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## The quality of temporary employment in Europe: an assessment of the individual and institutional determinants

Canzio Leandro Iván

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FACULTÉ DES SCIENCES SOCIALES ET POLITIQUES  
INSTITUT DES SCIENCES SOCIALES

**The quality of temporary employment in Europe: an assessment of the  
individual and institutional determinants**

THÈSE DE DOCTORAT

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de l'Université de Lausanne

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Docteur en Sciences Sociales

par

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**"The Quality of Temporary Employment in Europe : an Assessment of the Individual and Institutional Determinants."**

Nicky LE FEUVRE  
Doyenne

Lausanne, le 4 septembre 2023

## **ABSTRACT**

### **Summary**

This thesis investigates the individual and institutional determinants of job quality for temporary jobs in Europe. Through four studies, it explores how they might affect temporary workers' job satisfaction, wages, and well-being by analyzing survey data. Four main conclusions can be drawn from this dissertation. First, the temporary workforce is deeply heterogeneous, especially regarding the reason why workers have a temporary job, which is associated with workers' job satisfaction. Second, the hiring and dismissal regulations for permanent and temporary workers seem to have no relationship with temporary workers' job satisfaction. Third, unions seem beneficial for temporary workers' well-being and wages, even if, in some cases, they are associated with greater inequalities between temporary and permanent workers. Lastly, perceiving that the chances of finding a job are high might sometimes help workers cope with job insecurity, but generally it does not isolate them from the negative impacts on well-being.

### **Résumé**

Cette thèse étudie les déterminants micro et macro de la qualité de l'emploi dans les emplois temporaires en Europe. À travers quatre études basées sur des données d'enquête, elle explore comment ces facteurs peuvent affecter la satisfaction au travail, les salaires et le bien-être des travailleurs temporaires. Quatre conclusions principales peuvent être tirées de cette dissertation. Premièrement, la main-d'œuvre temporaire est profondément hétérogène, en particulier en ce qui concerne les raisons pour lesquelles les travailleurs peuvent avoir un emploi temporaire, et ces raisons sont associées à la satisfaction au travail. Deuxièmement, les réglementations en matière d'embauche et de licenciement pour les travailleurs permanents et temporaires semblent n'avoir aucun lien avec la satisfaction au travail des travailleurs temporaires. Troisièmement, les syndicats semblent bénéfiques pour le bien-être et les salaires des travailleurs temporaires, même s'ils sont parfois associés à de plus grandes inégalités entre travailleurs temporaires et permanents. Enfin, le fait de percevoir que les chances de trouver un emploi sont élevées peut parfois aider les travailleurs à faire face à l'insécurité de l'emploi, mais en général, cela ne les isole pas des impacts négatifs sur le bien-être.



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## PREFACE

The first time I reflected on temporary employment was thanks to Luis Ortiz, somewhere around the end of winter of 2019. He was – and still is – the Professor of Employment Policies and Labour Market at the Research Master in Sociology and Demography at Pompeu Fabra University. Initially, I enrolled in his course due to a scheduling conflict, but it ended up profoundly changing my research interests to the point where I decided to specialize in work sociology. For one of his lectures Luis told us to read Javier Polavieja’s seminal article about temporary employment in Spain, along with Clemens Noelke’s article about the effect of dismissal and hiring regulations. It was not until those days that I realised that Spain was very “different.” Of course, that made absolute sense once I thought about it: my family, my friends, myself, most of us were overwhelmingly employed on temporary contracts (if we were lucky enough to have a contract in the first place).

Luis’ explanation of the labour market dualization theory was excellent, but I was not fully convinced about the arguments proposed by the theory. Having personally worked in temporary jobs in Spain and witnessed the struggles of temporary workers, this explanation seemed, at least, incomplete. Temporary contracts were very frequently a tool to extract greater labour from workers. If workers did not perform as well as expected, if they did not accept to do unpaid overtime, if they complained, their temporary job contracts would not be prolonged, and employers would take the next candidate from the pile of CV’s that would grow very high during the years of recession.

A few months after that day in winter, I was accepted as a PhD student at the University of Lausanne in a project aiming to understand career trajectories from an interdisciplinary perspective. My supervisors, Felix Bühlmann and Jonas Masdonati, aimed to conducting research at the intersection of the sociology of work and vocational and organizational psychology. This project was part of IP7 at NCCR LIVES, an interdisciplinary team primarily composed of psychologists and some sociologists devoted to studying careers.

At the beginning of my PhD, organizational psychology was an entirely novel field of research for me. In fact, the first time I encountered the concept “job security,” I assumed it had something to do with construction workers putting helmets and wearing



reflective vests.<sup>1</sup> As I started to become familiar with the psychological literature on non-standard employment, one of the first things I learned was that non-standard jobs were not necessarily a sub-optimal and *undesired* alternative to standard employment. Coming from Spain, it was difficult to imagine that someone would prefer to have a temporary job instead of a permanent position. It took me some weeks to realise that that had been my case: Before starting my PhD, while I was still in Spain, I looked for a part-time temporary job. The reason why I wanted my job to be part-time was because I needed some free time to organize my new life in Switzerland. I also preferred a temporary job because I had the impression that employers would expect a lower commitment from my side and would also assume that I would leave at some point, without hard feelings. Hence, this story became an interesting point to analyse the heterogeneity of the temporary workforce in Europe and its consequences for job satisfaction.

Along this thesis, relying on personal and subjective experiences of precariousness to produce and understand quantitative research became usual. Being a 1.5-generation migrant worker and a new entrant in the labour market in Spain during the years of recession exposed me to a wide variety of labour market processes and multiple forms of precariousness. The second time I could make use of another personal experience was when I presented the findings of the third chapter at conferences. In 2015, I worked at very well-known international corporation in the fast-food sector. After my first month there, while I was working at the kitchen, a colleague and I started ranting about how terrible our job and working conditions were. He pointed out that my situation was even worse than his, as he earned €7 per hour while I was only making €4.65 per hour, despite having the same job. When I asked him why he was making about 50% more than me, he explained that when the works council faced pressure to accept wage cuts the year before, they decided to maintain the same wages for the workers who had some tenure by accepting lower wages for the new hires. However, because the tenured workers were permanent ones and the new hires were all temporary, the agreement signed by the works council introduced a permanent-temporary wage gap within the branch. This personal story was a perfect example to explain why industrial relations institutions in Spain could, in some cases, promote wage inequality between

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<sup>1</sup> I believe this confusion might be because in Spanish the words *safety* and *security* are spelled equally (*seguridad*). Perhaps it might be interesting to ask Spanish workers what they understand when interviewers ask them to rank their *seguridad* at work.

permanent and temporary workers. What the audience at some conferences did not know was that in this case the works council was appointed by the management.<sup>2</sup> They took the youngest middle-manager within the branch and asked him to become a representative at the “company union.” Later, they gave the tenured (permanent) workers the possibility to vote whether they wanted to lower wages for everyone, or to keep their wages the same and reduce the wages of the new hires.

The last chapter, where I studied whether employability mitigates the negative impacts of job insecurity on well-being, was also very timely. I wrote it during the last year of my PhD, when the fear of becoming unemployed after the end of my contract was having notably negative impacts on my well-being.<sup>3</sup> Later, once I found a comparable job before my PhD contract ended, I realised I was still not immune to the fact that my current contract at the time was going to end because the sole fact of changing jobs was already something that had negative impacts on my well-being: I would have to adapt to a new work environment, new regulations, change routines, and even move to another country. It was this experience which led me to argue that one of the reasons why employability might not compensate the negative impacts of job insecurity on well-being is because employability cannot compensate the negative impacts of *risk of job change*, even if it might compensate the negative effects of *risk of becoming unemployed*.

These are the three most prominent examples of how my own experiences complemented my research interests, but many other arguments and explanations were also complemented with the experiences of my friends and relatives. For better or worse, my partner’s work experiences as a middle manager in the amusement parks and hospitality sectors in Spain were an enormous source of inspiration and information. During the time I wrote this manuscript, she was also pursuing a Master’s degree in Labor Law, which significantly enhanced the quality of this thesis, especially in the third chapter.

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<sup>2</sup> After telling this story at the Industrial Relations in Europe Conference in Tampere (Finland) in a room full of industrial relations scholars, the audience seemed disappointed. During the discussion, after the presentation, many breathed with relief once I had the chance to tell them that the management had in fact appointed the works council representatives.

<sup>3</sup> Although in my case I could not perceive that my employability was high, this probably would not have helped much after all, as we will see in Chapter 4

Personal experiences served as a great source of inspiration and information, but the core of this thesis is constructed upon prominent theories in sociology, psychology, political science, and economics. In particular, the labour market dualization theory guides two of the four chapters. I made a conscious effort to address and confront any theoretical inconsistencies when empirical findings failed to support primary assumptions, even if doing so complicated the narrative. Over the last four years I had the impression that in sociological academic writing narratives are extremely important, frequently even more so than results or methods. To produce compelling narratives, reviewers and editors often expect researchers to conduct analyses driven by theory-backed hypotheses and develop linear arguments and narratives. Narratives become more captivating when researchers juxtapose theories that predict opposing and mutually exclusive outcomes. However, theoretical assumptions tend to be more complementary than opposing, and they often predict overlapping rather than mutually exclusive outcomes. In an effort to create more engaging narratives, some researchers seem to selectively omit certain theoretical aspects to frame theories as opposing and mutually exclusive. For this reason, I frequently highlighted matches and mismatches between theories, even if this created a less clear and less appealing narrative - something that I must also attribute to my poor academic writing skills.

Even if most of the analyses on this thesis are confirmatory, in some cases I took an exploratory approach instead. Because this is less conventional in sociology and might bother some readers, I consider it necessary to justify these decisions. The first reason is probably due to my lack of expertise and inability to properly formulate reasonings and arguments, which is key to translating complex assumptions into testable hypotheses. Probably, adopting an exploratory approach provided me with more flexibility that allowed me to avoid getting bogged down in multiple theory swamps that would have significantly delayed the delivery of this manuscript. Secondly, it was a deliberate decision. In my view, theory-backed hypotheses frequently impose unnecessary constraints to sociological research. Our discipline frequently appears to be more concerned with testing theoretical assumptions than with understanding and describing reality in a precise manner. In consequence, researchers are frequently compelled to dedicate their efforts to testing the validity of prominent theories rather than to unveiling the mechanisms that originate certain social phenomena. For this reason, I sometimes conducted certain analyses because I considered that the results

they provide would contribute to understanding social reality, even if they were not motivated by other authors' *magnum opus*.

Along the manuscript I attempted to openly criticize my own work, mostly by openly discussing the validity of the findings and by tempering the implications of the results for policy development. This self-critique gained prominence as my understanding of statistics and econometrics improved. A large part of this learning process was thanks to Michael Gebel and Anna Baranowska-Rataj, both of whom were professors at the Trento Winter School. During my third year of PhD, I also participated in another seminar by Michael Gebel and had an opportunity to learn panel data analysis from him during my research stay at the University of Bamberg in November of 2022. These experiences helped me to gain a deeper understanding of causal inference methods and laid the foundation for understanding research articles that utilized more complex methodologies. Part of this transition and growing interest for causal inference can be observed throughout the thesis. The first and second chapter offer more conventional and descriptive findings, the third attempts to enhance this approach, despite its limitations, and the last chapter analyses panel data, representing a significant improvement from the use of cross-sectional data. Once again, this thesis has been an integral part of my learning journey. Perhaps the clearest sign of improvement is that as I write these lines (some weeks before the public defence), I regret having written some chapters and realised I should have spent that time investigating something more interesting, precise or useful. In any case, these four years helped me to acquire the skills to produce better – and perhaps also useful – research in the future. As Shakira Mebarak expressed in her studio album *Oral Fixation, Vol. 2* released in 2005, “[lo que] *será, será, y lo que aún no fue es porque fue para hacerse hoy*” (“what will be will be, and what still has not been, is meant to be done today”).<sup>4</sup>

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<sup>4</sup> This verse might sound completely unfamiliar to non-Spanish speakers. However, the English version of this song, “Hips don’t lie” became a massive hit in many English-speaking countries. Although Shakira is well-known for releasing simultaneous Spanish and English versions of the same song, lyrics often carry different meanings. This is the case with the Spanish version of “Hips don’t lie”, where the verse “*será, será, y lo que aún no fue es porque fue para hacerse hoy*” (see translation in the main text) corresponds with the verse “I’m on tonight, you know my hips don’t lie, and I’m starting to feel it’s right” in the English version of the song. In fact, these are some of the few verses that truly belong to Shakira, as “Hips don’t lie” is a version of the song “Dance like this” by Wyclef Jean, who sings along with Shakira in both the Spanish and English versions.



## INTRODUCTION

### **Temporary employment in Europe: a contemporary phenomenon?**

In 2019, when I began to write this thesis, 12% of the employees in Europe – about 50 million workers – had a temporary contract as a main job. Over a four-year period, a European worker had, on average, a 0.262 probability of having a temporary job contract (Latner, 2022). Some representative examples of temporary employees are agriculture workers and ski or surf instructors who only work during a specific period of the year, construction workers who are hired for a defined period to work in a project, researchers who are hired to conduct research during a limited time, politicians whose contracts last until the end of their mandate, workers who substitute other colleagues on leave, young students who work at restaurants during holidays, workers who are in probation periods, or interns and trainees who have temporary contracts as part of their training process.

Because the term *temporary job* frequently has different meanings across countries, readers should note that, unless specified otherwise, in the frame of this thesis I will refer to temporary employment according to the definition of the ILO. This means that *temporary employment* includes fixed-term contracts, on-call employment, and temporary agency employment. In essence, in this manuscript the terms *temporary employment*, *temporary job*, *temporary contract*, and *temporary arrangement* refer to all forms of employment in which there exists a (legal) relationship of dependence with the employer (i.e. excluding self-employment, *bogus* self-employment, and undeclared work), and where the employment relationship is, in principle, deemed to end in a known, or yet unknown, date, as specified in a job contract (see ILO, 2016: 7-45 for in-depth discussions about each employment arrangement). As defined by the ILO:

Temporary employment, whereby workers are engaged only for a specific period of time, includes fixed-term, project or task-based contracts, as well as seasonal or casual work, including day labour. (ILO, n.d.)

The concept of permanent employment contract in Europe emerged at the beginning of the Industrial Revolution during the late eighteenth century (Deakin, 2000; Vosko, 2010a). Until then, workers were overwhelmingly self-employed or independent

contractors (Deakin, 2000). The emerging large companies required employers to reach agreements with workers by which they would obtain workers' skills in exchange for the promise of a long-lasting source of income (Deakin, 2000; Vosko, 2010a). During the post-war period, standard employment relationships – full-time permanent contracts – became consolidated, in large part thanks to the expansion of the welfare state and collective bargaining (Deakin and Wilkinson, 2005; Vosko, 2010b). In this period of strong economic growth, low unemployment and consolidation of the middle class, full-time permanent employment relationships became the norm in many Western European countries (Vosko, 2010b). However, it has been a matter of debate to what extent standard employment relationships were truly widespread in the post-war societies. Some claim that non-standard forms of employment<sup>1</sup> – temporary, part-time, and informal jobs – were much more prevalent among marginalized socio-demographic groups, like women and migrants (Vosko, 2010b; Betti, 2016; Betti, 2018), something that might have contributed to overshadowing the actual prevalence of the atypical forms of employment during this period.

Whereas it cannot be denied that that the figure of the (native-born) industrial male manual worker with a permanent full-time position has been overrepresented in the collective imaginary and in the academic literature, the last decades have seen a clear upward trend in the rate of temporary employment in Europe, as shown by the OECD (2002) and the ILO (2016: 52). Jonathan Latner (2022) also observed such an increase after analysing detailed longitudinal survey data from 31 European countries between 1996 and 2019. His research shows that the rate of temporary employment grew in Europe from the late 1990s until 2007 when the Great Recession started. The use of temporary contracts decreased during this period of economic downturn because employers were more likely to adjust their workforce needs by firing temporary workers instead of permanent ones, or simply because they stopped hiring workers, many of which usually started a new position as temporary workers and later became permanent employees. Once the recession ended, the use of temporary contracts expanded again, and the temporary employment rate returned to the pre-recession levels. Still, even if the rates of temporary employment in Europe have remained stagnant with respect to 2007, the risk of experiencing a temporary job increased

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<sup>1</sup> The terms *non-standard* or *atypical* employment refer to all employment relationships that are not permanent, full-time, and regular. This includes forms of employment such as part-time employment, dependent self-employment, temporary employment, temporary agency employment, and on-call work.

significantly after 2013. As most labour market disadvantages, the risk of having a temporary contract is not equally distributed across socio-demographic groups. In general, temporary positions are more likely to be held by women, young people, the low educated, and migrants (Kogan, 2011; Green and Livanos, 2016; Latner, 2022; Muñoz-Comet and Arcarons, 2022).

Within Europe, the temporary employment rates also present large disparities. In the Nordic countries (Norway, Finland, Sweden, and Denmark) this rate is around 10% like in the post-Communist countries (Poland, Romania, Estonia, Latvia, Lithuania, Czech Republic, Slovakia, Hungary, Croatia, and Bulgaria), where these rates are even below 10%, except in Poland, where they are above 25%. In the Continental European countries (the Netherlands, Austria, France, Germany, Switzerland, Belgium, and Luxembourg), the average is around 10.6%, being highest in the Netherlands. In Southern Europe it is around 20%, mostly because of Spain, which presented (until 2022) the highest rate of temporary employment in Europe. Among the lowest rates, about 3.3%, we find the Anglo-Saxon countries (Ireland and the United Kingdom).

### **Why do temporary jobs pose a problem to European societies?**

The main characteristic of temporary jobs is that they provide little to no job security due to the (almost) certain end of the job contract. This lack of job security produces significant alterations in multiple aspects of workers' lives: compared to permanent employees, temporary workers tend to leave the parental home later, postpone their marriage and their intention to have children, and have fewer kids and less access to mortgages (Pailhé and Solaz, 2012; Lersch and Dewilde, 2015; Clark and Lepinteur, 2020). Moreover, these negative impacts tend to have spillover effects among other family members, even in countries with supportive welfare states (Mauno et al., 2017). Because job insecurity is also associated with multiple negative impacts that have long-lasting consequences on workers' well-being, mental health, and life satisfaction, temporary jobs can be harmful for workers' well-being (Ferrie et al., 2002; Rugulies et al., 2006; Green, 2011; Knabe and Rätzl, 2011; Otterbach and Sousa-Poza, 2016; Helbling and Kanji, 2018; Eberl et al., 2023).

