

The welfare effect of temporary work: *A Dutch case study using LISS panel-data*

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Abstract

Both policy makers and academics are increasingly concerned with the position of the rapidly increasing temporary work force and its effect on worker's welfare. The literature on this relation is however inconclusive and inconsistent. This paper therefore researches the relationship between temporary work and job satisfaction. Given the specific Dutch labour market context it is hypothesised that temporary work has a negative effect on job satisfaction which is driven by job insecurity. From the breadwinner model it is furthermore expected that the negative effects of temporary work and job insecurity on job satisfaction would be experienced more strongly for men. These hypotheses are tested using Dutch LISS panel data for the period 2008-2015. Temporary work is found to have an insignificant effect on job satisfaction for both men and women when controlled for individual time invariant heterogeneity and job insecurity. Job insecurity, in contrast, is found to have a significantly negative effect on job satisfaction. There is no evidence that men and women or permanent and temporary workers value job insecurity differently. This paper hence concludes that it is not the contract type, but the level of job insecurity that determines the welfare effect of temporary contracts. For policy makers this implies that they should focus on mitigating the effect of job insecurity rather than limiting the number of flexible contracts.

Keywords: *temporary work, job satisfaction, job insecurity*

For the sake of transparency and reproducibility, all data, calculations and regressions, including the corresponding do-files, are available upon request by the author.

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'Labour markets are about people. And people have a right to be treated with dignity and respect.'

Juan Somavia -former Director-General of the ILO-

I. Introduction

The share of temporary workers in total employment has increased in most developed economies since the 1990's (Zijl, 2006). Temporary contracts are characterized by lower levels of employment protection legislation (EPL) and hence higher job insecurity (e.g. de Cuyper et al., 2008a; Jahn, 2015; Sverke et al., 2006). Policy makers and academics are increasingly concerned that this growing share of temporary contracts will lead to a dual or separated labour market with increasing numbers of marginalized and highly insecure workers with little career perspectives (Booth et al., 2002; de Graaf-Zijl, 2012; EC, 2010; EuroFound, 2015; ILO, 2011; OECD, 2002, 2014a). Surprisingly, the welfare effect of temporary work is however subject to academic debate. The literature on the relation between temporary work and worker's welfare is inconclusive and inconsistent (see for a literature review: de Cuyper et al., 2008a). The empirical evidence mirrors this ambiguous literature, finding negative (e.g. Chadi & Hetschko, 2016; Kaiser, 2007; Wilkin, 2013), insignificant (e.g. Bardasi & Francesconi, 2004; D'addio et al., 2007; de Graaf-Zijl, 2012, Green et al., 2010; Guest et al., 2006) and even positive (e.g. Mauno et al., 2005; McDonald & Makin, 2000; Wooden & Warren, 2004) relations between temporary work and worker's welfare, operationalized as job satisfaction. From a policy perspective, it is therefore important to know the exact relationship between temporary work and job satisfaction in order to evaluate the welfare effect of temporary work. Especially because temporary work has proven to be more than a symptom of the economic crisis; it is here to stay and likely to increase even more in the coming years (de Beer, 2016; Leupen, 2015). By focusing on the role of job insecurity this paper contributes to a better understanding of the welfare effect of temporary work.

It is argued that the evaluation of temporary work mostly depends on the labour market context. Low mobility between temporary and permanent jobs in combination with profound differentials in Employment Protection Legislation (EPL) would create a dual labour market (Boeri & Garibaldi, 2007; Booth et al., 2002), where temporary workers suffer from higher insecurity and lower employer commitment, including fewer training and career possibilities (e.g. de Graaf-Zijl, 2012; Jahn, 2015; OECD, 2002, 2014a). If temporary work is however accepted as a stepping stone towards a permanent contract, an insignificant or even positive welfare effect is expected (Beckmann et al., 2009; Green & Heywood, 2011; Guest & Clinton, 2006). As will be discussed in section II, the Dutch labour market is characterized by a combination of low transition rates from temporary to permanent contracts and the highest EPL differential between these contracts of the OECD (CPB, 2015; EC, 2016; EuroFound, 2015). Given these unique Dutch labour market characteristics, this paper expects temporary work to have a negative effect on job satisfaction which is primarily driven by job insecurity (Dawson et al., 2014; de Graaf-Zijl, 2012; EC, 2016; Sverke et al., 2002; 2006). Given the high share of Dutch women working part-time (CBS Statline, 2016) and being secondary earner (CPB, 2014), this paper further hypothesizes that the negative effects of temporary work and job insecurity will be stronger for men compared to women (de Witte, 1999; Jahn, 2015).

To evaluate the effect of temporary work on workers' welfare this paper focusses on job satisfaction as a dependent variable, because it is accepted as a summary indicator for job evaluation, reflecting the valuation of different job characteristics (Hamermesh, 2001; Jahn, 2015). It focusses on the Netherlands, because of its relatively high share - 10 percent- of temporary work in total employment (CBS Statline, 2016), its unique labour market institutions (e.g. de Lange, 2013; CPB, 2015) and the topical (policy) debate about the consequences of temporary work in the Netherlands (e.g. FNV, 2015; CBS & TNO, 2015). By using using Dutch LISS panel data for the period 2008-2015 this paper follows recommendations to use longitudinal data (Cheng & Chan, 2008; Chung & Mau, 2014). Dealing with mostly subjective data, this results are sensitive to unobserved time invariant heterogeneity including

personal characteristics (Buddelmeyer et al., 2013; Jahn, 2015). To control for this type of unobserved heterogeneity, this paper uses fixed effects estimation (Ferrer-i-Carbonell & Frijters, 2004).

Contrary to our first hypothesis, we find an insignificant effect of temporary work on job satisfaction for both men and women when controlling for time invariant heterogeneity and Job insecurity. Job insecurity itself is found to have a significant negative effect on job satisfaction, which is in line with the job stress (e.g. de Witte & Näswall, 2003) and deprivation theory (Beckmann et al., 2009; Buddelmeyer et al., 2013). We find no significant differences in the valuation of job insecurity between men and women or temporary and permanent workers. These findings are robust using different estimation techniques, operationalizations of the (dependend) variables and for different subsamples including public sector and fulltime workers and youth below 25. This paper hence concludes that it is job insecurity rather than temporary work that has a negative effect on job satisfaction and that this effect is not significantly different for both men and women and temporary and permanent workers. From a policy perspective this implies that there should be focussed on mitigating the effect of job insecurity rather than limiting the number of flexible contracts.

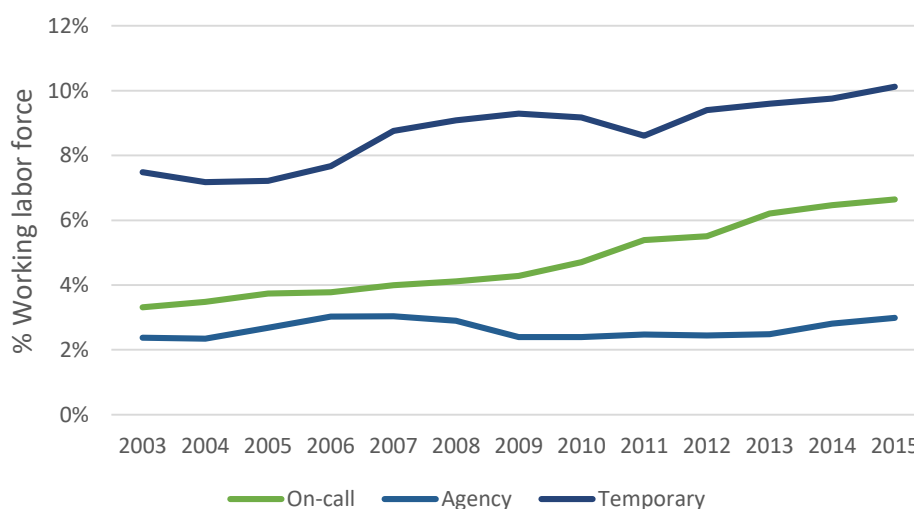
This paper starts with a brief overview of the Dutch labour market in section II, which will focus on the regulations and institutions surrounding Dutch temporary contracts. Section III provides the theoretical framework and empirical evidence on the relation between temporary work, job insecurity and job satisfaction and culminates in four hypotheses. The data, econometric model and methodology will be discussed in section IV, followed by the descriptive and explanatory results in respectively section V and VI. After reporting the robustness checks in section VII, this paper ends with a conclusion and discussion in section VII.

II. Temporary work in the Netherlands

From an employee perspective, labour market flexibility is often described in terms of flexibility in hours, status and contracts. From this perspective, the Netherlands has one of the most diverse labour markets of the EU, ranking first in part-time work (Eurostat, 2015), 7th with regard to self-employment (Hatfield, 2015) and third with regard to the share of workers working on a flexible contract (Eurostat, 2015). In contrast to other EU countries or the US, part-time and freelance work are an accepted part of the Dutch labour market, often voluntarily chosen and therefore generally not seen as problematic (De Graaf-Zijl, 2012; Hupkens, 2012; Remery, 2002; IBO, 2015). This is different for contract flexibility however, including temporary work, which is often not a deliberate choice; around 90 percent of temporary workers negatively evaluate the fixed-term nature of their contracts and would prefer to have a permanent job (CBS, 2016a; FNV, 2015).

As Figure I shows, the main flexible contract forms in the Netherlands include temporary work, agency work and on-call labour. Together, these flexible workers make up 21 percent of all employment in the Netherlands in 2015. Within this group of flexible workers, this paper focusses on temporary work for several reasons. With 10.7 percent, temporary work forms the main group of flexible workers in the Netherlands, followed by on-call and agency workers with respectively 6.6 and 3 percent¹ (CBS Statline, 2016; Zijl, 2006). The agency sector is traditionally small in the Netherlands given the high availability of other flexible contracts (Zijl, 2006). On-call work is, despite its increase, generally not considered to be problematic because it often includes voluntary, side- or student jobs; 67 percent of on-call workers are younger than 25 and over 50 percent report that their on-call contract concerns a free choice (CBS, 2016a; CBS Statline, 2016). This paper hence focusses on temporary work given its prevalence and involuntary character. Within this group, 31 percent has an explicit agreement with their employer to convert their contract into an open-ended contract in case of good performance. Because this only concerns an intention declaration which is, in most cases, not legally binding (Zijl, 2006; de Graaf-Zijl, 2012), this paper will use temporary work to denote all 800.000 direct hired fixed-term workers in the Netherlands (de Cuyper et al., 2008a; CBS Statline, 2016), unless stated explicitly otherwise.

Figure I: Flexible contracts as percentage of the total labour force (2015)



Source: CBS Statline (edited)

¹ The other 1.6% includes permanent workers with flexible hours, which are not included in the figure.

Temporary and permanent workers are subject to the same collective labour agreements in the Netherlands. Since the law on equal treatment of temporary and permanent workers, which is effective since 2002, the conditions in these collective agreements (e.g. pay, holiday- and pension rights) should be the same for temporary and permanent workers (de Lange, 2013)². The main difference between temporary and permanent contracts is therefore their level of Employment Protection Legislation (EPL); the total of procedures and costs involved in dismissing workers (OECD, 2016a). In order to flexibilize their labour markets, many EU countries undertook so-called dual-tier reforms since the 1990's; only loosening the EPL for temporary workers for political reasons³ (CPB, 2015; Ochel, 2008). In this period, the Netherlands loosened their main restriction on temporary contracts: the total number of subsequent temporary contracts per employee. Until 1999 only one subsequent contract was allowed. Since the Flexibility and Security Act of 1999 this has increased to three consecutive fixed-term contracts which cannot exceed a total contract period of three years (CPB, 2015; de Graaf-Zijl, 2012; de Lange, 2013; Ochel, 2008). This means that a temporary contract is automatically converted into an open ended -permanent- contract when a third contract by the same employer implicitly expires, or when the total contract duration exceeds the three years term (Ibid.). Without further restrictions on its use, the Netherlands can be seen as one of the least restricting countries with respect to temporary contracts (CPB, 2015).

Permanent contracts are in contrast traditionally highly regulated in the Netherlands⁴. As a consequence, the Netherlands experiences the highest gap between the EPL levels of temporary and permanent workers of the OECD as shown in Figure II (CPB, 2015; OECD, 2016a). This gap is measured as the OECD EPL indicator for permanent minus the indicator for temporary contracts⁵. The higher EPL of permanent workers make them relatively more expensive and hence less attractive than temporary workers. More stringent employer commitments for permanent workers regarding social security contributions, have the same effect (Boeri & Garibaldi, 2007, 2009). While employers' obligations regarding sick pay or reintegration can take up to 2 years for permanent contracts, these obligations (partly) end with the expiration of temporary contracts, making them less risky (ter Weel, 2016)⁶. If these extra costs are higher than the search costs and loss of firm specific human capital, firms will hire temporary instead of permanent workers, even when the work is permanent in nature (Boeri & Garibaldi, 2007, 2009). Temporary contracts are then used to circumvent more stringent labour market institutions of permanent workers⁷ (Ibid.). For this reason, the Netherlands recently further regulated temporary contracts with the introduction of the Work and Security Act in 2015. This act is not included in the research period, however important for the current debate. Most notably are the measures to strengthen the position of flexible workers, including limiting the period of consecutive contracts to two years instead of three years (National Government, 2016).

² Deviation of equal treatment is possible under certain objective criteria. For the full text, see: College voor de Rechten van de Mens (2016): Wet onderscheid bepaalde en onbepaalde tijd (WOBOT).

³ For an overview of the history and political economy of dual-tier EPL reforms in Europe, see: Ochel (2008).

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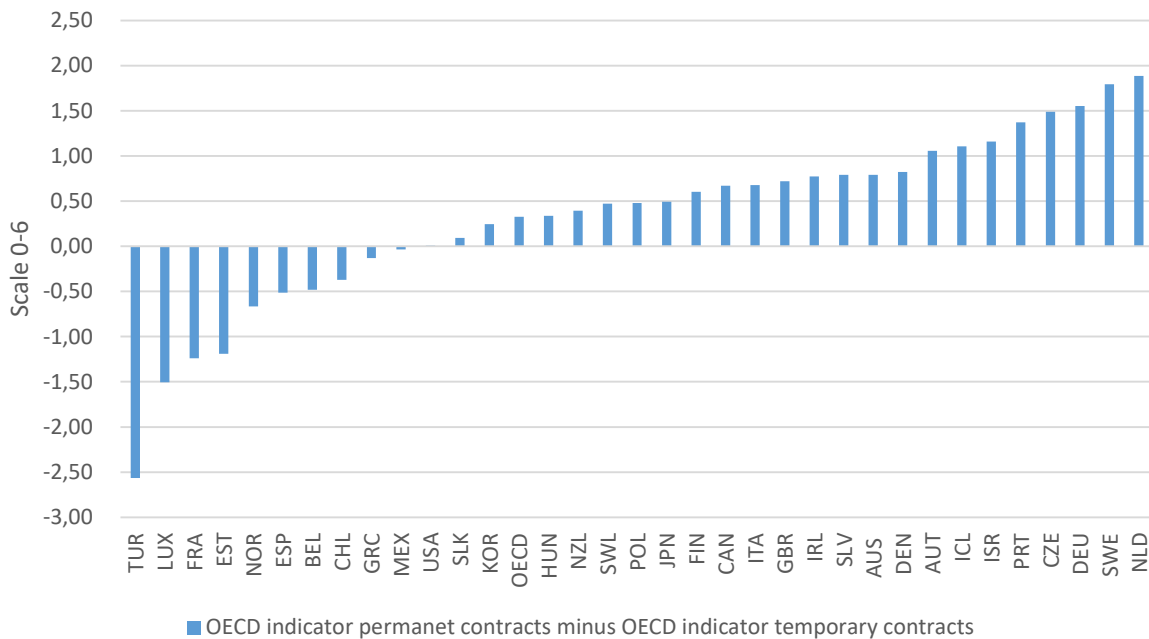
⁴ The Netherlands has the highest total OECD index score on individual and collective dismissal for permanent workers, mainly explained by strict procedural obstacles including reporting barriers and delays (CPB, 2015).

