality. Therefore, in the next section, the exponential transition model provides estimations of the mechanisms of job quality.

Table 4: Summary of results

	Regular part-time	*Marginal part-time*
Training	• Positive for effect on the transition to standard employment for men and women	• No significant effect on the transition to standard work or inactivity for both gender
Mismatch	• Only significant positive effect on the transition to standard work for women	• No significant effect on the transition to standard work or inactivity for both gender
Wage	• Hourly wage above 10 Euros per hours has a significant positive effect on women's transition to standard employment and a negative on the transition to inactivity • High pay has a negative effect for men's transition to inactivity	• No significant effect on the transition to full-time work or inactivity for both gender
Contract	• Open-end contracts have positive effect on the transition to inactivity for men • Open-end contracts have a negative effect on the transition to standard for men and women	• Open-end contracts have a negative effect on the transition to standard work and inactivity for women

5.3. Effects of Job Quality on the Transition to Standard Employment and Inactivity

Unlike the descriptive method, the exponential transition rate model has the advantage of allowing for the introduction of covariates in the analysis in order to control for individual characteristics. This makes it possible to interpret the effects of a certain outcome. In the previous section, it was only possible to describe distributions. The transition rate model analysis was dependent on a set of covariates (Blossfeld, Golsch and Rohwer 2007, 87). In Table 5–Table 8, job quality variables are introduced into the exponential transition rate model. The tables provide data on the transition from regular part-time work to standard employment or inactivity as well as the transition from marginal part-time work to standard employment and inactivity separated by gender. The job quality variables are coded for high-quality jobs. According to the hypothesis that high job quality has a positive effect on the transition to standard employment, the coefficients of the quality variables had to be positive in the case of transition from part-time to standard employment and negative for the transition to inactivity.

According to the theory of transitional labour markets, there are three main types of transition: integrative and exclusionary (see Reilly and Bothfeld 2002). Integrative transition refers to part-time workers who transition to standard employment, and exclusionary transition applies to employees who transition to inactivity or stay in part-time employment. The following section provides the findings on which job quality elements affect these transitions.

Receiving further training had a positive effect on transition to the first segment of the labour market, though only for female regular part-time workers and male marginal part-time workers (Table 5). Training increased the job exit rate for female regular part-timers by 84.78%[10] and for male marginal part-time workers 196.00% in the case of the transition to standard work. Training seemed to have no effect on all transitions to inactivity. Table 3 shows the educational and skill levels of marginal part-time workers. According to Bellmann et al. (2012), firms invest more in employees with high potential. Training to improve skills is more intensive and expensive. Therefore, companies gain a higher output if they spend more on training for regular part-time workers. Additionally, marginal part-time workers tend to have a lower level of education than regular part-time workers, and as a result, they may be less likely to receive training and will need more training to reach the same skill level as regular part-time workers. Therefore, further training has an integrative effect on transition from the second segment to the first segment of the labour market.

Examining skill matching, a significant effect was only observable for transitions to inactivity for women in all part-time groups (Table 6 and Table 8). However, the effect is the contrary

[10]The percentage effect on job exit rate is calculated by the formula $\Delta\check{r} = (\exp(\alpha_j - 1)) \cdot 100\%$, where α_j is known as the alpha effect (Hannan and Tuma 1979). If the covariate has no effect, alpha takes the value 0 ($\alpha_j = 0$) (Blossfeld, Golsch and Rohwer 2007, 99). For example, here $\Delta\check{r} = (\exp(0.614 - 1)) \cdot 100\% = 84.78$.

for regular and marginal part-time workers: Regular part-time working women with a skill matching job are more likely to move into inactivity than regular part-time working women with skill mismatch (Table 6). A match between skills and job duties increased the job exit rate to inactivity for female regular part-time workers by about 47.99%. This movement could be due to pregnancy, maternity leave or child rearing. The public sector has a high share of high quality part-time jobs. Therefore, it is likely that regular part-time women with skill match work in these jobs. In the private sector the reconciliation of family and work is more promoted than in the private sector (Gornick and Jacobs 1998). The effect on female marginal part-time workers was the opposite; a match between skills and job duties had negative effect on the transition to inactivity (Table 8). A match between skill and job duties decreased the transition to inactivity for marginal part-time working women by 26.34%.

It seems that working in the same occupation the individual has been trained for has different outcomes for regular and marginal part-time workers. The presence of a match between skills and job duties had an integrative effect for regular part-time workers and an exclusionary effect for marginal part-time workers.

High-quality jobs in terms of pay had an contrary effect on regular and marginal part-time workers. Pay above 10 Euros per hour had a positive effect on female regular part-time workers' transition to standard employment (Table 5). An hourly wage above the pay limit increased the transition rate to standard employment for women by 41.2%. For the transition to inactivity, the effect is significant for both genders in regular part time; men were especially less likely to transition to inactivity if they earned more than 10 Euros per hour. Earning more than 10 Euros per hour decreased men's transition to inactivity by 208.33% and women's by only 152.00%. It seems that men are more motivated by monetary gain than women. According to some scholars (e.g., Brehmer and Seifert 2008; Gensicke et al. 2010), women have less desire to enter standard employment than men because of family responsibilities. Therefore, it is conceivable that women in regular part-time jobs have less interest in monetary gain. Nonetheless, being paid more than 10 Euros per hour had an integrative effect for both genders.

However, the negative effect of high pay on marginal part-time workers' upward mobility cannot be explained by this argument. It is well-known that marginal part-time employees suffer from wage penalties (Wolf 2014). In terms of pay, marginal part-time workers constitute a group in the low-pay and low-skill sector of Germany's labour market (Caliendo, Kuenn and Uhlendorff 2012; Steiner and Wrohlich 2005, 92). Therefore, marginal part-time workers represent a special group in terms of low pay because of low qualifications and illegal wage dumping by companies (Voss and Weinkopf 2012). For them, the real reason for upward mobility is low skills instead of pay. Low skilled workers are concentrated in the marginal part-time jobs. Jobs that require less skills generally have lower wages than highly qualified jobs. Here a compositional effect is probable because high skills effect positively wages. For marginal part-time workers, the effect of high-quality jobs is exclusionary.

Job security is more likely to have an effect on women than on men. Based on the Kaplan–Meier estimations, it is evident that women tended to stay longer in part-time work than men. Holding an open-end contract (high-quality job) have an exclusionary effect on moving to the first segment of the labour market. On the one hand, open-end contracts hinder workers to move to inactivity. On the other hand, the binding characteristic of open-end contracts prevent moving to the first segment of the labour market. Workers with open-end contracts are more likely to stay in a lateral[11] position in their jobs. This is caused by high job security; individuals with expiring working contracts are forced to look for another job if the employer does not prolong the contract. It is evident than women are more affected by open-end contracts, while marginal part-time workers are less affected. Open-end contracts decreased the job exit rate by 38.2% for female regular part-time workers compared to temporary contracts. Open-end contracts decreased the job exit rate to inactivity by 47% for regular part-time working women and 63% for men

This effect was weaker for marginal part-time workers; open-end contracts only decreased marginal part-time women's job transition rates to inactivity by 30.9% (Table 8). In sum, open-end contracts hinder transition to inactivity and the first segment of the labour market because its effects favour lateral moves. However, it can be said that marginal part-time workers benefit less from the effect than regular part-time workers, and marginal workers receive no benefits in terms of moving to standard employment.

The exponential transition rate model shows similar results for regular part-time workers than the product-limit estimator: Training has a positive effect on women's transition to standard work. Mismatch has a positive effect on women's transition to inactivity. In the case of wage, women who earn more than 10 Euros per hour are more likely to move to f standard work than women who earn less than 10 Euros per hour. Men with a higher hourly wage than 10 Euros are less likely to move to inactivity. Open-end contracts affect women's transition to inactivity negatively compared to women with temporary contracts.

The multivariate analyses discovered more significant effects than the Kaplan-Meier estimation for marginal part-time workers: The job-quality dimension of training has a significant positive effect on men's transition to f standard. Skill matching has a positive effect on women's transition to inactivity. The same pattern we observed for regular part-time working women. Male marginal part-time workers with an hourly wage above 10 Euros are less likely to move to standard than men with less than 10 Euros per hour. High wage has a positive effect on the transition to inactivity for female workers. The job-quality dimension of wage affects regular and marginal part-time workers contrary. Open-end contracts prevent women to move to inactivity. Therefore, with the exponential transition rate model it is possible to explore the effects especially on marginal part-time workers.

[11]Lateral means that the individual is not moving up or down but stays in the same position.