Besides their inherent lack of job security, temporary jobs are also of lower overall quality. Compared to permanent workers, temporary employees receive lower wages (Mertens et al., 2007; Westhoff, 2022; Fauser and Gebel, 2023), are offered fewer



training opportunities (Forrier and Sels, 2003; Eurofound, 2015; Adolfsson et al., 2022), enjoy lower job autonomy (Wagenaar et al., 2012), and seem to experience a higher risk of work accidents (Fabiano, 2008; Hintikka, 2011). These disadvantages still exist in Europe, even though most countries have laws that require employers to provide temporary workers with (almost<sup>2</sup>) the same working conditions as permanent employees, as specified in EU directives.<sup>3</sup> However, these mandates that require equal treatment for permanent and temporary workers are less common outside Europe. In some advanced economies, like the United States, and in some developing countries where these regulations do not exist, temporary workers are not entitled to the same benefits and working conditions as permanent employees (for a review, see ILO, 2016: 247-323).<sup>4</sup>

The consequences of temporary jobs are clearly asymmetrical for social actors: companies gain most of the benefits of using temporary positions (e.g. greater capacity to adjust their workforce, fewer dismissal costs) while workers bear most of the costs (e.g. job insecurity, poorer job stability, lower job quality). This unequal division of the benefits and risks between employers and employees constitutes a defining characteristic of precariousness according to Hewison and Kalleberg (2012). Because of the multiple disadvantages that temporary workers experience, it is not surprising that many researchers opt for classifying non-standard arrangements in general, and temporary jobs in particular, as *bad* and *precarious* jobs, therefore conceiving these contracts as inherently sub-optimal and undesirable forms of participation in the labour market (Benavides et al., 2000; Kalleberg, 2000; Standing, 2014). While it is undeniable that temporary jobs generally provide lower job quality than permanent jobs and frequently have negative consequences for workers' well-being, careers, and labour market prospects, they can also have positive impacts in these domains, at least under certain circumstances, for certain individuals, or in specific contexts. These

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<sup>2</sup> The most relevant rights that apply differently to permanent and temporary workers are severance pay and firing regulations. In most countries, permanent workers are entitled to receive a compensation at the end of their contracts while temporary workers are not. Among the OECD countries, temporary workers are entitled to severance pay at the pre-determined end date of their contracts only in a few (France, Slovenia, Portugal, and Spain), but the amount is generally lower than what permanent workers would receive. Similarly, a longer notice period is required to fire permanent workers than temporary ones.

<sup>3</sup> Council Directive 1999/70/EC and DIRECTIVE 2008/104/EC of the European Parliament and of the Council set the goal to provide equal pay and working conditions to fixed-term and temporary agency workers with regard to permanent workers.

<sup>4</sup> Because this thesis only studies temporary employment in Europe, the lack of social benefits temporary workers experience beyond this context will not be addressed in this manuscript.

multiple facets of temporary job contracts are easily noticeable when workers are asked why they have a temporary position rather than a permanent one. In 2019, 52.1% of temporary workers in the EU27 stated they had a temporary position because they could not find a permanent one, 15.3% had a temporary position due to education or training reasons (such as doing traineeships or internships), 13.5% were workers who did not want to have a permanent position, and 8.9% were in a probation period.<sup>5</sup> Essentially, as we will see with greater detail in Chapter 1, this illustrates that the temporary workforce is very heterogeneous and temporary jobs are far from being undesired and sub-optimal *by default*.

The heterogeneity of the temporary workforce and other non-standard workers is frequently ignored, and the phenomenon thus conceptually misclassified. In addition to these theoretical and conceptual misclassifications, in empirical research this also occurs when researchers pool together the most disadvantaged workers (those that cannot find job security) with those that actively seek flexibility and partial engagement in the labour market and those that are taking part in a training process (apprentices and trainees). The main flaw of this misclassification is that it can lead to an underestimation of the negative effects of temporary contracts among the truly disadvantaged workers (this will be discussed in more depth in Chapter 1). This presumed *universal undesirability* of temporary positions is attributed to part-time jobs too, despite only 25.8% of part-timers in Europe preferring full-time engagement in the labour market.<sup>6</sup> To a certain extent, the conception of the *full-time permanent* position as the only optimal form of employment seems to be closely related to the over-represented figure of the industrial male breadwinner from the Golden Age of Capitalism (Sirianni and Negrey, 2000; Vosko, 2010; ILO, 2016: 14). When scholars, lawmakers, or journalists conceive permanent and full-time jobs as the only form of acceptable and decent employment, they implicitly neglect the needs of caregivers, students, and even workers with multiple employment relationships who are (frequently voluntarily) engaged in non-standard employment contracts. Once the socio-demographic groups that more commonly hold these non-standard contracts are regarded as rightful and legitimate actors in the labour market, not only will we improve the accuracy and validity of our analyses, but also our capacity to articulate adequate

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<sup>5</sup> The remaining 10.3% did not provide a response.

<sup>6</sup> This percentage corresponds to the share of involuntary part-timers in the EU27 in 2019.

policies that benefit them. Of course, acknowledging this heterogeneity does not mean that researchers should not draw on ideal types to guide their analyses. Instead, this critique implies that the selection of these ideal types and salient socio-demographic groups should be based on current empirical evidence rather than outdated or misleading theoretical assumptions.

### **Labour market flexibility and temporary employment incidence**

Many European governments have tried for decades to reduce the use of these arrangements, but with little success. Perhaps the cause of this failure is that researchers have not been able to adequately identify the causes of the – first raising, then stagnant – rates of temporary employment in Europe.

According to the most relevant body of literature in economics and political science, what caused a spike in the temporary employment rates during the 1980s and 1990s were a series of labour market reforms that were developed in Europe during that period. In the 1970s and 1980s, the European labour markets were considered to be stagnant and poorly performing compared to the United States. This was mostly attributed to the lack of flexibility and excessive regulations in Europe (Giersch, 1985). As a result, the general reaction of European governments was to provide employers with greater flexibility by easing the restrictions to employ workers on temporary contracts, which was supposed to boost employment creation, especially among those groups with lower employability (Rueda, 2007; Barbieri, 2009). However, when governments introduced these reforms, they maintained the high costs and restrictions for dismissing workers on permanent contracts (Regini, 2000; Rueda, 2007; Barbieri, 2009). This conjunction of high restrictions to dismiss permanent employees and few restrictions to hire temporary workers seems to have incentivized employers to hire workers on temporary rather than on permanent arrangements, and even replace some of their permanent workforce with temporary employees (Blanchard and Landier, 2002; Cahuc and Postel-Vinay, 2002; Kahn, 2010). The process by which governments maintained firing regulations for permanent contracts but lowered the restriction to use temporary ones became commonly known as ‘partial reform’, ‘partial deregulation’, and ‘reform at the margins’ (Bentolila and Dolado, 1994; Esping-Andersen and Regini, 2000; Blanchard and Landier, 2002). These reforms would have originated a ‘two tier’ or ‘dual’ labour market divided in two groups: the “insiders” (permanent workers with good employment protection and good quality jobs) and the

“outsiders” (temporary workers with low job security and poor job quality) (Bentolila and Dolado, 1994; Lindbeck and Snower, 2001; Bentolila et al., 2012).<sup>7</sup> Some of the scholars who defended the idea of labour market dualization also claimed that these reforms were promoted by social democratic parties and labour unions (Rueda, 2005; Rueda, 2007; Emmenegger, 2009; Davidsson and Emmenegger, 2013). In their view, for the social democratic parties these reforms allowed satisfying the market demands for flexibility, but without reducing the protection of the ‘insiders’, who made up the majority of their voters (Rueda, 2007; Emmenegger, 2009). Unions were claimed to be interested in promoting these reforms to protect the interests of their core constituency, the permanent workers (Saint-Paul, 2002; Emmenegger et al., 2012). To preserve the job security and solid employment protection permanent workers had, unions would have opted for promoting these ‘reforms at the margins’, which maintained the job security of the insiders at the expense of the outsiders, who had fewer chances of obtaining a secure contract (Saint-Paul, 2002; Palier and Thelen, 2010; Davidsson and Emmenegger, 2013). For the OECD (2012)<sup>8</sup>, some researchers at the IMF (2010), and the European Commission (2003), the solution to reduce ‘labour market dualism’ in Europe was to lower the firing costs and regulations for permanent workers. The alternative policy to reduce dualism – that is, to increase (again) the restrictions on the use of temporary contracts – was claimed to reduce employment rates (OECD, 1994: 50, 1996: 20-21).

Although this is the most common explanation for the spike in the rates of temporary employment in Europe, it is far from being an agreed one among scholars. Many have proven wrong the assumptions that unions systematically defend the interests of the insiders at the expense of the outsiders, and the claim that they promote the use of temporary contracts to protect the jobs of permanent employees (Devicienti et al., 2018; Addisson et al., 2019; Carver and Doellgast; 2020; Adolfsson et al., 2022). Similarly, the motivation of the social-democratic parties and their voters for promoting these reforms has been debated too (Häusermann et al., 2012; Schwander, 2019). But the most conflicting point of debate seems to be about the effects of hiring and

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<sup>7</sup> Still, these classifications have been mostly useful as broad theoretical frameworks. Not only do authors tend to classify the insiders and outsiders differently, but this classification tends not to adequately reflect reality. See Seo (2021) for a discussion.

<sup>8</sup> Namely, the OECD country-specific recommendations of the report propose to relax the dismissal costs and regulations for permanent contracts in Czech Republic, Germany, Greece, Luxembourg, the Netherlands, Portugal, Slovenia, Spain, and Sweden.

dismissal regulations for permanent and temporary contracts. The most conventional explanation consists of attributing the high rates of temporary employment to the combination of high protection for dismissing permanent workers and few restrictions to hire temporary workers. At the same time, some researchers and the OECD even suggested that the main cause of the high temporary employment rates were the high obstacles to laying off permanent workers rather than its combination with low restrictions to hire temporary employees (e.g. OECD, 1999: 88; OECD, 2004: 87; Polavieja, 2006; Kahn, 2007). More recently, the ILO has freed the firing costs for permanent workers from the blame of causing an excessive use of temporary contracts and pointed to the few restrictions to use temporary contracts alone as the main problem (ILO, 2016: 166) although there is scant evidence to sustain the claim.<sup>9</sup> Something that might speak in favour of the ILO claim is that Spain seems to have reduced its temporary employment rate by 7.5 percentage points (falling below 20% for the first time in decades) in only one year after introducing a labour reform that mainly increased the restrictions on the use of temporary contracts while leaving the firing costs for permanent workers untouched.<sup>10</sup> This occurred after decades of reforms that reduced the firing regulations for permanent workers, as international organizations required, but had no clear effects on the (over)use of temporary contracts. In any case, more analyses are needed to fully disentangle the mechanisms whereby hiring firing regulations affect temporary employment rates.

When the Great Recession arrived in the aftermath of the 2008 financial crisis, many European governments opted for following the recommendations of the OECD and IMF and eased the firing regulations for permanent contracts (OECD, 2020).

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<sup>9</sup> The ILO attributes this evidence to another study elaborated by researchers at the ILO, namely Aleksynska and Berg (2015).

<sup>10</sup> In December 2021, the Spanish Government introduced a new labour reform that implemented several limitations on the use of temporary contracts, conceiving that most jobs should be *permanent* in nature. For seasonal activities, it made the *permanent discontinuous* contract the default option. This arrangement allows employers to hire workers on intermittent and recurrent bases, with a pre-defined regularity. At the same time, Labour Inspection increased the enforcement of laws concerning the limitation on the number and duration of temporary contracts that employers could use. This reform aimed at reducing temporary employment rates was agreed on between the government, union representatives, and employer representatives. Unai Sordo, the leader of *Comisiones Obreras*, one of the main labour unions in Spain, explained in a radio interview that the priority of the reform was to benefit the labour market outsiders: “Therefore, contrary to that common place where we only care about the *insiders* [sic], about the permanent workers, here we have preferred a compromise, of course, of course we would have preferred to improve the severance pay [for permanent workers] too, but in a situation where we have to choose, we have tried to choose to improve the rights of the Spanish precariat instead of situating us in this recurrent claim of reinstating the 60 days [of severance pay for the unfair dismissal of permanent workers]” (Sordo, 2022).

Unfortunately, these reforms have not been nearly as effective as the confidence that their proponents had in their success. The rates of temporary employment grew until the mid-2000s and have remained stagnant since then (Latner, 2022). In the meantime, the risk of experiencing a temporary contract has increased (Cárdenas and Villanueva, 2021; Latner, 2022). Of course, this cannot be considered as consistent proof that the employment protection reforms had no effect on the rates of temporary employment, but it highlights that these reforms did not deliver what they promised. This adds up to the fact that some countries with loose hiring regulations for permanent contracts present high temporary employment rates. Poland, for example, has been an outlier with the second highest rate of temporary employment in Europe despite the lack of a ‘partial deregulation’ setting. Until 2022, Spain was by far the country with the highest rate of temporary employment in Europe – an outlier also among the poor performing and ‘segmented’ Mediterranean labour markets – even though the firing regulations for permanent workers had been more flexible than those of most European economies since 2012. In the meantime, the Baltic and Eastern European countries do not fit the theoretical model of the segmentation literature either: they have very low temporary employment rates while ensuring high protection for permanent employees. Some findings suggest, in fact, that the “partial reform” argument might only be valid to explain the high temporary employment rates in Western Europe but is of little use when also accounting for the post-Socialist countries (Baranowska and Gebel, 2010).

The ineffectiveness of some of these reforms also triggered alternative policy proposals. For the OECD (Wölfl and Mora-Sanguinetti, 2011: 29; OECD, 2014a: 53) and some economists (e.g. Bentolila et al., 2012; García Perez and Osuna, 2014), the alternative remedy to the high temporary employment rates is simply to eliminate the distinction between temporary and permanent contracts with a ‘single’ or ‘unified’ job contract. In essence, with a single contract workers would no longer be classified as permanent or temporary; they would all be employed under the same arrangement and progressively obtain rights and benefits with tenure. The main assumption is that because benefits are acquired gradually, employers should be less reluctant to hire workers and to do so with a long-term perspective. This should reduce dualization in the labour market by erasing the entry barriers to workers with lower employability. This idea has received attention from the ILO (Casale and Perulli, 2014) and the OECD

(2014b) and has been promoted by some researchers at the Institute of Labour Economics (Bentolila et al., 2012), but apparently governments have not yet shown interest in it.

It is true that erasing the categorization of between permanent and temporary employees eliminates a prominent form of labour market dualism, but this might contribute to enlarging other existing inequalities. A plausible consequence is that employers might more frequently opt for dismissing workers at low levels of tenure to avoid paying higher severance compensations. Some might consider that this assumption lacks foundation because employers have incentives to retain their workforce and avoid turnovers, mainly due to its costs on productivity. However, this might not necessarily be the case for tasks that require low qualification and few firm-specific skills. Platform workers and temporary agency workers constitute a good example of how a wide range of tasks and occupations can be performed without workers having a proper contractual relationship of dependence or continuity with the *contractor* (i.e. employers). For these kinds of tasks and occupations, high turnover rates are not necessarily a concern for employers, who can easily replace their workers with others with similar skills. In consequence, a single employment contract, where benefits are acquired with seniority, might reduce the disadvantages that temporary workers experience with respect to permanent employees (i.e. job insecurity, poor job quality, lack of bargaining power), but instead increase the disadvantages that low-skilled workers experience compared to the highly-skilled ones. For many workers this model is likely to become one of “employment at will”, similar to what it is found in liberal market economies like the United States. Another potentially undesired consequence of the single contract is that employers would opt more frequently for hiring independent contractors rather than fixed-term workers for tasks that are temporary in nature (OECD, 2014b:189). Other concerns have also been raised regarding the impacts on productivity and the political feasibility of such a reform (see Lepage-Saucier et al., 2013)

What the single contract and the flexibilization approaches have in common is that both attempt to reduce labour market inequalities by lowering the standards for the better-off group (the insiders) rather than by improving the standards of the worse-off (the outsiders). The main argument in favour of equalizing “downwards” rather than “upwards” (i.e. the argument that defends relaxing firing restrictions for permanent

contracts rather than increasing restrictions on the use of temporary contracts) is that higher dismissal costs and stricter regulations will hamper employment creation (Bentolila et al., 2012; OECD, 2018). However, a recent meta-analysis found no support for the claim that stricter firing restrictions lead to lower employment creation (Heimberger, 2021). The argument made by researchers and institutions for *closing the gap* between permanent and temporary workers by lowering the standards of the permanent ones rather than by increasing the standards of the temporary ones seems to lack empirical foundation.

Over decades the firing and hiring regulations for permanent and temporary contracts have been treated by scholars and international organizations as crucial determinants of temporary employment rates. These social actors have insisted that the adequate calibration of these regulations would deliver significant improvements in labour markets' performance. Many assume, in consequence, that country-level factors are the main contributing factor of temporary employment rates. Other scholars contend that dismissal and hiring regulations for permanent and temporary contracts have little explanatory power. They argue that within-country comparisons, where institutional regulations are the same, show significant sectorial and regional disparities in the use of temporary contracts (Arrighetti et al., 2022). Overall, this indicates that the country-level institutional factors described by the dualization framework are, at best, insufficient to describe the causes of the high and stagnant rates of temporary employment in Europe. Hence, researchers might be missing the point when they (almost exclusively) opt for analysing macro-level institutions, rather than the meso-level ones (e.g. companies), as the main cause of the (over)use of temporary contracts.

### **Temporary employment and job quality: a complex relationship**

The most straightforward explanation as to why temporary workers experience poorer job quality than permanent employees is that the short-term nature of temporary contracts causes multiple negative indirect consequences, mainly due to human capital devaluation. Because temporary workers achieve lower tenure and are less likely to receive training, they are less productive than permanent workers and receive lower wages in consequence (Mincer and Ofek, 1982; Forrier and Sels, 2003; McTier and McGregor, 2018). The frequent job changes and intermittent periods of unemployment inherent to temporary contracts might also have a detrimental effect on temporary workers' labour market outcomes (McTier and McGregor, 2018). This would



signal to employers that a worker who had a temporary contract is less valuable than a similar worker who held a permanent position (Spence, 1973; for a review, see Latner and Saks, 2022).

On the other hand, poor job quality can also be considered a determinant rather than only a consequence of temporary employment. This is because temporary contracts can be used by employers as an instrument to reduce labour costs (i.e. job quality). Hence, temporary workers are more likely to do unpaid overtime to signal their commitment and effort (Engellandt and Riphahn, 2005). This allows employers to obtain greater labour from temporary workers, even if they receive the same hourly compensation as permanent employees, as required in most European countries. Others indicate that employers frequently use temporary contracts as a tool to undermine and circumvent collective action (Stanworth and Druker, 2004; ILO, 2012: 386; Hatton, 2014; Jansen et al., 2017).<sup>11</sup> Temporary employees are also less prone to profit from basic labour rights, such as taking sick and parental leaves, therefore saving costs to employers (Virtanen et al., 2003; De La Rica and Iza, 2005; Virtanen et al., 2006; Lapuerta et al., 2011; Romero-Balsas et al., 2013: 684; García Mainar et al., 2018; Geisler and Kreyenfeld, 2019). Some might be sceptical about the validity of this claim in the European context, where most workers are entitled to sick and parental leave paid by the state. In some countries, however, employers must still pay social security contributions or part of the wage during the leave period (e.g. Spain),<sup>12</sup> or even pay part of the salary during some of the parental leave (e.g. Belgium). Therefore, even in generous welfare systems, a soon-to-be mother or father and a sick worker might still entail costs to employers. Employers could therefore save some of these costs by hiring workers on consecutive temporary contracts rather than on permanent ones. Of course, in most countries it would be illegal to fire a pregnant woman or a sick worker,<sup>13</sup> but it is not illegal not to provide temporary workers a

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<sup>11</sup> The use of temporary employment as a tool to undermine workers' rights and working conditions is something that the Meeting of Experts on Non-Standard Forms of Employment conformed by the ILO in 2015 has also voiced concerns about: "Non-standard forms of employment should meet the legitimate needs of workers and employers and should not be used to undermine labour rights and decent work, including freedom of association and the right to collective bargaining, equality and non- discrimination, and security of employment." (ILO, 2015: 50)

<sup>12</sup> Although some of these expenses in social security contributions are later reimbursed depending on the duration of the leave, they might entail a significant loss of capital for certain companies. In short-term sick leaves, there is no reimbursement.