⁵ The OECD indicator for the EPL of permanent workers are categorized into four clusters: (1) procedural inconveniences, (2) notice periods and severance pay, (3) difficulty of dismissal and (4) additional provisions for collective dismissal. The EPL indicators for temporary workers are categorized into three clusters: (1) restrictions on the use of temporary contracts, (2) the maximum number of successive contracts and (3) the maximum cumulated duration of these contracts (OECD, 2014b). For a full overview of the indicators and the methodology see: OECD (2014b). calculating summary indicators of EPL strictness: methodology.

⁶ Regarding sick pay, employers should pay at least 70 percent of the salary up to two year for permanent workers. This is percentage is lower for temporary workers leaving the firm after contract exemption (UWV, 2015)

⁷ In surveys, more than a third of employers give this as a primary reasons to hire temporary workers (Donker van Heel et al., 2013).

Figure II: Difference between the OECD EPL indicator for permanent contracts and temporary contracts (2013)



Source: OECD Employment Protection Database, 2013 (edited)

Chung & Mau (2014) points out that labour market and social security institutions not only influence the relative costs of temporary contracts for firms. By providing income security, welfare state institutions in general, also moderate the effect of job insecurity on temporary worker’s welfare (Chung, 2014; Origo & Pagani, 2009). The institutional mix enhancing both flexibility and security in the labour market is known as the flexicurity model, which ‘attempts to reconcile employers’ need for a flexible workforce with workers’ need for security’ (EC, 2016)⁸. Despite budget cuts since the 1990’s, the Netherlands still has a relatively generous welfare state programs for workers (OECD, 2016b), including the unemployment insurance scheme (WW), the disability insurance scheme (WAO/WIA), and the sickness insurance scheme for shorter periods of sickness (ZW) (de Lange, 2013). The disproportional use of these programs by temporary workers supports the idea that their higher job insecurity is partly compensated by welfare state institutions (Van der Werff et al., 2016). In their cross-national study, Origo & Pagani (2009) find that temporary work is evaluated more positively in countries with more generous welfare states like the Netherlands, compared to less generous states like the US and the UK⁹. Although this paper does not focus on the interacting effect of welfare state institutions, these observations are important when discussing the – cross-country- empirical evidence in section III and the policy implications as discussed in section VII.

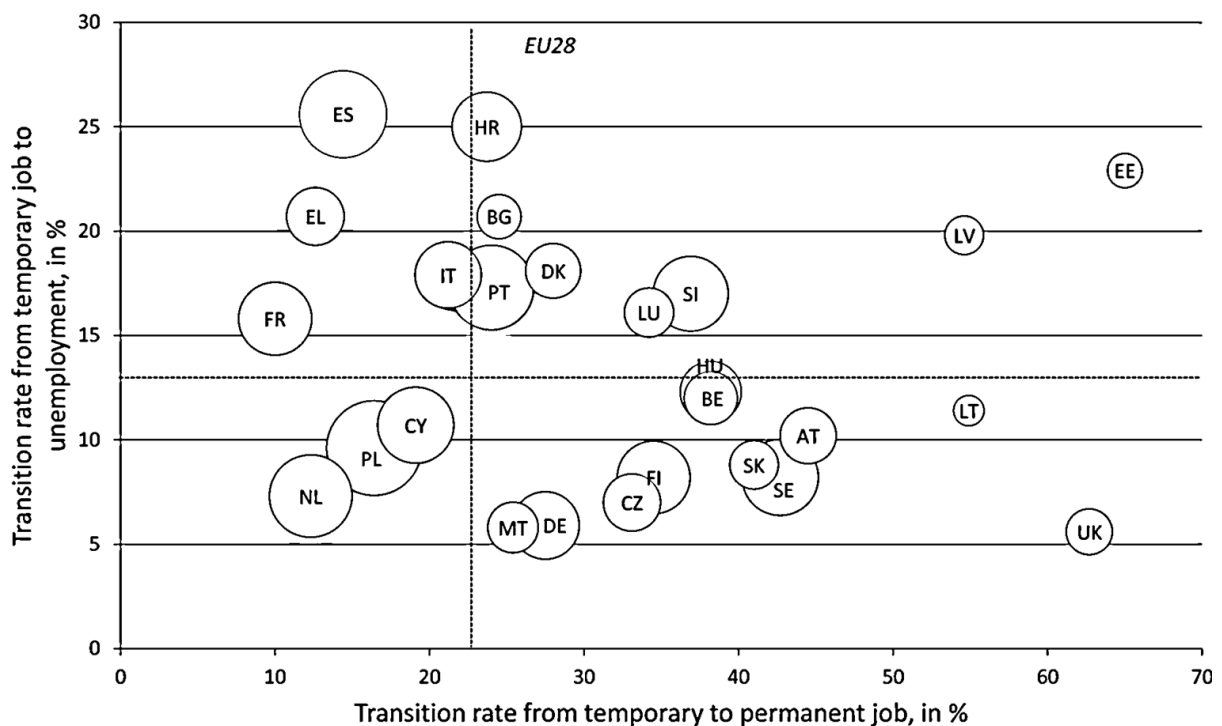
In the next section we will discuss the theoretical relation between temporary work and job satisfaction and the role of job insecurity. As we will see, this relation primarily depends on the nature of the labour market. In a labour market characterized by mobility, temporary work can serve as a stepping stone towards permanent employment (Booth et al., 2002; Zijl, 2006). Temporary contracts can then be used as a screening device or a prolonged probationary period to screen worker’s ability or productivity (de Graaf-Zijl et al., 2011; CPB, 2006; EC, 2010). In a segregated labour market

⁸ See for a more elaborate discussion on the welfare effect of institutions and the concept of flexicurity: Muffels & Wilthagen (2015). Flexicurity en sociale modellen in Europa: een vergelijkende analyse van het effect van instituties op werkgelegenheid en mobiliteit. In CBS & TNO (2015). Dynamiek op de Nederlandse arbeidsmarkt: de focus op flexibilisering. CBS, den Haag.

⁹ Looking at the moderating effect of culture, Probst & Lawler (2006) find that the effect of job insecurity is stronger for collectivist cultures (e.g. the Netherlands) compared to more individual cultures (e.g. US, UK)

characterized by low mobility, temporary contracts are however seen as jobs without a long-term career perspective – dead end- (Ibid.). This level of mobility can be measured as the transition rates from temporary to permanent work within a certain period (e.g. EC, 2016; EuroFound, 2015). Figure III shows the transition rates of temporary workers into unemployment and permanent work for different EU countries between 2012-2013. The size of the circles denotes the share of temporary workers in a specific country. The figure again shows that the share of temporary work in the Netherlands is relatively high. The transition rates from temporary work into both unemployment and permanent work of respectively 7 and 12 percent are low compared to the EU average of 14.7 and 25 percent. The low transition rate towards permanent work is partly explained by a sharp drop since the financial crisis in 2008, when this rate was still around 30 percent (EC, 2016; EuroFound, 2015)¹⁰. These limited transition rates support the idea that many temporary workers are trapped into a visual cycle of subsequent fixed-term contracts without a view on permanent work (Boyce et al., 2007). This view is supported by the finding that temporary workers do not find a permanent job more easily than unemployed or inactive individuals (De Graaf-Zijl et al., 2011). It should be noted however, that transition rates are highly dependent on socio-economic variables (e.g. education, age, origin) (De Graaf-Zijl et al., 2011; Dekker, 2007; EuroFound, 2015). Therefore, heterogeneity between groups should be taken into account.

Figuur III: Transition rates from temporary work to unemployment and permanent work (2012-2013)



Source: EC (2016). Analytical Webnote 1/2016

¹⁰ The EC (2010) and EuroFound (2015) figures cover the period 2008-2014. Studies focussing on transition rates in the 1990's found transition rates of around 25 percent a year (Dekker, 2007) and 38 percent within two years (de Graaf-Zijl, 2011). Further recall that temporary contracts, through there lower EPL, are more sensitive to economic fluctuations.

III. Theoretical framework and empirical findings

To research the welfare consequences of temporary work, this paper focusses on its effect on job satisfaction because *'it can be viewed as a single metric that allows the worker to compare the current job to other labour market opportunities'* (Hamermesh, 2001, p. 2). Job satisfaction can be defined in a cognitive (evaluative) or affective (or emotional) way on a unidimensional or multidimensional basis (e.g. Hulin & Judge, 2003; Weiss, 2002). Cognitive job satisfaction evaluates a job on the basis of objective expectations and comparisons of a worker. Affective job satisfaction focusses on the emotional affection to the job, also defined as *"a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences"* (Locke, 1976, p.1304). Furthermore, job satisfaction can be unidimensional when dealing with the job as a whole and multidimensional when it is only dealing with certain job characteristics like pay or security (Hulin & Judge, 2003; Weiss, 2002). Because this paper focusses on the worker's evaluation of temporary work, the focus is mainly on unidimensional cognitive job satisfaction. This section will discuss the relation between temporary work, job insecurity and job satisfaction.

Temporary work as dead end

The segmented or dual labour market theory (Doeringer & Piore, 1985) divides the labour market into: *'separate submarkets or segments, distinguished by different characteristics and behavioural rules.'* (ILO, 2016). There is little or no mobility between these segments. With the core-periphery model, Atkinson (1984) was the first to think about labour market segmentation in terms of temporary and permanent workers. The model distinguishes two types of workers based on their function within the firm: the core and the periphery. The core workers consist of permanent full-time workers, which are employed on a long-run basis. The periphery group consists of all kinds of numerical flexible workers, including temporary workers which are employed on a short term perspective by the firm, based on its fluctuating needs (Atkinson, 1984; Atkinson & Meager, 1986). For temporary workers this short term perspective primarily means higher job insecurity (Dawson, et al., 2014; Greenhalgh & Rosenblatt, 1984; Jahn, 2015). Furthermore, it means that temporary workers face lower employer commitment in general, materializing in lower investments in training and less career possibilities (Akgündüz & van Huizen, 2015; Beckmann et al., 2009; de Witte & Näswall, 2003; Wooden & Warren, 2004). These lower investments in human capital, limited career possibilities and the negative signalling effect of multiple temporary contracts, all decrease the likelihood of a transition to a permanent job (Booth et al., 2002; Boyce et al., 2007; de Graaf-Zijl et al., 2011). Although the theory of equalizing differences would expect a compensating wage premium for these seemingly worse job characteristics (Brown, 1980; Rosen, 1986; Wooden & Warren, 2004), the empirical evidence systematically shows the reverse; a wage penalty for temporary work (e.g. Booth et al., 2002; EuroFound, 2015; Jahn, 2015). De Lange (2013, p. 22) explains this phenomenon of the poorer bargaining position of temporary workers versus their employers, which she refers to as *'contingent asymmetric commitment'*.

These worse, uncompensated, job characteristics associated with temporary work are argued to have a negative effect on job satisfaction for several reasons. First of all, according to the job stress theory, the higher job insecurity causes a permanent feeling of stress about income security in the short run and life planning in the long run, lowering job satisfaction (de Witte & Näswall, 2003; Wooden & Warren, 2004). Other arguments depart from the relative positions of temporary workers compared to their permanent co-workers (Beckmann et al., 2009; Buddelmeyer et al., 2013; de Cuyper et al., 2008a). The deprivation theory states that, through the process of social comparison and exclusion, flexible workers will experience feelings of deprivation, inequity and unfairness. This make them feel like marginalized secondary class-workers, which materialises in lower satisfaction levels (Ibid.). The

same holds for feelings of a lack of recognition or not being part of the 'corporate family' (Beckmann et al., 2009; Sverke et al., 2006). It is furthermore argued that, given the short term perspective of firms, temporary workers experience a weaker emotional relation with their employer, the so-called psychological contract (Rousseau, 1989). The more transactional and asymmetrical nature of this relationship for temporary workers is generally negatively evaluated, causing lower levels of job satisfaction (Beckmann et al., 2009; Guest & Clinton, 2006).

Temporary work as stepping stone

If a labour market is however, characterised by high levels of mobility between temporary and permanent contracts, an insignificant or even positive relation between temporary work and job satisfaction is expected. If temporary contracts are accepted as a stepping stone towards a permanent contract (Booth et al., 2002; de Graaf-Zijl et al., 2011), temporary workers '*are likely to be more easily satisfied, because they have lower expectations about the employer's behaviour and duties*' (Beckmann et al., 2009, p.7). Temporary workers would value for instance their employment status more, or have lower aspiration levels with respect to their job compared to permanent workers (Buddelmeyer et al., 2013; Guest & Clinton, 2006). Beckmann et al. (2009) further point out that some jobs are only provided on a non-permanent basis. If someone accepts the fact that a job only exists in a flexible form, he/she is likely to be satisfied with the job irrespective of the contract (Ibid.). Pouliakas & Theodossiou (2010, p. 688) argue that temporary workers do not have lower expectations, however, '*[...] have a psychological immune system which neutralizes events that challenge their sense of wellbeing, such as job insecurity*'. Individuals thus adapt to their situation, which implies that temporary work only causes a temporary welfare loss. Another argument why temporary work would not lead to lower job satisfaction is that temporary work can serve employees increased demand for flexibility in working patterns (OECD, 2002). Temporary work can offer more autonomy and freedom (e.g. Green & Heywood, 2011) or the ability to combine work with other activities like child caring or education (e.g. Alletaris, 2010; de Graaf-Zijl, 2012; Jahn, 2015).

International empirical findings

Table I sums up the international empirical evidence on the effect of different flexible contract arrangements, including temporary work, on job satisfaction. For the sake of comparability only those studies are included which control for socio-economic variables, but not for job characteristics yet¹¹. What stands out are the different effects for different contract types. Agency work and other contract types, including seasonal, casual and on-call work, are found to have a negative effect on job satisfaction, while for temporary work the evidence is mixed. These findings underline the importance of differentiating between different types of flexible workers (e.g. Pitilliot, 2016; de Graaf-Zijl, 2012; Wilkin, 2013). Looking at the evidence for temporary contracts in more detail, we see a difference between studies using cross-sectional and panel data. The first provides more mixed outcomes with three studies independently finding an insignificant (de Cuyper & de Witte, 2006; Guest et al., 2006; Guest & Clinton, 2006), positive (Wooden & Warren, 2004) and negative (de Cuyper et al., 2010; Kaiser, 2005) effect. Kaiser (2005) finds a negative effect of temporary work in 12 of the 14 reviewed EU countries. Reviewing 72 studies in her meta-analysis, Wilkin's (2013) finds a small negative effect of temporary work on job satisfaction. The aforementioned research was however unable to control for time invariant unobserved individual heterogeneity, which is important given the subjective nature

¹¹ Some studies did not present a model without these job characteristics and are therefore not included (e.g. Buddelmeyer et al., 2013; Clark, 1997; Clark & Oswald, 1996; de Cuyper & de Witte, 2007; de Witte & Näswall, 2003; Dawson et al., 2014; Mauno et al., 2005). Other studies were excluded because they did not control for socio-economic variables (e.g. Feather & Rauter, 2004; McDonald & Makin, 2000) or only used surveys for very small subgroups of workers (e.g. Tak & Lim, 2008).

of the dependent variable (Ferrer-i-Carbonell & Frijters, 2004; Jahn, 2015). The panel studies using fixed effects find both negative and insignificant effects. The higher percentage of insignificant studies is most likely explained by the fact that there was too limited variation in contract switchers in the research period, or that temporary and permanent workers have some different individual characteristics which was not controlled for in the cross-sectional studies. De Graaf-Zijl (2012) was the only study researching the Netherlands. She found a negative effect of agency work and an insignificant effect of temporary and on-call work on job satisfaction.