Table 5: Exponential transition rate model for regular part-time work to standard employment (integrative transition)

	Model 1		Model 2		Model 3		Model 4		Model 5	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Control variables[12]	:	:	:	:	:	:	:	:	:	:
Explanatory variables (high-quality)										
Training	.	.	0.790	**0.614****	.	.	.	.	.	.
Skill match	.	.	.	.	-0.190	0.057	.	.	.	.
Hourly wage above wage limit	.	.	.	.	.	.	0.090	**0.350****	.	.
Open-end contract	.	.	.	.	.	.	.	.	-0.249	**-0.481****
Constant	-4.294	-5.486	-4.062	-5.289	-4.188	-5.356	-4.100	-5.775	-4.194	-5.145
Log-Likleyhood (starting)	-619.889	-1356.243	-569.363	-1280.426	-599.670	-1328.908	-494.729	-1236.827	-429.607	-1099.061
Log-Likleyhood (estim.)	-598.413	-1322.683	-544.664	-1247.064	-572.91	-1294.44	-475.707	-1195.962	-409.8004	-1066.984
Number of observations	2945	9683	2758	9273	2826	9509	2315	8482	2226	7293

Note: + p<.10, * p<.05, ** p<.01, *** p<.001; Source: GSOEP, 2003–2017, own calculations.

Table 6: Exponential transition rate model for regular part-time work to inactivity (exclusionary transition)

	Model 1		Model 2		Model 3		Model 4		Model 5	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Control Variables[13]	:	:	:	:	:	:	:	:	:	:
Explanatory variables (High-quality)										
Training	.	.	-0.412	0.259	.	.	.		.	.
Skill match	.	.	.	.	0.033	**0.392***	.		.	.
Hourly wage above wage limit	.	.	.	.	.	.	**-1.126*****	**-0.925*****	.	.
Open-end contract	.	.	.	.	.	.	.		**-0.999*****	**-0.601*****
Constant	-3.303	-5.963	-3.400	-5.961	-3.624	-5.723	-3.874	-6.565	-3.361	-5.331
Log-Likleyhood (starting)	-472.613	-1395.551	-439.522	-1326.225	-442.785	-1379.247	-351.329	-1279.934	-318.514	-1169.422
Log-Likleyhood (estim)	-432.655	-1278.094	-402.917	-1211.150	-407.951	-1258.005	-304.516	-1140.049	-290.325	-1057.976
Number of Observations	2945	9683	2760	9287	2826	9509	2315	8482	2226	7293

Note: + p<.10, * p<.05, ** p<.01, *** p<.001; Source: GSOEP, 2003–2017, own calculations.

[12] The tables with the coefficients of the control variables can be find in the Appendix GG.
[13] The tables with the coefficients of the control variables can be find in the Appendix HH.

Table 7: Exponential transition rate model for marginal part-time work to standard employment (integrative transition)

	Model 1		Model 2		Model 3		Model 4		Model 5	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Control Variables[14]	:	:	:	:	:	:	:	:	:	:
Explanatory variables (High-quality)										
Training	.	.	**1.673***	0.547	.	.	.	.	.	.
Skill match	.	.	.	.	0.328	0.337	.	.	.	.
Hourly wage above wage limit	.	.	.	.	.	.	**-0.996***	-0.426	.	.
Open-end contract	.	.	.	.	.	.	.	.	-0.326	-0.107
Constant	-7.453	-6.959	-7.450	-6.804	-7.424	-6.699	-22.427	-7.682	-7.136	-6.574
Log-Likleyhood (starting)	-238.503	-648.911	-215.212	-563.436	-208.718	-595.023	-142.613	-453.791	-162.737	-464.304
Log-Likleyhood (estim.)	-206.859	-599.628	-183.780	-519.947	-180.036	-550.416	-120.818	-421.825	-137.231	-429.566
Number of Observations	2061	8386	1840	7814	1869	7959	1469	6829	1344	6095

Note: + p<.10, * p<.05, ** p<.01, *** p<.001; Source: GSOEP, 2003–2017, own calculations.

Table 8: Exponential transition rate model for marginal part-time work to inactivity (exclusionary transition)

	Model 1		Model 2		Model 3		Model 4		Model 5	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Control Variables[15]	:	:	:	:	:	:	:	:	:	:
Explanatory variables (High-quality)										
Training	.	.	-12.715	0.239	.	.	.	.	.	.
Skill match	.	.	.	.	0.113	**-0.307***	.	.	.	.
Hourly wage above wage limit	.	.	.	.	.	.	0.106	**0.459***	.	.
Open-end Contract	.	.	.	.	.	.	.	.	-0.207	**-0.369 ***
Constant	-4.610	-4.471	-4.684	-4.903	-4.709	-4.825	-6.379	-4.415	-5.105	-4.699
Log-Likleyhood (starting)	-592.609	-1282.257	-522.578	-1163.722	-548.193	-1208.091	-319.613	-928.426	-366.299	-847.322
Log-Likleyhood (estim.)	-544.316	-1159.020	-479.212	-1057.774	-502.116	-1093.451	-291.546	-835.746	-322.619	-776.742
Number of Observations	2061	6325	1837	5984	1869	6090	1469	5360	1344	4751

Note: + p<.10, * p<.05, ** p<.01, *** p<.001; Source: GSOEP, 2003–2017, own calculations.

[14] The tables with the coefficients of the control variables can be find in the Appendix II.

[15] The tables with the coefficients of the control variables can be find in the Appendix JJ.

6. Conclusion

This paper demonstrated the effect of job quality on the transition from the secondary to the primary segment of the labour market in Germany. The secondary segment of the labour market has increased in Germany due to active labour market policies implemented in the last two decades. Applying event history analysis techniques to micro-level data from the German SOEP, this paper studied the impact of job quality on the transition from regular and marginal part-time work to standard employment or inactivity.

The number of part-time workers has increased as women have entered the labour market through these jobs. The results of this paper show a large polarisation between part-timers; transitions to the first segment of the labour market are much more likely for regular part-timers than for marginal ones. Women are more likely to stay in regular and marginal part-time work than men, which matches the results of Gazier and Gautié (2009), Schmid (2002), Gash (2008) and Reilly and Bothfeld (2002). Because most part-time workers (and especially marginal ones) are women, firms use flexibility to extend the second segment of the labour market to female workers in atypical employment (see Goldthrop 1985). Marginal part-time workers get stuck at the margin of the labour market. Additionally, it seems that marginal part-time work is creating a divide within the second segment of the labour market. This increases the likelihood of social exclusion and should signal the need for political interventions.

The hypothesis that high job quality affects transition to the first segment of the labour market could not be confirmed for all dimensions of job quality and all types of part-time work. The only dimension of job quality that helped marginal part-time workers to enter the first segment of the labour market was training, and this only applied to men. Further training and a pay above the minimum pay limit had a positive effect on regular part-time workers' transition to the first segment of the labour market. In for both part-time types, the increase in human capital seemed to have the largest impact on the transition to the first segment.

The labour market segmentation theory focuses on employers' roles and the particular forms of labour market regulation. According to this theory, employers wish to retain highly qualified core employees. Employers offer jobs and are responsible for the quality of those jobs. Therefore, they are not interested in investing in marginal part-time workers. Labour market regulation allows them to make free choices in terms of working conditions, for example, lowering pay and not offering training opportunities to reduce costs. Open-end contracts are characteristic of less flexible labour markets because they build a barrier to prevent movement to the first segment of the labour market. With the flexibilisation of the German labour market and the increase in marginal part-time employment, a highly precarious group with less opportunities to transition was created.

However, labour market flexibilisation allows workers to balance family and career with regular part-time work. Therefore, it cannot be assumed that regular part-time jobs necessarily affect workers' lives negatively. This and other research shows that it is highly difficult to transition to the first segment. Additionally, legal regulations downgrade life expectations of these workers by the exclusion of social distributions (e.g., health insurance

and pension). This research shows that further training favours the transition of marginal part-time employees to the first segment of the labour market. Therefore, training opportunities should be a major concern for policymakers.

The study has some limitations. The event history analysis was conducted using panel data. Therefore, the start and ending time of the episode were coded using the year and month of interview. Therefore, the real timepoint of the events may differ from the date of interview. Further research should focus on other variables of job quality (e.g., psychological pressure and career networks). Other household-based variables, like the employment status of the partner, could also be controlled for to explore decision-making processes at the household level. Another interesting independent variable could be voluntary vs. involuntary part-time work. This could reveal to what extent employees have aspirations to transition to the first segment of the labour market, avoiding negative overestimations about atypical employment.