<sup>13</sup> It is true that many countries require workers some tenure to be entitled to sick leave and parental leave, but this period generally lasts between a few months and a year.

temporary contract renewal. Most notably, the dismissal does not even need to occur to be effective. The sole threat of job loss can delay pregnancy among women, reduce parental leave durations, and decrease the likelihood of taking sick leave among workers who need it (De La Rica and Iza, 2005; Romero-Balsas et al., 2013: 684). For this reason, the relationship between temporary employment and job quality can be bidirectional to a certain extent; temporary employment can be the cause but also the consequence of low job quality.<sup>14</sup>

### **The goal of this thesis**

Efforts to reduce the rates of temporary employment in Europe over the last decades have been futile (Latner, 2022). Temporary job contracts have become structural elements in contemporary European labour markets, usually with negative consequences for workers (ILO, 2016). Given that abolishing temporary employment is not foreseeable (and probably not even optimal), I consider that it becomes necessary to *close the job quality gap* between permanent and temporary workers. This means ensuring that temporary and permanent workers can participate in the labour market under the same conditions and standards, conceiving the duration of the contract as the only legitimate and bearable difference between the two groups. This necessity of allowing non-standard forms of employment to exist while improving their quality has been defended by the ILO in their 2016 report on non-standard forms of employment: “The ILO recognizes that work can have varied contractual forms. The goal is not to make all work standard, but rather to make all work decent”. (ILO, 2016: 3). In this sense, decent work is specifically conceived by the ILO as:

“...work that is productive and delivers a fair income, with a safe workplace and social protection, better prospects for personal development and social integration, freedom for people to express their concerns, organize and participate in the decisions that affect their lives and equality of opportunity and treatment for all women and men.” (ILO, 2016: 247)

In my view, making temporary jobs decent too and closing the gap in job quality between permanent and temporary contracts is a step towards achieving a more symmetric distribution of the benefits and costs related to temporary contracts between

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<sup>14</sup> Unfortunately, no research has analysed how employers' expenses during sick leaves and parental leaves influence the use of temporary employment contracts.

social actors. This is a necessary condition to *make temporary jobs work for everyone*, and not just employers.

The purpose of this manuscript is closely connected to the ILO goals: due to the necessity of making temporary jobs decent, this thesis investigates the individual and institutional determinants of objective and subjective job quality for temporary jobs. For this reason, I will explore *under which conditions* temporary workers experience better objective and subjective job quality compared to permanent employees. I also ask how institutional factors shape subjective and objective job quality differences between permanent and temporary workers. The end goal is to orientate future analyses and research that will lead to the development of public policies and regulations in Europe aiming to improve the quality of temporary jobs, ensuring that they are decent too. Hence, this project contributes to the ILO policy recommendations that aim at “(1) making non-standard jobs better; and (2) supporting all workers regardless of their contractual status” (ILO: 2016: 247).

### **Assessing job quality**

The analysis of job quality has involved multiple academic disciplines with distinct traditions and orientations. This has resulted in distinct interpretations of what job quality is and how it should be assessed. For example, Olsen et al. (2010) defined job quality as comprising five dimensions: extrinsic job quality, intrinsic job quality, work intensity, working conditions, and interpersonal relationships, while Green et al. (2013) and Osterman (2013) argued that a good job mainly consists of a good salary and benefits, job quality, and employment contract and protection. McGovern et al. (2004: 230) chose an even more economic-oriented conceptualization by identifying bad jobs as “those with (a) low pay, (b) no sick pay, (c) no pension scheme, beyond the basic state scheme; and (d) are not part of a recognized career or promotion ladder.” For the OECD, job quality refers “to those aspects of employment that contribute to the well-being” (2014c: 83) and they focus on earnings quality, labour market security, and quality of working environment as its main components. The ILO also identifies several aspects of what constitutes “decent work”, but includes a broader set of dimensions, such as earnings, working time, balance between work and family, stability and security, safety in the work environment, social security, and workers representation (ILO, 2013). Comparably, Eurofound (2012) elaborated four different indexes looking at the dimensions of earnings, prospects, intrinsic job quality (decomposed into skill

use and discretion, social environment, physical environment, and work intensity), and working time quality. Whereas it is obvious that these researchers and organizations share a common core of concepts and ideas, some emphasize certain aspects over others. It must be noted that even if they all relied on the same indicators, it would still be impossible to define optimal standards for each variable. For example, this seems straightforward for wages – the higher, the better – but what appears to be an adequate level of work intensity or autonomy for some people, might be unbearable for others (Osterman, 2013).

The multidimensionality and complexity of the concept makes it evident that providing a comprehensive assessment of job quality would require analysing multiple job outcomes simultaneously. Whereas Eurofound and the ILO tend to frequently develop these analyses in extensive reports, my analyses will be constrained to a reduced group of outcomes. This will unavoidably provide a very partial evaluation of job quality, but it will also allow me to investigate these specific facets of job quality in much greater depth.

Although I make a distinction between ‘objective’ and ‘subjective’ job quality, the boundaries between both facets are blurry. As ‘subjective’ components of job quality we could generally identify those aspects of work that are based on a subjective assessment of individuals and hence influenced by their own experiences, perceptions, values, and preferences. This might include, for example, job satisfaction, organizational commitment, fear of job loss, or perceived job autonomy. By objective job quality we can refer to those aspects that can be assessed regardless of workers’ subjective evaluation, such as wages, access to paid training, exposure to hot or cold temperatures, doing unpaid overtime, or having the possibility to take a day off when needed. Multiple aspects can be assessed based on both objective and subjective criteria. This occurs, for example, with job security, job autonomy, work environment, or work intensity. Still, even some of the measures deemed as ‘objective’ could have a subjective component since they are reported by workers (Eurofound, 2012).

In the frame of this thesis, I will focus in one objective component of job quality and two subjective ones. These elements are, respectively, wages, and job satisfaction and well-being. The selection of these variables was motivated by their relevance in the literature, but also by my own curiosity as a worker who only had temporary positions, while the availability of good data sources also imposed some constraints on these

choices. By analysing both subjective and objective outcomes, I also attempt to assess job quality from an interdisciplinary perspective, drawing on insights from the literature in sociology and organizational psychology.

### **Theoretical foundations**

To guide the quantitative analyses, my supervisors – Felix Bühlmann and Jonas Masdonati – and I rely on prominent theories in the field of work sociology, organizational psychology and, to a lower extent, political science to address specifically relevant questions. Most labour market sociologists that analyse temporary workers tend to rely on the labour market dualization theory or insider-outsider theory, which I have addressed more extensively in the paragraphs above. In a nutshell, the labour market dualization theory argues that there are two crucial labour market institutions that tend to benefit permanent workers but do so at the expense of temporary ones. First, labour unions, which are claimed to be corporatist organizations that tend to protect the interest of their members (the vast majority being labour market insiders with secure positions) at the expense of the outsiders (the *atypical* workers, who are much less likely to be union members). Second, the hiring and dismissal regulations for permanent workers. Whereas strict and high dismissal costs for permanent workers prevent them from losing their jobs easily, the theory argues that such costs harm temporary workers' chances of becoming permanent employees. Whereas in the introductory paragraphs I strongly criticized this theory and highlighted its several limitations, it is also true that at least in specific cases some of its assumptions have found empirical support. In addition, for many researchers it still constitutes the principal framework of reference to explain all kinds of labour market inequalities between insiders and outsiders.

In the second chapter, nonetheless, it becomes clear that many assumptions of the labour market dualization theory are simply not backed up by evidence. For this reason, we relied on theories from psychology and argued that there are still other reasons to assume that unions and the hiring and dismissal regulations could have negative impacts on temporary workers' well-being. According to the social comparison theory and the relative deprivation frameworks, better standards for the reference group – the permanent workers – should have negative consequences for the temporary ones. Therefore, it could be argued that even if it might be unlikely that the EPL for permanent workers would reduce the employment opportunities of temporary

workers and, therefore, harm temporary workers' well-being, we could still expect that higher employment protection for permanent workers could have a negative impact on well-being. Similarly, even though labour unions might not strictly bargain against temporary workers, the fact that they might address more effectively the issues that concern permanent workers could also have negative impacts on temporary workers' well-being.

In the last chapter, we also sought to enhance the interdisciplinary character of this thesis and make a small contribution to the analysis of job insecurity and well-being. The existing literature had mostly relied on assumptions and frameworks from economics to claim that job insecurity should have a lower negative impact on workers' well-being if they knew they could easily find another job. However, this assumption had little empirical support. By drawing on research in psychology, we suggested that job change is a stressful event and, therefore, the perceived probability or *risk of a job change* could already have negative impacts on workers' well-being. For this reason, we indicated that the reason why employability might not mitigate the negative impacts of job insecurity on well-being is because employability might eliminate the negative impacts of the risk of being unemployed but not those of the risk of job change. We therefore suggested that the negative impacts of job insecurity on well-being do not only occur because workers fear becoming unemployed but also because they fear changing jobs.

### **Structure and content of this thesis**

Although this thesis is not formally structured as an article-based dissertation, it comprises four distinct studies, each following the format of a standard quantitative research article. Each study consists of sections like introduction, literature review, methods and data, results, and conclusion, with additional material included in the Appendix. This structure offers the advantage that each chapter can be read as an independent piece of research, allowing readers to delve into specific topics of interest. Notably, the first chapter has already been published in *Economic and Industrial Democracy*, and the third chapter is also intended for publication in the same journal. The fourth chapter is in the process of being submitted for publication soon. While this structure facilitates the independent reading of each chapter, it does have a downside for readers who choose to read the entire dissertation as a monograph. They may find some redundancy, particularly in the introductions of each chapter, where familiar

information may be reiterated. Throughout the manuscript, readers may have readily noticed the frequent use of the terms "we" and "our." This is due to impact and contributions of Felix Bühlmann and Jonas Masdonati, who not only provided supervision but also elevated the quality of this work.

In the next paragraph I provide a summary of what can be found in each of the four chapters:

The **first chapter** contributes both to a long-standing debate in the academic literature and builds new findings on an unexplored issue. When I first approached studies that explored the association between temporary employment and job satisfaction it became clear that the findings were mixed. Some studies in organizational psychology have suggested that the reason why workers have a temporary job could be a key determinant of their job satisfaction. However, these studies were carried out in a very specific group of countries, generally with samples that were not representative of the overall population. I intuitively assumed the duration of the temporary job contract could also be associated with temporary workers' job satisfaction. Hence, workers who accepted a temporary position because they could not find a permanent one would presumably be more satisfied with a long-term temporary contract than with a short-term one. For this reason, we decided to explore how the reason for having a temporary contract and the duration of the temporary contract were associated with job satisfaction across multiple European countries. Relying on the 2017 ad-hoc module of the European Labour Force Survey, we analyse data from 27 European countries. Results show that the reason why workers have a temporary job seems to matter for their job satisfaction. Overall, only the involuntary temporary workers (those that have a temporary job because they could not find a permanent one) tend to be less satisfied than permanent employees. Instead, the voluntary temporary workers (those who prefer to have a temporary job instead of a permanent one) tend to be as satisfied as permanent employees. Apprentices and trainees were generally as satisfied as permanent workers, and frequently even more than them. These findings are not homogeneous and seem to vary across institutional settings. In the Nordic countries, involuntary temporary workers tend to be as satisfied as permanent ones, whereas in the liberal and Eastern European countries, involuntary temporary workers show the largest difference in job satisfaction with respect to permanent workers. Moreover, in most Eastern European countries all kinds of temporary workers report

less satisfaction than permanent workers. An analysis of the duration of temporary contracts shows that shorter contracts are generally associated with lower job satisfaction, but only among involuntary temporary workers. For the voluntary temporary ones and apprentices and trainees there seems to be no difference. Although the analytical strategy does not allow inferring causality, results suggest that the association of temporary employment and job satisfaction is highly dependent on individual factors (i.e. the reason for having a temporary contract) and shaped by country-level ones.

The **second chapter** builds on these findings. The main goal was then to understand which institutional factors could explain the cross-national differences in job satisfaction gap between permanent and involuntary temporary workers in Europe. To this end, we rely on labour market dualization theory assumptions and previous findings that indicated that the Employment Protection Legislation (EPL) and labour unions boost labour market inequalities between permanent and temporary workers. In addition to the labour market dualization theory, the social comparison and relative deprivation framework also suggests that better standards for the reference group (i.e. permanent workers) could have negative impacts on the well-being of the worse-off (i.e. involuntary temporary workers). Overall, our findings suggest that these inequalities have no relationship with the EPL. Contrary to what is predicted, union strength is related to lower job satisfaction differences between permanent and involuntary temporary workers and greater job satisfaction among involuntary temporary workers. We also observe that when unions are more inclusive towards temporary workers, the job satisfaction difference between permanent and involuntary temporary workers is smaller.

In the **third chapter** we opted for digging deeper into the possible consequences of labour unions for temporary workers. The findings in Chapter 2 suggest that unions had positive impacts on involuntary temporary workers' job satisfaction. For this reason, it could also be possible that unions would have positive impacts on temporary workers' material working conditions, something that would generally contradict the labour market dualization theory assumptions. Our first goal then became to explore whether labour unions widen or reduce the wage gap between permanent and temporary workers. The second goal was to explore unions' absolute effect on temporary workers' wages. The third and secondary goal was to analyse if unions'



effects were affected by the economic climate: whereas unions might be willing to adopt inclusive and solidary strategies in periods of economic growth, they might opt for adopting dualizing and corporatist practices in periods of recession when resources become scarcer. To carry out these analyses we examine data from Spain; a country that is an especially relevant case of study. For decades, Spain had the highest rate of temporary employment in Europe and the labour market dualization theory has frequently argued that labour unions in this country tend to benefit permanent workers at the expense of temporary ones. The analysis relies on a series of cross-sectional surveys going from 2006 to 2010, which allows capturing a period of economic growth and another period of recession. To assess how unions are related to temporary workers' wages and the permanent-temporary wage gap, we study different institutions: collective agreements, works councils, and union density. Results show that, in some cases, these institutions are associated with wider wage differences between permanent and temporary workers. However, unions are frequently associated with higher temporary workers' wages, but never lower wages. Results are generally the same during the period of economic growth and the period of recession. These findings suggest, in fact, that unions might sometimes widen wage inequalities between permanent and temporary workers. However, this does not seem to happen because unions benefit permanent workers at the expense of temporary ones. Because unions are never related to lower wages among temporary workers, it appears that they are beneficial for both groups, but they might increase inequalities because they are more beneficial for permanent than temporary employees.

Finally, in the fourth chapter we address a question that arose in the second chapter: Can employability mitigate the negative impacts of job insecurity on well-being? More simply, the chapter investigates if the negative effects of job insecurity on well-being are reduced when workers know they can easily find another job. There are two reasons this question is especially relevant. First, because it helps to disentangle the mechanisms of why job insecurity has negative effects on well-being. Second, because it allows assessing the validity of the flexicurity paradigm in non-pecuniary terms. To measure job insecurity, we use two subjective indicators (*fear of job loss* and *risk of job loss over the last year*) and an objective one (*having a temporary job*). Since previous studies suggest that these moderating effects of employability, as well as the negative impacts of job insecurity on well-being, frequently differ by gender, separate

analyses are performed for men and women. We apply fixed-effects models to analyse panel data from Switzerland, a country that closely reflects the flexicurity model due to its structurally low unemployment rate and its high labour demand. Results indicate that employability does not mitigate the negative impacts of any of the measures of job insecurity on job satisfaction, neither for women nor men. Employability seems to reduce some of the negative impacts of job insecurity on life satisfaction. However, these mitigating effects are only observed among men, despite women being almost as negatively impacted by job insecurity as men. For mental health, the results are mixed: employability appears to reduce some of the impacts of *fear of job loss* only for women, and some of the negative impacts of the *risk of job loss* over the last year, but only for men. The negative impacts of temporary employment on well-being were only observed among men, but they were never reduced by employability. Overall, results suggest that employability helps but does not shield workers from the negative impacts of job insecurity.

These four studies constitute an attempt to improve the understanding of which individual-level and macro-level factors affect temporary workers' job quality and, to a lesser extent, the mechanisms through which this occurs.



## **CHAPTER 1**

### **Job satisfaction across Europe: An analysis of the heterogeneous temporary workforce in 27 countries**

#### **1.1 Introduction**

Temporary workers accounted for about 13.6% of the EU-28 workforce in 2019. Their situation in the labour market is a matter of public concern. Besides lacking job security due to the (almost) certain end of their job contract (Ellonen and Nätti, 2015; Parker et al., 2002), fixed-term workers frequently experience poorer job quality than permanent employees: They receive lower wages and economic benefits (Booth et al., 2002; OECD, 2014c; Eurofound, 2015; OECD, 2015), are offered fewer training opportunities (Forrier and Sels, 2003) and have less autonomy (Goudswaard and Andries, 2002; Wagenaar et al., 2012). Nevertheless, it is not clear whether temporary jobs have negative consequences for job satisfaction (Wilkin, 2013). In the last decades, a fair number of research articles have pointed to three possible outcomes in this regard: Temporary workers are more satisfied with their work than permanent employees (De Cuyper and De Witte, 2005; Mauno et al., 2005; Beckmann et al., 2007; De Cuyper and De Witte, 2007a; De Cuyper and De Witte, 2007b; De Cuyper et al., 2010a); temporary workers are as satisfied as permanent employees (Allen and Van der Velden, 2001; De Graaf-Zijl, 2005; De Cuyper and De Witte, 2006; Guest et al., 2006; D'Addio et al., 2007; Green and Heywood, 2011; De Graaf-Zijl, 2012; Bruno et al., 2014; De Cuyper et al., 2019); and temporary workers are less satisfied than permanent employees (Benavides et al., 2000; Bardasi and Francesconi, 2004; Green and Tsitsianis, 2005; Kaiser, 2005; Fabra and Camisón, 2009; Pichler and Wallace, 2009; Chadi and Hetschko, 2016). Job satisfaction is associated with subjective well-being and health (Faragher, et al., 2005; Bowling et al., 2010), it predicts job quits (Clark, 2001; Böckerman and Ilmakunnas, 2009; Green, 2010) business outcomes (Harter et al., 2002) and productivity (Böckerman and Ilmakunnas, 2020). Understanding the consequences of temporary employment for job satisfaction is therefore a matter of interest for human resources practitioners, managers, career counsellors, employers, but also policymakers and public health professionals.