Table I: empirical evidence

Study	Country	Data	Year	Temporary	Agency	Other*
Forde & Slater (2006)	Britain	Cross-section	2000		-	
Guest & Clinton (2006)	Britain	Cross-section	2004	0	0	
Kaiser (2005)	Cross-country	Panel: no fixed effects	1994-2001	- (12/14) 0 (2/14)		
Chadi & Hetschko (2016)	Germany	Panel	2001-2010	-		
Bardasi & Francesconi (2004)	Britain	panel	1991-2000	0		-
Booth et al. (2002)	Britain	Panel	1991-1997	-		-
De Graaf-Zijl (2012)	Netherlands	Panel	1995-2002	0	-	0
Wilkin (2013)	Cross-country	Meta-study (70 studies/cases)	-	-	-	
Wooden & Warren (2004)	Britain	Cross-section	2001	+	- F	- M
Green & Heywood (2011)	Britain	Panel	1999-2004	0	-	- M
Green et al. (2010)	Australia	panel	2000-2005	0	-	-
Guest et al. (2006)	Britain	Cross-section	2006	0		
D'addio et al. (2007)	Denmark	Panel	1995-1999	0		
De Cuyper & de Witte (2006)	Belgium	Cross-section	2002	0		
De Cuyper et al. (2010)	Belgium & Finland	Cross-section	2002	-		
Alletaris (2010)	Australia	Cross-section	2001		- M	

* **Seasonal, casual, on-call.** **F** and **M** indicate that the results only apply to women or men. +, - and 0 are used to denote respectively a positive, negative and insignificant effect.

Both the theoretical and empirical literature discussed in this section provide inconclusive and inconsistent evidence on the relation between temporary work and job satisfaction (de Cuyper et al., 2008a). As discussed in section II, this relation is largely dependent on country specific labour security, social security and welfare state institutions (Chung, 2014; de Cuyper et al., 2008a). These cross-country differences might explain the discussed inconsistent empirical findings. The large EPL differentials between temporary and permanent work in the Netherlands, combined with the low transition rates from temporary to permanent work, suggest that the Dutch labour market can be best described as a segregated or dual labour market with low mobility. This is supported by the fact that over 90 percent of the temporary workers prefer to have a permanent contract (CBS, 2016a; FNV,

2015). It is therefore expected that temporary work has a negative effect on job satisfaction in the Netherlands. The insignificant effect found by de Graaf-Zijl (2012) might therefore be related to her research period 1995-2002, in which transition rates to permanent employment were still high (Dekker, 2007; de Graaf-Zijl et al., 2011). The Dutch law of equal treatment between temporary and permanent workers, implies that both types of workers should be treated the same, with respect to conditions included in collective labour market agreements (e.g. pay, holiday- and pension rights) (de Lange, 2013). The primary difference between temporary and permanent workers is hence their level EPL; temporary workers face more limited EPL rights and hence experience higher levels of job insecurity compared to permanent workers. Given this difference we expect that the negative effect of temporary work is driven by job insecurity. These expectations can be summarized in the following three hypotheses:

H1: Temporary work has a negative effect on job satisfaction

H2: Job insecurity has a negative effect on job satisfaction

H3: The negative effect of temporary work on job satisfaction is driven by the effect of job insecurity

Hypothesis I and II implicitly assume that the effects of temporary work and job insecurity are the same for both men and women. From the breadwinner model it is however expected that both negative effects would be stronger for the primary earner in a household (Bernard, 1981; de Witte, 1999), which in most European countries is still the men (CPB, 2014; Rastragina & Varashchagina, 2015). Although the labour participation rates for women are steadily growing in Europe (World Bank, 2016), most of these working women are secondary earners (Buddelmeyer et al. 2013; Rastragina & Varashchagina, 2015). Looking at the Netherlands in particular, although the percentage of women breadwinners has increased from 13 percent in 2002 to 19 percent in 2012, this is still clearly lower than that of their male counterparts (CBS, 2014)¹². This percentage is even lower when there are children (Ibid.) and lower than the European average (Rastragina & Varashchagina, 2015). One explanation is that women in the Netherlands are almost three times as likely to work part-time compared to men, providing caring responsibilities as the main reason to work part-time¹³. Given the prevalence of male breadwinners, it is expected to be more problematic when the man's job, and hence the household income, is insecure. For the same reason it is argued that paid work is more important for the identity of men compared to women (Jahn, 2015; de Witte, 1999). Moreover, Buddelmeyer et al. (2013) and Jahn (2015) argue that women see temporary contracts more often as a career choice. Empirical evidence indeed supports the claim that temporary work is more negatively evaluated by men compared to women (Clark, 1997; Jahn, 2015). This brings us to the fourth differentiated hypothesis of this paper with respect to gender:

H4a: The negative effects of temporary work on job satisfaction are stronger for men than for women

H4b: The negative effects of job insecurity on job satisfaction are stronger for men than for women

¹² Rastragina & Varashchagina (2015) find that Percentage distribution of working age couples by share of female earnings in the Netherlands for 2011: Woman has no earnings (15.2), earns less than man (59.4), earns roughly equal as man (13.8), earns more than man (7.9), is the only earner (3.7).

¹³ In 2003 respectively 20 and 74 percent of men and women worked part-time. In 2014 this was 27 against 75 percent (CBS Statline, 2016). This difference is even higher when looking specifically at temporary workers (Ibid.).

To summarize, this paper expects that both temporary work and job insecurity will have a negative effect on job satisfaction (hypothesis 1 & 2) and that these effects are stronger for compared to women (hypothesis 4a & 4b). Moreover, this paper expects that the negative effect of temporary work on job satisfaction is driven by job insecurity (hypothesis 3). The subsequent sections are concerned with the research design and testing of these hypotheses.

IV. Data and methodological approach

This paper uses longitudinal Internet Studies for the Social sciences (LISS) panel data. This panel consists of a random sample of 5000 Dutch households including 8000 individuals (LISS, 2015). Using the LISS core studies annual data for the period 2008-2015, a total of eight time periods are covered. Respondents are selected by a true probability sample of the Dutch population register. Self-selection in the sample is not possible and face-to-face (CAPI) and telephone (CATI) methods are used to approach individuals (Ibid.). The quality of the data is high through the use of participation payments and the non-commercial approach of the LISS study¹⁴. Within this dataset we focus on working individuals with either a temporary or a permanent contract between 25 and 65 years old. Respondents younger than 25 are excluded from the analysis given that temporary work for them more often concerns a voluntary side jobs¹⁵ (TNO & CBS, 2016). Because youth below 25 make up more than 60 percent of temporary workers in our sample, the analyses are repeated including these observations as a robustness test at the end of this paper. This section continues by introducing the econometric model. Then the operationalization and summary statistics of the variables in this model are discussed. This section ends with a discussion of the methods and estimation techniques used.

The model

In what follows we assume that job satisfaction, is based on five elements: (A) the kind of employment contract, (B) the degree of job insecurity, (C) socio-economic characteristics, (D) job and firm characteristics and (E) personal characteristics. Equations 1, 2 and 3 shows the econometric models based on these factors. Job satisfaction is the dependent variable which is explained by the right hand side, or explanatory, variables. A and B represents the main variables of interest, while C and D represents two different groups of control variables. Year represents the year dummies, included to correct for year effects including economic volatility. ε_{it} represents the error term, i.e. the variation in job satisfaction which is not explained by the model. α_{it} represents element E, the personal characteristics. The method section will further discuss how this paper deals with this type of time invariant unobserved heterogeneity. Equation (1) estimates the effect of temporary work on job satisfaction. Given our first hypothesis we expect the coefficient of A to be negative. Equation (2) adds the job insecurity variable to equation (1). Given our second and third hypothesis we expect that the coefficient of B is negative and that the coefficient of A will weaken or become insignificant after adding job insecurity to the model; indicating that the negative effect of temporary work on job satisfaction is driven by job insecurity. Equation (3) furthermore includes an interaction term between temporary work and job insecurity. A significant coefficient shows that the effect of job insecurity is evaluated differently by temporary and permanent workers. To test our last hypothesis with regard to gender, the analysis will be carried out separately for both men and women. In what follows we will refer to equations 1, 2 and 3 as models. Because these models are estimated each with and without job and firm characteristics controls, we end up with six models in total which are estimated for men and women separately.

$$(1) \text{JobSatisfaction}_{it} = \beta_{1it} (A) + \beta_{3it} (C) + \beta_{4it} (D) + \beta_{5it} (\text{Year}) + \alpha_{it} + \varepsilon_{it}$$

$$(2) \text{JobSatisfaction}_{it} = \beta_{1it} (A) + \beta_{2it} (B) + \beta_{3it} (C) + \beta_{4it} (D) + \beta_{5it} (\text{Year}) + \alpha_{it} + \varepsilon_{it}$$

¹⁴ See for a further description of the LISS panel: de Vos (2009; 2010), Knoef & de Vos (2009), LISS (2015) & Scherpenzeel (2009).

¹⁵ The national survey on working conditions (N=42213) shows that while 18.4 percent of youth below 25 reports that permanent contracts are not important, this percentage is more than three times lower for older workers (with 5.9 percent) (CBS & TNO, 2016).

$$(3) \text{JobSatisfaction}_{it} = \beta_{1it} (A) + \beta_{2it} (B) + \beta_{3it}(A * B) + \beta_{4it} (C) + \beta_{5it} (D) + \beta_{7it} (\text{Year}) + \alpha_{it} + \varepsilon_{it}$$

Operationalizations

This paper focusses on the overall evaluation of temporary work and is hence interested in unidimensional cognitive job satisfaction (Hulin & Judge, 2003; Weiss, 2002). In the literature there is debate if overall job satisfaction should be measured using single- or multiple-item measures (e.g. Oshagbemi, 1999). Because recent studies found single-item measures to have a high reliability and validity (Dolbier et al. 2005; Steger et al., 2012), this paper uses the following single-item operationalization of job satisfaction: *How satisfied are you with your current work?* This item is measured on an eleven-point Likert-scale where 1 indicates that you are not satisfied at all and 11 indicates fully satisfied. This scale is found to yield a higher degree of measurement precision, validity and reliability than traditional five-point Likert scales (Wittink & Bayer, 1994). To check for the effect of a multi-item measure and the inherently higher within variation, this paper has constructed two multiple-item measures of job satisfaction (e.g. Brown & Moore, 2012). These measures are based on five sub-dimensions of job satisfaction (e.g. satisfaction with wage or career), which are considered to be internal consistent with a Cronbach alfa of .79 (e.g. Bland & Altman, 1997; Tavakol & Dennick, 2011). The first multi-item measure is weighted by factor loadings while the second measure is a simple weighted average (Brown & Moore, 2012). This paper hence uses a single-item measure in the analyses and uses the two constructed multi-item measures as a robustness test at the end of this paper¹⁶.

Looking at the main independent variables, contract type is measured as a dummy which compares temporary and permanent workers, the last serving as reference category. Given that the questionnaire allowed for 8 possible contract agreements, including on-call and agency work, temporary work only includes direct hired workers with fixed-term contracts (de Cuyper et al., 2008a)¹⁷. A limitation of this operationalization is that we cannot distinguish between temporary workers with and without an agreement of conversion into a permanent contracts. The second independent variable - job insecurity - can be assessed in a quantitative and qualitative way (Hellgren et al., 1999; Sverke et al., 2006). Quantitative insecurity is used to denote the concern of losing a job, while qualitative insecurity points to the concern of losing some qualitative aspects within the job, like concerns about future working conditions (Ibid.). This paper focusses on the first given its stronger welfare impact and policy relevance (Hellgren et al., 1999). The subjective evaluation of this quantitative job insecurity is called subjective job insecurity (de Cuyper & de Witte, 2005, 2006; de Cuyper et al., 2008b; de Witte & Näswell, 2003; Sverke et al. 2002, 2006), which de Cuyper et al. (2008b, p. 492) define as: *“the employees’ perceptions about potential involuntary job loss”*. Within subjective insecurity one can make a distinction between cognitive job insecurity and affective job insecurity (Cheng & Chan, 2008; de Witte & Näswell, 2003). Cognitive insecurity refers to the perceived chance of losing the job, while affective job insecurity denotes the potential welfare loss of losing the job (Ibid.). Because this paper is interested in the effect of job insecurity on job satisfaction, it focusses on subjective cognitive insecurity. i.e. the perceived chance of losing the job. This is operationalized

¹⁶ Wanous et al. (1997) en Wanous & Hudy (2001) argued that single-item measures are reliable when they correlate with the multiple item measure close to .70 for individual and .80 for group data. The correlation between the single- and multiple-item measure used in this paper is .82, and is therefore considered to be reliable.

¹⁷ Besides temporary and permanent employment the contract questions distinguished the following categories: on-call employee, temp-staffer, self-employed/freelancer, independent professional, director of a limited liability or private limited company and majority shareholder director

using the following question: ‘Do you think that there is any chance that you might lose your job in the coming 12 months?’. This question is measured using a percentage between 0 and 100 where 0 percent indicates that someone is sure to keep his job while 100 percent indicates the opposite.

Table II shows some descriptive statistics of the observation included in the analysis and their summary scores on the main variables of interest¹⁸. Looking at the first part of the table, temporary workers are, with 7.5 percent, slightly overrepresented in the sample compared to the population statistic of 7 percent (CBS Statline, 2016)¹⁹. The small overrepresentation of men for temporary workers is likely due to its limited sample size, given that there are no gender differences in the population (Ibid.). In line with the population, permanent workers tend to be older than temporary workers. Based on these statistics and some additional analysis, this paper concludes that the sample used is a good representation of the population²⁰. The second part of Table II shows the summary statistics for Job satisfaction and job insecurity. Measured on an eleven-point scale, job satisfaction is significantly higher for permanent (7.46) compared to temporary workers (6.95). Temporary workers furthermore report insecurity levels which are more than twice as high compared to permanent workers. The mean perceived chance of losing one’s job within the next 12 months is 36.8 percent for temporary, compared to 16.7 percent for permanent workers.