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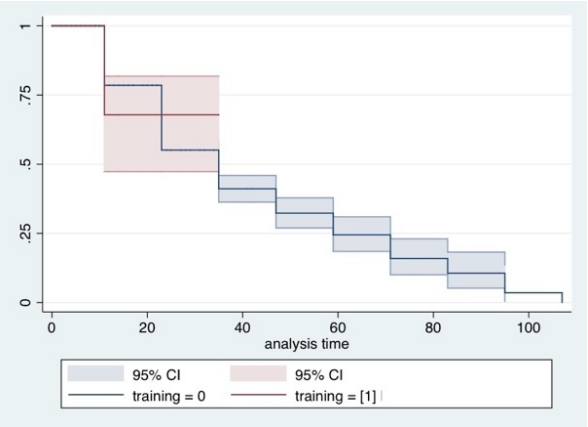
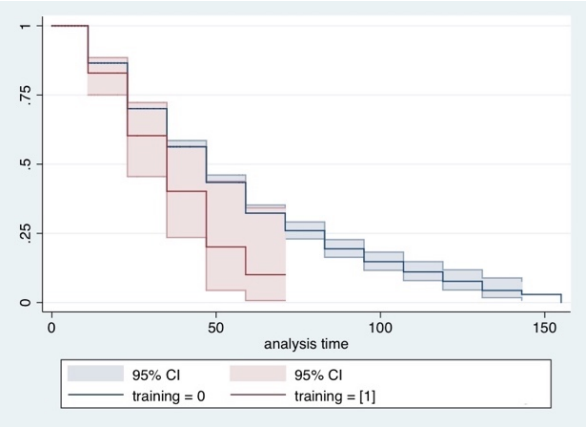
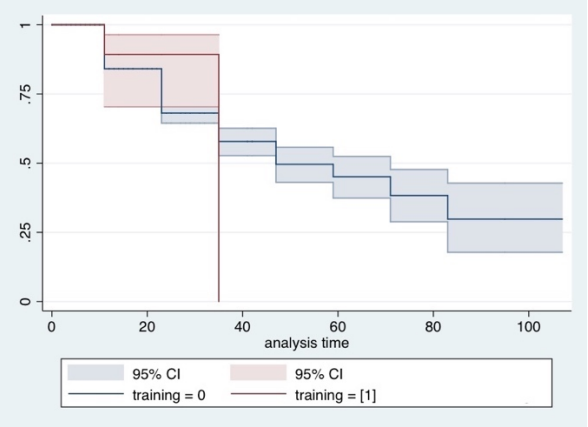
Apendix



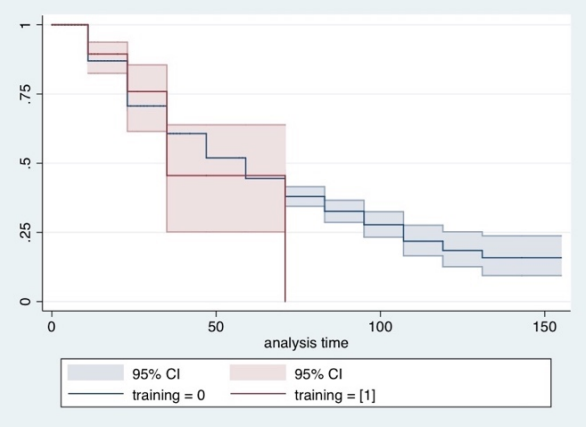
Appendix A: Survivor function for regular part-time to standard Employment by training for men
Source: GSOEP, 2003–2017, own calculations.



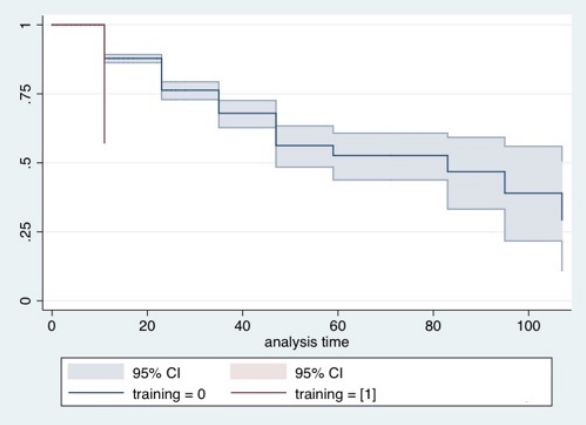
Appendix B: Survivor function for regular part-time to standard employment by training for women
Source: GSOEP, 2003–2017, own calculations.



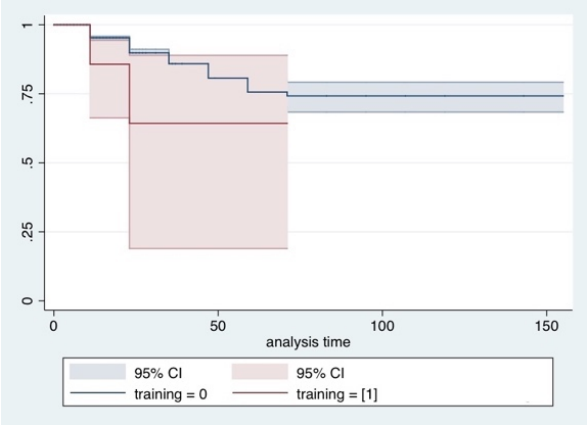
Appendix C: Survivor function for regular part-Time to inactivity by training for men
Source: GSOEP, 2003–2017, own calculations.



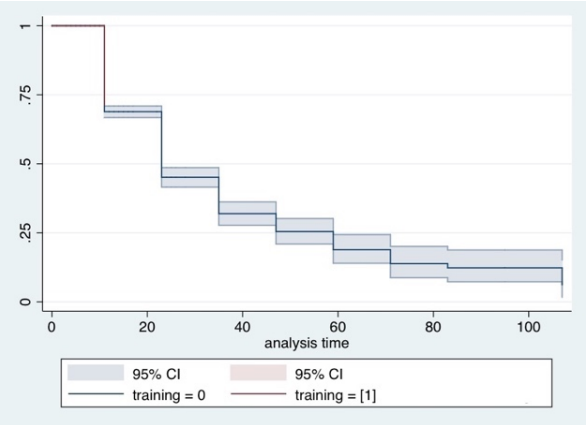
Appendix D: Survivor function for regular part-time to inactivity by training for women
Source: GSOEP, 2003–2017, own calculations.



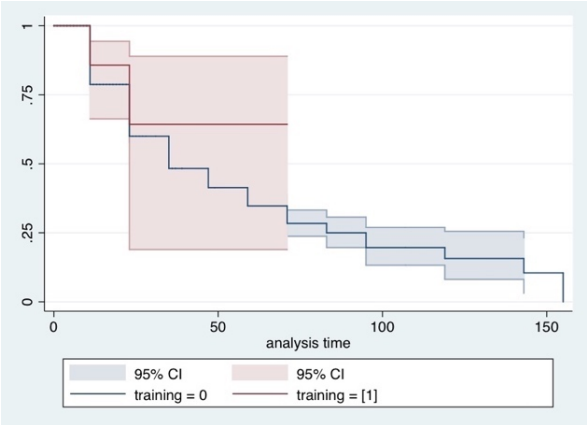
Appendix E: Survivor function for marginal part-time to standard employment by training for men
Source: GSOEP, 2003–2017, own calculations.



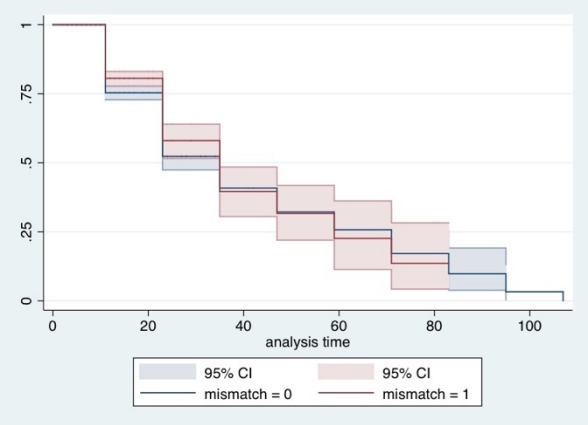
Appendix F: Survivor function for marginal part-time to standard employment by training for women
Source: GSOEP, 2003–2017, own calculations.



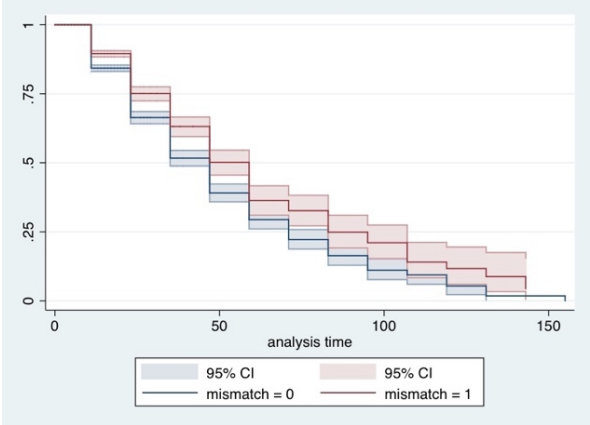
Appendix G: Survivor function for marginal part-time to inactivity by training for men
Source: GSOEP, 2003–2017, own calculations.