This study argues that part of the mixed findings about the effects of temporary

employment on job satisfaction can be attributed to the heterogeneity of the temporary workforce between and within countries. More specifically, among the many micro determinants that shape the association between temporary employment and job satisfaction –such as previous work experiences or perceived employability (see De Cuyper et al., 2008 and Dawson, 2017 for a review) – we focus on two compositional aspects that have received little or no attention. First, the association between temporary work and job satisfaction depends on workers' contract preference (Krausz et al., 1995; Ellingson et al., 1998; Krausz, 2000) and the reason for being a temporary worker (De Cuyper and De Witte, 2008). Some workers take temporary jobs because they cannot find permanent employment, while others do so simply because they seek short-term engagement in the labour market or in a certain position. Nonetheless, these findings are limited to a small group of countries, namely the US (Krausz et al., 1995; Maynard et al., 2006), the UK (Guest et al., 2006) and Belgium (De Cuyper and De Witte, 2007b; De Cuyper and De Witte, 2008), and frequently rely on small samples. Secondly, temporary contracts can vary widely in terms of their duration, from just a few days to a few years. Still, the effects of the duration of these temporary contracts on job satisfaction are mostly unexplored. Given that the lack of job security is the main characteristic of fixed-term jobs, contract duration may be a relevant determinant of job satisfaction among temporary workers. These two individual aspects, therefore, might explain some of the cross-national differences on the effects of temporary employment on job satisfaction (De Witte and Näswall, 2003). At the same time, the association between temporary employment and job satisfaction is also affected by institutional factors – for example, cultural aspects or labour market institutions (Kristentsen and Johansson, 2008; Clark and Postel-Vinay, 2009). In consequence, the effects of the reason for having a temporary contract, and the duration of the temporary contract on satisfaction, might differ across institutional contexts.

With the aim to tackle job satisfaction combining a micro and macro perspective, this study makes two contributions to the literature. First, we analyse the effects of the reason for being a temporary worker for job satisfaction in 27 European countries at the aggregate European level, and then we explore these effects for each country independently. Second, we evaluate for the first time the effect of contract duration on workers' satisfaction in Europe, also obtaining estimates for each country. These country-specific analyses constituted an advantage: they unveiled that certain results

are common across countries with similar institutional configurations, but also provided results that are particularly relevant for under-researched areas such as the post-Socialist countries.

## 1.2 Literature review

### ***Job satisfaction and temporary work***

Two mechanisms explain why temporary workers might be less satisfied than permanent employees. Firstly, fixed-term workers suffer from job insecurity due to the eventual termination of their contract, which negatively affects their overall job satisfaction (Dawson et al., 2017). However, it appears that the job satisfaction of temporary workers is more resistant to the negative effects of job insecurity compared to permanent employees (De Witte and Näswall, 2003; Mauno et al., 2005). Secondly, fixed-term employees experience poorer overall job quality than workers in permanent arrangements. Therefore, even if temporary workers were immune to job insecurity, they would still have reasons to be less satisfied than permanent employees.

At the same time, there are grounds to justify why temporary workers could be as satisfied or more satisfied than permanent employees. Even if temporary jobs are of poorer quality, temporary workers might experience what some authors call the *honeymoon-hangover effect* (Boswell et al., 2005; Georgellis and Yusuf, 2016). According to this effect, workers' job satisfaction suddenly increases after they take a new job and progressively returns to pre-transition levels after some time. Thus, because temporary workers have started a new job more recently, it is likely that they will be more satisfied than permanent employees (Chadi and Hetschko, 2016). Similarly, temporary workers are more likely to have recently experienced unemployment, be new entrants in the labour market, and been informally employed. Consequently, a temporary position would be comparatively better than previous situations and may lead to a temporary job satisfaction *bonus*.

In addition to individual-level factors that shape the association between temporary employment on job satisfaction, there are institutional elements that affect this relationship. Cultural features influence the assessment of job satisfaction and the extent to which certain job characteristics such as job security are relevant for job satisfaction (Kristensen and Johansson, 2008; Hauff et al., 2015). Additionally, the effects of temporary jobs on satisfaction depend on economic cycles. For example,

during recessions job security becomes more important for job satisfaction (Artz and Kaya, 2014). The same applies to labour market institutions. Regulations on the use of permanent and temporary contracts influence temporary workers' satisfaction. For instance, temporary workers feel more satisfied with their job security in countries where unemployment benefits are higher (Clark and Postel-Vinay, 2009). Similarly, the legislations that regulate hiring and firing procedures for permanent and temporary workers influence how insecure temporary workers feel compared to permanent employees (Balz, 2017). In consequence, due to the influence of multiple institutional factors, the effects of temporary employment on job satisfaction cannot be deemed as constant across different contexts.

### ***Voluntary and involuntary temporary work***

Given the lower wages and lack of security affecting temporary workers, it is not surprising that most find their engagement in the labour market to be suboptimal. According to Eurostat, in 2017 around 53% of temporary workers in the EU and EFTA countries claimed to have a fixed-term arrangement because they could not find a permanent job (see Table 1). These workers are what some researchers label as 'involuntary temporary workers' (e.g. Feldman et al., 1995; Krausz et al., 1995) and represent more than 80% of the temporary workforce in Cyprus, Spain, Portugal and Romania, but less than 10% in Iceland or Austria.

For others, a temporary job might be an instrument, a stepping-stone towards a permanent position or the path to achieve a set of skills that could open new labour market opportunities (Booth et al., 2002; Van den Berg et al., 2002; De Jong et al., 2009). This is the case of 8% of European temporary workers under probation periods and 15.2% who are doing internships or apprenticeships. In Switzerland, Germany and Austria, these workers account for more than half of fixed-term contracts, whereas in most Eastern Europe countries they represent a very small share of the workforce. For practical reasons, we follow previous studies in the field (e.g. De Cuyper and De Witte, 2008) and refer to temporary workers in probation periods, apprentices, and trainees as "instrumental temporary workers".

Another 12.4% of temporary workers are employees who claim to have a fixed-term contract simply because they did not want to have a permanent one. They might decide to have an intermittent engagement in the labour market due to their participation in

**Table 1: Temporary workers by reason for having a temporary job, as a percentage of the temporary workforce aged 15-64 in Europe (2017)**

	Could not find a permanent job	Did not want a permanent job	In education or training	Probationary period
<b>EU+EFTA</b>	53,1	12,4	15,2	8,0
<b>Belgium</b>	75,8	19,5	4,7	0
<b>Bulgaria</b>	68,3	12,4	0 (*)	16,2
<b>Czechia</b>	77,1	21,5	1	0
<b>Denmark</b>	39,6	27,2	28,5	4,6
<b>Germany</b>	15,1	3,2	39,6	13,5
<b>Estonia</b>	12 (*)	11,9 (*)	0 (*)	46,8
<b>Ireland</b>	39,1	21,8	8,3	4,7
<b>Greece</b>	72,5	3,5	9,2	6,1
<b>Spain</b>	85,2	3,1	4,6	1
<b>France</b>	54,2	21,9	13,3	2,4
<b>Croatia</b>	86	5,1	6,4	2,3 (*)
<b>Italy</b>	72,4	2,3	16,4	8,5
<b>Cyprus</b>	91,9	2,3 (*)	3,5	2,3 (*)
<b>Latvia</b>	56,3	20,1	0 (*)	18,1
<b>Lithuania</b>	56,6	11,7 (*)	13,8 (*)	17,9 (*)
<b>Luxembourg</b>	57,1	6,7	5,4	15,4
<b>Hungary</b>	77,5	9,1	2,1	11,3
<b>Malta</b>	46,5	19,8	7,6	26,1
<b>Netherlands</b>	31,1	12,3	2,6	26,9
<b>Austria</b>	9,1	35,5	43,1	12,2
<b>Poland</b>	58,8	19,8	9	12,4
<b>Portugal</b>	82,4	5,4	5,1	7,1
<b>Romania</b>	84,2	0	0	0
<b>Slovenia</b>	53,3	35,5	2,7 (*)	8,5
<b>Slovakia</b>	77,1	17,6	1,7	0
<b>Finland</b>	70,3	22,9	4,2	1,9
<b>Sweden</b>	51,2	32,6	1,1	12,6
<b>United Kingdom</b>	28,7	25	9	3,2
<b>Iceland</b>	5,8	49,2	3,6	8
<b>Norway</b>	50,1	22,5	10,4	0
<b>Switzerland</b>	11,3	5,5	56,3	2,8

**Notes:** Some rows do not add up to 100 percent due to the missing answers. (\*) Values with low reliability. Source: European Labour Force Survey, 2017.



other activities (Casey and Alach, 2004). Tan and Tan (2002) observed that some workers actively seek a temporary position for family and economic reasons (e.g. greater flexibility), self-improvement (e.g. gaining experience in different organisations) or simply because of a personal preference (e.g. a desire for less office politics). This group represents more than one third of the temporary workforce of Slovenia, Austria and Iceland. We refer to them as “voluntary temporary workers”.

The reason why workers have a temporary position has been considered as a crucial moderator in the association between contract type and job satisfaction. This association has also been conceptualised as *work status congruence* or *contract mismatch*, or sometimes encompassed by the more general psychological concept of *volition*. Numerous scholars argue that being voluntarily engaged in a temporary job has positive impacts on job satisfaction (Feldman et al., 1995; Krausz et al., 1995; Ellingson et al., 1998; Tan and Tan, 2002; Connelly and Gallagher, 2004; Guest, 2004; Westover, 2012).

Nevertheless, studies on the association between the preference for temporary jobs and job satisfaction are scant and frequently rely on small and scarcely diverse samples in a limited number of countries. Some researchers have observed that workers who are voluntarily engaged in a temporary position are sometimes more satisfied than temporary workers who prefer a permanent job (Ellingson et al., 1998; Guest et al., 2006) or even permanent employees (Krausz et al., 1995), while Maynard et al. (2006) observed different effects for different facets of job satisfaction. By contrast, De Cuyper and De Witte (2007b) found no association between contract preference and job satisfaction, and De Cuyper and De Witte (2008) reported that ‘free choice’ temporary workers were less satisfied than ‘forced choice’ ones and permanent employees.

In line with most of the theoretical arguments and part of the evidence, three hypotheses are tested:

(H1) Involuntary temporary workers are less satisfied than permanent employees.

(H2a) Instrumental temporary workers are equally or more satisfied than permanent employees.

(H2b) Voluntary temporary workers are equally or more satisfied than permanent employees.

### ***Contract duration***

The duration of temporary contracts is a significant source of heterogeneity among the fixed-term workforce. Contract duration might be related to different perceptions of job security, but its effects on job satisfaction have received little research attention. As shown in Table 2, these differences exist between and within countries in Europe. For example, in Germany, Austria and Switzerland, close to 40% of temporary workers have contracts of more than 2 years in duration, unlike the Baltic countries, where temporary contracts lasting more than one year are negligible. In Estonia, Lithuania, Latvia, Croatia and Belgium, more than one third of temporary workers have contracts with a maximum duration of three months, while in Germany, Cyprus and the Czech Republic less than 4% of contracts are of this type.<sup>1</sup>

Although the effects of contract duration on temporary workers' job satisfaction are not well known, some studies have focused on temporary agency workers, who normally have shorter contracts. The results more consistently point to the fact that temporary workers are less satisfied than permanent employees (De Graaf-Zijl, 2005; Aletraris, 2010; Green et al., 2010; Green and Heywood, 2011; De Graaf-Zijl, 2012; Jahn, 2015; Buddelmeyer et al., 2015). However, it remains unanswered whether temporary agency workers are less satisfied because they have shorter contracts and experience more job insecurity, or because they are exposed to poorer job quality in general (Green et al., 2010; De Graaf-Zijl, 2012).

Following the previous evidence and given that shorter temporary contracts offer less job security, it is expected that temporary workers with short contracts will experience larger differences in job satisfaction with respect to permanent employees than temporary workers with longer contracts. However, voluntary temporary workers are not looking for job security, and for instrumental temporary workers, job security is probably not yet their main priority. Short contracts, then, should have a negative effect on the job satisfaction of those who seek job security: temporary workers who want a permanent job. Therefore:

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<sup>1</sup> Part of these differences across countries can be attributed to limitations on the extension of temporary contracts, as in the case of Lithuania or Latvia (Tomas, n.d.; Wexels-Riser, n.d.).

**Table 2: Temporary workers by contract duration, as a percentage of the temporary workforce aged 15-64 in Europe (2017)**

	<b>Up to 3 months</b>	<b>From 4 to 6 months</b>	<b>From 7 to 12 months</b>	<b>From 13 to 24 months</b>	<b>More than 2 years</b>
<b>EU+EFTA</b>	16,1	14,9	25,2	10,7	15,9
<b>Belgium</b>	37,3	15,8	29,3	6,7	11,0
<b>Bulgaria</b>	17,8	39,0	23,2	2,5 (*)	0,0 (*)
<b>Czechia</b>	3,9 (*)	10,1	42,4	25,8	17,6
<b>Denmark</b>	11,3	12,8	20,7	20,6	34,6
<b>Germany</b>	3,3	11,5	28,7	15,4	38,0
<b>Estonia</b>	34,5 (*)	32,2 (*)	9,8 (*)	0,0 (*)	0,0 (*)
<b>Ireland</b>	13,3	9,8	19,4	8,8	12,4
<b>Greece</b>	12,7	28,8	39,5	7,0	12,0
<b>Spain</b>	17,7	15,3	14,8	1,6	4,6
<b>France</b>	30,6	14,7	21,6	15,6	8,3
<b>Croatia</b>	34,7	25,4	20,4	2,9	14,5
<b>Italy</b>	22,9	26,3	29,3	3,1	11,0
<b>Cyprus</b>	3,6 (*)	17,1	41,4	12,0 (*)	24,7 (*)
<b>Latvia</b>	38,3 (*)	25,6	14,1	0,0 (*)	7,9 (*)
<b>Lithuania</b>	42,1 (*)	27,7	17,9	0,0 (*)	0,0 (*)
<b>Luxembourg</b>	16,4	12,8	25,1	16,9	26,9
<b>Hungary</b>	24,6	17,9	50,3	4,2	2,9
<b>Malta</b>	8,9 (*)	24,1	33,9	11,6 (*)	17,0 (*)
<b>Netherlands</b>	5,1	4,4	27,7	3,5	2,0
<b>Austria</b>	11,2	14,0	25,7	9,2	39,7
<b>Poland</b>	15,1	11,7	31,9	20,9	20,5
<b>Portugal</b>	13,1	27,5	35,9	3,0	5,2
<b>Romania</b>	14,5 (*)	28,2	45,3	0,0 (*)	0,0 (*)
<b>Slovenia</b>	28,8	20,2	33,6	9,4	8,2 (*)
<b>Slovakia</b>	19,4	28,5	36,5	10,0	2,8 (*)
<b>Finland</b>	26,8	24,0	28,7	11,1	7,4
<b>Sweden</b>	21,7	15,5	14,6	12,5	11,6
<b>United Kingdom</b>	6,5	6,4	12,1	12,3	10,4
<b>Iceland</b>	31,8 (*)	19,7	29,5	0,0 (*)	6,4 (*)
<b>Norway</b>	5,4 (*)	5,3	13,0	11,0 (*)	17,8
<b>Switzerland</b>	12,1	10,7	23,2	10,2	43,7

Note: Some rows do not add up to 100 percent due to the missing answers. (\*) Values with low reliability. Source: European Labour Force Survey, 2017.

(H3) Compared to permanent employees, involuntary temporary workers are less satisfied with their jobs when their temporary contracts are short rather than long.

On the other hand:

(H4a) Differences in job satisfaction between permanent and instrumental temporary workers do not depend on the duration of the temporary contract.

(H4b) Differences in job satisfaction between permanent and voluntary temporary workers do not depend on the duration of the temporary contract.

### **1.3 Data and methods**

#### ***Sample selection and characteristics***

The study data were retrieved from the ad-hoc module of the 2017 European Labour Force Survey (EU-LFS), which contains information for 27 European countries: Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Germany, Denmark, Estonia, Spain, Finland, France, Greece, Hungary, Ireland, Italy, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Sweden, Switzerland, Slovak Republic, and the UK. This is the only dataset that provides information about job satisfaction, the duration of temporary contracts, and the reason for being a temporary worker across multiple countries in Europe. Other cross-national surveys do not contain information about for being temporary worker (e.g. the European Working Conditions Survey and the European Social Survey) or even whether workers have a temporary or a permanent position (e.g. the International Social Survey Programme).

Starting with the full original sample from the Ad-Hoc module of the EU-LFS of 2017, the observations that had missing values for the dependent variable, independent variables, control variables, as well as those with missings in filters or variables that derived control variables, were discarded. Observations with missing values for the following variables were excluded: proxy interview (whether the questionnaire was answered by the worker or the workers' relatives), job satisfaction, professional status, type of work contract (permanent or temporary), reason for being a temporary worker (among those with temporary contracts), occupation, education, nationality, working time, number of hours worked in the second job (among those with a second job), tenure, duration of temporary contract (observations with missing values for this

variable were only discarded when contract duration was used as independent variable). In addition, workers with the following characteristics were discarded: self-employed workers and family workers (these workers are rarely employed under permanent or temporary job contracts), workers younger than 15 and older than 64, army and military workers (they represent a category of workers with very few observations in most countries, and frequently face especial contract conditions), workers who reside in a country different from their country of employment (especial institutional regulations tend to apply to these workers), workers who devote more than 10 hours per week to a second job<sup>2</sup> (workers with a second job might be less reliant on their primary job, which might affect their willingness to accept a temporary contract and their job satisfaction). In addition to this selection, other countries were not analysed for specific issues. This is the case for Slovenia (the variable *reason for having a temporary job* was missing for the whole sample), Croatia (the data for Croatia was not provided by Eurostat), Iceland and Latvia (the low number of temporary workers did not allow to perform a reliable analysis). The original sample was conformed by 395,565 observations. After discarding observations with missings, the analytical sample was conformed by 378,112 employees. Among them, 46,172 were temporary workers and 331,940 were permanent employees, although these numbers changed slightly in some analyses due to the inclusion of other variables with missing cases. In Table C1 in the Appendix we display the descriptive statistics of the original sample alongside the analytical sample, showing that none of the different categories are consistently over or under-represented.

### ***Measurements and methods***

The independent variable, *reason for having a temporary job*,<sup>3</sup> covered four categories: (1) 'it is a contract covering a period of training (apprentices, trainees, research assistants, etc.);'<sup>4</sup> (2) 'person could not find a permanent job'; (3) 'person did not want a permanent job' and (4) 'it is a contract for a probationary period'. The first and fourth

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<sup>2</sup> Although excluding workers who work more than 10 hours per week to a second job might be arbitrary, this criterion allowed us to select more relevant cases without a significant loss of observations.

<sup>3</sup> Eurostat derives this variable from each national Labour Force Survey. However, the questions differ slightly between countries. They normally follow the structure 'Why do you have a temporary contract instead of a permanent one?' or 'Why did you accept a temporary contract?'. The complete questionnaires can be found at: [https://ec.europa.eu/eurostat/statistics-explained/index.php/EU\\_labour\\_force\\_survey\\_-\\_methodology#Core\\_questionnaires](https://ec.europa.eu/eurostat/statistics-explained/index.php/EU_labour_force_survey_-_methodology#Core_questionnaires).

<sup>4</sup> Eurostat only computes internships and traineeships if workers receive some kind of remuneration for their work.

categories were identified as '*instrumental* temporary workers'. These workers accept a temporary job to achieve something else: either a permanent position (probation periods) or a certain qualification and skills (apprenticeships and internships).<sup>5</sup> The second category was identified as '*involuntary* temporary work' and comprised workers who were seeking a permanent position but could not find one. Finally, 'not wanting a permanent job' was labelled as '*voluntary* temporary work'.