Table II: Descriptive and summary statistics main variables

	Permanent		Temporary		Total	
Observations	13729		1117		14846	
% observations	92.5%		7.5%		100%	
% male	49.1%		56.0%		49.6%	
Age (mean)	45.8		41.2		45.5	

Variables	Mean	S.D.	Mean	S.D.	Mean	S.D.
Job satisfaction	7.46	(1.45)	6.95	1.94	7.45	1.50
Job insecurity	16.67	(24.83)	36.78	(33.07)	18.18	(26.09)

Because the standard deviations are difficult to compare given the unequal number of observations for temporary and permanent workers, Figure IV provides a closer look at the distribution of the values for both job satisfaction and job insecurity. Both distributions compare the values of temporary and permanent workers separately for men and women. Given the scale of these variables, job satisfaction is presented using a histogram and job insecurity using a Kernel density function. Looking at job satisfaction first, the values are normally distributed, with most values being reported between 7 and 10 for both temporary and permanent workers. There is little variation in the satisfaction score of men and women. The differences between temporary and permanent workers are more profound looking at the job insecurity distributions. Although both have peaks around zero and fifty percent, temporary workers’ insecurity levels are more equally distributed over the whole range of insecurity levels. The last peak in insecurity levels around 100 percent can be explained by the regulation of temporary contracts in the Netherlands during the research period (see for more detail section II); firms are likely to fire those temporary workers with three sequent contracts or a total duration that approaches

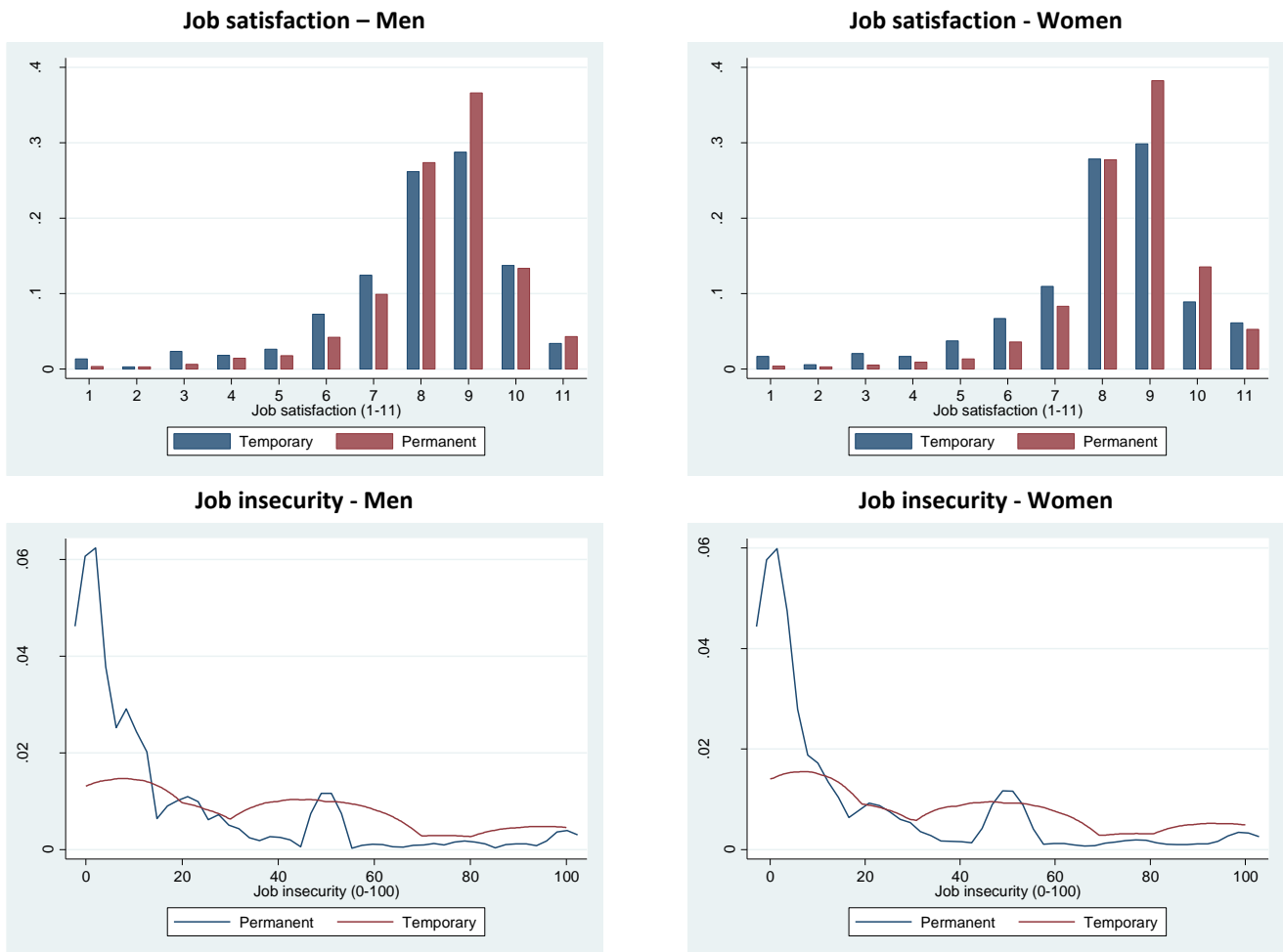
¹⁸ All statistics presented in this section and in the descriptive analysis cover those respondents which have reported values on contract type, job insecurity and the socio-economic control variables. It concerns pooled statistics for the research period: 2008-2015. See for a full overview of all summary statistics Appendix II.

¹⁹ Note that this number is lower than the 10.7 percent reported in Figure I, because this figure also includes individuals younger than 25, which are more likely to have a temporary contract (22 percent).

²⁰ We checked for differences in some other population parameters including education, children and income.

three years in order to avoid automatic conversion into a permanent contract. We see again little difference in the job insecurity distributions between men and women.

Figure IV: Job satisfaction (histograms) and job insecurity (density functions) for men and women



Following Jahn (2015), this paper examined how well individuals can assess their own job insecurity by using job insecurity as a predictor for future labour market status. Table III shows the correlations between subjective job insecurity and respectively, being unemployed, out of the labour force or working in another job in t+1. All correlations are significant. Not surprisingly, job insecurity correlates the strongest with future unemployment. Overall, these results strengthen the idea that respondents are able to assess their own insecurity and that subjective job insecurity is hence an acceptable measure.

Table III: correlations job insecurity and labour market status in t+1

	Unemployed t+1	Out Labour force t+1	Changed Job t+1
Job insecurity	.238***	.017**	.146***
	(.000)	(.062)	(.000)

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

If temporary work and job insecurity are correlated with other job satisfaction determinants, their coefficients will be biased (Wooldridge, 2002a). This paper therefore controls for both socio-economic and job characteristics which are correlated with job satisfaction and the independent variables. This

paper includes dummies for age and education because they have an effect on both perceived insecurity levels and job satisfaction (Kaiser, 2005; Sverke et al., 2006). It furthermore splits the analysis for men and women because we know that men and women yield different values on job satisfaction (e.g. Kaiser, 2005; Wilkin, 2013) and both independent variables (Buddelmeyer, 2015; Jahn, 2015). According to the dependency theory, individuals are more dependent on their job if they have family responsibilities like children. Household structures hence moderate the effect of temporary work and job insecurity on job satisfaction (Cheng & Chan, 2008; de Witte & Näswell, 2003; Sverke et al., 2006). This paper therefore includes a dummy for at-home-living children and four dummies for the domestic situation of the respondents, being single, single with children, married or co-habitation with and without children.

It is moreover important to control for job and firm characteristics because the core-periphery model predicts these to be correlated with both temporary work and job satisfaction (e.g. Alletaris, 2010; de Graaf-Zijl, 2012, Jahn, 2015). Job characteristics are controlled for using eight subjective statements on working conditions with four answer possibilities: 1 disagree entirely, 2 disagree, 3 agree and 4 agree entirely. These statements are related to the experienced physicality of work, time pressure, freedom and autonomy, support and appreciation, salary and career and training possibilities. Furthermore, a dummy for part-time work, defined as working less than 36 hours (CBS, 2016b), is included because part-time work is associated with higher satisfaction levels (e.g. Guest et al., 2006; Guest & Heywood, 2011; Thorsteinson, 2003). Following Jahn (2015), we furthermore include a variable which measures the discrepancy between the preferred number of working hours and the actual hours. A variable measuring the quality of the job match is included because this not only has an effect on job satisfaction, but is also negatively related to temporary work (de Graaf-Zijl, 2012). The job match quality is operationalized by the discrepancy between someone's knowledge and skills and the work he does, which tends to be a better operationalization than the educational match (Amador et al., 2016). This paper is unable to control for union membership which is associated with lower levels of job insecurity (e.g. Sverke et al., 2006).

On the firm level we control for occupation, sector and firm size. Some occupations or certain sectors have a disproportionately high number of temporary workers. Furthermore, sectors, occupations and firm size are used as proxy for employment security; they influence the sensitivity of a job to economic volatility or downsizing operations (Cheng & Chan, 2008; Jahn, 2015; Sverke et al., 2002). Occupational level, measured in terms of skill-level, was recoded into four categories: high, intermediate, skilled and unskilled. Instead of using a dummy for public sector work, this paper recoded the sector variable into four categories: the primary, secondary, tertiary and quaternary sector. Firm size further serves as a proxy for internal promotion and training possibilities and other workplace benefits (Jahn, 2015). Year dummies are furthermore included to control for certain year specific effects and, most importantly, the potential economic cycle effects which correlate with both independent variables (Wooldridge, 2002b). See for a complete overview of the operationalizations and related summary statistics, respectively Appendix I and Appendix II.

Methodological approach

There is an intense debate in the literature about which estimation technique is the best to evaluate subjective well-being measures (Van Praag & Ferrer-i-Carbonell, 2010; Jahn, 2015). Both ordered logit (e.g. de Graaf-Zijl, 2012) and OLS regression (e.g. Jahn, 2015) are used. The choice for one of these techniques depends on the assumed scale of the dependent variable, which is assumed to be ordinal for ordered logit and interval(-like) for OLS regression. Van Praag & Ferrer-i-Carbonell (2010) argue that respondents most likely interpret the well-being questions in an interval-like way and that respondents have a common understanding of how to translate internal feelings into a numerical

scale, especially in the same language community (Van Praag, 1991). Van Praag & Ferrer-i-Carbonell (2006) and Ferrer-i-Carbonell & Frijters (2004) showed empirically that both methods yield similar results. This paper will use OLS regression because this technique is less data consuming compared to ordered logit, which works with individual specific cut-of-points. OLS has the additional advantage that its results are easier to interpret. Ordered logit estimation will however be performed as a robustness test at the end of this paper.

While the assumed scale of satisfaction scores makes little difference, allowing for fixed-effects does change results substantially (Ferrer-i-Carbonell & Frijters, 2004). As Table I shows, studies which used fixed effect more often find an insignificant relation than studies which do not. Also studies which compare the two methods find different results (e.g. de Graaf-Zijl, 2012). This difference caused by fixed effects has two explanations: (1) either the within variation of these studies is too limited, or (2) not all relevant time invariant characteristics are controlled for. The most important time invariant characteristics include fixed psychological factors and factors like social and family background (Beckmann et al., 2009; D'addio et al., 2007; Hamermesh, 2004; Jahn, 2015). We have good reasons to believe these personal characteristics bias the estimates when not controlled for. First of all, both the dependent and independent variable are subjective measures, merely reflecting scale feelings which depend on personalities (Beckmann et al., 2009; Ferrer-i-Carbonell & Frijters, 2004; Jahn, 2015). Moreover, meta-research on the big five personality traits found that these personal characteristics had an overall meta-correlation with job satisfaction as high as .41 (Judge et al., 2002). Others found similar correlations between personality traits and subjective job insecurity (Chadi & Hetschko, 2016; Sverke et al., 2006). This time invariant heterogeneity is included in the different models as the individual error term α_{it} . This paper controls for this time invariant heterogeneity by using fixed effects estimation, which removes this individual error term α_{it} by demeaning the data²¹ (Wooldridge, 2002b). To compare the effect of this technique, all estimates are not only separated for men and women, but for OLS and fixed effects as well. Clustered robust standard errors are further used to correct for heteroscedasticity and within cluster correlation, that is, correlation between the different observations of one individual (Ibid.)

Before moving to the analysis, it is however important to note that the fixed effect results are based on those who switched from contract type. If contract switchers are different from other workers the outcomes will not be representative for the population (de Graaf-Zijl, 2012; Jahn, 2015). Table IV therefore shows the number of contract switchers and how they compare to the whole population on some socio-demographic characteristics²². Most of the respondents did not switch between contract type, which mean that they either stayed in the same job, or got a new job with the same type of contract. The fact that contract switchers make up only 1.97 percent of the total observations might result in high standard errors and hence a more conservative result from the fixed effect analysis. We should furthermore be cautious generalizing the results of the fixed effects analysis to the whole sample given that Table IV indicates that contract switchers are not fully representative for the whole sample including contract stayers.

²¹ Because this paper assumes that the individual error term is correlated with the other explanatory variables it uses fixed effects instead of random effects. This choice is also supported by the Hausman test (Wooldridge, 2002b).

²² The total observations sum up to around 68 percent. The other 32 percent hence include observations with only one time period. Because the attrition rates of the LISS panel are low (de Vos, 2009), this high number is explained by the selection used in this paper. Individuals moving to a different contract than a temporary or permanent one, or to unemployment or out of the labour force, drop out of the selection.

Table IV: Comparing contract switchers and stayers

	Switchers			Stayers		
	Temp-per	Per-temp	Total	Temp-temp	Per-per	Total
Number of observations	361	258	619	1185	12715	13900
% total observations	1.26	0.71	1,97	3.05	62,93	65.98
% male	58%	59%	59%	61%	50%	51%
Age (mean)	37.8	38.6	38.0	40.0	46.0	44.7
Variables						
Job satisfaction	7.2	6.7	7.1	7.0	7.5	7.5
Job insecurity	25.9	33.0	28.7	37.8	16.1	17.3

V. Descriptive evidence

Figure V shows the average job satisfaction and subjective job insecurity levels for temporary and permanent contracts over the research period 2008-2015. Recall that job satisfaction is evaluated on an eleven point scale where a higher score indicates higher satisfaction levels. Job insecurity is measured by asking respondents to evaluate the percentage chance of losing their job in the coming 12 months. We find that permanent workers report systematically higher job satisfaction scores compared to temporary workers. This difference is statistically significant. The satisfaction scores of both groups are however converging over time, decreasing the differences between both from 0.5 points in 2008 to less than 0.3 points in 2015. The difference in reported job insecurity levels between permanent and temporary workers is higher. Temporary workers feel on average more than twice as insecure than permanent workers. What further stands out is the systematic increase in insecurity for both permanent and temporary workers since the financial crisis of 2008.