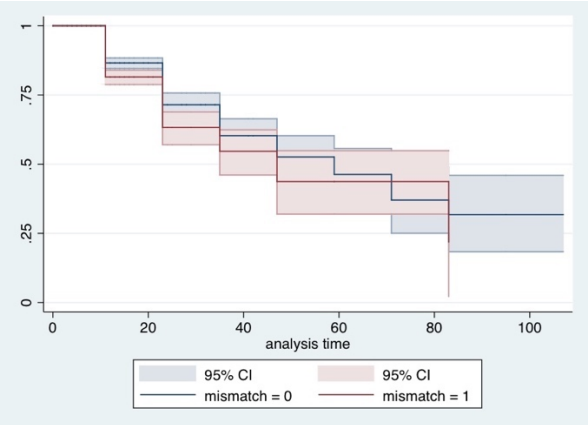
Appendix H: Survivor function for marginal part-time to inactivity by training for women
Source: GSOEP, 2003–2017, own calculations.



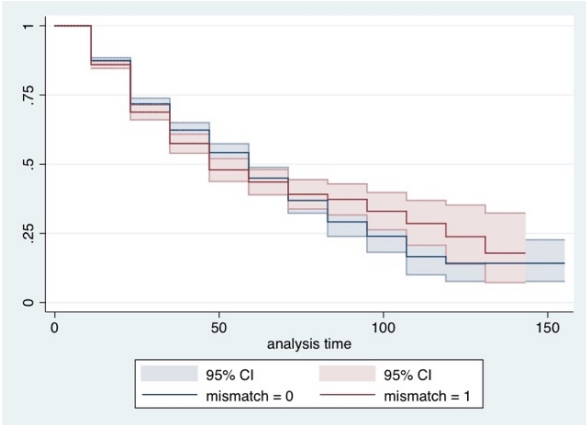
Appendix I: Survivor function for regular part-time to standard employment by mismatch for men
Source: GSOEP, 2003–2017, own calculations.



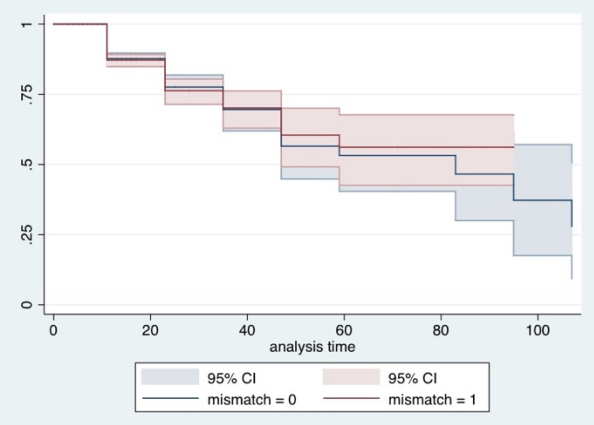
Appendix J: Survivor function for regular part-time to standard employment by mismatch for women
Source: GSOEP, 2003–2017, own calculations.



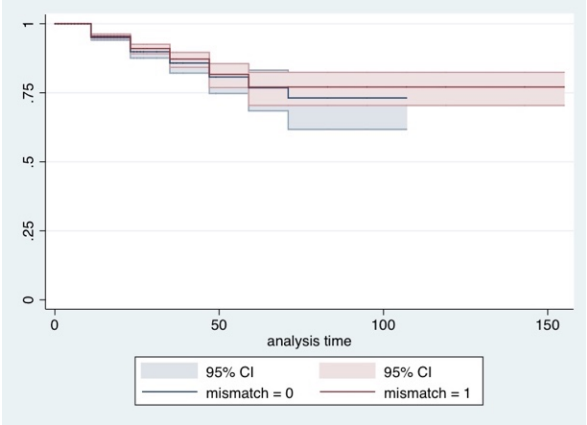
Appendix K: Survivor function for regular part-time into inactivity by mismatch for men
Source: GSOEP, 2003–2017, own calculations.



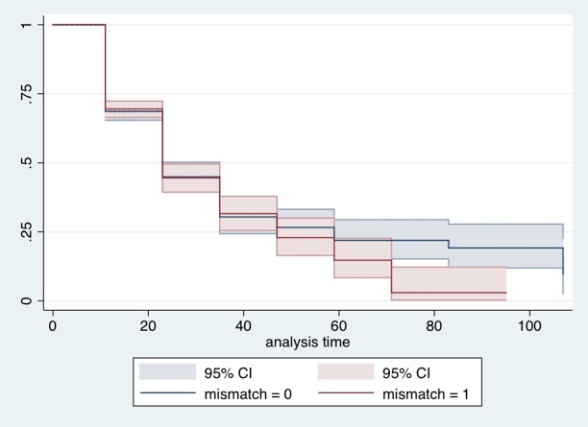
Appendix L: Survivor Function for regular part-time to inactivity by mismatch for women
Source: GSOEP, 2003–2017, own calculations.



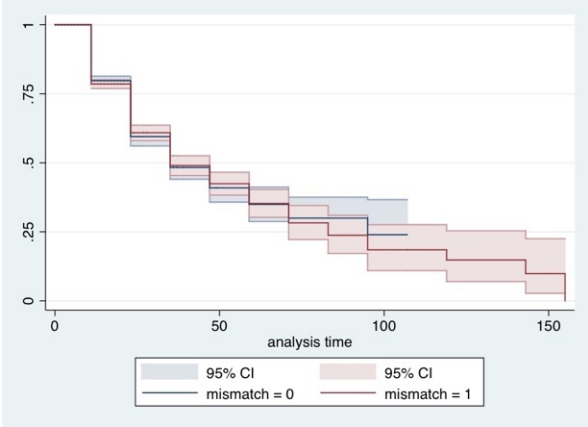
Appendix M: Survivor function for marginal part-time to standard employment by mismatch for men
Source: GSOEP, 2003–2017, own calculations.



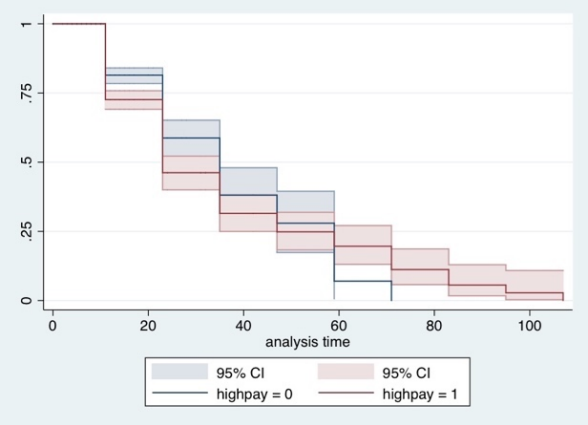
Appendix N: Survivor function for marginal part-time to standard employment by mismatch for women
Source: GSOEP, 2003–2017, own calculations.



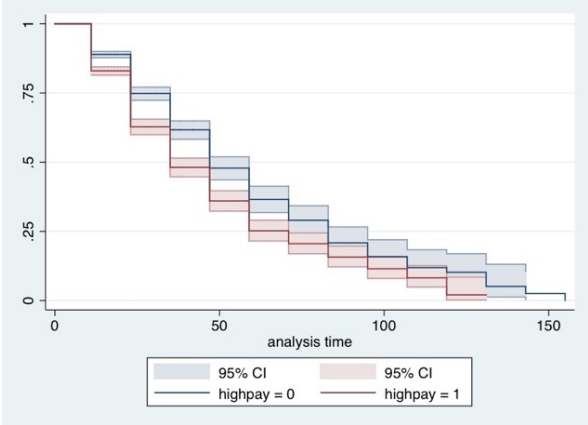
Appendix O: Survivor function for marginal part-time to inactivity by mismatch for men
Source: GSOEP, 2003–2017, own calculations.



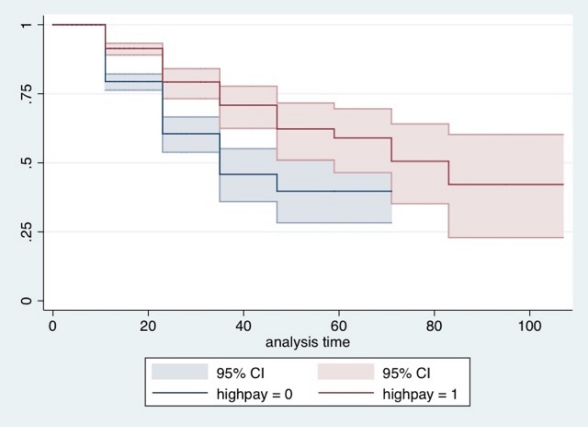
Appendix P: Survivor function for marginal part-time to inactivity by mismatch for women
Source: GSOEP, 2003–2017, own calculations.