The second independent variable, *contract duration*, was codified in three different categories to capture non-linearities: up to 6 months, 7 to 12 months, and more than one year. This categorization attempts to pool a relevant number of observations for each category and country.

The dependent variable, *job satisfaction*, was assessed with the question 'To what extent are you satisfied with your current job?', and four possible responses: 'satisfied to a large extent', 'satisfied to some extent', 'satisfied to a small extent' and 'not satisfied at all'. To facilitate the interpretation of results, the responses were recorded as if job satisfaction were a continuous variable, assigning the values 100, 66.66, 33.33 and 0 to each respective answer. Whereas the use of a single-item indicator to measure job satisfaction reduces the accuracy of our results (Ock, 2010), this is the only dataset that allows us to perform these analyses.

The hypotheses are tested first on the aggregate European sample. Then we explore these associations on each country independently, obtaining specific results for each national context. This presents two advantages compared to an aggregate analysis of Europe. First, it allows detecting whether associations differ between territories and institutional configurations. Second, country-level analyses provide detailed information for areas that are frequently under-researched, such as the post-Socialist countries. In the first step of the analysis, we performed linear regression models to quantify the job satisfaction gap between permanent employees and each of the three categories of temporary workers (involuntary, instrumental, and voluntary). The first model was performed for the total sample of countries (this is, including country dummies), and the next models were performed on each country separately. These regression models included several confounders as control variables, which might

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<sup>5</sup> These two groups present several differences and some similarities, but doing separate analyses for each of them was not optimal due to the small sample size in several countries.

have simultaneously affected the independent and the dependent variables; this is, variables that affect job satisfaction and the probability of having a permanent or a temporary contract. These variables were age (as categorical, in intervals), gender, nationality (whether *native*, *EU/EFTA national* or *non-EU/EFTA national*), education (as a continuous variable, from 0 to 8, following the ISCED 2011 scale), working time (whether *full time*, *part-time* or *marginal work*<sup>6</sup>), supervisory role (*yes* vs. *no and does not know*), occupation (ISCO-08, 1-digit), and tenure (in months). Contrary to other studies, the analyses did not control for agency work. This is because legal regulations differ between countries and there are very few agency workers in some countries. Below, in Table 3, we offer descriptive statistics of the sample containing permanent and temporary workers by the reason why workers have a temporary job contract.

**Table 3: Sample descriptive statistics by reason for having a temporary job contract**

	<b>Permanent</b>	<b>Involuntary temporary</b>	<b>Instrumental temporary</b>	<b>Voluntary temporary</b>	<b>Total</b>
	Mean / Percentage (Standard deviation)	Mean / Percentage (Standard deviation)	Mean / Percentage (Standard deviation)	Mean / Percentage (Standard deviation)	Mean / Percentage (Standard deviation)
<b>Job satisfaction</b>	78.72 (22.69)	72.83 (26.30)	80.37 (22.50)	78.32 (22.91)	78.29 (23.05)
<b>Age</b>					
15 to 24	6.06	16.52	45.92	41.06	8.49
25 to 34	18.76	28.39	29.17	20.88	19.83
35 to 44	26.3	24.15	12.12	12.54	25.54
45 to 54	29.1	19.85	9.1	11.08	27.55
55 to 64	19.79	11.09	3.69	14.44	18.6
<b>Gender</b>					
Man	50.34	47.27	53.1	45.44	50.08
Woman	49.66	52.73	46.9	54.56	49.92

<sup>6</sup> The classification of the variable *working time* depended in most cases on the number of hours worked per week “as usual” in the main job. Hence, “full-time work” refers to more than 30 hours of work per week, “part-time work” refers to between 15 and 30 hours of work per week, and “marginal work” refers to less than 15 hours of work per week “as usual”. In those observations where the number of hours worked per week “as usual” was missing, the number of hours of work during the week of reference was used instead, following the same criteria. If this variable was also missing, the self-classification provided by the worker was used instead. However, workers could only classify themselves as “part-time” or “full-time” workers. Therefore, the analysis might underestimate, to some extent, the actual number of “marginal workers”. In consequence, the classification gives priority to the usual number of hours per week, then to the number of hours of work during the reference week, and finally to the classification provided by the worker.

<b>Educational level</b>	4.02 (1.83)	3.55 (1.87)	3.58 (1.79)	3.75 (1.80)	3.97 (1.84)
<b>Working time</b>					
Full-time	82.93	71.31	77.71	46.4	81.26
Part-time	13.95	22.17	16.79	31.1	14.97
Marginal work	3.12	6.52	5.5	22.5	3.78
<b>Nationality</b>					
Native	93.76	90.51	91.69	92.91	93.44
EU/EFTA	3.69	3.73	3.73	4.04	3.7
Non-EU/EFTA	2.54	5.75	4.58	3.05	2.86
<b>Supervisory role</b>					
No	76.55	92.77	92.34	89.61	78.47
Yes	23.45	7.23	7.66	10.39	21.53
<b>Occupation</b>					
Managers	5.28	0.86	1.22	2.48	4.78
Professionals	21.25	14.73	17.44	18.04	20.58
Technicians and associate professionals	16.23	8.82	15.53	10.73	15.52
Clerical support workers	10.58	8.79	10.54	8.16	10.39
Service and sales workers	17.14	21.84	22.26	31.07	17.88
Skilled agricultural, forestry and fisheries	0.85	1.88	1.56	1.51	0.96
Craft and related trades workers	11.13	10.46	16.34	6.49	11.13
Plant and machine operators, and assemblers	8.94	8.72	6.35	5.53	8.8
Elementary	8.6	23.89	8.77	16	9.95
<b>Tenure (in months)</b>	135.80 (121.49)	26.95 (50.37)	13.98 (25.31)	28.73 (59.04)	122.21 (120.69)
<b>Country</b>					
Austria	4.06	0.26	7.39	7.72	3.9



Belgium	4.29	3.7	0.78	4.45	4.16
Bulgaria	3.1	1.31	1.08	1.13	2.88
Switzerland	1.55	0.26	5.36	0.61	1.53
Cyprus	0.95	1.88	0.26	0.22	1
Czechia	3.96	3.58	0.11	4.53	3.84
Germany	4.15	1.06	11.17	0.74	4.03
Denmark	2.89	2.02	4.69	5.97	2.91
Estonia	1.65	0.09	0.85	0.25	1.49
Spain	6.64	21.29	4.56	3.49	7.71
Finland	2.45	3.34	0.95	5.01	2.53
France	1.29	1.56	1.93	2.86	1.36
Greece	2.97	3.92	2.28	0.94	3
Hungary	5.3	6.96	2.5	2.55	5.32
Ireland	3.34	1.37	1.1	2.56	3.11
Italy	9.15	13.66	13.26	2.48	9.5
Lithuania	1.75	0.22	0.42	0.13	1.57
Luxembourg	0.83	0.44	0.57	0.27	0.78
Malta	1.24	0.41	0.88	0.77	1.16
Netherlands	7.85	6.79	20.08	13.26	8.16
Norway	3.15	1.69	1.2	3.46	2.99
Poland	4.22	9.82	9.88	16.34	5.02
Portugal	3.13	7.64	3.41	2.23	3.49
Romania	5.19	0.25	0.15	0.16	4.58
Sweden	4.42	3.37	3.33	10.39	4.41
Slovak Republic	2.01	1.79	0.12	1.98	1.94
United Kingdom	8.45	1.35	1.69	5.52	7.66
<b>N</b>	331,940	30,293	9,515	6,364	378,112

The second step consisted in the analysis of contract duration, first for the total sample, and then for each country separately. In these models the three categories of temporary workers were independently compared with permanent employees and the association between contract duration and job satisfaction was measured. These models included the same control variables mentioned above, except for tenure, due to collider bias concerns. Unfortunately, in the country-specific analyses some coefficients had to be suppressed and some countries were fully discarded from the analyses due to the low number of observations for certain categories of the independent variables. These suppressions were done attending to the Eurostat guidelines, which require a minimum number of observations per category for each country. Again, also following Eurostat guidelines, variables like *nationality* and *occupation* had to be recoded or eliminated in some country-specific models due to the low number of observations in some categories. The risk of sample bias and the

impossibility of assuming causality due to the risk of omitted variable bias and reversed causality constitute the two main weaknesses of the analysis. In the three tables below, we present the descriptive statistics of the respective samples of involuntary, instrumental, and voluntary temporary workers, categorized by the duration of their temporary contracts.

**Table 4.1: Sample descriptive statistics of involuntary temporary workers, by duration of the temporary job contract**

	<b>Up to 6 months</b>	<b>Between 7 and 12 months</b>	<b>More than 1 year</b>	<b>Total</b>
	Mean / Percentage (Standard deviation)	Mean / Percentage (Standard deviation)	Mean / Percentage (Standard deviation)	Mean / Percentage (Standard deviation)
<b>Job satisfaction</b>	70.81 (27.77)	73.32 (25.60)	75.3 (25.21)	72.71 (26.48)
<b>Age</b>				
15 to 24	19.24	14.26	16.51	16.74
25 to 34	27.55	28.64	32.08	28.9
35 to 44	23.06	24.48	24.21	23.85
45 to 54	19.34	20.7	16.94	19.37
55 to 64	10.82	11.93	10.26	11.14
<b>Gender</b>				
Man	50.44	42.92	44.28	46.25
Woman	49.56	57.08	55.72	53.75
<b>Educational level</b>	3.23 1.67	3.76 1.93	3.98 1.98	3.59 1.86
<b>Working time</b>				
Full-time	69.05	72.42	78.85	72.38
Part-time	24.49	22.55	14.07	21.59
Marginal work	6.46	5.03	7.08	6.03
<b>Nationality</b>				
Native	89.66	91.83	89.74	90.52
EU/EFTA	3.85	3.52	3.75	3.70
Non-EU/EFTA	6.49	4.65	6.51	5.78
<b>Supervisory role</b>				
No	94.95	92.07	88.43	92.49
Yes	5.05	7.93	11.57	7.51

<b>Occupation</b>				
Managers	< 0.5	0.67	2.48	0.94
Professionals	7.77	20.65	19.75	15.24
Technicians and associate professionals	7.4	9.81	11.18	9.11
Clerical support workers	8.71	9.34	8.95	9.00
Service and sales workers	25.15	18.75	19.77	21.55
Skilled agricultural, forestry and fisheries	2.04	2.37	0.92	1.94
Craft and related trades workers	11.10	7.61	10.53	9.62
Plant and machine operators, and assemblers	9.41	7.94	8.99	8.75
Elementary	28.00	22.87	17.44	23.84
<b>Country</b>				
Austria	< 0.5	< 0.5	< 0.5	< 0.5
Belgium	5.56	3.71	3.58	4.43
Bulgaria	2.23	0.95	< 0.5	1.34
Switzerland	< 0.5	< 0.5	< 0.5	< 0.5
Cyprus	1.12	2.65	3.70	2.25
Czechia	1.70	4.27	9.45	4.29
Germany	0.71	1.59	1.73	1.26
Denmark	1.24	1.52	6.43	2.42
Estonia	< 0.5	< 0.5	< 0.5	< 0.5
Spain	21.64	9.3	6.43	13.71
Finland	4.41	3.55	3.75	3.94
France	2.61	1.33	1.44	1.87
Greece	5.02	5.05	3.39	4.70
Hungary	6.89	13.03	2.29	8.33
Ireland	0.54	0.52	1.64	0.76
Italy	20.06	15.62	4.29	15.09
Lithuania	< 0.5	< 0.5	< 0.5	< 0.5
Luxembourg	< 0.5	< 0.5	1.29	< 0.5
Malta	< 0.5	< 0.5	< 0.5	< 0.5
Netherlands	2.89	10.23	4.18	6.01
Norway	< 0.5	0.73	3.62	1.21
Poland	5.62	10.05	27.14	11.77
Portugal	8.56	9.31	3.48	7.81
Romania	< 0.5	< 0.5	< 0.5	< 0.5
Sweden	3.27	1.99	6.95	3.53
Slovak Republic	2.76	1.98	1.17	2.13
United Kingdom	0.63	0.60	1.79	0.86
<b>N</b>	10,245	9,841	5,196	25,282

**Note:** In accordance with Eurostat guidelines, the exact percentage of cells with a significantly low number of observations is not explicitly disclosed.

**Table 4.2: Sample descriptive statistics of instrumental temporary workers, by duration of the temporary job contract**

	<b>Up to 6 months</b>	<b>Between 7 and 12 months</b>	<b>More than 1 year</b>	<b>Total</b>
	Mean / Percentage (Standard deviation)	Mean / Percentage (Standard deviation)	Mean / Percentage (Standard deviation)	Mean / Percentage (Standard deviation)
<b>Job satisfaction</b>	77.89 (25.38)	79.01 (24.31)	84.07 (20.92)	80.87 (23.45)
<b>Age</b>				
15 to 24	36.64	38.96	67.52	50.88
25 to 34	30.96	31.65	24.73	28.31
35 to 44	16.67	14.56	4.45	10.80
45 to 54	11.29	10.59	2.36	7.17
55 to 64	4.43	4.24	< 1.0	2.84
<b>Gender</b>				
Man	54.68	48.53	55.87	54.00
Woman	45.32	51.47	44.13	46.00
<b>Educational level</b>	3.58 1.66	3.91 1.90	3.22 1.73	3.48 1.76
<b>Working time</b>				
Full-time	77.04	75.60	89.23	82.19
Part-time	18.76	18.59	8.57	14.18
Marginal work	4.21	5.81	2.21	3.63
<b>Nationality</b>				
Native	91.13	90.09	89.86	90.36
EU/EFTA	3.45	4.72	4.90	4.35
Non-EU/EFTA	5.42	5.19	5.24	5.29
<b>Supervisory role</b>				
No	92.69	91.11	95.37	93.57
Yes	7.31	8.89	4.63	6.43
<b>Occupation</b>				
Managers	< 1.0	0.96	0.67	0.81
Professionals	12.54	22.62	14.98	15.62
Technicians and associate professionals	12.58	14.01	17.98	15.27
Clerical support workers	12.13	11.28	8.84	10.49

Service and sales workers	22.96	21.26	23.0	22.64
Skilled agricultural, forestry and fisheries	1.14	2.80	1.88	1.8
Craft and related trades workers	13.41	11.76	25.06	18.28
Plant and machine operators, and assemblers	10.61	5.33	4.24	6.72
Elementary	13.72	9.98	3.36	8.36
<b>Country</b>				
Austria	4.21	5.19	15.62	9.49
Belgium	< 1.0	1.64	0.88	1.00
Bulgaria	2.5	2.05	< 1.0	1.34
Switzerland	1.59	3.76	12.5	6.89
Cyprus	< 1.0	< 1.0	< 1.0	< 1.0
Czechia	< 1.0	< 1.0	< 1.0	< 1.0
Germany	4.93	11.62	22.97	14.30
Denmark	2.69	4.31	9.44	6.02
Estonia	2.73	< 1.0	< 1.0	1.08
Spain	7.20	7.25	2.54	5.13
Finland	1.74	1.03	< 1.0	1.2
France	1.29	2.05	3.09	2.24
Greece	3.41	3.90	2.12	2.93
Hungary	8.18	1.03	< 1.0	3.21
Ireland	< 1.0	2.05	< 1.0	< 1.0
Italy	20.5	14.49	13.95	16.39
Lithuania	1.14	< 1.0	< 1.0	< 1.0
Luxembourg	1.10	< 1.0	< 1.0	< 1.0
Malta	1.52	1.64	< 1.0	1.13
Netherlands	< 1.0	3.42	< 1.0	< 1.0
Norway	< 1.0	< 1.0	2.51	1.28
Poland	17.01	17.7	7.02	12.69
Portugal	5.31	8.75	< 1.0	3.86
Romania	< 1.0	< 1.0	< 1.0	< 1.0
Sweden	8.45	3.35	< 1.0	4.05
Slovak Republic	< 1.0	< 1.0	< 1.0	< 1.0
United Kingdom	1.52	1.71	1.79	1.67
<b>N</b>	2,649	1,463	3,304	7,406

**Note:** In accordance with Eurostat guidelines, the exact percentage of cells with a significantly low number of observations is not explicitly disclosed.

**Table 4.3: Sample descriptive statistics of voluntary temporary workers, by duration of the temporary job contract**

	<b>Up to 6 months</b>	<b>Between 7 and 12 months</b>	<b>More than 1 year</b>	<b>Total</b>
	Mean / Percentage (Standard deviation)	Mean / Percentage (Standard deviation)	Mean / Percentage (Standard deviation)	Mean / Percentage (Standard deviation)
<b>Job satisfaction</b>	77.81 (23.93)	77.65 (23.09)	81.05 (22.08)	78.71 (23.18)
<b>Age</b>				
15 to 24	48.00	35.38	26.82	37.86
25 to 34	19.05	20.82	27.52	22.08
35 to 44	9.95	14.92	16.33	13.37
45 to 54	10.62	10.89	13.05	11.42
55 to 64	12.38	17.99	16.27	15.27
<b>Gender</b>				
Man	46.29	42.54	45.72	44.95
Woman	53.71	57.46	54.28	55.05
<b>Educational level</b>	3.44 1.58	3.90 1.82	4.34 1.99	3.85 1.82
<b>Working time</b>				
Full-time	47.19	47.53	59.87	51.01
Part-time	32.29	31.95	22.25	29.25
Marginal work	20.52	20.52	17.88	19.75
<b>Nationality</b>				
Native	92.48	93.5	93.38	93.06
EU/EFTA	3.76	4.21	4.44	4.10
EU/EFTA	3.76	2.29	2.19	2.84
<b>Supervisory role</b>				
No	93.43	89.65	81.99	88.9
Yes	6.57	10.35	18.01	11.1
<b>Occupation</b>				
Managers	< 2.0	< 2.0	6.56	2.75
Professionals	12.62	21.12	26.75	19.41
Technicians and associate professionals	9.10	12.39	13.44	11.40
Clerical support workers	8.57	8.30	7.97	8.31

Service and sales workers	33.57	28.46	22.7	28.79
Skilled agricultural, forestry and fisheries	< 2.0	< 2.0	< 2.0	< 2.0
Craft and related trades workers	7.38	6.8	6.24	6.86
Plant and machine operators, and assemblers	6.86	4.93	5.34	5.81
Elementary	19.14	14.68	10.29	15.16
<b>Country</b>				
Austria	8.67	11.49	7.59	9.23
Belgium	8.29	3.19	3.60	5.32
Bulgaria	< 2.0	< 2.0	< 2.0	< 2.0
Switzerland	< 2.0	< 2.0	< 2.0	< 2.0
Cyprus	< 2.0	< 2.0	< 2.0	< 2.0
Czechia	2.24	7.94	7.01	5.42
Germany	< 2.0	< 2.0	< 2.0	< 2.0
Denmark	5.10	4.69	12.54	7.15
Estonia	< 2.0	< 2.0	< 2.0	< 2.0
Spain	4.19	< 2.0	< 2.0	2.39
Finland	9.62	3.97	3.02	5.92
France	5.86	< 2.0	2.06	3.42
Greece	< 2.0	< 2.0	< 2.0	< 2.0
Hungary	2.81	4.51	< 2.0	3.05
Ireland	2.00	< 2.0	< 2.0	< 2.0
Italy	3.62	3.37	< 2.0	2.76
Lithuania	< 2.0	< 2.0	< 2.0	< 2.0
Luxembourg	< 2.0	< 2.0	< 2.0	< 2.0
Malta	< 2.0	< 2.0	< 2.0	< 2.0
Netherlands	6.29	17.51	3.47	8.97
Norway	< 2.0	< 2.0	2.19	< 2.0
Poland	9.90	20.46	31.64	19.56
Portugal	3.14	< 2.0	< 2.0	2.01
Romania	< 2.0	< 2.0	< 2.0	< 2.0
Sweden	12.95	4.69	11.64	9.99
Slovak Republic	2.52	2.89	< 2.0	2.37
United Kingdom	3.33	2.41	3.47	3.08
<b>N</b>	2,100	1,662	1,555	5,317

**Note:** In accordance with Eurostat guidelines, the exact percentage of cells with a significantly low number of observations is not explicitly disclosed.