Figure V: average job insecurity and job satisfaction levels for temporary and permanent workers (2008-2015)

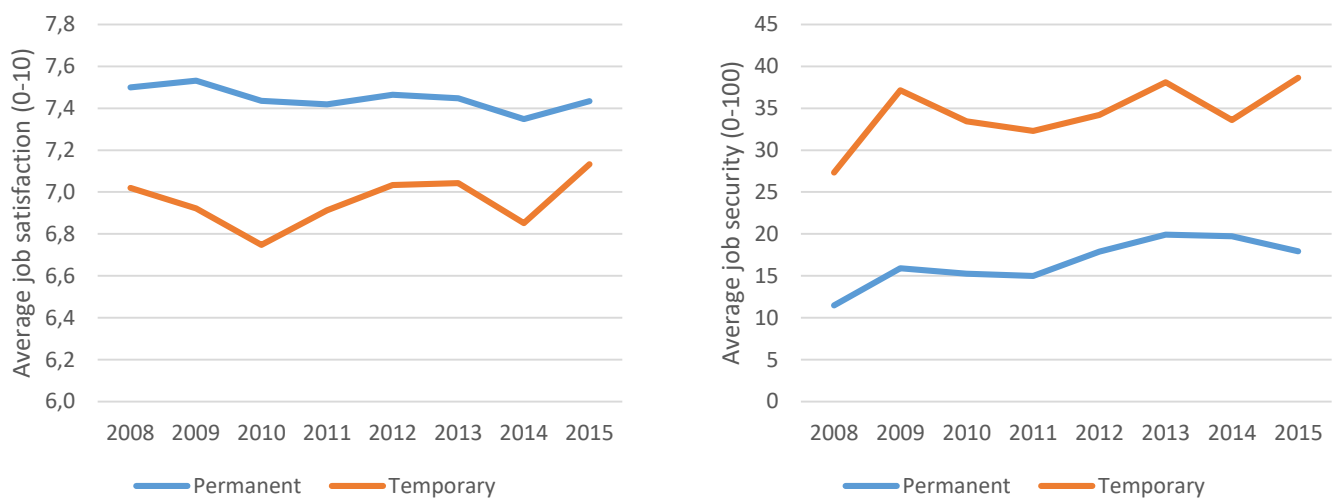


Table VI shows the mean differences between satisfaction levels and perceived working conditions over the period 2008-2015 for temporary and permanent workers. The Δ provides the (significant) differences between both means. As in Figure V, we find that overall job satisfaction is significantly lower for temporary workers. The different satisfaction aspects provide insights into what causes this lower satisfaction levels of temporary workers. We find significantly higher satisfaction levels on all aspects for permanent workers. The difference is the highest for the career and work aspects with respectively .68 and .6 lower satisfaction scores for temporary workers. Satisfaction scores on hours and wage are around .4 point lower and the difference on atmosphere is with .09 almost negligible. The perceived working conditions on the right side of the table denote perceived working conditions measured as statements which could be answered with: (1) disagree entirely, (2) disagree, (3) agree, (4) agree entirely. The first three statements and the last one were formulated negatively, the others positively. That means that, given the non-significant differences on physical and career, temporary workers on average experience less time pressure, however, also less freedom, training possibilities, support, appreciation, salary and security. Because these working conditions are measured on the same scale, we can compare the size of the differences between them. With .31, the biggest difference between temporary and permanent workers is their experienced job security. Together with Figure V, this supports the idea that lower job insecurity is the main differences between temporary and permanent workers in the Netherlands and that it is this lower job insecurity that explains the lower job satisfaction levels found for temporary workers.

Table VI: Mean differences job satisfaction aspects and perceived working conditions (t-tests)

	Satisfaction levels			Perceived Working condition levels			
	Permanent	Temporary	Δ	Permanent	temporary	Δ	
Overall	7,46	6,95	0,49	Physical	2,13	2,15	-0,02
Career	7,32	6,64	0,68	Pressure	2,25	2,18	0,07
Atmosphere	7,62	7,53	<u>0,09</u>	Freedom	2,01	2,15	-0,14
Work	7,60	7,00	0,6	Training	2,85	2,72	0,13
Hours	7,55	7,15	0,4	Support	2,84	2,78	0,06
Wage	6,77	6,33	0,44	Appreciation	2,75	2,69	0,06
				Salary	2,59	2,52	0,07
				Career	2,61	2,63	-0,02
				Security	2,15	2,46	0,31

Mean differences between permanent and temporary workers. Significance between means indicated by: **Bold**=0.01 & Underlined=0.05.

Table VII shows the Pearson correlations of both the independent and control variables with overall job satisfaction, separated for gender and contract type. The high correlations between the overall measure of job satisfaction and its facets strengthen the belief that they measure the same concept, supporting the choice for a single-item measure of job satisfaction (Steger et al., 2012; Wanous & Hudy, 2001). In line with earlier research, this paper finds job satisfaction mostly reflects satisfaction with work and is weaker correlated with hours or wage (de Graaf-Zijl, 2012; Jahn, 2015). This holds for both temporary and permanent workers and for both genders, although men experience a somewhat higher correlation with wage. Career satisfaction is correlated more with overall satisfaction for permanent compared to temporary workers, which can be explained by the more long term perspective of permanent workers. When looking at job insecurity what stands out is not the difference between temporary and permanent workers, but between men and women. Although the correlations are significant and negative for both groups, the correlations are higher for men than for women, which supports our third hypothesis. Moving to the correlations with the socio-economic control variables we find mostly insignificant or very small correlations. Working conditions, in contrast, are highly correlated with job satisfaction. While the gender differences are limited, the correlations for temporary workers are systematically higher than for permanent workers. Within the working conditions the highest correlations with job satisfaction are found for the training, support and appreciation variables (over .4), while we find weaker correlations (less than .2) for the physical and pressure variables. When looking at the work and firm characteristics we find that working part-time, the difference between preferred and actual hours, and firm size have no or insignificant correlations. We further find that it is not so much the sector you work in, but your occupation which is highly correlated with job satisfaction. Higher professions are associated with higher job satisfaction levels, while these tend to be lower for unskilled professions. Overall Table VII shows the importance of most control variables, especially for the seven working conditions. It furthermore supports the idea that job satisfaction determinants are different for temporary and permanent workers and men and women.

Table VII: Pearson correlations with overall job satisfaction

	Temporary		Permanent	
	male	female	male	female
SatCarreer	0,66	0,69	0,75	0,73
SatAtmosphere	0,54	0,6	0,56	0,57
SatWork	0,84	0,84	0,82	0,82
SatHours	0,46	0,44	0,45	0,45
SatWage	0,55	0,50	0,47	0,42
	Insecurity			
Job Insecurity	-0,24	-0,16	-0,20	-0,15
	Socio-economic controls			
Age	0,02	0,07	0,09	0,10
Children	0,01	0,01	-0,01	0,01
Domestic situation1	<u>-0,09</u>	-0,02	-0,06	-0,02
Domestic situation2	0,03	-0,01	0,06	0,02
Domestic situation3	0,07	0,02	-0,01	-0,01
Domestic situation4	<u>-0,10</u>	0,01	-0,01	0,00
Education1	-0,05	-0,01	0,00	0,01
Education2	0,03	-0,03	-0,00	0,01
Education3	-0,13	0,07	-0,03	0,00
Education4	-0,04	-0,02	<u>-0,02</u>	-0,01
Education5	0,04	-0,02	<u>0,03</u>	0,00
Education6	<u>0,12</u>	0,02	0,02	-0,01
	Working conditions			
Physical	-0,18	-0,22	-0,11	-0,09
Pressure	-0,18	-0,22	-0,16	-0,18
Freedom	-0,34	-0,23	-0,26	-0,24
Training	0,40	0,43	0,35	0,34
Support	0,43	0,39	0,37	0,39
Appriciation	0,46	0,53	0,46	0,43
Salary	0,35	0,34	0,32	0,26
Career	-0,29	-0,28	-0,28	-0,26
	Work and firm characteristics			
Parttime	<u>-0,09</u>	-0,02	-0,01	-0,02
PrefHours	0,08	-0,04	0,04	0,03
JobMatch	0,42	0,43	0,37	0,34
Primary	0,02	-0,04	0,01	-0,03
Secondary	-0,02	0,07	-0,05	<u>-0,02</u>
Tertiary	-0,07	-0,05	-0,02	<u>-0,03</u>
Quartair	0,06	<u>0,10</u>	0,07	0,07
Other	0,02	<u>-0,10</u>	-0,01	-0,04
Higher	0,16	0,09	0,09	0,05
Intermediate	-0,02	0,18	-0,01	<u>0,03</u>
Skilled	-0,02	-0,08	-0,05	-0,01
Unskilled	-0,19	-0,26	-0,06	-0,09
FirmSize	0,10	-0,01	0,04	0,01

Significance indicated by: **Bold**=0.01 & Underlined=0.05. uncontrolled.

VI. Empirical analysis

This section discusses the regression results for the six models presented in section IV. Recall that Model 1 includes the contract variable, Model 2 adds the job insecurity variable and Model 3 includes an interaction term between both independent variables. All models include social-economic controls, while Model 4, 5 and 6 furthermore include the work and firm characteristics controls. These six models are estimated separately for men and women using two estimation techniques: OLS and fixed effects. By demeaning the data, this last technique is able to control for time invariant heterogeneity including personal characteristics (Wooldridge, 2002b). This section will start discussing the OLS results in Table VIII, after which the focus will be to discuss the fixed effects results in Table IX. After comparing these findings and discussing them theoretically, section VII will present some sensitivity and robustness checks to evaluate the robustness of the results found.

All six models presented in Table VIII yield significant F-statistics and are hence interpretable. Model 1 shows a significant negative effect of temporary work on job satisfaction for men, while this effect is insignificant for women. On an eleven-point scale, temporary working men experience on average .206 points lower job satisfaction levels than their permanent co-workers. These observations are in line respectively, with hypothesis 1 and 4a. This negative effect of temporary work for men however evaporates after including the job insecurity variable in model 2. This indicates that the negative effect of temporary work on job satisfaction for men is driven by the negative effect of job insecurity, which was predicted in hypothesis 2 and 3. Recall that job insecurity is measured in percentages ranging from 0 to 100. The insecurity coefficient can hence be interpreted in the following way: if a man or woman feels one percent more uncertain about the future of their job in the coming 12 months, this is associated with respectively a .006 and .008 decrease in job satisfaction. Being hundred percent unsure about your job hence implies a decrease in satisfaction levels of .60 and .80 points. What stands out here is that, contrary to hypothesis 4b, this effect seems stronger for women compared to men. The interaction term between temporary work and job insecurity in model 3 is insignificant for both men and women, which implies that job insecurity is valued the same for temporary and permanent workers.

Including the job and firm characteristics in model 4, 5 and 6 boosts the explanatory power - within R-square - of the models, indicating that the control variables are strong predictors of job satisfaction. Including these controls slightly changes the results. Although the effect of temporary work remains insignificant for women and significantly negative for men in model 4, the effect for men becomes somewhat stronger. Looking at model 5, the effect of job insecurity is still significant and negative for both men and women, however its effect size halved. The job and firm characteristics hence partly explain the higher negative effect found in model 2. When including the job insecurity variable, the negative coefficient for temporary work drops and becomes only borderline significant. The effect of temporary work is hence driven by job insecurity and should be interpreted with caution. We further test if the difference between the job insecurity coefficients for men and women is significant over the models. We find that although this difference is significant at the 5 percent level in the first three models, it turns insignificant after controlling for the job and firm characteristics in model 4, 5 and 6. Contrary to hypothesis 4b, there is hence no evidence that men and women evaluate job insecurity differently. Similarly, the lasting insignificant interaction term in model 6 yields the same conclusion for the evaluation of job insecurity for temporary and permanent workers. Overall, the results in Table VIII show an insignificant effect of temporary work on job satisfaction for women. We further find that the negative effect of temporary work for men in model 1 and 4 is driven by job insecurity, which itself is found to have a negative effect on job satisfaction for both men and women. We further find no significant differences in the evaluation of job insecurity between both men and women and temporary and permanent workers.

As discussed in the methods section, the results found in OLS could be explained by time invariant unobserved individual factors like personality or social and family background. In other words, the results described above can be biased because they do not control for potential differences in personality traits (e.g. negativity or neuroticism) between temporary and permanent workers. Our analysis is especially vulnerable for this kind of variation given the subjective nature of both the dependent and job insecurity variable (e.g. Beckmann et al., 2009; Ferrer-i-Carbonell & Frijters, 2004). To control for the influence of this kind of time invariant heterogeneity this paper applies fixed effects estimation, which results are shown in Table IX. Again, all models yield significant F-statistics. Looking at model 1 and 3, what stands out is that, compared to the OLS results, the effect of temporary work turns insignificant for men. Controlling for time invariant unobserved heterogeneity hence makes the negative effect of temporary work disappear. Because this observation is constant over the models, we find no evidence for our hypotheses related to the temporary work variable: 1, 3 and 4a. The effect of job insecurity, in contrast, is similar as we find with OLS and hence in line with hypothesis 2. The effect is significantly negative for both men and women and somewhat less strong compared to the OLS results. Like in the OLS regression, the effect becomes smaller after including the job and firm controls. Given the insignificant effect of job insecurity it is no surprise that the interaction term between temporary work and job insecurity in model 3 and 6 is not significant as well.

As pointed out, adding the (job and firm) controls in model 4, 5 and 6, significantly boosts the explanatory power for both estimation techniques. Taking a closer look at the complete OLS estimation in Appendix III, we see that job satisfaction tends to be higher for partners with and without children compared to singles. We further find a small positive effect for age and a positive effect of higher education for women. Surprisingly, this last effect turns negative for both men and women after including the job and firm controls including occupational level. The high coefficients for higher occupation levels support the idea that it is occupation-level rather than education that has a positive effect on job satisfaction and that high education combined with a low skilled job will cause strain (Cheng & Chan, 2008). This idea is supported by the strong positive effect for job match (Amador et al., 2016). Six out of the seven working conditions have a significant effect on job satisfaction and follow the predicted direction. The strongest effects are found for appreciation, learning and support. The most notable gender differences include the weaker effect for pressure and the higher effect of wage and freedom for women. Looking at the full fixed effects regression in Appendix IV we find similar results as using OLS. Most socio-economic variables turned insignificant which is explained by the limited within variation (e.g. Wooldridge, 2002b). The working conditions variables however follow the same sign and significance, although their effect size is somewhat weaker. What stands out is that when using fixed effects, not only occupational-level, but also the sector has a strong effect. Apparently, different sectors attract people with different personalities, backgrounds, or other non-observed time invariant variables.

Comparing both estimation methods, this paper concludes that, contrary to hypothesis 1 and 3, temporary work has an insignificant effect on job satisfaction. Although OLS finds a significant negative effect in model 1 and 4, this effect evaporates after including the job insecurity variable. This effect furthermore fully disappears when controlling for time invariant heterogeneity. Moreover, both techniques find a negative effect of job insecurity which is robust over the models and in line with hypothesis 2. The negative effect of job insecurity becomes smaller when controlling for job and firm characteristics and time invariant heterogeneity. Contrary to hypothesis 4a and 4b, we find no significant difference in the evaluation of temporary work or job insecurity between men and women. The insignificant interaction term between temporary work and job insecurity in both tables furthermore indicates that temporary and permanent workers do not differ in their evaluation of temporary work. Overall, this paper concludes that it is not the contract, but job insecurity that has a negative effect on job satisfaction and that there is no evidence that this effect is significantly different for both men and women and temporary and permanent workers.

Table VIII: Ordinary Least Square (OLS) summary estimates job satisfaction (age >25)

Ordinary Least Squares (OLS)												
VARIABLES	1		2		3		4		5		6	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Temporary (0=permanent, 1=temporary)	-0.206** (0.081)	-0.124 (0.095)	-0.096 (0.100)	-0.042 (0.109)	-0.022 (0.119)	-0.010 (0.155)	-0.271*** (0.074)	-0.130 (0.080)	-0.165* (0.087)	-0.060 (0.092)	-0.086 (0.103)	-0.109 (0.136)
Job Insecurity (0=secure, 100=insecure)			-0.006*** (0.001)	-0.008*** (0.001)	-0.006*** (0.001)	-0.008*** (0.001)			-0.003*** (0.001)	-0.004*** (0.001)	-0.003*** (0.001)	-0.005*** (0.001)
Temporary*Job Insecurity					-0.002 (0.003)	-0.001 (0.004)					-0.002 (0.002)	0.001 (0.003)
Constant	6.765*** (0.194)	6.512*** (0.202)	6.976*** (0.203)	6.508*** (0.224)	6.964*** (0.203)	6.507*** (0.223)	3.083*** (0.395)	3.611*** (0.325)	3.320*** (0.466)	3.786*** (0.340)	3.310*** (0.464)	3.789*** (0.340)
Socio-economic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Job and firm controls							✓	✓	✓	✓	✓	✓
Observations	9,347	8,803	7,279	7,375	7,279	7,375	7,560	7,687	5,998	6,511	5,998	6,511
Individuals	2,751	2,541	2,299	2,260	2,299	2,260	2,441	2,369	2,063	2,129	2,063	2,129
R-squared (within)	0.002	0.005	0.008	0.012	0.009	0.012	0.179	0.184	0.181	0.188	0.181	0.188

Clustered standard errors in parentheses. Significance indicated by: *** p<0.01, ** p<0.05, * p<0.1. Socio-economic controls: age, domestic situation (4 dummies), number of living-at-home children, education (6 dummies). Job and firm controls: part-time (dummy), preferred hours, job match quality, sector (5 dummies), occupation (4 dummies), firm size, seven working conditions measured on a 4 point scale (1=disagree entirely, 4=agree entirely): physical, pressure, freedom, learn, support, appreciation, salary, career.