Appendix Q: Survivor function for regular part-time to standard employment by hourly pay for men
Note: Dummy 0 is less than 10 Euros per hour and 1 is more than than 10 Euros per hours
Source: GSOEP, 2003–2017, own calculations.



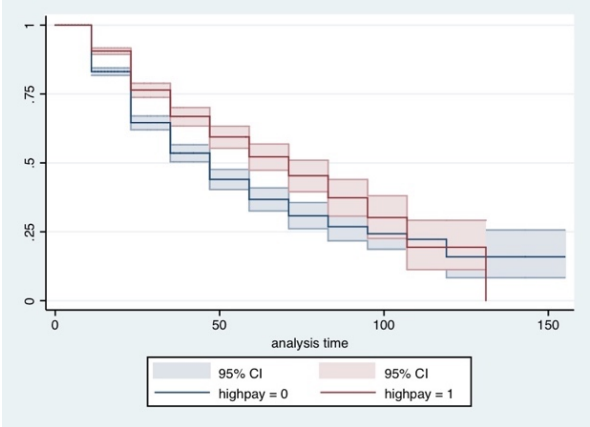
Appendix R: Survivor Function for regular part-time to standard employment by hourly pay for women
Note: Dummy 0 is less than 10 Euros per hour and 1 is more than than 10 Euros per hours
Source: GSOEP, 2003–2017, own calculations.



Appendix S: Survivor function for regular part-time to inactivity by hourly pay for men

Note: Dummy 0 is less than 10 Euros per hour and 1 is more than than 10 Euros per hours

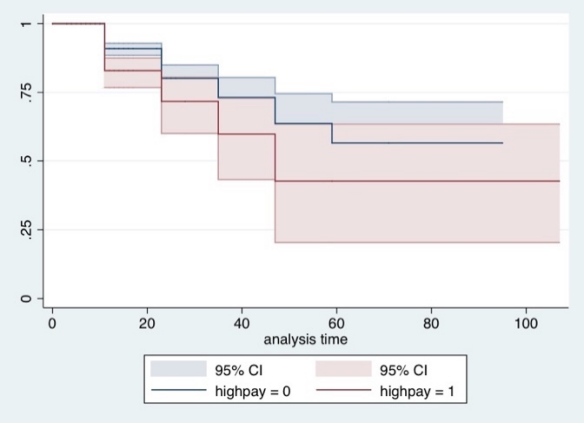
Source: GSOEP, 2003–2017, own calculations.



Appendix T: Survivor function for regular part-time to inactivity by hourly pay for women

Note: Dummy 0 is less than 10 Euros per hour and 1 is more than than 10 Euros per hours

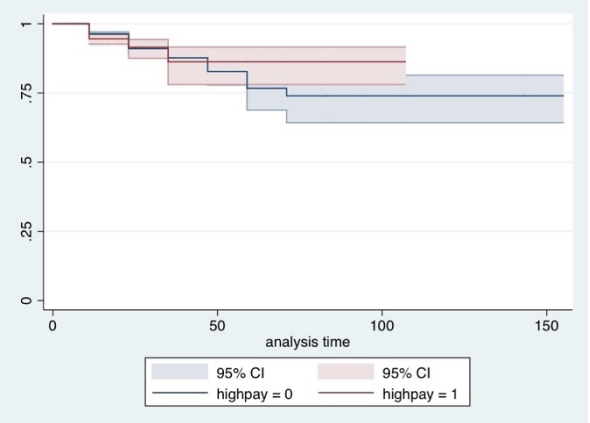
Source: GSOEP, 2003–2017, own calculations.



Appendix U: Survivor function for marginal part-time to standard employment by hourly pay for men

Note: Dummy 0 is less than 10 Euros per hour and 1 is more than than 10 Euros per hours

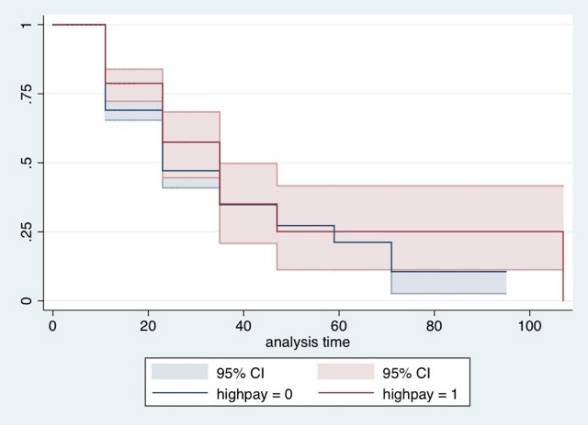
Source: GSOEP, 2003–2017, own calculations.



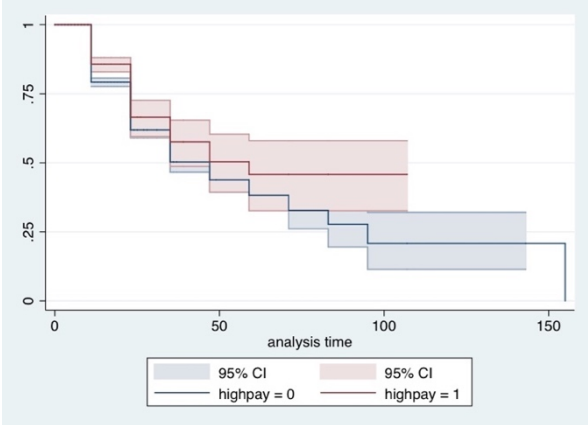
Appendix V: Survivor function for marginal part-time to standard employment by hourly pay for women

Note: Dummy 0 is less than 10 Euros per hour and 1 is more than than 10 Euros per hours

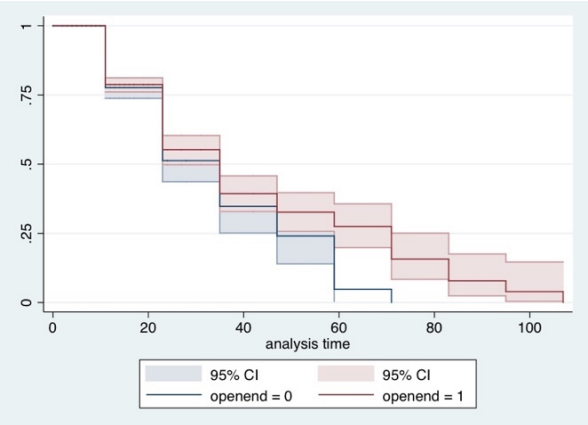
Source: GSOEP, 2003–2017, own calculations.



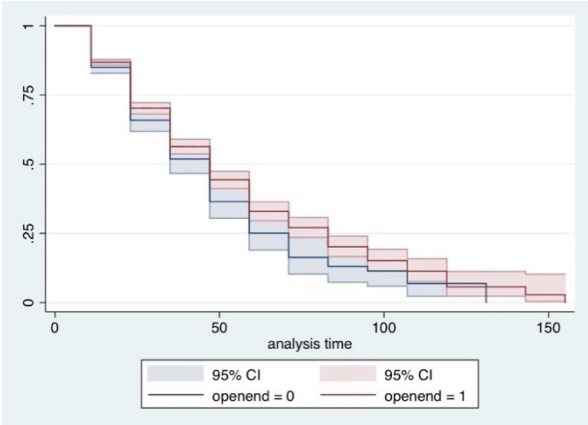
Appendix W: Survivor function for marginal part-time to inactivity by hourly pay for men
Note: Dummy 0 is less than 10 Euros per hour and 1 is more than than 10 Euros per hours
Source: GSOEP, 2003–2017, own calculations.



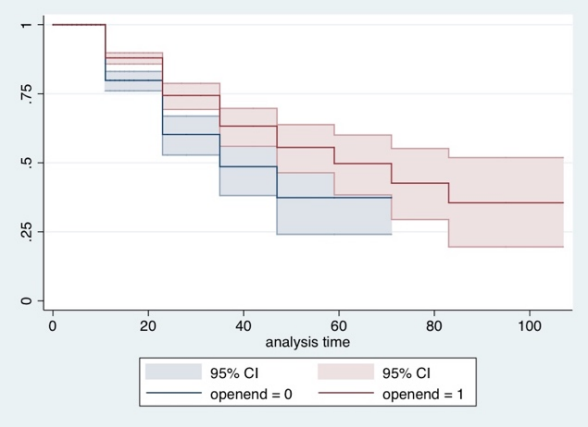
Appendix X: Survivor function for marginal part-time to inactivity by hourly pay for women
Note: Dummy 0 is less than 10 Euros per hour and 1 is more than than 10 Euros per hours
Source: GSOEP, 2003–2017, own calculations.