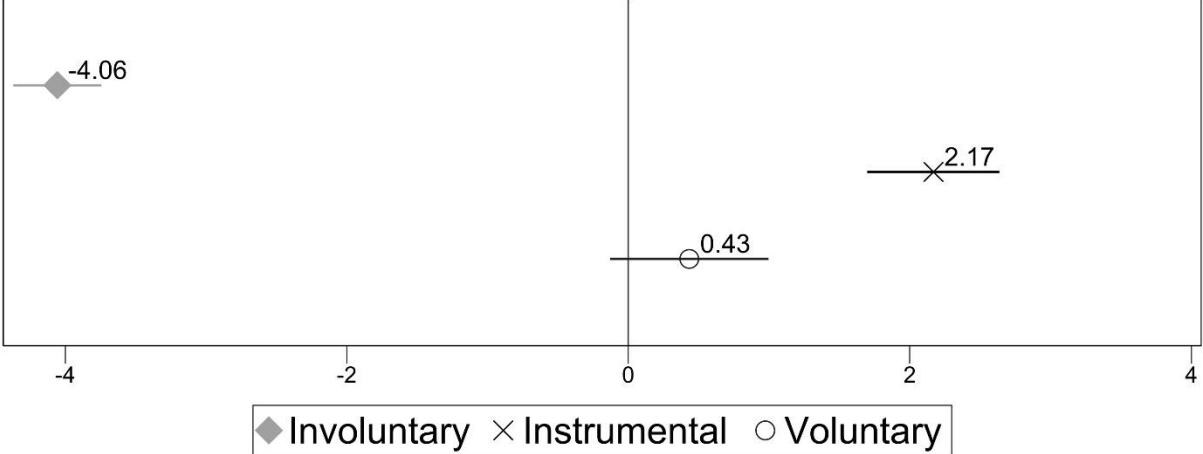
## 1.4 Results

### *Reason for having a temporary job and job satisfaction*

Each of the coefficients with confidence intervals reported in Figure 1 represents the

gap in job satisfaction between permanent employees and each category of temporary workers (involuntary, instrumental, and voluntary) for the total sample of countries, including control variables.<sup>7</sup>

**Figure 1: Difference in job satisfaction between permanent (ref.) and different kinds of temporary workers for the overall sample. Estimates from linear regression models (C.I. 95%)**



**Note:** Full results are available in the in Table 5 of the Supplementary Tables section at the end of this chapter.

The figure shows that in Europe involuntary temporary workers are on average less satisfied than permanent employees, with a significant difference of 4.06 points on the job satisfaction scale (going from 0 to 100). Instrumental temporary workers are on the opposite situation, as they are significantly more satisfied than permanent employees ( $\beta = 2.17$ ). The voluntary temporary workers, instead, are just as satisfied as permanent employees ( $\beta = 0.43$ ).

In Figure 2 we present the country-specific results of these associations. It shows the gap in job satisfaction between permanent employees and each category of temporary worker for each country. To facilitate the interpretation of the results, the countries are sorted by the size of the coefficient of involuntary temporary workers (those with non-significant associations rank first).

Involuntary temporary workers are as satisfied as permanent employees in 9 out of 27 countries, and more satisfied in one country (Finland,  $\beta = 3.21$ ). This is the case in the Scandinavian countries (Norway, Sweden and Denmark), as well as in Estonia, Luxembourg, France, Austria, and the two Mediterranean islands of Malta and Cyprus. In the other 17 countries, involuntary temporary workers report less job satisfaction compared to permanent employees, but the cross-national variation is high. The first

<sup>7</sup> All the figures were obtained with COEFPLOT (Jann, 2014) for STATA.



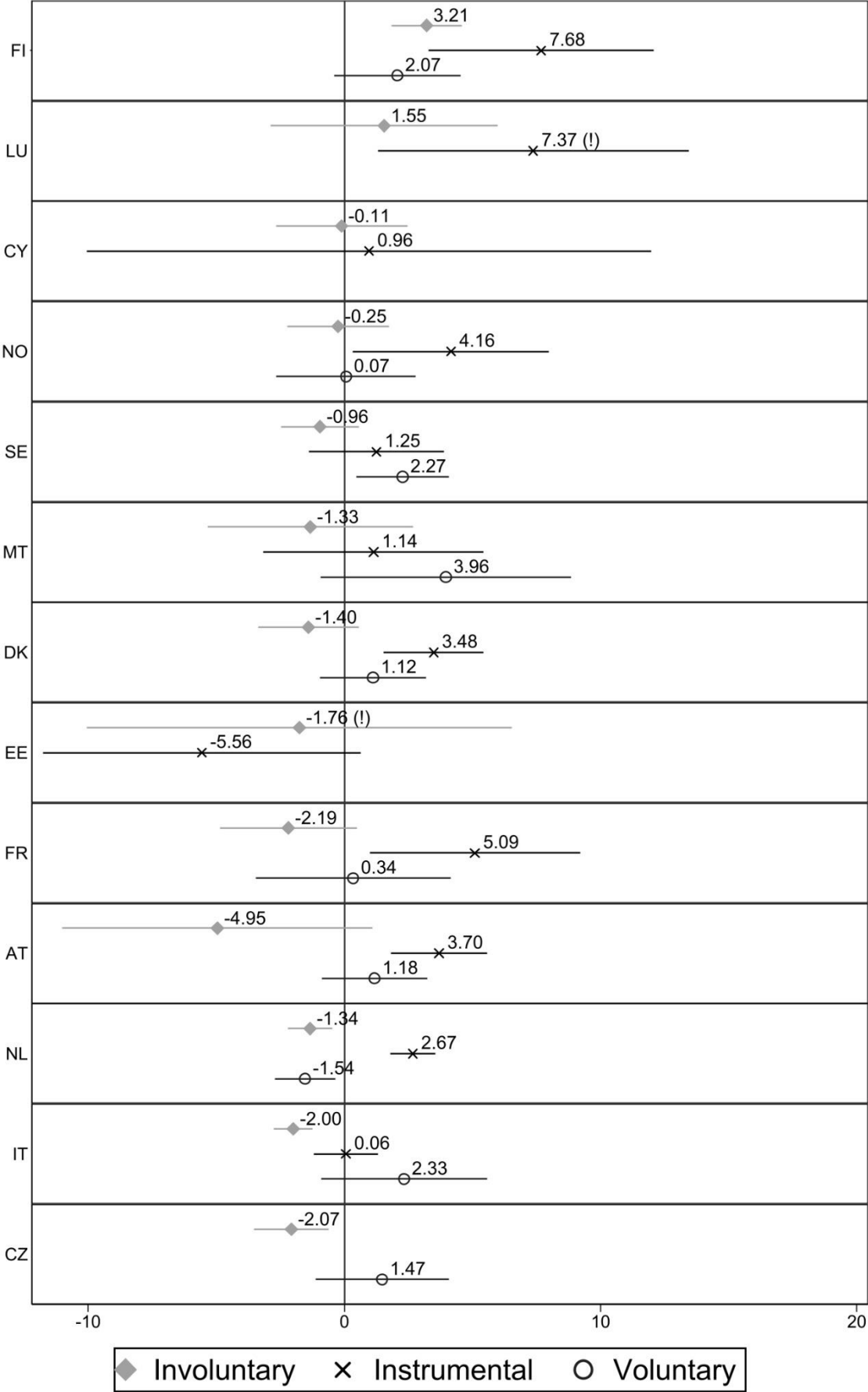
identifiable cluster is composed of the remaining Southern European countries (Italy, Greece, Portugal and Spain), the Netherlands, Belgium and the Czech Republic. Their gaps are significant but small: below 3 points. This cluster is followed by Germany and Poland, which present negative coefficients of 5 points, and by the UK, Switzerland and Ireland, where the coefficients range from 8 to 9 points. The largest gaps – larger than 10 negative points – are observed in most of the post-Socialist countries (Hungary, Bulgaria, Romania, Lithuania and Slovakia), with Slovakia showing the largest difference ( $\beta = -14.60$ ).

Instrumental temporary workers exhibit less variation between countries than involuntary temporary workers. In 11 out of 24 countries they are significantly more satisfied than permanent employees, particularly in some Scandinavian countries (Finland, Norway and Denmark) and in most of the Western European ones (Luxembourg, France, Austria, the Netherlands, Belgium, Germany, Switzerland and Ireland). In 12 out of 24 countries instrumental temporary workers were as satisfied as permanent employees. This is the case of Sweden, the UK, the Southern European countries, and most of the post-Socialist ones (some coefficients are not reported because of insufficient observations). Finland, Luxembourg and Switzerland showed the largest significant positive coefficients (about 7 points), while Germany and the Netherlands showed the lowest (about 2 points). Bulgaria stands out as the only country where instrumental temporary workers are less satisfied than permanent employees ( $\beta = -5.11$ ,  $p = 0.045$ ).

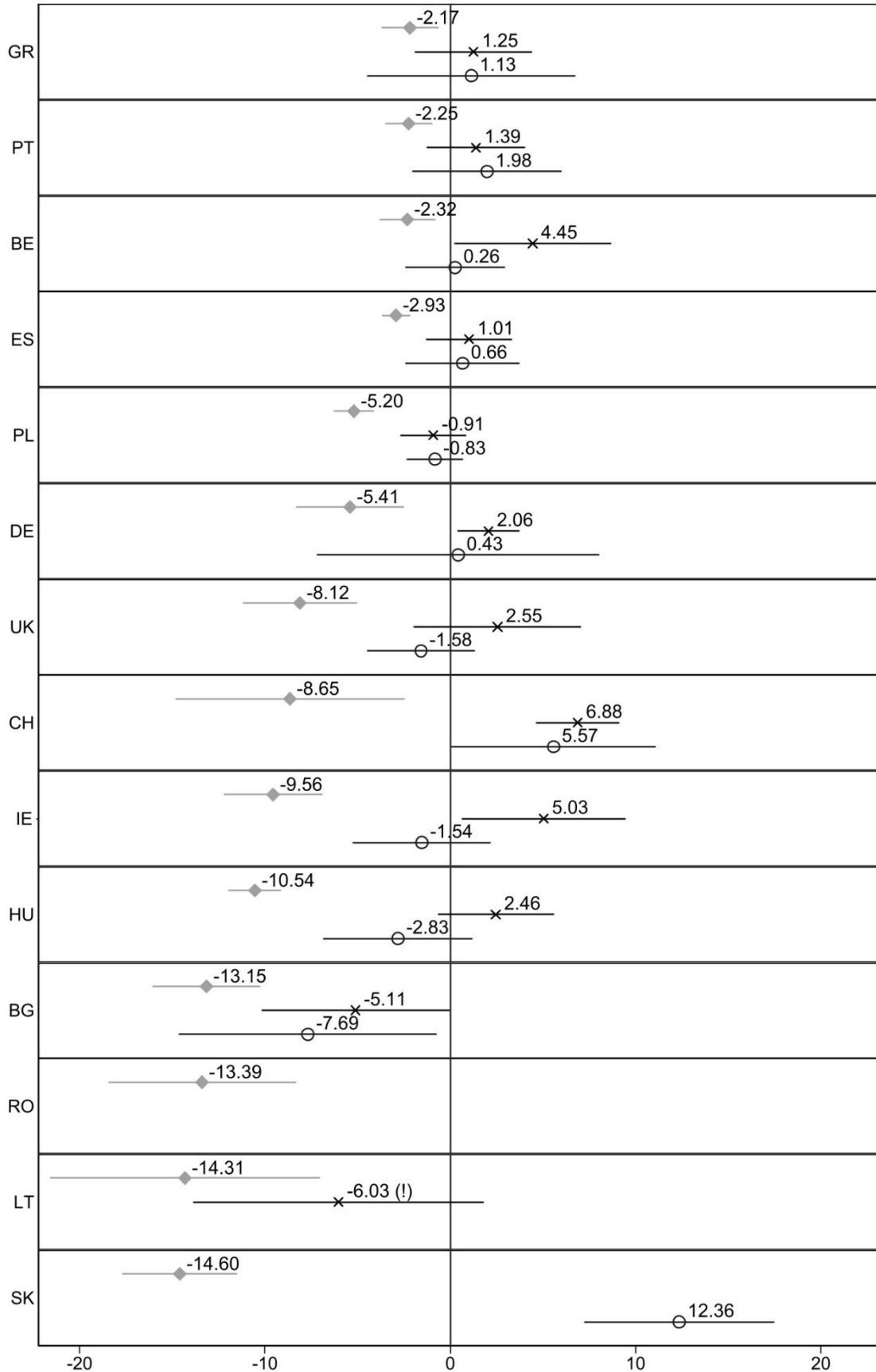
Lastly, voluntary temporary workers report the same satisfaction as permanent employees in all but five countries: in Sweden ( $\beta = 2.27$ ), Switzerland ( $\beta = 5.57$ ,  $p = 0.048$ ) and Slovakia ( $\beta = 12.36$ ), where they are more satisfied than permanent employees, and in Bulgaria ( $\beta = -7.69$ ) and the Netherlands ( $\beta = -1.54$ ), where the associations are negative.

Given these results, Hypothesis 1 can be confirmed: involuntary temporary workers are, on average, less satisfied than permanent employees. However, this job satisfaction difference is not the same across countries, as it is observed in 17 out of the 27 national samples. The gap does not exist in the Scandinavian countries but is very frequent and large in the post-Socialist ones. The results for Western Europe are

**Figure 2: Difference in job satisfaction between permanent (ref.) and different kinds of temporary workers, by country. Estimates from linear regression models (C.I. 95%)**



(continued)



**Notes:** Full results are available in the in Table 6 of the Supplementary Tables section at the end of this chapter. Some coefficients or countries are not reported because of few observations. (!) Indicates that the coefficient is unreliable because of few observations, according to Eurostat guidelines. The descriptive statistics of each sample can be found in Table D1 in the Appendix.

mixed, but the difference appears to be larger in the most liberal economies (i.e. Ireland, the UK and Switzerland). Hypothesis 2a is also supported by the results. On average, instrumental temporary workers are more satisfied than permanent employees in Europe. This especially occurs in the Scandinavian and Western European regions, while in Southern Europe and most post-Socialist countries they present the same job satisfaction as permanent employees. Hypothesis 2b is confirmed too: Except in a few countries, voluntary temporary workers are as satisfied as permanent employees.

### ***Duration of temporary contracts and job satisfaction***

In Figure 3, each coefficient and confidence interval represent the gap in satisfaction between permanent and involuntary temporary workers depending on the duration of their contract for the aggregate sample of countries, controls being included.

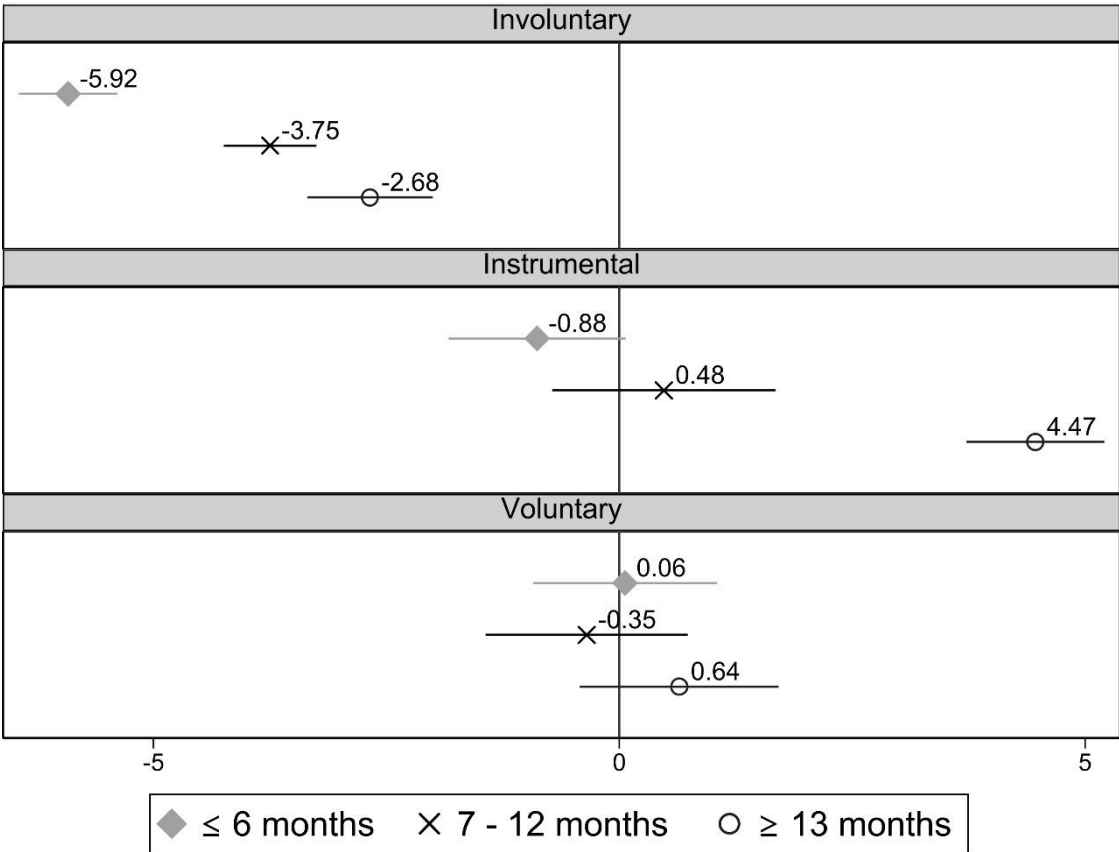
Involuntary temporary workers tend to present larger job satisfaction differences with respect to permanent workers when their temporary contracts are shorter. These differences are of 5.92 points for those with contracts lasting 6 months or less, but only of 2.68 points when their contracts last 13 months or more. Results in Table 7 (in the Supplementary Tables section, at the end of this chapter) also show that the three categories of contract duration are also significantly different from each other, being those with short(long) temporary contracts the least(more) satisfied among the temporary employees. Instrumental temporary workers tend to present the same job satisfaction as permanent employees, except if their temporary contracts are long, when they are significantly more satisfied ( $\beta = 4.47$ ). For the voluntary temporary workers, results show that they are as satisfied as permanent employees, regardless of their contract duration.