Table IX: Fixed Effects (FE) summary estimates job satisfaction (age >25)

VARIABLES	Fixed Effects											
	1		2		3		4		5		6	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Temporary (0=permanent, 1=temporary)	0.026 (0.104)	0.090 (0.126)	0.118 (0.132)	0.092 (0.149)	0.167 (0.150)	-0.042 (0.194)	-0.128 (0.110)	-0.021 (0.114)	-0.030 (0.135)	-0.039 (0.139)	0.014 (0.148)	-0.210 (0.184)
Job Insecurity (0=secure, 100=insecure)			-0.004*** (0.001)	-0.005*** (0.001)	-0.004*** (0.001)	-0.005*** (0.001)			-0.002** (0.001)	-0.003*** (0.001)	-0.002** (0.001)	-0.003*** (0.001)
Temporary*Job Insecurity					-0.001 (0.003)	0.004 (0.005)					-0.001 (0.003)	0.006 (0.005)
Constant	6.538*** (0.920)	9.327*** (0.276)	5.854*** (0.844)	9.092*** (0.325)	5.845*** (0.838)	9.089*** (0.326)	2.842*** (0.998)	6.090*** (0.512)	1.490 (1.217)	6.005*** (0.532)	1.491 (1.217)	5.913*** (0.557)
Socio-economic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Job and firm controls							✓	✓	✓	✓	✓	✓
Observations	9,347	8,803	7,279	7,375	7,279	7,375	7,560	7,687	5,998	6,511	5,998	6,511
Individuals	2,751	2,541	2,299	2,260	2,299	2,260	2,441	2,369	2,063	2,129	2,063	2,129
R-squared (within)	0.004	0.008	0.012	0.016	0.011	0.016	0.185	0.191	0.187	0.196	0.187	0.197

Clustered standard errors in parentheses. Significance indicated by: *** p<0.01, ** p<0.05, * p<0.1. Controls: see Table VIII.

VII. Robustness checks

To check the robustness of the effects discussed above, this section presents some additional analyses and robustness checks. In the methods section we argued that the dependent variable was most likely interpreted in an interval-like way and that OLS and ordered probit regression were likely to yield similar results (Van Praag & Ferrer-i-Carbonell, 2006; Ferrer-i-Carbonell & Frijters, 2004). To check if the results are sensitive to the assumed scale of the dependent variable we executed an ordered probit regression which is included in Appendix V. This regression yields very similar results to the OLS regression presented in this paper; finding an insignificant effect for temporary work for both men and women when controlling for job insecurity and job and firm characteristics. This paper therefore concludes that the conclusions drawn from OLS are robust with respect to the estimation technique and that the supposed scale of the dependent variable does not change the basic results. In the method section we further assumed that the individual error term was correlated with the explanatory variables (e.g. Beckmann, 2009; Ferrer-i-Carbonell & Frijters, 2004). To check for the impact of this assumption we conducted a random effects regression, which is a more efficient estimation technique when the individual error term is uncorrelated with the explanatory variables (Wooldridge, 2002b). The outcomes were very similar to the OLS, but much different from the fixed effects regression, which underlines the importance of controlling for time invariant heterogeneity.

This paper used a single item measure for job in security because recent studies found it to produce reliable and valid results (Dolbier et al., 2005; Steger et al., 2012). To check for the effect of a multi-item measure of the dependent variable we constructed two variables using different facets of job satisfaction with a Cronbach alpha of .79: one weighted by factor loadings and one taking the simple weighted average. Both multi-item measures yield similar results as the single item operationalization of job insecurity, finding no differences in sign or significance. The effect size of job insecurity tends however to be lower for the multi-item measures, which might point to an upward bias. The similarity in outcomes can be explained by the high correlation between both measures (.81) (Wanous & Hudy, 2001). Job insecurity is furthermore operationalized using the following item: 'it is uncertain whether my job will continue to exist', which can be answered on a four point scale where 1 means disagree entirely and 4 the converse. Including this operationalization does not change the sign and significance of the effect.

To check for the sensitivity and generalizability of our results we limited the analysis to different groups, including public sector workers, full-time workers and youth below 25. Using sector controls as a proxy for employment security we found strong sectoral effects in the fixed effects regression, especially for public sector workers. Moreover, we know that job satisfaction determinants differ for public and private sector workers (e.g. Beulens & Van den Broeck, 2007; Bright, 2008). Limiting the analysis to public sector workers yields a weaker effect for job insecurity, which strengthens the idea that sector controls can be seen as a proxy for employment security. Because part-time workers tend to experience higher job satisfaction and experience less negative effects of job insecurity (e.g. Thorsteinson, 2003), this paper further limited its analysis to full-time workers. As expected, the effect of job insecurity is stronger for fulltime compared to part-time workers. Lastly, we include youth below 25 in the analysis, which as we saw in section IV make up more than 60 percent of the temporary workers in our original sample. We expect the effect of temporary work to be more positive for youth for two reasons. First of all, temporary work is more likely to include voluntary side or student jobs. Secondly, because temporary contracts are so prevalent for entrée level jobs, we expect younger workers to have different expectations towards temporary contracts: seeing them more often as a stepping stone (CBS & TNO, 2016). Table X however finds no evidence that youth value temporary work or job insecurity differently than older workers.

Table X: Fixed Effects (FE) estimates job satisfaction (including youth <25)

VARIABLES	Fixed effects											
	1		2		3		4		5		6	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Temporary (0=permanent, 1=temporary)	0.066 (0.086)	-0.020 (0.104)	0.126 (0.121)	0.106 (0.139)	0.183 (0.137)	0.012 (0.175)	-0.070 (0.090)	-0.040 (0.097)	-0.013 (0.124)	-0.031 (0.128)	0.018 (0.137)	-0.161 (0.164)
Job Insecurity (0=secure, 100=insecure)			-0.004*** (0.001)	-0.005*** (0.001)	-0.004*** (0.001)	-0.005*** (0.001)			-0.002** (0.001)	-0.003*** (0.001)	-0.002* (0.001)	-0.003*** (0.001)
Temporary*Job Insecurity					-0.002 (0.003)	0.003 (0.005)					-0.001 (0.003)	0.004 (0.004)
Constant	6.699*** (0.832)	9.211*** (0.243)	5.996*** (0.810)	9.029*** (0.309)	5.984*** (0.803)	9.026*** (0.310)	2.768*** (0.936)	6.133*** (0.531)	1.517 (1.170)	5.925*** (0.502)	1.522 (1.171)	5.860*** (0.515)
Socio-economic controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Job and firm controls							✓	✓	✓	✓	✓	✓
Observations	10,316	9,509	7,542	7,526	7,542	7,526	8,272	8,210	6,220	6,650	6,220	6,650
Individuals	3,170	2,836	2,406	2,326	2,406	2,326	2,768	2,611	2,159	2,195	2,159	2,195
R-squared (within)	0.004	0.009	0.011	0.015	0.011	0.016	0.190	0.200	0.187	0.198	0.187	0.198

Clustered standard errors in parentheses. Significance indicated by: *** p<0.01, ** p<0.05, * p<0.1. Controls included: see Table VII

VIII. Conclusion & Discussion

This paper started with the observation that while the share of temporary workers in total employment has increased in many developed economies since the 1990's, the effect of temporary contracts on workers welfare is still subject to academic debate (de Cuyper et al., 2008a; Wilkin, 2013). The goal of this paper was hence to research the exact relation between temporary work and workers' welfare in the Netherlands, a country with a high share of temporary workers (CBS Statline, 2016). Section II started by discussing the Dutch labour market context and the regulations surrounding temporary work in the Netherlands. It was argued that the most important difference between temporary and permanent workers is the inherently lower job security for temporary workers (CPB, 2015; de Lange, 2013). Because its high EPL differential (CPB, 2015) and low transition rates to permanent contracts (EC, 2010; Eurofound, 2015), the Dutch labour market was characterised as a dual labour market (Boeri & Garibaldi, 2009). Section III showed that temporary work in such labour markets is seen as a dead end rather than a stepping stone to permanent employment and would therefore be negatively evaluated according to the job stress and deprivation theory (e.g. de Cuyper et al., 2008a). Given these unique Dutch labour market institutions it was predicted that temporary work and job insecurity would have negative effects on job satisfaction (hypotheses 1 and 2) and that the negative effect of the first is driven by job insecurity (hypothesis 3). Given the low share of female primary earners, it was further hypothesized that both these negative effects would be stronger for men (hypothesis 4a & 4b).

To test these hypotheses, this paper used Dutch LISS panel data for the period 2008-2014. The longitudinal nature of the data allowed this paper to control for time invariant unobserved heterogeneity, including personal characteristics and social background, using fixed effects estimation. Controlling for this type of time invariant unobserved heterogeneity and job insecurity, this paper finds, contrary to hypothesis 1, an insignificant effect of temporary work on job satisfaction. In contrast, this paper finds a significantly negative effect of job insecurity on job satisfaction for both men and women, which is in line with hypothesis 2. Although this effect slightly decreases after controlling for job and firm characteristics and using fixed effects, it is consistent and highly significant over the models. Contrary to hypothesis 4a and 4b, we find no evidence that men and women evaluate temporary work or job insecurity differently. The insignificant interaction term between temporary work and job satisfaction furthermore indicates that the effect of job insecurity is similar for temporary and permanent workers. These findings are found to be robust using different estimation techniques, operationalizations of the main variables and different subsamples including public sector and fulltime workers and youth below 25. This paper hence concludes that it is job insecurity rather than temporary work that has a negative effect on job satisfaction and that there is no evidence that men and women or temporary and permanent workers value job insecurity differently.

Earlier panel studies found insignificant (e.g. Bardasi & Fransisconi, 2004; D'adio et al., 2007; Green et al., 2010; Guest et al., 2006) and negative (e.g. Booth et al., 2002; Chadi & Hetschko, 2016) effects of temporary work on job satisfaction. These mixed empirical findings were explained by the importance of the national labour market context and institutions. When looking at the Netherlands in particular, de Graaf-Zijl (2012) found an insignificant effect of temporary work using panel data for the period 1995-2002. This paper expected that temporary work would be evaluated more negatively after this period given the drop in transition rates, especially after the financial crisis in 2008 (EU, 2016; EuroFound, 2015). The fact that this paper finds similar insignificant results as de Graaf-Zijl (2012) could be explained by changing expectations of workers as a consequence of the growing share of temporary workers in total employment (Beckmann et al., 2009). Pouliakas & Theodossiou (2010) put forward the possibility that temporary workers adapt to their new situation (e.g. lower transition

rates), which only results in a temporary welfare loss which is invisible in the data. The significant negative effect of job insecurity supports the idea that (job) insecurity is an important determinant of job satisfaction (e.g. De Cuyper et al., 2008a; Jahn, 2015) and well-being more in general (e.g. Dawson et al., 2014). Contrary to earlier results (Clark, 1997; Jahn, 2015), this paper does not find a stronger effect of job insecurity for men. One explanation for this finding is that, although women are more often secondary wage earners in the Netherlands, the importance of this secondary income as part of the total household income increased overtime²³. Similar to de Graaf-Zijl (2012) and Jahn (2015), this paper finds no difference in how temporary and permanent workers evaluated job insecurity or other job characteristics.

The conclusion that job insecurity, rather than the type of contract has an effect on job satisfaction implies that policy should not be focussed on the limitation of temporary contracts, but on reducing the objective level of insecurity or mitigating its impact. On the individual level, workers could reduce their job insecurity by investing in their 'employability': *'the individual's ability to make labour market transitions'* (de Cuyper et al., 2008b, p. 490; Sverke et al., 2006). Education and training could for instance be stimulated using subsidies, especially for temporary workers which receive on average less training than their permanent co-workers (Akgündüz & van Huizen, 2015). On the firm level, De Witte et al. (2013) and Sverke et al. (2006) point out that the impact of job insecurity can be mitigated through clear communication, transparency and employee participation with respect to downsizing operations, enhancing employee's feelings of fairness and control. On the institutional level, more generous welfare state benefits could provide higher income security for workers when losing their job. EPL has however the most direct effect on job insecurity. As pointed out in section II, the Netherlands has the highest EPL differential of the OECD (CPB, 2015). This inequality in job insecurity is problematic given the limited mobility between temporary and permanent contracts (EC, 2010; EuroFound, 2015). The Dutch government tried to reduce this gap by strengthening the position of temporary workers with the introduction of the Work and Security Act in 2015 (National Government, 2016). Among several smaller measures, this act limited the maximum period of subsequent temporary contracts from three to two years in order to stimulate employers to offer temporary workers a permanent contract more easily. It is however too early to evaluate the outcomes of this act.

This paper has several limitations and recommendations for further research. First of all, Jahn (2015) shows that the negative effect of job insecurity on job satisfaction is moderated by the broader concept of employment security. Because this paper was unable to explicitly control for employment security, it used proxies including variables for human capital (education, occupational level) and sector. Like Sverke et al. (2002), this paper finds high correlations between the sector variables and job insecurity and job satisfaction. It would hence be interesting to research if the effect of temporary work on job satisfaction is different between sectors, especially because we know that people in different sectors value permanent contracts differently (CBS & TNO, 2016). Previous research furthermore pointed to the moderating effects of past labour market experience on the effect of temporary work, like the time accumulated in the workforce or in temporary contracts (e.g. Chadi & Hetschko, 2014; 2016; de Graaf-Zijl et al., 2011; Jahn, 2015). This paper is unable to control for this because of data limitations. Given these limitations, further research can look at the moderating effect of past labour market status and the voluntariness of the contract (switch) on the effect of temporary work on job satisfaction. Moreover, future research could look more in depth at the moderating effects of personality traits on the effect of job insecurity on job satisfaction given the differences

²³ Kösters & Moonen (2011) find that although many women still work part-time, they are increasingly working between 25-35 hours, so-called big part-time jobs.

between the OLS and fixed effects estimations in this paper. Especially because we know from previous research that personality effects are strong using subjective measures of job satisfaction (Judge et al., 2002) and job insecurity (Chade & Hetschko, 2016; Sverke et al., 2006). Lastly, it would be interesting to research if the effects found in this paper are similar for those workers with and without an explicit agreement to conversion into a permanent contract.