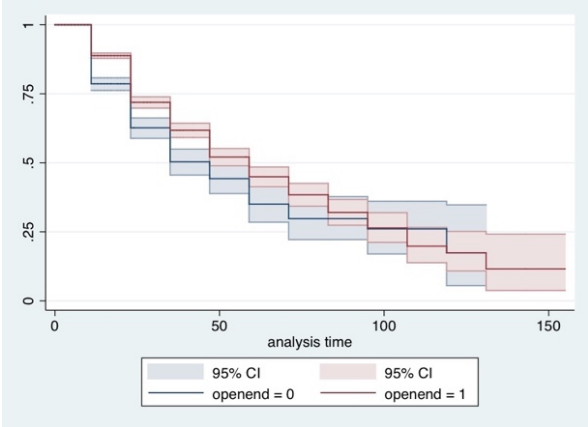
Appendix Y: Survivor function for regular part-time to standard employment by open-end contract for men
Source: GSOEP, 2003–2017, own calculations.



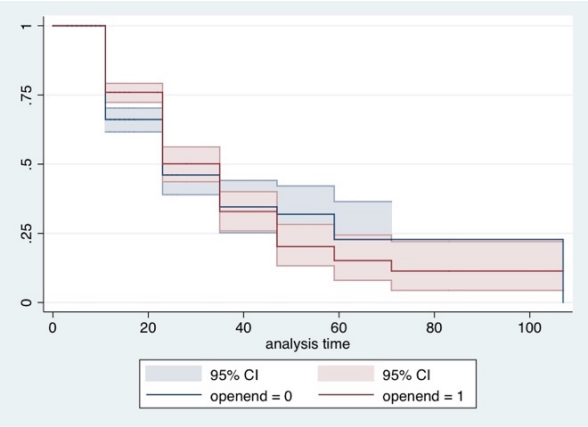
Appendix Z: Survivor function for regular part-time to standard employment by open-end contract for women
Source: GSOEP, 2003–2017, own calculations.



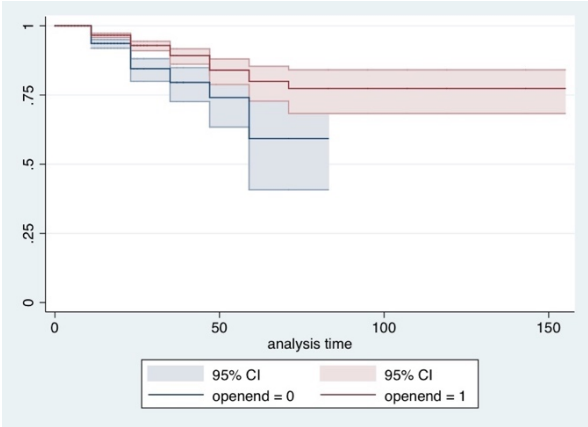
Appendix AA: Survivor function for regular part-time to inactivity by open-end contract for men
Source: GSOEP, 2003–2017, own calculations.



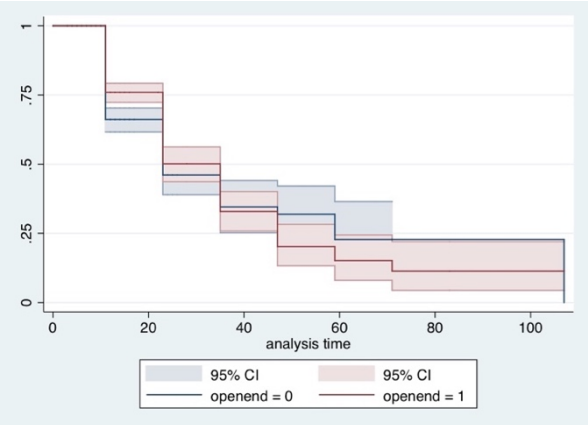
Appendix BB: Survivor function for regular part-time to inactivity by open-end contract for women
Source: GSOEP, 2003–2017, own calculations.



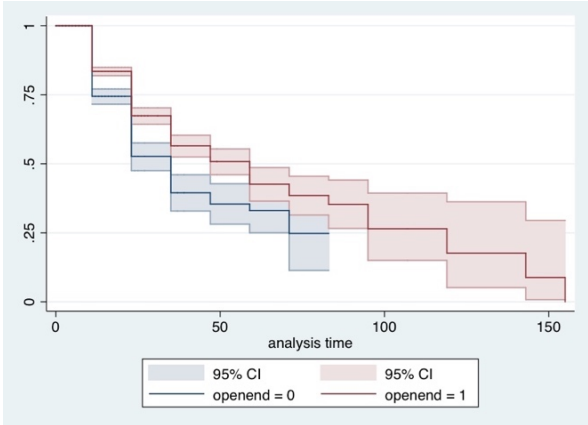
Appendix CC: Survivor function for marginal part-time to standard employment by open-end contract for men
Source: GSOEP, 2003–2017, own calculations.



Appendix DD: Survivor function for marginal part-time to standard employment by open-end contract for women
Source: GSOEP, 2003–2017, own calculations.



Appendix EE: Survivor function for marginal part-time to inactivity by open-end contract for men
Source: GSOEP, 2003–2017, own calculations.



Appendix FF: Survivor Function for marginal part-time to inactivity by open-end contract for women
Source: GSOEP, 2003–2017, own calculations.

Appendix GG: Exponential transition rate mode for regular part-time into standard employment (Integrative Transition) (inkl. coefficients of control variables)

	Model 1		Model 2		Model 3		Model 4		Model 5	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Age (ref.: > 24)										
25 - 34	-0.528	-0.022	-0.636*	-0.139	-0.700*	-0.201	-0.669*	-0.192	-0.436	0.237
35 >	-1.248***	-0.637*	-1.482***	-0.750*	-1.485***	-0.812*	-1.452***	-0.645*	-1.027**	-0.239
Living in West Germany	-0.2553	0.294*	-0.322	0.310*	-0.313	0.290*	-0.147	0.209	-0.233	0.201
Firm size (ref.: <20)										
middle (20-200)	-0.056	-0.081	-0.044	-0.090	-0.107	-0.061	-0.127	-0.144	0.086	-0.182
high (200-2000)	-0.061	0.010	0.0385	0.066	-0.185	0.011	-0.099	0.060	-0.042	-0.042
very high (>2000)	-0.186	0.046	-0.147	0.054	-0.239	0.051	-0.245	0.082	-0.091	-0.042
Education (ref.: Low or no school qualification)										
Middle school qualification	-0.232	-0.333	-0.190	-0.348*	-0.188	-0.344*	-0.260	-0.394*	-0.161	-0.442*
High school qualification	0.107	0.123	-0.085	0.089	0.215	0.163	0.158	0.153	-0.099	0.042
University degree	-0.010	0.073	-0.190	-0.016	0.036	0.052	-0.075	0.102	-0.508	-0.034
Professional status (ref.: Higher Managerial and Profession										
Lower Managerial and Profession	-0.312	-0.018	-0.388	-0.083	-0.320	-0.046	-0.358	0.196	-0.372	-0.047
Routine Clerical Work	-0.121	0.368	-0.202	0.463	-0.103	0.314	-0.103	0.559*	-0.176	0.290
Routine Service and Sales Worker	-0.603	0.056	-0.520	0.023	-0.698	-0.075	-0.624	0.033	-0.701	-0.227
Skilled Manual Workers	-0.267	0.203	-0.410	0.262	-0.265	0.188	-0.452	0.250	-0.829	0.229
Semi- and Unskilled Manual Worker	-0.145	-0.089	-0.226	-0.053	-0.096	-0.090	-0.189	0.030	-0.536	-0.302