Figure 4 shows the country-specific results of the job satisfaction gap between involuntary temporary workers and permanent employees by contract duration. Countries are sorted by the size of the coefficient involuntary temporary workers with short contracts present (with those at the top showing non-significant associations). Several coefficients are not reported because of the small number of observations.

Involuntary temporary workers with short contracts (6 months or less) are significantly less satisfied than permanent employees in 14 out of 24 countries. However, when their temporary contracts are long (more than one year in length), they are significantly

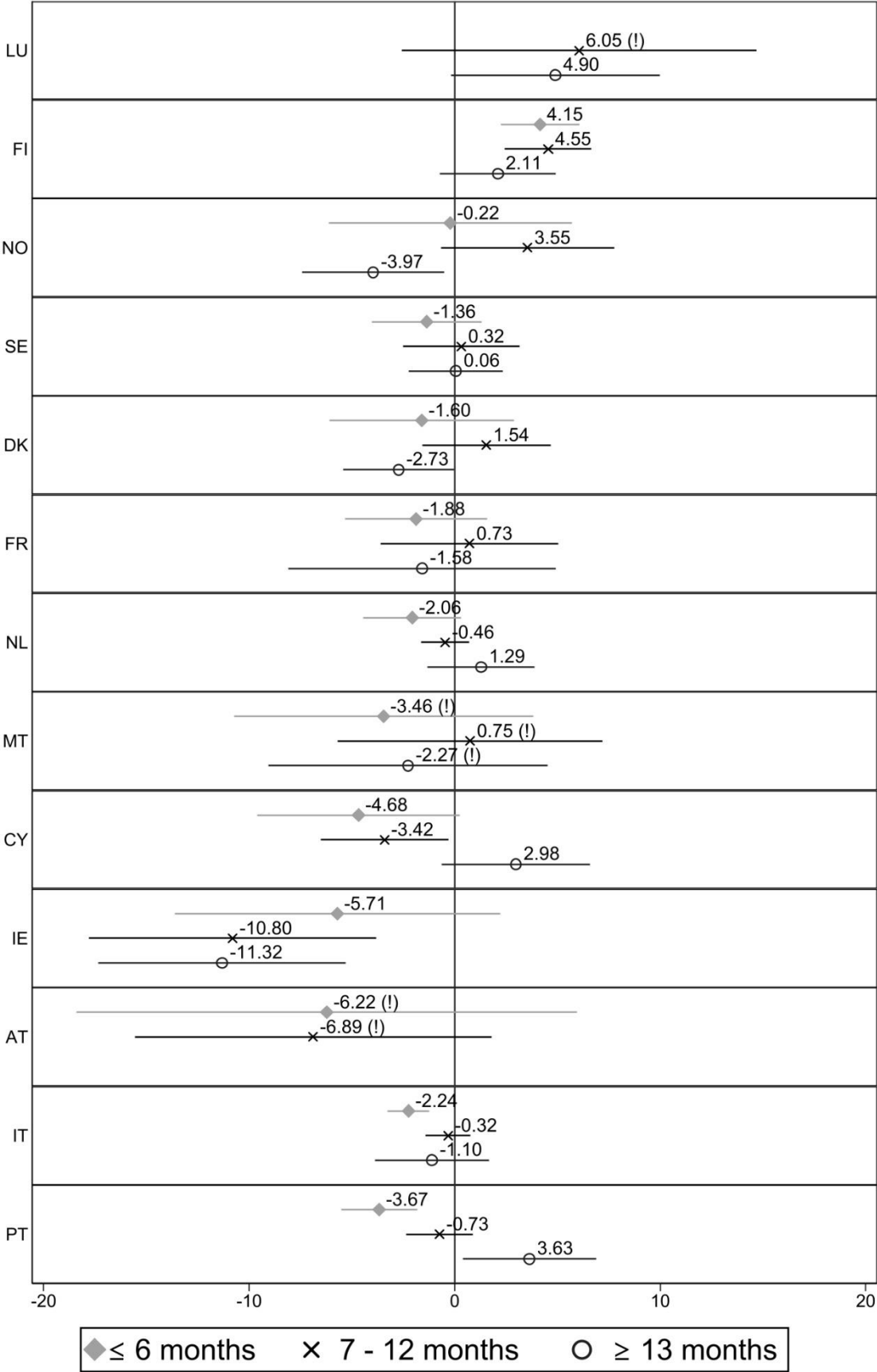
less satisfied than permanent employees in only 6 out of 21 countries. In 18 out of 24 countries, involuntary temporary workers with short contracts are, on average, less satisfied than temporary workers with longer contracts. Further analyses (results not shown) reveal that these differences are statistically significant in 9 out of 24 countries (Cyprus, Italy, Portugal, Spain, Belgium, Greece, Poland, Hungary and Bulgaria). Workers with short temporary contracts are not found to be significantly more satisfied than workers with longer contracts in any of the countries. Figure 2 previously showed that there was no gap in job satisfaction between involuntary temporary workers and permanent employees in the Scandinavian countries, Malta, Cyprus, Austria, France and Luxembourg. Now, Figure 4 suggests that involuntary temporary workers in these countries are as satisfied as permanent employees – and even more satisfied than them in Finland ( $\beta = 4.15$ ), – even when their contracts provide job security for only 6

**Figure 3: Difference in job satisfaction between permanent (ref.) and different kinds of temporary workers with different contract durations for the overall sample. Estimates from linear regression models (C.I. 95%)**

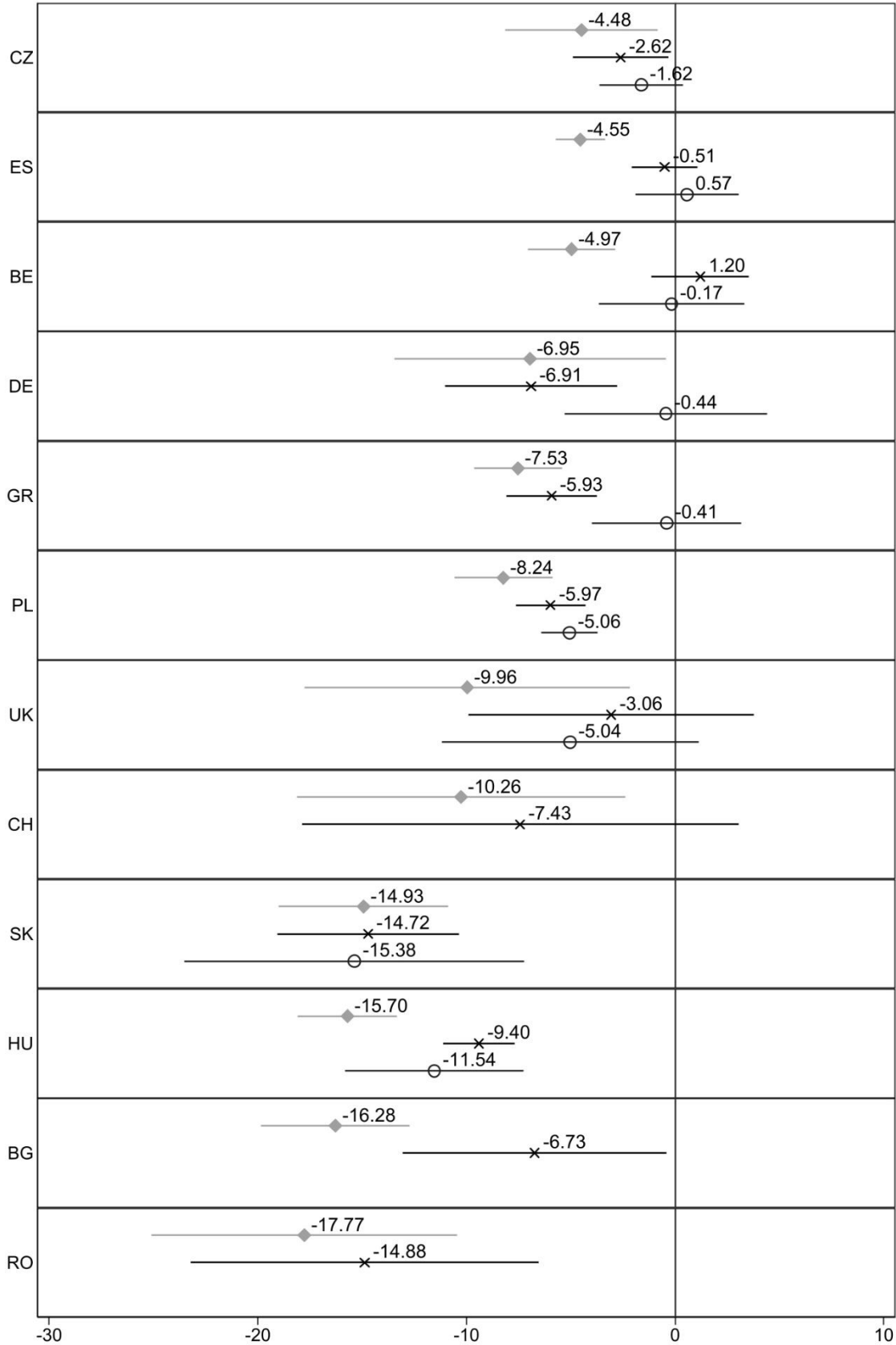


**Note:** Full results are available in the in Table 7 of the Supplementary Tables section at the end of this chapter.

**Figure 4: Difference in job satisfaction between permanent (ref.) and involuntary temporary workers with different contract durations, by country. Estimates from linear regression models (C.I. 95%)**



(continued)



**Notes:** Full results are available in the in Table 8 of the Supplementary Tables section at the end of this chapter. Some coefficients or countries are not reported because of few observations. (!) Indicates that the coefficient is unreliable because of few observations, according to Eurostat guidelines. The descriptive statistics of each sample can be found in Table D2 in the Appendix.

months or less. Surprisingly, temporary workers in Denmark and Norway are less satisfied than permanent employees, but only when their contracts last more than one year ( $\beta = -2.73$ ,  $p = 0.047$ , and  $\beta = -3.97$ , respectively). Ireland's situation is similar: employees with short contracts are as satisfied as permanent ones, but those with longer contracts present significant negative coefficients. The gaps in satisfaction for workers with short contracts range from 2 to 5 points in Italy, Portugal, the Czech Republic, Spain and Belgium and widen (6–11 points) in Germany, Greece, Poland, the UK and Switzerland, with the post-Socialist countries showing the largest gaps. Specifically, involuntary temporary workers with short contracts in Slovakia, Hungary, Bulgaria and Romania report a 14 to 18 point lower job satisfaction than permanent employees. Although some coefficients are missing, the results suggest that involuntary temporary workers are significantly less satisfied than permanent employees in this group of countries, regardless of the contract duration.

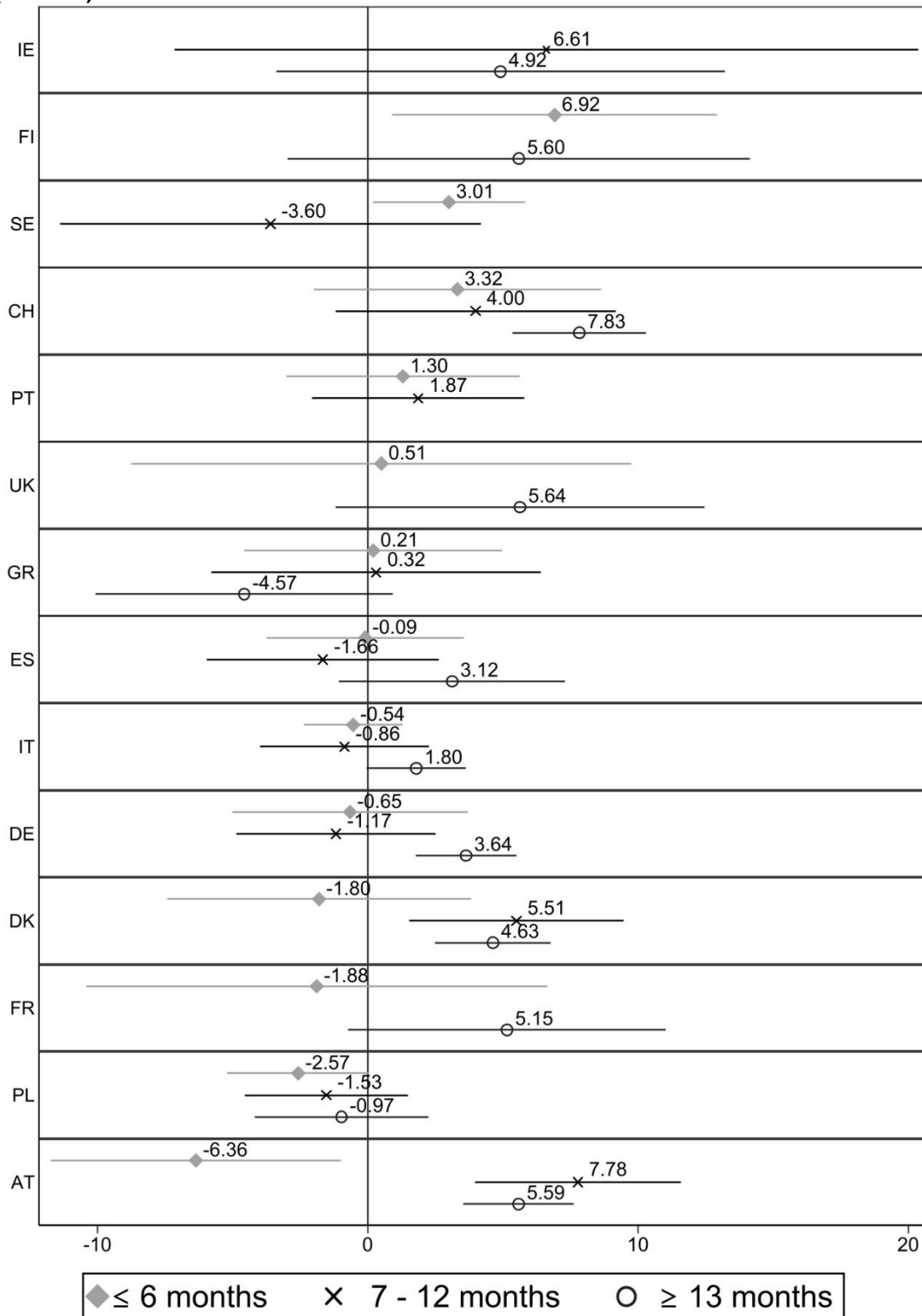
Figure 5 displays gaps in job satisfaction between permanent and instrumental temporary workers of different duration. Figure 6 shows the same information but for permanent and voluntary temporary workers. Only half of the countries are reported in each table due to the small number of observations in some of them.

For instrumental temporary workers, contract duration does not seem to affect job satisfaction. The difference in job satisfaction with respect to permanent workers is usually similar between the three contract lengths. In some cases, instrumental temporary workers report more satisfaction when the contracts are longer, and in other cases the opposite is observed. These temporary workers are significantly less satisfied than permanent employees only in Austria when they have contracts lasting six months or less ( $\beta = -6.36$ ). However, those in Finland and Sweden are also more satisfied when their contracts are short ( $\beta = 6.92$  and  $\beta = 3.01$ , respectively). When their contracts are longer than one year, instrumental temporary workers report more satisfaction than permanent employees in Switzerland, Germany, Denmark and Austria, with coefficients ranging from 3 to 7 points.

The picture is similar for voluntary temporary workers (Figure 6). Again, the mean gap in job satisfaction with respect to permanent employees across countries does not seem to be systematically lower when they have short rather than long contracts. Voluntary temporary workers with short contracts were not found to be less satisfied in any of the 16 countries observed, while they are significantly more satisfied in Denmark

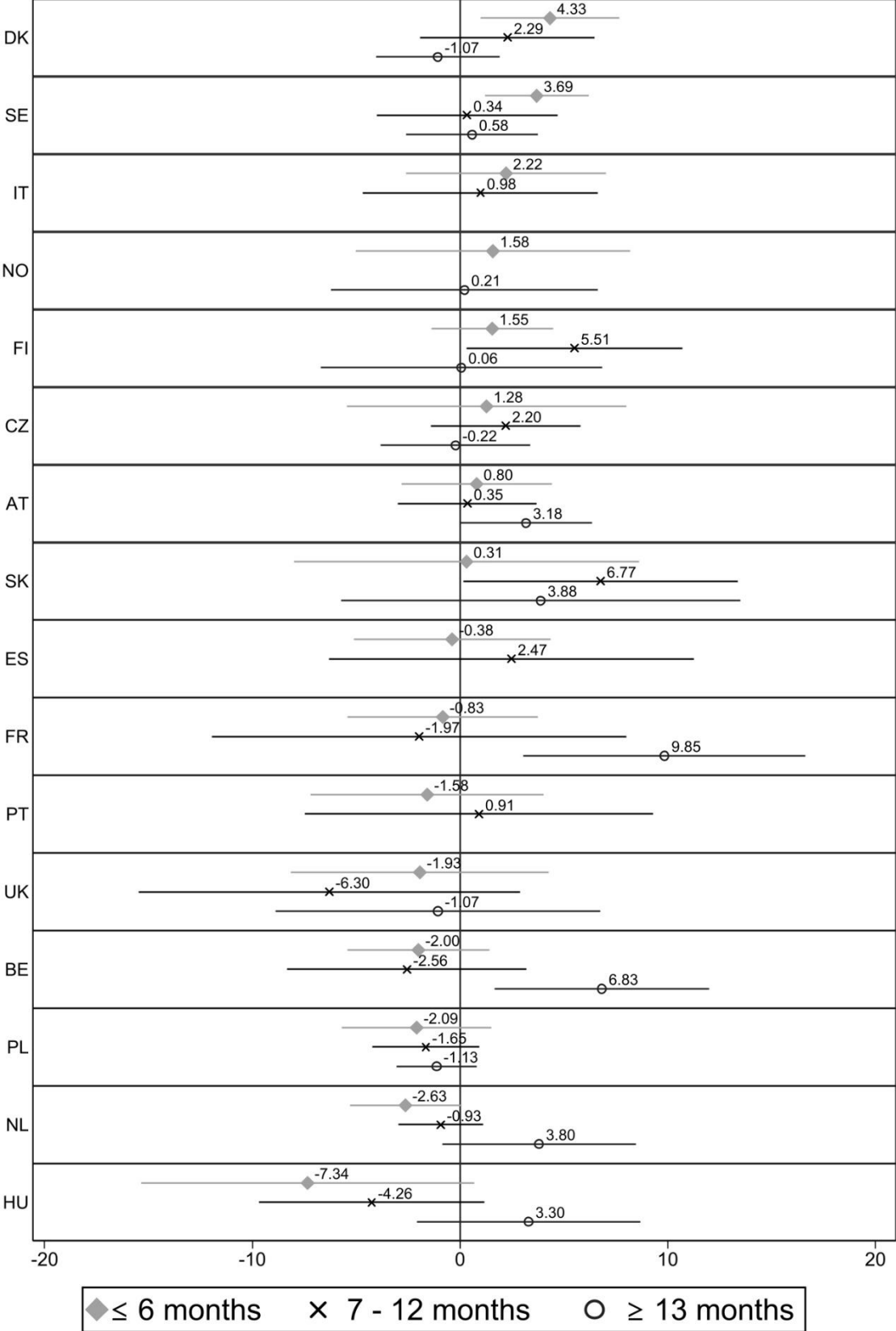


**Figure 5: Difference in job satisfaction between permanent (ref.) and instrumental temporary workers with different contract durations, by country. Estimates from linear regression models (C.I. 95%)**



**Notes:** Full results are available in the in Table 9 of the Supplementary Tables section at the end of this chapter. Some coefficients or countries are not reported because of few observations. (!) Indicates that the coefficient is unreliable because of few observations, according to Eurostat guidelines. The descriptive statistics of each sample can be found in Table D3 in the Appendix.