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Appendix I: Operationalizations

Variable	Operationalization	LISS code	
Dependent variable			
Job Satisfaction	Overall	Indicator: 'How satisfied are you with your current work?' Scale: eleven point Lickert-scale where 1 means that you are not at all satisfied with your current work; 11 means that you are fully satisfied.	133
	Dimensions (factor analysis)	Indicator: 'How satisfied are you with your ... so far?'	128
		• Wages, salary or profit earnings	129
		• Working hours	130
		• The type of work that you do	131
		• The general atmosphere among your colleagues	132
	• Career		
	Scale: eleven point Lickert-scale where 1 means that you are not at all satisfied with your current work; 11 means that you are fully satisfied.		
A & B: independent variables			
Contract type	Dummy: 0= permanent (ref.) 1= temporary	121	
Job Insecurity	Indicator: 'Do you think that there is any chance that you might lose your job in the coming 12 months?' Scale: percentage between 0 and 100 where 0 means you are sure about not losing job; 100 means that you are sure losing your job	256	
C: socio-economic control variables			
Gender	Dummy: 0= male 1= female	Geslacht	
Age	Age in years	Leeftijd	
Domestic situation	Recoded into 4 dummies: 1= Single 2= (Un)married co-habitation, without child(ren) 3= (Un)married co-habitation, with child(ren) 4= Single, with child(ren)	woonvorm	
Children	Number of living-at-home children in the household	aantalki	
Education	Highest level of education with diploma. Recoded into 6 dummies: 1= primary education (ref.) 2= vmbo 3= havo/vwo 4= mbo 5= hbo 6= wo	oplcac	
D: job and firm characteristics control variables			
Working conditions	Indicator: 7 statements regarding working conditions. 'Please indicate which of these apply to the work...':	427	
		428	
	• physically demanding.	429	
	• continually under time pressure.	430	
	• very little freedom for me to determine how to do my work.	431	
	• opportunity to learn new skills.	432	

	<ul style="list-style-type: none"> • sufficient support in difficult situations. • appreciation I deserve for my work. • My salary/income sufficient, given my effort and performance. • My prospects of career advancement/promotion in poor. 	433
Part-time	<p><u>Scale:</u> 1 = disagree entirely 2= disagree 3= agree 4= agree entirely</p> <p>Dummy: 0= actual hours =>36 1= actual hours<36</p>	127
Actual ≠ Preferred hours	Preferred hours – Actual hours	145
Job match quality	<p><u>Indicator:</u> ‘Please indicate on a scale from 0 to 10 how your knowledge and skills suit the work you do.’</p> <p><u>Scale:</u> eleven point Lickert-scale where 0 means that you knowledge and skills suit not at all; 10 means that they suit perfectly.</p>	032
Sector	<p><u>Indicator:</u> ‘In what sector do you work?’</p> <p>Original 15 categories recoded into 5 dummy variables (numbers refer to original categories)</p> <ul style="list-style-type: none"> • Primary: 1, 2 (ref.) • Secondary: 3, 4, 5 • Tertiary: 6, 7, 8, 9, 10 • Quataire: 11, 12, 13, 14 • Other: 15 	402
Occupation	<p><u>Indicator:</u> ‘What is your current profession?’</p> <p>Original 9 categories recoded into 4 dummy variables (numbers refer to original categories):</p> <ul style="list-style-type: none"> • Higher: 1, 2 • Intermediate: 3, 4, 5 • Skilled: 6, 7 • Unskilled: 8, 9 (ref.) 	404
Firm size	<p><u>Indicator:</u> ‘How many people work (approximately) in the branch/location where you (mainly) work?’</p> <p><u>Scale:</u> 0 to [integer]</p>	408
Other		
YearD	8 year dummies. 2008 (ref.)	wave

LISS refers to the original code in the data set. LISS datasets used: background, work and schooling and income core studies.

Appendix II: Summary statistic

Variables	Temporary		Permanent	
	Mean	S.D.	Mean	S.D.
Satisfaction				
JobSatisfaction	7,040	1,895	7,480	1,421
SatCarreer	6,669	1,910	7,351	1,413
SatAtmosphere	7,456	1,693	7,622	1,391
SatWork	7,192	1,986	7,671	1,421
SatHours	7,293	1,869	7,581	1,555
SatWage	6,361	1,963	6,816	1,720
Insecurity				
Job insecurity	36,412	33,225	16,435	24,545
Socio-economic controls				
Children	0,861	1,147	0,994	1,095
Age	40,854	10,658	45,723	9,999
Dom_situation1	0,227	0,419	0,164	0,370
Dom_situation2	0,339	0,474	0,302	0,459
Dom_situation3	0,381	0,486	0,477	0,500
Dom_situation4	0,046	0,209	0,049	0,217
Education1	0,033	0,180	0,033	0,178
Education2	0,149	0,356	0,182	0,386
Education3	0,099	0,299	0,080	0,271
Education4	0,280	0,449	0,303	0,460
Education5	0,263	0,440	0,297	0,457
Education6	0,177	0,382	0,106	0,307
Working conditions				
Physical	2,13	0,824	2,15	0,835
Pressure	2,25	0,761	2,18	0,747
Freedom	2,01	0,756	2,15	0,687
Learn	2,85	0,718	2,72	0,621
Support	2,84	0,632	2,78	0,607
Appriciation	2,75	0,665	2,69	0,647
Salary	2,59	0,712	2,52	0,665
Career	2,61	0,818	2,63	0,746
Other work and firm controls				
Parttime	1,522	0,500	1,458	0,498
PrefHours	1,216	8,678	0,035	10,884
JobMatch	6,855	2,223	7,415	1,733
FirmSize	319,264	1302,661	332,173	988,445
Primary	0,014	0,117	0,014	0,119
Secondary	0,115	0,320	0,176	0,381
Tertiary	0,287	0,452	0,255	0,436
Quartair	0,389	0,488	0,424	0,494
Other	0,195	0,396	0,131	0,337
Higher	0,174	0,379	0,162	0,368
Intermediate	0,615	0,487	0,663	0,473
Skilled	0,132	0,339	0,140	0,347
Unskilled	0,079	0,270	0,035	0,185

Those respondents are included which have reported values on contract type, job insecurity and the socio-economic control variables. It concerns pooled statistics for the research period: 2008-2015.

Appendix III: Complete Ordinary Least Square (OLS) estimates job satisfaction (age >25)

VARIABLES	1		2		3		4		5		6	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Temporary	-0.244*** (0.077)	-0.169* (0.089)	-0.153 (0.096)	-0.071 (0.101)	-0.039 (0.118)	-0.004 (0.143)	-0.266*** (0.071)	-0.087 (0.076)	-0.203** (0.084)	0.001 (0.087)	-0.100 (0.107)	-0.007 (0.130)
Job Insecurity			-0.006*** (0.001)	-0.008*** (0.001)	-0.006*** (0.001)	-0.008*** (0.001)			-0.003*** (0.001)	-0.004*** (0.001)	-0.002*** (0.001)	-0.004*** (0.001)
Temporary*Job insecurity					-0.003 (0.002)	-0.002 (0.003)					-0.003 (0.002)	0.000 (0.003)
Age	0.015*** (0.002)	0.014*** (0.003)	0.013*** (0.003)	0.014*** (0.003)	0.013*** (0.003)	0.014*** (0.003)	0.009*** (0.002)	0.010*** (0.003)	0.009*** (0.002)	0.011*** (0.003)	0.010*** (0.002)	0.011*** (0.003)
Dom_situation2	0.097 (0.071)	0.236*** (0.073)	0.091 (0.072)	0.195*** (0.071)	0.094 (0.072)	0.194*** (0.071)	0.044 (0.059)	0.178*** (0.059)	0.068 (0.062)	0.137** (0.059)	0.071 (0.062)	0.137** (0.059)
Dom_situation3	0.075 (0.068)	0.133* (0.070)	0.076 (0.070)	0.136** (0.069)	0.078 (0.070)	0.135* (0.069)	0.069 (0.059)	0.082 (0.056)	0.059 (0.062)	0.086 (0.056)	0.060 (0.062)	0.086 (0.056)
Dom_situation4	0.063 (0.106)	0.081 (0.129)	-0.035 (0.121)	0.069 (0.133)	-0.036 (0.121)	0.066 (0.133)	0.033 (0.088)	0.022 (0.109)	0.019 (0.105)	0.087 (0.108)	0.018 (0.105)	0.087 (0.108)
Education2	0.057 (0.160)	0.119 (0.148)	-0.076 (0.167)	0.139 (0.171)	-0.072 (0.167)	0.138 (0.171)	0.152 (0.140)	-0.081 (0.122)	0.029 (0.135)	-0.185 (0.129)	0.032 (0.134)	-0.185 (0.129)
Education3	0.120 (0.170)	0.047 (0.165)	-0.036 (0.178)	0.059 (0.186)	-0.030 (0.178)	0.059 (0.186)	-0.029 (0.146)	-0.245* (0.138)	-0.183 (0.144)	-0.292** (0.142)	-0.179 (0.143)	-0.293** (0.142)
Education4	0.012 (0.155)	0.180 (0.147)	-0.107 (0.161)	0.213 (0.169)	-0.100 (0.162)	0.213 (0.169)	-0.045 (0.133)	-0.084 (0.120)	-0.161 (0.129)	-0.156 (0.127)	-0.156 (0.128)	-0.156 (0.127)
Education5	0.054 (0.154)	0.257* (0.147)	-0.091 (0.160)	0.280* (0.168)	-0.083 (0.160)	0.281* (0.168)	-0.178 (0.133)	-0.180 (0.126)	-0.285** (0.129)	-0.255* (0.132)	-0.279** (0.129)	-0.255* (0.132)
Education6	-0.007 (0.169)	0.310* (0.158)	-0.161 (0.175)	0.376** (0.178)	-0.152 (0.175)	0.375** (0.178)	-0.327** (0.149)	-0.337** (0.141)	-0.373** (0.146)	-0.358** (0.148)	-0.366** (0.146)	-0.358** (0.148)
Physical							-0.021 (0.024)	0.002 (0.026)	-0.021 (0.026)	0.006 (0.028)	-0.021 (0.026)	0.006 (0.028)
Pressure							-0.130*** (0.025)	-0.070*** (0.025)	-0.129*** (0.027)	-0.076*** (0.026)	-0.129*** (0.027)	-0.076*** (0.026)
Freedom							-0.149*** (0.025)	-0.194*** (0.026)	-0.150*** (0.028)	-0.180*** (0.027)	-0.152*** (0.028)	-0.180*** (0.027)
Learn							0.222*** (0.030)	0.207*** (0.030)	0.191*** (0.032)	0.182*** (0.032)	0.192*** (0.032)	0.182*** (0.032)
Support							0.236*** (0.033)	0.288*** (0.033)	0.238*** (0.036)	0.288*** (0.035)	0.238*** (0.036)	0.288*** (0.035)
Appriciation							0.496*** (0.035)	0.421*** (0.032)	0.464*** (0.036)	0.406*** (0.033)	0.463*** (0.036)	0.406*** (0.033)
Salary							0.094*** (0.029)	0.169*** (0.030)	0.082*** (0.031)	0.148*** (0.031)	0.082*** (0.031)	0.148*** (0.031)
Career							-0.161*** (0.024)	-0.183*** (0.023)	-0.152*** (0.025)	-0.192*** (0.025)	-0.152*** (0.025)	-0.192*** (0.025)

Parttime							-0.048	-0.003	-0.004	-0.063	-0.003	-0.063
							(0.045)	(0.058)	(0.047)	(0.061)	(0.047)	(0.061)
PrefHours							0.005***	0.002	0.005***	0.000	0.005***	0.000
							(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
JobMatch							0.175***	0.184***	0.187***	0.199***	0.186***	0.199***
							(0.012)	(0.013)	(0.014)	(0.014)	(0.013)	(0.014)
Secondary							0.520*	-0.172	0.351	-0.182	0.353	-0.182
							(0.296)	(0.141)	(0.380)	(0.151)	(0.379)	(0.151)
Tertiary							0.489*	-0.141	0.382	-0.160	0.382	-0.160
							(0.287)	(0.142)	(0.371)	(0.152)	(0.369)	(0.152)
Quartair							0.620**	-0.053	0.442	-0.087	0.444	-0.087
							(0.287)	(0.145)	(0.371)	(0.154)	(0.369)	(0.154)
Other							0.458	-0.034	0.315	-0.074	0.317	-0.074
							(0.287)	(0.146)	(0.371)	(0.159)	(0.369)	(0.159)
Higher							0.517***	0.186	0.480***	0.175	0.483***	0.175
							(0.136)	(0.180)	(0.161)	(0.192)	(0.161)	(0.193)
Intermediate							0.358***	-0.009	0.374**	-0.013	0.378***	-0.013
							(0.119)	(0.171)	(0.146)	(0.183)	(0.146)	(0.184)
Skilled							0.443***	0.128	0.474**	0.140	0.478***	0.141
							(0.156)	(0.167)	(0.185)	(0.181)	(0.185)	(0.181)
FirmSize							-0.000	0.000	0.000	0.000*	0.000	0.000*
							(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
YearD2	-0.019	0.045	0.078	0.099*	0.076	0.099*	-0.038	0.046	0.046	0.113**	0.045	0.113**
	(0.044)	(0.044)	(0.059)	(0.055)	(0.059)	(0.055)	(0.042)	(0.041)	(0.054)	(0.050)	(0.054)	(0.050)
YearD3	-0.149***	-0.107**	-0.045	-0.042	-0.047	-0.042	-0.139***	-0.053	-0.065	0.011	-0.065	0.011
	(0.049)	(0.047)	(0.061)	(0.057)	(0.061)	(0.057)	(0.045)	(0.044)	(0.057)	(0.052)	(0.057)	(0.052)
YearD4	-0.118**	-0.153***	-0.008	-0.094	-0.011	-0.094	0.082*	0.107**	0.168***	0.173***	0.166***	0.173***
	(0.051)	(0.049)	(0.063)	(0.060)	(0.062)	(0.060)	(0.048)	(0.047)	(0.059)	(0.057)	(0.059)	(0.057)
YearD5	-0.149***	-0.077	-0.032	0.001	-0.036	0.001	-0.101**	-0.018	-0.006	0.041	-0.009	0.041
	(0.052)	(0.050)	(0.064)	(0.059)	(0.064)	(0.059)	(0.048)	(0.049)	(0.060)	(0.057)	(0.060)	(0.057)
YearD6	-0.192***	-0.099*	-0.047	0.007	-0.050	0.006	-0.222***	-0.036	-0.114*	0.041	-0.115*	0.041
	(0.054)	(0.052)	(0.068)	(0.061)	(0.068)	(0.061)	(0.053)	(0.049)	(0.064)	(0.055)	(0.064)	(0.055)
YearD7	-0.178***	-0.295***	-0.022	-0.165**	-0.026	-0.166***	-0.116**	-0.151***	-0.031	-0.068	-0.034	-0.068
	(0.053)	(0.055)	(0.066)	(0.064)	(0.066)	(0.064)	(0.051)	(0.050)	(0.062)	(0.058)	(0.062)	(0.058)
YearD8	-0.150***	-0.145***	0.001	-0.056	-0.004	-0.056	-0.096**	-0.024	-0.006	0.023	-0.009	0.023
	(0.053)	(0.053)	(0.065)	(0.062)	(0.065)	(0.062)	(0.049)	(0.048)	(0.061)	(0.056)	(0.061)	(0.056)
Constant	6.795***	6.500***	7.010***	6.556***	6.992***	6.550***	3.144***	3.685***	3.389***	3.901***	3.370***	3.902***
	(0.193)	(0.200)	(0.203)	(0.225)	(0.203)	(0.224)	(0.380)	(0.325)	(0.456)	(0.338)	(0.454)	(0.338)
Observations	9,347	8,803	7,279	7,375	7,279	7,375	7,560	7,687	5,998	6,511	5,998	6,511
Individuals	2,751	2,541	2,299	2,260	2,299	2,260	2,441	2,369	2,063	2,129	2,063	2,129
R-square (within)	0.002	0.005	0.009	0.012	0.009	0.012	0.185	0.185	0.187	0.188	0.187	0.188

Clustered standard errors in parentheses. Significance indicated by: *** p<0.01, ** p<0.05, * p<0.1.