Appendix GG: Continued…

	Model 1		Model 2		Model 3		Model 4		Model 5	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Sector (Ref.: Industry)										
Agriculture	-0.975	-13.090	-0.982	-12.237	-1.045	-12.819	-0.555	-12.031	-0.094	-11.314
Construction	0.232	-0.292	0.380	-0.288	0.151	-0.2612	0.367	-0.175	0.858	0.009
Commerce and hospitality	0.338	0.076	0.287	-0.009	0.309	0.109	0.363	0.101	0.494	0.092
Transport	-0.205	-0.346	-0.046	-0.361	-0.016	-0.325	0.193	-0.113	0.072	-0.156
Financial services	0.0216	-0.156	0.158	-0.194	0.188	-0.120	0.312	0.072	0.301	-0.267
Public administration	0.134	-0.570	0.249	-0.657	0.288	-0.534	0.543	-0.410	0.399	-0.427
Education	0.052	0.088	0.204	-0.011	-0.013	0.139	0.132	0.258	0.402	0.005
Health care	0.070	0.019	0.124	-0.041	-0.012	0.060	0.093	0.061	0.228	-0.017
Other services	-0.110	0.271	-0.094	0.163	-0.208	0.299	0.204	0.311	0.142	0.294
Being Married	0.083	0.053	0.038	0.022	0.093	0.065	0.263	0.045	-0.120	0.106
Numb. Children in household (Ref.: 0)										
1	0.397	0.096	0.427	0.045	0.326	0.087	0.259	0.030	0.542*	0.137
2	0.298	-0.083	0.410	-0.074	0.274	-0.109	0.050	-0.143	0.467	-0.214
<3	0.370	-0.204	0.403	-0.151	0.370	-0.265	-0.269	-0.394	-0.159	-0.328
Explanatory variables (high-quality)										
Training	.	.	0.790	**0.614****	.	.	.	.	.	.
No Skill mismatch	.	.	.	.	-0.190	0.057	.	.	.	.
Hourly wage above wage limit	.	.	.	.	.	.	0.090	**0.350****	.	.
Open-end contract	.	.	.	.	.	.	.	.	-0.249	**-0.481****
Constant	-4.294	-5.486	-4.062	-5.289	-4.188	-5.356	-4.100	-5.775	-4.194	-5.145
Log-Likleyhood (starting)	-619.889	-1356.243	-569.363	-1280.426	-599.670	-1328.908	-494.729	-1236.827	-429.607	-1099.061
Log-Likleyhood (estim.)	-598.413	-1322.683	-544.664	-1247.064	-572.91	-1294.44	-475.707	-1195.962	-409.8004	-1066.984
Number of observations	2945	9683	2758	9273	2826	9509	2315	8482	2226	7293

Note: + p<.10, * p<.05, ** p<.01, *** p<.001; Source: GSOEP, 2003–2017, own calculations.

Appendix HH: Exponential transition rate model for regular part-time into inactivity (Exclusionary Transition) (inkl. coefficients of control variables)

	Model 1		Model 2		Model 3		Model 4		Model 5	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Age (Ref.: > 24)										
25 - 34	-1.941***	-0.378	-1.792***	-0.546*	-1.869***	-0.545*	-2.417***	-0.305	-1.846***	-0.191
35 >	-1.382***	-1.628***	-1.297***	-1.806***	-1.336***	-1.835***	-1.268**	-1.391***	-0.932*	-1.349***
Living in West Germany	0.587	-0.154	0.520*	-0.168	0.547*	-0.165	0.458	-0.234	0.534	-0.208
Firm size (Ref.: <20)										
Middle (20-200)	-0.611	0.008	-0.693**	-0.168	-0.633*	0.002	-0.662*	-0.017	-0.260	0.055
High (200-2000)	-0.611	-0.068	-0.540	-0.008	-0.761*	-0.014	-0.426	0.072	-0.507	-0.105
Very high (>2000)	-0.084	0.218	-0.104	0.244	-0.159	0.228	0.051	0.270	0.277	0.311
Education (Ref.: Low or no school qualification)										
Middle school qualification	-0.443	-0.113	-0.256	-0.092	-0.354	-0.136	-0.464	-0.088	-0.403	-0.241
High school qualification	-0.288	0.145	-0.214	0.128	-0.135	0.149	-0.258	0.230	-0.177	0.037
University degree	-0.639	0.504	-0.519	0.498**	-0.488	0.479**	-0.429	0.548**	-0.401	0.333
Professional status (Ref.: Higher Managerial and Profession										
Lower Managerial and Profession	-0.190	0.323	-0.129	0.425	-0.106	0.265	0.081	0.351	-0.388	0.294
Routine Clerical Work	-0.372	0.283	-0.795	0.390	-0.369	0.173	-0.094	0.150	-0.115	0.144
Routine Service and Sales Worker	-0.111	0.824**	-0.081	0.947**	-0.049	0.642	-0.057	0.633*	0.261	0.705*
Skilled Manual Workers	0.005	0.4147912	0.179	0.233	0.226	0.269	-0.415	0.007	0.191	0.430
Semi- and Unskilled Manual Worker	0.241	0.719**	0.187	0.810**	0.400	0.489	0.054	0.491	0.246	0.660*

Appendix HH: Continued…

	Model 1		Model 2		Model 3		Model 4		Model 5	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Sector (Ref.: Industry)										
Agriculture	-14.099	0.695	-14.689	0.743	-13.501	0.681	-11.773	0.809	-10.646	0.877
Construction	-0.451	0.358	-0.366	0.187	-0.399	0.301	-0.367	0.616	-0.492	0.715
Commerce and hospitality	-0.382	0.456	-0.338	0.380	-0.370	0.379	-0.709	0.516*	-0.545	0.274
Transport	-0.851	-0.368	-0.711	-0.390	-0.589	-0.501	-0.936	-0.147	-0.826	-0.596
Financial services	0.010	-0.482	0.005	-0.459	-0.435	-0.536	-1.256	-0.937	0.0712	-0.479
Public administration	-0.726	-1.132**	-0.772	-1.113**	-0.583	-1.181**	-0.558	-1.016**	-0.288	-1.211
Education	-0.993	-0.276	-0.913	-0.324	-0.926	-0.276	-1.785	-0.066	-1.500*	-0.502
Health care	-0.908	0.095	-0.916	0.095	-0.780	0.094	-1.265	0.163	-0.731	-0.085
Other services	-0.855**	0.280	-0.953	0.258	-0.833**	0.196	-1.300	0.297	-0.654	0.149
Being Married	0.305	0.597***	0.349	0.554***	0.437	0.597***	0.534	0.588***	0.213	0.586***
Numb. Children in household (Ref.: 0)										
1	-0.821*	0.634***	-0.9037*	0.630***	-1.027**	0.610***	-1.044*	0.655***	-0.856	0.616***
2	-0.459	0.024	-0.522	0.059	-0.490	-0.007	-0.620	0.004	-0.672	0.113
<3	-0.240	0.265	-0.641	0.330	-0.274	0.231	-0.4039	0.232	-0.307	0.075
Explanatory variables (High-quality)										
Training	.	.	-0.412	0.259	.	.	.		.	.
No skill mismatch	.	.	.	.	0.033	**0.392***	.		.	.
Hourly wage above wage limit	.	.	.	.	.	.	**-1.126***	**-0.925***	.	.
Open-end contract	.	.	.	.	.	.	.		**-0.999***	**-0.601***
Constant	-3.303	-5.963	-3.400	-5.961	-3.624	-5.723	-3.874	-6.565	-3.361	-5.331
Log-Likleyhood (starting)	-472.613	-1395.551	-439.522	-1326.225	-442.785	-1379.247	-351.329	-1279.934	-318.514	-1169.422
Log-Likleyhood (estim)	-432.655	-1278.094	-402.917	-1211.150	-407.951	-1258.005	-304.516	-1140.049	-290.325	-1057.976
Number of Observations	2945	9683	2760	9287	2826	9509	2315	8482	2226	7293

Note: + p<.10, * p<.05, ** p<.01, *** p<.001; Source: GSOEP, 2003–2017, own calculations.

Appendix II: Exponential transition rate Model for marginal part-time into standard employment (integrative transition) (inkl. coefficients of control variables)

	Model 1		Model 2		Model 3		Model 4		Model 5	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Age (Ref.: > 24)										
25 - 34	0.283	-0.133	0.274	-0.225	0.182	-0.261	0.064	-0.056	0.381	-0.077
35 >	-0.667	-1.082***	-0.717	-1.141***	-0.532	-1.175***	-1.063	-0.983**	-0.655	-0.867*
Living in West Germany	-0.305	0.105	-0.229	0.106	-0.544	0.058	-0.412	0.158	-0.688	0.040
Firm size (Ref.: <20)										
Middle (20-200)	-0.987	-0.443	-1.121*	-0.372	-0.838	-0.442	-1.046	-0.507	-1.254*	-0.846**
High (200-2000)	0.088	-0.184	-0.041	-0.383	0.288	-0.004	-0.021	-0.037	0.180	-0.164
Very high (>2000)	-0.841	-0.605	-0.881	-0.449	-0.416	-0.392	-0.941	-0.464	-0.659	-0.424
Education (Ref.: Low or no school qualification)										
Middle school qualification	-0.473	-0.313	-0.331	-0.315	-0.588	-0.342	-0.161	-0.083	-0.252	-0.339
High school qualification	0.088	0.481	0.344	0.464	0.155	0.498*	0.075	0.788	0.024	0.489
University degree	-0.690	0.062	-0.418	0.074	-0.655	0.004	-0.706	0.405	-0.833	-0.254
Professional status (Ref.: Higher Managerial and Profession										
Lower Managerial and Profession	1.608	0.599	1.468	0.423	1.346	0.313	15.937	0.540	1.327	0.526
Routine Clerical Work	1.474	0.249	1.512	0.091	1.251	0.030	16.185	0.644	2.753	0.169
Routine Service and Sales Worker	1.703	1.030	1.531	0.749	1.358	0.629	16.437	1.274	1.858	1.026
Skilled Manual Workers	2.222*	1.640*	1.972	1.468	1.861	1.345*	16.909	2.062	2.601	1.570*
Semi- and Unskilled Manual Worker	1.564	1.197	1.493	1.006	0.860	0.689	16.075	1.579*	1.212	1.054