Appendix IV: Complete Fixed Effects (FE) estimates for job satisfaction (age >25)

VARIABLES	1		2		3		4		5		6	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Temporary	0.026 (0.104)	0.090 (0.126)	0.118 (0.132)	0.092 (0.149)	0.167 (0.150)	-0.042 (0.194)	-0.128 (0.110)	-0.021 (0.114)	-0.030 (0.135)	-0.039 (0.139)	0.014 (0.148)	-0.210 (0.184)
Job Insecurity			-0.004*** (0.001)	-0.005*** (0.001)	-0.004*** (0.001)	-0.005*** (0.001)			-0.002** (0.001)	-0.003*** (0.001)	-0.002** (0.001)	-0.003*** (0.001)
Temporary*Job insecurity					-0.001 (0.003)	0.004 (0.005)					-0.001 (0.003)	0.006 (0.005)
Age	0.019 (0.021)	-0.049*** (0.003)	0.035* (0.018)	-0.047*** (0.003)	0.035* (0.018)	-0.047*** (0.003)	-0.001 (0.017)	-0.039*** (0.003)	0.023 (0.017)	-0.039*** (0.003)	0.023 (0.017)	-0.039*** (0.003)
Dom_situation2	0.158 (0.173)	0.203 (0.127)	0.132 (0.178)	0.188 (0.122)	0.138 (0.178)	0.190 (0.122)	0.072 (0.146)	0.252** (0.112)	0.086 (0.169)	0.229** (0.108)	0.091 (0.169)	0.231** (0.108)
Dom_situation3	0.177 (0.174)	0.077 (0.128)	0.163 (0.186)	0.118 (0.132)	0.168 (0.185)	0.119 (0.131)	0.154 (0.150)	0.077 (0.109)	0.124 (0.175)	0.139 (0.114)	0.127 (0.175)	0.143 (0.113)
Dom_situation4	0.143 (0.208)	0.118 (0.183)	-0.132 (0.228)	-0.053 (0.199)	-0.131 (0.228)	-0.040 (0.199)	0.040 (0.186)	0.057 (0.145)	-0.156 (0.227)	0.013 (0.161)	-0.155 (0.228)	0.025 (0.161)
Education2	0.311 (0.319)	0.020 (0.230)	0.398 (0.348)	0.149 (0.318)	0.399 (0.348)	0.144 (0.316)	0.606* (0.330)	0.078 (0.209)	0.244 (0.346)	0.173 (0.257)	0.242 (0.347)	0.185 (0.262)
Education3	0.215 (0.381)	0.218 (0.352)	0.052 (0.446)	0.258 (0.439)	0.055 (0.445)	0.269 (0.440)	0.409 (0.379)	0.195 (0.312)	-0.108 (0.419)	0.230 (0.364)	-0.106 (0.419)	0.258 (0.366)
Education4	0.010 (0.286)	0.030 (0.249)	0.138 (0.346)	0.138 (0.305)	0.139 (0.347)	0.138 (0.307)	0.190 (0.306)	0.099 (0.219)	-0.026 (0.363)	0.100 (0.248)	-0.026 (0.363)	0.115 (0.256)
Education5	0.169 (0.303)	0.015 (0.310)	0.054 (0.339)	0.231 (0.360)	0.051 (0.339)	0.226 (0.363)	0.191 (0.329)	0.152 (0.273)	0.010 (0.350)	0.180 (0.301)	0.010 (0.350)	0.185 (0.305)
Education6	-0.428 (0.303)	0.524 (0.562)	-0.298 (0.290)	0.845 (0.692)	-0.300 (0.290)	0.866 (0.694)	-0.340 (0.296)	0.583 (0.580)	-0.330 (0.289)	0.944 (0.714)	-0.329 (0.289)	0.974 (0.712)
Physical							-0.040 (0.032)	-0.023 (0.033)	-0.029 (0.034)	-0.013 (0.037)	-0.029 (0.034)	-0.012 (0.037)
Pressure							-0.124*** (0.030)	-0.070** (0.030)	-0.126*** (0.032)	-0.077** (0.032)	-0.126*** (0.032)	-0.078** (0.032)
Freedom							-0.115*** (0.029)	-0.158*** (0.031)	-0.114*** (0.031)	-0.141*** (0.031)	-0.115*** (0.031)	-0.142*** (0.031)
Learn							0.194*** (0.034)	0.193*** (0.035)	0.181*** (0.037)	0.163*** (0.037)	0.181*** (0.037)	0.164*** (0.037)
Support							0.198*** (0.037)	0.251*** (0.038)	0.195*** (0.041)	0.267*** (0.039)	0.195*** (0.041)	0.269*** (0.039)
Appriciation							0.416*** (0.040)	0.357*** (0.036)	0.365*** (0.040)	0.343*** (0.037)	0.365*** (0.040)	0.342*** (0.037)
Salary							0.068** (0.034)	0.110*** (0.035)	0.057* (0.035)	0.114*** (0.036)	0.058* (0.035)	0.112*** (0.036)
Career							-0.136*** (0.027)	-0.133*** (0.026)	-0.124*** (0.029)	-0.129*** (0.030)	-0.124*** (0.029)	-0.129*** (0.030)
Parttime							-0.071 (0.067)	0.023 (0.089)	-0.026 (0.067)	-0.015 (0.097)	-0.026 (0.067)	-0.015 (0.096)

PrefHours							0.006**	0.003	0.005**	0.001	0.005**	0.001
							(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
JobMatch							0.128***	0.133***	0.142***	0.142***	0.142***	0.143***
							(0.015)	(0.015)	(0.016)	(0.017)	(0.016)	(0.017)
Secondary							1.546***	-0.369	1.459***	-0.587**	1.457***	-0.585**
							(0.470)	(0.256)	(0.550)	(0.275)	(0.549)	(0.274)
Tertiary							1.432***	-0.038	1.629***	-0.224	1.624***	-0.228
							(0.453)	(0.265)	(0.529)	(0.298)	(0.528)	(0.297)
Quartair							1.779***	0.140	1.834***	-0.190	1.828***	-0.175
							(0.452)	(0.280)	(0.518)	(0.314)	(0.517)	(0.312)
Other							1.597***	-0.243	1.640***	-0.531*	1.636***	-0.519*
							(0.439)	(0.249)	(0.516)	(0.312)	(0.514)	(0.310)
Higher							0.685*	0.293	0.967	0.527*	0.967	0.597*
							(0.360)	(0.365)	(0.654)	(0.316)	(0.656)	(0.357)
Intermediate							0.428	0.154	1.007	0.338	1.008	0.406
							(0.318)	(0.342)	(0.628)	(0.289)	(0.630)	(0.333)
Skilled							0.620**	0.050	1.071*	0.286	1.075*	0.351
							(0.307)	(0.324)	(0.562)	(0.279)	(0.564)	(0.322)
FirmSize							-0.000	0.000	-0.000	0.000	-0.000	0.000*
							(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
YearD2	-0.035	0.092**	0.061	0.148**	0.061	0.151**	-0.038	0.078*	0.004	0.143**	0.005	0.146***
	(0.050)	(0.045)	(0.064)	(0.060)	(0.064)	(0.060)	(0.046)	(0.042)	(0.058)	(0.056)	(0.058)	(0.056)
YearD3	-0.175***	-0.006	-0.086	0.042	-0.087	0.044	-0.130**	0.016	-0.120*	0.075	-0.120*	0.077
	(0.066)	(0.049)	(0.075)	(0.064)	(0.075)	(0.064)	(0.058)	(0.046)	(0.068)	(0.059)	(0.068)	(0.059)
YearD4	-0.132	0.001	-0.048	0.058	-0.050	0.060	0.066	0.161***	0.077	0.231***	0.077	0.234***
	(0.082)	(0.052)	(0.084)	(0.068)	(0.084)	(0.068)	(0.072)	(0.050)	(0.078)	(0.066)	(0.078)	(0.065)
YearD5	-0.194*	0.148***	-0.130	0.198***	-0.131	0.200***	-0.106	0.132**	-0.114	0.194***	-0.115	0.196***
	(0.099)	(0.053)	(0.098)	(0.069)	(0.097)	(0.068)	(0.084)	(0.053)	(0.090)	(0.066)	(0.090)	(0.066)
YearD6	-0.239**	0.186***	-0.160	0.255***	-0.161	0.256***	-0.195*	0.161***	-0.221**	0.236***	-0.221**	0.239***
	(0.119)	(0.056)	(0.113)	(0.070)	(0.112)	(0.070)	(0.100)	(0.054)	(0.104)	(0.064)	(0.103)	(0.064)
YearD7	-0.210	0.073	-0.161	0.163**	-0.163	0.166**	-0.085	0.093*	-0.155	0.168**	-0.155	0.171**
	(0.136)	(0.059)	(0.125)	(0.073)	(0.124)	(0.073)	(0.112)	(0.056)	(0.115)	(0.067)	(0.114)	(0.067)
YearD8	-0.221	0.261***	-0.176	0.311***	-0.178	0.312***	-0.060	0.271***	-0.152	0.319***	-0.152	0.321***
	(0.155)	(0.059)	(0.140)	(0.073)	(0.139)	(0.073)	(0.126)	(0.057)	(0.129)	(0.068)	(0.128)	(0.068)
Constant	6.538***	9.327***	5.854***	9.092***	5.845***	9.089***	2.842***	6.090***	1.490	6.005***	1.491	5.913***
	(0.920)	(0.276)	(0.844)	(0.325)	(0.838)	(0.326)	(0.998)	(0.512)	(1.217)	(0.532)	(1.217)	(0.557)
Observations	9,347	8,803	7,279	7,375	7,279	7,375	7,560	7,687	5,998	6,511	5,998	6,511
Individuals	2,751	2,541	2,299	2,260	2,299	2,260	2,441	2,369	2,063	2,129	2,063	2,129
R-square (within)	0.004	0.008	0.011	0.016	0.011	0.016	0.185	0.191	0.187	0.196	0.187	0.197

Clustered standard errors in parentheses. Significance indicated by: *** p<0.01, ** p<0.05, * p<0.1.

Appendix V: Ordered probit (OP) summary estimates job satisfaction (age >25)

VARIABLES	1		2		3		4		5		6	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Temporary (0=permanent, 1=temporary)	-0.277*** (0.058)	-0.151** (0.062)	-0.153** (0.072)	0.010 (0.068)	-0.153 (0.099)	0.061 (0.103)	-0.160*** (0.059)	-0.050 (0.068)	-0.087 (0.070)	0.036 (0.075)	-0.059 (0.092)	0.030 (0.116)
Job Insecurity (0=secure, 100=insecure)			-0.006*** (0.001)	-0.008*** (0.001)	-0.006*** (0.001)	-0.008*** (0.001)			-0.003*** (0.001)	-0.004*** (0.001)	-0.003*** (0.001)	-0.004*** (0.001)
Temporary*Job Insecurity					0.000 (0.002)	-0.001 (0.002)					-0.001 (0.002)	0.000 (0.002)
Constant cut1	-2.273*** (0.169)	-2.214*** (0.160)	-2.454*** (0.184)	-2.300*** (0.181)	-2.454*** (0.184)	-2.296*** (0.181)	0.032 (0.319)	-0.186 (0.302)	-0.154 (0.365)	-0.355 (0.327)	-0.150 (0.365)	-0.356 (0.327)
Constant cut2	-2.082*** (0.164)	-2.039*** (0.155)	-2.277*** (0.178)	-2.110*** (0.175)	-2.277*** (0.178)	-2.107*** (0.175)	0.346 (0.315)	0.109 (0.298)	0.138 (0.360)	-0.044 (0.322)	0.142 (0.360)	-0.045 (0.321)
Constant cut3	-1.850*** (0.160)	-1.749*** (0.150)	-2.037*** (0.174)	-1.825*** (0.170)	-2.037*** (0.174)	-1.821*** (0.170)	0.709** (0.313)	0.529* (0.298)	0.540 (0.358)	0.352 (0.323)	0.544 (0.358)	0.351 (0.322)
Constant cut4	-1.625*** (0.158)	-1.446*** (0.147)	-1.810*** (0.173)	-1.509*** (0.166)	-1.810*** (0.173)	-1.505*** (0.166)	1.024*** (0.313)	0.961*** (0.294)	0.869** (0.358)	0.801** (0.316)	0.874** (0.358)	0.800** (0.316)
Constant cut5	-1.396*** (0.158)	-1.208*** (0.145)	-1.580*** (0.173)	-1.275*** (0.165)	-1.580*** (0.173)	-1.271*** (0.165)	1.362*** (0.315)	1.301*** (0.293)	1.201*** (0.360)	1.144*** (0.315)	1.206*** (0.360)	1.144*** (0.315)
Constant cut6	-1.067*** (0.157)	-0.863*** (0.145)	-1.229*** (0.171)	-0.917*** (0.165)	-1.229*** (0.171)	-0.913*** (0.165)	1.805*** (0.316)	1.751*** (0.294)	1.679*** (0.362)	1.611*** (0.317)	1.684*** (0.362)	1.610*** (0.316)
Constant cut7	-0.635*** (0.157)	-0.400*** (0.145)	-0.776*** (0.170)	-0.433*** (0.165)	-0.776*** (0.170)	-0.428*** (0.165)	2.353*** (0.318)	2.370*** (0.296)	2.255*** (0.363)	2.243*** (0.318)	2.259*** (0.363)	2.243*** (0.318)
Constant cut8	0.189 (0.156)	0.380*** (0.145)	0.080 (0.170)	0.380** (0.165)	0.080 (0.170)	0.385** (0.165)	3.410*** (0.320)	3.399*** (0.299)	3.346*** (0.365)	3.300*** (0.321)	3.351*** (0.365)	3.299*** (0.321)
Constant cut9	1.228*** (0.157)	1.407*** (0.146)	1.155*** (0.171)	1.434*** (0.167)	1.155*** (0.171)	1.438*** (0.167)	4.682*** (0.323)	4.687*** (0.304)	4.659*** (0.368)	4.615*** (0.326)	4.664*** (0.367)	4.614*** (0.326)
Constant cut10	1.938*** (0.161)	2.183*** (0.148)	1.888*** (0.176)	2.245*** (0.171)	1.888*** (0.176)	2.250*** (0.170)	5.573*** (0.327)	5.690*** (0.311)	5.575*** (0.372)	5.648*** (0.332)	5.579*** (0.372)	5.648*** (0.332)
Socio-economic control	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Job and firm control							✓	✓	✓	✓	✓	✓
Observations	9,347	8,803	7,279	7,375	7,279	7,375	7,560	7,687	5,998	6,511	5,998	6,511
R2 (pseudo)	0.006	0.007	0.013	0.017	0.013	0.017	0.127	0.144	0.132	0.151	0.132	0.151

Clustered standard errors in parentheses. Significance indicated by: *** p<0.01, ** p<0.05, * p<0.1. Controls: see Table VIII.