Appendix II: Continued…

	Model 1		Model 2		Model 3		Model 4		Model 5	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Sector (Ref.: Industry)										
Agriculture	-13.728	-11.886	-13.361	-11.961	-13.586	-11.999	-15.287	-11.822	-12.637	-15.676
Construction	0.624	0.692	0.516	0.778	0.756	0.724	0.758	0.509	0.300	0.100
Commerce and hospitality	0.143	0.481	0.205	0.583	0.031	0.351	0.166	0.535	0.366	0.192
Transport	-0.032	0.366	-0.190	0.525	-0.168	0.216	-0.072	0.016	0.593	0.095
Financial services	-0.304	-0.062	-0.281	0.211	0.630	0.211	0.473	0.281	-0.206	-0.201
Public administration	-13.3492	-0.090	-13.197	-0.136	-13.210	-0.056	-15.791	-0.274	-12.609	0.236
Education	0.701	0.263	0.638	0.291	0.252	0.212	1.084	0.481	0.644	0.091
Health care	0.296	-0.415	-0.096	-0.431	0.047	-0.554	0.979	-0.315	0.390	-0.563
Other services	-0.036	0.172	-0.088	0.373	-0.230	0.121	1.028	0.337	0.237	-0.098
Being Married	0.034	-0.291	0.0426	-0.424	0.109	-0.251	0.514	-0.283	-0.208	-0.282
Numb. Children in household (Ref.: 0)										
1	1.277**	0.310	1.367***	0.242	1.463***	0.404	1.242**	-0.023	1.449**	0.310
2	0.787	-0.045	0.835	-0.023	0.884	-0.032	-0.706	-0.345	0.421	-0.180
<3	0.680	0.133	0.885	0.299	0.899	0.229	-0.061	-0.095	-0.307	0.050
Explanatory variables (High-quality)										
Training	.	.	**1.673***	0.547	.	.	.	.	.	.
No Skill mismatch	.	.	.	.	0.328	0.337	.	.	.	.
Hourly wage above wage limit	.	.	.	.	.	.	**-0.996***	-0.426	.	.
Open-end contract	.	.	.	.	.	.	.	.	-0.326	-0.107
Constant	-7.453	-6.959	-7.450	-6.804	-7.424	-6.699	-22.427	-7.682	-7.136	-6.574
Log-Likleyhood (starting)	-238.503	-648.911	-215.212	-563.436	-208.718	-595.023	-142.613	-453.791	-162.737	-464.304
Log-Likleyhood (estim.)	-206.859	-599.628	-183.780	-519.947	-180.036	-550.416	-120.818	-421.825	-137.231	-429.566
Number of Observations	2061	8386	1840	7814	1869	7959	1469	6829	1344	6095

Note: + p<.10, * p<.05, ** p<.01, *** p<.001; Source: GSOEP, 2003–2017, own calculations.

Appendix JJ: Exponential transition rate model for marginal part-time into inactivity (xxclusionary transition) (inkl. coefficents of control variables)

	Model 1		Model 2		Model 3		Model 4		Model 5	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Age (Ref.: > 24)										
25 - 34	-0.982**	-1.098***	-0.926**	-1.036***	-1.136***	-1.057***	-0.386	-1.005***	-1.060**	-0.730**
35 >	-0.794*	-1.525***	-0.716*	-1.448***	-0.935**	-1.417***	-0.217	-1.582***	-0.464	-1.177***
Living in West Germany	-0.218	0.074	-0.314	0.030	-0.190	0.146	-0.251	-0.024	-0.356	-0.037
Firm size (Ref.: <20)										
Middle (20-200)	-0.411*	-0.684****	-0.345	-0.655***	-0.447*	-0.667***	-0.275	-0.617***	-0.404	-0.686***
High (200-2000)	-0.133	-0.466*	-0.215	-0.508**	-0.189	-0.305	0.001	-0.344	-0.334	-0.561*
Very high (>2000)	0.271	-0.787***	0.322	-0.825***	0.423	-0.711***	0.229	-0.750**	0.576	-0.741**
Education (Ref.: Low or no school qualification)										
Middle school qualification	-0.241	-0.672***	-0.233	-0.614***	-0.303	-0.562***	-0.211	-0.759***	0.247	-0.697***
High school qualification	-0.205	-0.279	-0.148	-0.125	-0.347	-0.129	-0.130	-0.295	-0.212	-0.383*
University degree	-0.308	-0.387	-0.328	-0.218	-0.392	-0.246	-0.239	-0.603*	-0.101	-0.625**
Professional status (ref.: Higher Managerial and Profession										
Lower Managerial and Profession	-0.255	0.342	-0.206	0.356	-0.051	0.518	0.348	0.095	-0.416	0.186
Routine Clerical Work	0.107	0.483	-0.063	0.677	0.162	0.719	0.019	0.053	0.261	0.302
Routine Service and Sales Worker	0.273	0.833*	0.367	0.876	0.375	1.128*	1.092	0.594	0.733	0.771
Skilled Manual Workers	0.728	1.002*	0.975*	1.118*	0.992*	1.312*	1.084	0.822	1.185*	0.814
Semi- and Unskilled Manual Worker	0.779*	1.217**	0.853**	1.370**	0.841*	1.661**	1.746**	1.104	1.034*	1.211*

Appendix JJ: Continued…

	Model 1		Model 2		Model 3		Model 4		Model 4	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Sector (Ref.: Industry)										
Agriculture	-1.068	-12.458	-1.009	-13.301	-1.015	-12.349	-11.253	-12.014	0.998	-13.369
Construction	0.757*	-0.156	0.693	0.161	0.787*	-0.046	0.757	-0.368	0.882	0.835
Commerce and hospitality	0.517	0.453	0.467	0.672**	0.554	0.503*	0.650	0.500	0.122	0.766
Transport	-0.154	0.131	-0.272	0.293*	-0.106	-0.045	0.014	-0.595	0.063	0.230
Financial services	0.709	0.448	0.783	0.412	1.012	0.558	0.967	0.535	0.805	0.668
Public administration	-0.195	-0.415	0.221	-0.139	1.162*	-0.265	0.797	-0.018	1.236	-0.150
Education	-0.109	-0.083	-0.211	0.105	0.058	-0.096	0.709	0.128	0.037	0.057
Health care	0.289	0.435	0.203	0.695*	0.526	0.342	0.644	0.645	0.364	0.623
Other services	0.561*	0.351	0.675*	0.559*	0.577	0.398	1.168**	0.484	0.863*	0.503
Being Married	0.462*	0.027	0.422	0.031	0.484*	0.035	0.421	0.087	0.507	0.035
Numb. Children in household (Ref.: 0)										
1	-0.282	-0.270	-0.429	-0.293	-0.303	-0.297*	-0.463	-0.351	-0.595	-0.285
2	-0.852**	-0.702***	-0.667	-0.720***	-0.816**	-0.716***	-0.671	-0.573**	-1.306**	-0.603**
<3	-0.871*	-0.122	-0.881*	-0.172	-0.877**	-0.107	-1.22*	-0.259	-1.106**	-0.300
Explanatory variables (High-quality)										
Training	.	.	-12.715	0.239	.	.	.	.	.	.
No skill mismatch	.	.	.	.	0.113	**-0.307***	.	.	.	.
Hourly wage above wage limit	.	.	.	.	.	.	0.106	**0.459***	.	.
Open-end Contract	.	.	.	.	.	.	.	.	-0.207	**-0.369 ***
Constant	-4.610	-4.471	-4.684	-4.903	-4.709	-4.825	-6.379	-4.415	-5.105	-4.699
Log-Likleyhood (starting)	-592.609	-1282.257	-522.578	-1163.722	-548.193	-1208.091	-319.613	-928.426	-366.299	-847.322
Log-Likleyhood (estim.)	-544.316	-1159.020	-479.212	-1057.774	-502.116	-1093.451	-291.546	-835.746	-322.619	-776.742
Number of Observations	2061	6325	1837	5984	1869	6090	1469	5360	1344	4751

Note: + p<.10, * p<.05, ** p<.01, *** p<.001; Source: GSOEP, 2003–2017, own calculations.