**Figure 6: Difference in job satisfaction between permanent (ref.) and voluntary temporary workers with different contract durations, by country. Estimates from linear regression models (C.I. 95%)**



**Notes:** Full results are available in the in Table 10 of the Supplementary Tables section at the end of this chapter. Some coefficients or countries are not reported because of few observations. (!) Indicates that the coefficient is unreliable because of few observations, according to Eurostat guidelines. The descriptive statistics of each sample can be found in Table D4 in the Appendix.

and Sweden ( $\beta = 4.33$  and  $\beta = 3.69$ , respectively). By contrast, in three countries (France, Austria and Belgium) they are significantly more satisfied when their contracts last more than one year, with coefficients ranging from 3 to 9 points. The same applies to Finland ( $\beta = 5.51$ ) and Slovakia (6.77) for workers with contracts of 7 to 12 months in duration.

According to results, Hypothesis 3 is only partially confirmed: Analysis for the overall sample showed that, compared to permanent employees, involuntary temporary workers report less job satisfaction when their temporary contracts are short. However, the evidence is less consistent than in previous hypotheses. Contract duration appears to be positively related to job satisfaction among involuntary temporary workers, but only in some Southern and Western European countries. Conversely, involuntary temporary workers in the Scandinavian countries are generally as satisfied as permanent employees, regardless of the contract duration. In the post-Socialist countries, these workers were generally *less* satisfied than permanent employees, with no frequent differences found for contract duration. Hypotheses 4a and 4b are both confirmed. The duration of temporary contracts does not affect the job satisfaction gap between permanent and instrumental temporary workers, nor between permanent and voluntary temporary workers. Contrary to findings for involuntary temporary workers, instrumental and voluntary temporary workers are not less satisfied when their contracts are short. Nonetheless, results suggest that instrumental and voluntary temporary workers in some countries might experience a job satisfaction *bonus* compared to permanent ones when their contracts are long.

### ***Robustness test***

Although the data limitations do not allow us to address concerns about omitted variable bias or reversed causality, we can address other methodological issues to strengthen the validity of our results.

First, we opted for analysing job satisfaction by coding a 4-point Likert scale as a continuous, rather than an ordinal or categorical outcome. Although our intention was to provide simpler results, this decision violates key linear regression assumptions. Analysing job satisfaction as an ordinal outcome using ordinal logistic regression was problematic due to the violation of the parallel lines assumption, while coding job satisfaction as a binary outcome resulted in a significant loss of information. For this

reason, we repeated our analyses using multinomial logistic regression, analysing job satisfaction as an outcome with three categories (“Not satisfied at all” and “Satisfied to a small extent”, “Satisfied to some extent”, “Satisfied to a large extent”). The results, available in tables A1-A6 in the Appendix, are nearly identical to our main findings.

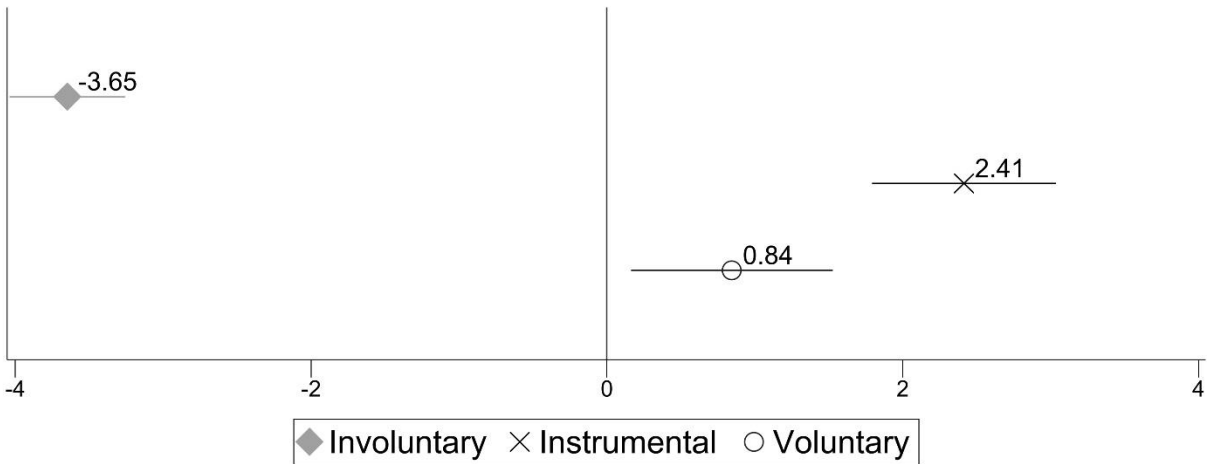
Second, when we analysed the job satisfaction differences between permanent workers and different temporary workers by the reason for having a temporary contract, we considered tenure to be a confounder and opted for including it as a control variable. Some readers might argue that tenure is a collider instead, as the type of contract directly affects tenure (temporary jobs lead to shorter tenure) and job satisfaction too (unsatisfied workers are more likely to quit), which might introduce bias in our results. Because we find this argument reasonable, we chose to repeat our main analyses without including tenure as a control variable. The results of these analyses (available upon request) do not differ from our main findings.

Third, variables such as *income*, *number of dependent children*, and *number of unemployed adults in the household* could be also considered as relevant confounders and be included as control variables. However, apart from concerns regarding collider bias, we decided not to include them as controls because these variables were either unavailable or had many missing values in some countries, resulting in a substantial reduction of the sample size. Therefore, whenever possible, the analyses were repeated by including these controls solely for the analysis of the reason for being a temporary worker. The relationships (results in Table B1 in the Appendix) remain largely unchanged, both in terms of their coefficients and significance.

A fourth concern refers to the proxy interviews in our sample. To achieve a higher representativeness, Eurostat also allows family members of the target individuals to respond on their behalf. While this might not be problematic for variables such as professional status or occupation, it can certainly induce bias in variables like job satisfaction, a concern that is also raised in the Eurostat’s Assessment Report of the 2017 LFS Ad-Hoc module. In our sample, about one third of interviews were proxy interviews. Some countries like Sweden or Luxembourg did not include any proxy interviews, but in countries like Spain, Malta, Ireland, Slovakia and the Netherlands, they account for about 50 % of the observations. Therefore, we face a trade-off between two different kinds of bias: a higher number of proxy interviews induces larger measurement bias, while a lower number of proxy interviews induce a higher sample

bias. Whereas we initially opted for conducting our analyses including all the proxy interviews to avoid a considerably reduction of the sample, we now repeat our main analyses after discarding all the proxy interviews. Because of the lower sample sizes, we only repeat those analyses concerning the overall sample, but not the country-specific models. Figure 7, below, shows the difference in job satisfaction between permanent and different kinds of temporary workers for the overall sample, without including proxy interviews.

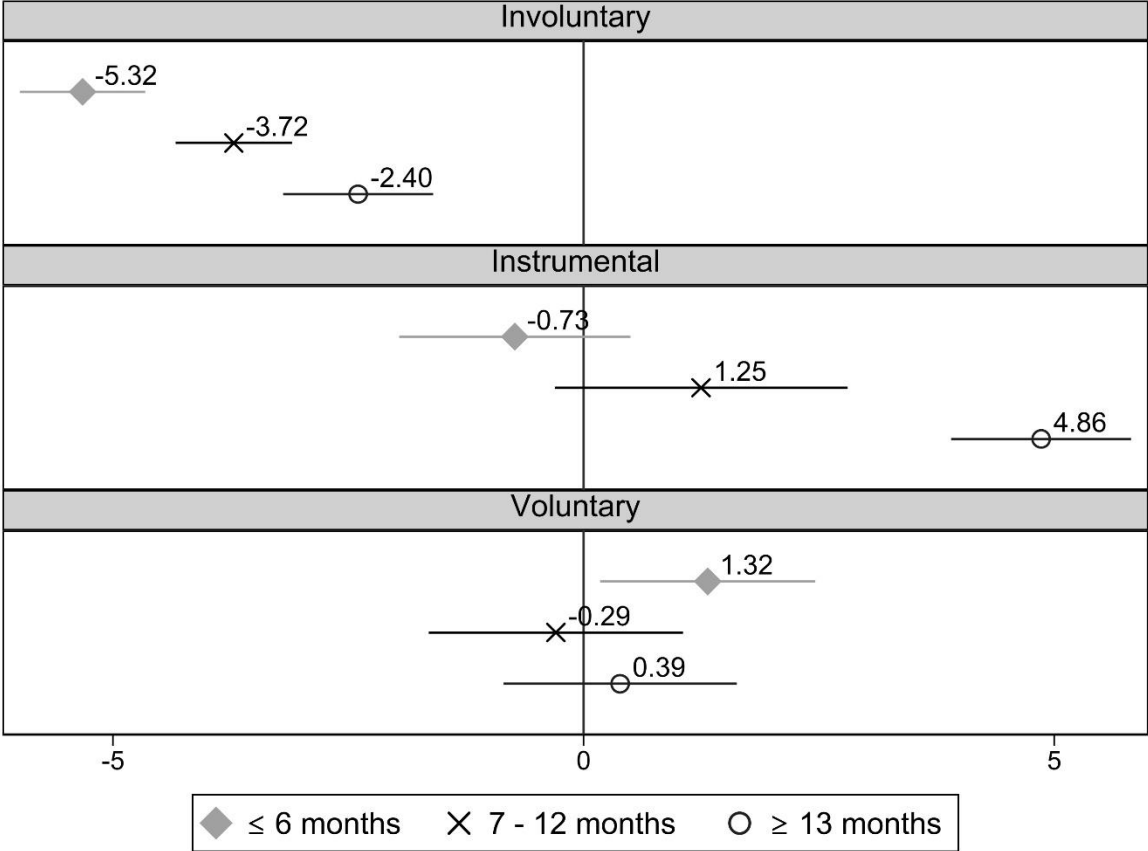
**Figure 7: Difference in job satisfaction between permanent (ref.) and different kinds of temporary workers for the overall sample, excluding proxy interviews. Estimates from linear regression models (C.I. 95%)**



As we observe, involuntary temporary workers present lower job satisfaction than permanent employees ( $\beta = -3.65$ ), and instrumental temporary workers present higher job satisfaction than permanent workers ( $\beta = 2.41$ ). The only difference is observed among voluntary temporary workers. Our main analyses (in Figure 1) showed that voluntary temporary workers reported higher job satisfaction than permanent employees, but this difference was not significant. Instead, when proxy interviews are not included, this association becomes significant and the coefficient is slightly higher ( $\beta = 0.84$ ).

Figure 8 presents the difference in job satisfaction between permanent and different kinds of temporary workers with different contract durations for the overall sample, and without including proxy interviews. These results are also very similar to those in our primary analyses (in Figure 3). Involuntary temporary workers with shorter contracts present larger job satisfaction differences with respect to permanent workers when their contracts are shorter. Instrumental temporary workers present the same job

**Figure 8: Difference in job satisfaction between permanent (ref.) and different kinds of temporary workers with different contract durations for the overall sample, excluding proxy interviews. Estimates from linear regression models (C.I. 95%).**



satisfaction as permanent employees when their contracts have short ( $\beta = -0.73$ ) or medium ( $\beta = 1.25$ ) duration, but they are significantly more satisfied when their contracts are long ( $\beta = 4.86$ ). The only difference with respect to our primary results is observed among voluntary temporary workers. Our main analyses showed that they were always as satisfied as permanent workers, regardless of our contract duration. Instead, in Figure 8, after excluding proxy interviews, we observe that those with very short contracts are significantly more satisfied than permanent employees ( $\beta = 1.32$ ). Although this does not notably alter our main conclusions, we must consider that these differences are due to the different results to different characteristics of this sample.

Finally, we considered the necessity of controlling for temporary agency employment, since it constitutes a very specific category of temporary employment, which might also explain certain cross-national differences. To examine this possibility, we conducted additional analyses by excluding temporary agency workers from the sample. However, the results remained largely unchanged, indicating that the inclusion or

exclusion of temporary agency workers did not significantly affect our findings (results can be provided upon request).

## **1.5 Conclusion**

This chapter investigates under which conditions temporary workers are more, equally or less satisfied than permanent employees. This is addressed by exploring the effects of the reason for having a temporary contract and the duration of these temporary contracts on job satisfaction across 27 European countries.

The results show that involuntary temporary workers are generally less satisfied than permanent employees, albeit with significant variations depending on the context. In the Scandinavian countries there is no job satisfaction gap between permanent and involuntary temporary workers, in Western and Southern Europe the gaps were significant but small, while in most of the post-Socialist countries the differences were large. The duration of temporary contracts is also associated with the job satisfaction of involuntary temporary workers. When temporary contracts are short, these workers tend to be less satisfied than permanent employees, and when they are long, the differences in job satisfaction are smaller. This applies to most of the Southern and Western European countries. By contrast, involuntary temporary workers in the Scandinavian countries are generally as satisfied as permanent employees, regardless of the contract duration. In most of the post-Socialist countries these workers show substantial differences in job satisfaction with respect to permanent employees, even when their temporary contracts are long.

The fact that the Scandinavian and the post-Socialist countries arise as two clearly distinct clusters suggests that structural factors might affect the association between temporary employment and job satisfaction. This could be attributed to the generous unemployment benefits of the Scandinavian countries, which could mitigate the negative consequences of job insecurity for job satisfaction. Conversely, in the post-Socialist countries, where social protection is generally low, the effects of job insecurity on job satisfaction would be more pronounced. However, the countries in these two regions share cultural elements and recent economic trajectories that might also determine how certain job characteristics impact on workers' satisfaction. For example, during the soviet period job insecurity was technically not an individual concern as the state was supposed to provide stable jobs for all workers. Then, it might be possible

that insecure jobs in the post-Socialist countries have a deeper negative impact on job satisfaction.

The analyses also show that the voluntary temporary and instrumental temporary workers (i.e. those in probation periods, interns, and trainees) are, in general, as satisfied as permanent employees. However, instrumental temporary workers appear to be even more satisfied than permanent employees if their contracts are long, especially in Western Europe. This particular result could be explained by the institutionalization of vocational education and training systems in this region, where public and private support for and involvement in these programmes is strong (Busemeyer and Schlicht-Schmälzle, 2014).

These findings have methodological implications for future research. They illustrate that the temporary workforce is deeply heterogeneous within and between countries, as well as the effects of temporary contracts on job satisfaction. The reasons for accepting a temporary contract and the duration of the temporary contract seem to determine workers' well-being. Not accounting for these factors can easily lead to spuriousness as is clearly reflected in countries like Ireland, Switzerland or Germany. In these countries, apprentices and interns drive the average job satisfaction of temporary workers upwards, while involuntary temporary workers do the opposite. The same applies to the contract duration in most of Southern Europe. Although most temporary workers are involuntary, those with long temporary contracts are as satisfied as permanent employees. When assessing well-being at work, precariousness, or job insecurity, researchers might consider focusing on specific profiles of temporary workers, or at least accounting for these compositional differences.

For managers, human resources practitioners, and policymakers, our results might preliminarily lead to two main implications. First, the fact that longer temporary contracts tend to mitigate the negative impacts on job satisfaction of involuntary temporary workers suggests that long contracts should be promoted to enhance workers' job satisfaction. This speaks against offering consecutive short temporary contracts, a practice that some employers seem to follow to avoid firing costs, and to obtain more productivity from workers at risk of job loss (Polavieja, 2003; Engelland and Riphann, 2005; Güell and Petrongolo, 2007). Legislations also impose limitations on the duration of the temporary contracts (Tomas, n.d.; Wexels-Riser, n.d.). Whereas limiting the number of consecutive temporary contracts might protect workers from



abusive situations, limiting the duration of temporary contracts might negatively impact their well-being. Second, the voluntariness dimension of temporary contracts, and particularly the fact that involuntary temporary workers tend to be less satisfied than permanent ones, should also be considered. While offering temporary contracts to workers who pursue temporary positions seems positive for their job satisfaction, initiatives should be implemented to foster the access to permanent contracts to workers who do not aspire to temporary jobs.

A relevant methodological and conceptual question that this study highlights is whether temporary job contracts should be assessed as treatments that produce heterogeneous effects (depending on whether individuals preferred a permanent or a temporary contract in the first place) or whether involuntary, instrumental, and voluntary temporary job contracts are simply different (heterogeneous) treatments. In the former case, the assumption would be that temporary contracts are all the same and that their effects on job satisfaction vary depending on whether individuals preferred permanent or temporary contracts. This means that *contract preference*, *reason for having a temporary contract* or *volition* would behave as a moderator of the independent variable *temporary contract*. In the latter case, it is considered that *voluntary* and *involuntary* temporary contracts are simply different treatments. This means that for a given worker, some temporary jobs are *voluntary* and others are *involuntary*. Both assumptions seem compatible. Some workers might prefer permanent jobs but be willing to accept a temporary one if job insecurity is compensated by other job quality facets (such as high wages, opportunities for advancement, specific training or prestige). Hence, whether a temporary job is *voluntary* or *involuntary* is not solely determined by individuals' preferences regarding job security, but also by other job characteristics. In this chapter we have followed previous studies and classified as *involuntary temporary workers* those temporary workers who accepted a temporary position because they could not find a permanent one. However, this classification does not allow us to account for the fact that job security is simply one of the multiple determinants of job quality and job satisfaction. For this reason, different approaches are necessary to differentiate involuntary and voluntary temporary employment, considering that job insecurity is just one many reasons why workers might accept or reject a certain position. Researchers might alternatively evaluate the extent to which workers would prefer a permanent position

instead of a temporary one by asking “would you prefer your current temporary job contract to be permanent?.” This question might allow us to understand to what extent workers prefer secure and permanent contracts, while holding other job characteristics constant.

Finally, these results open new questions that need to be explored. This study only presented associations, but longitudinal designs could better identify causal relationships. Such designs could also help to discern whether the negative effect of short temporary contracts on job satisfaction is partially set off by the honeymoon-hangover effect. Indeed, in the absence of this effect, workers with short contracts might present deeper differences in job satisfaction compared to permanent employees. At the same time, it is relevant to track changes in contract preferences over time and how they affect job satisfaction. For instance, what began as an ‘involuntary temporary’ position might become a personal preference for temporary over permanent contracts. Furthermore, some of the gaps in job satisfaction between different kinds of temporary workers and permanent employees seem to be determined by institutional features. Future studies could investigate these elements and under which mechanisms they operate. For example, involuntary temporary jobs might report lower job satisfaction compared to permanent workers in countries where permanent workers are more protected against dismissals, as these permanent positions guarantee more job security and stability (Balz, 2017). Similarly, it is pertinent to study whether the negative impacts of involuntary temporary employment on job satisfaction might be stronger in certain socio-demographic groups. This could be the case for older workers, who have higher career expectations, or even men in countries where the male breadwinner is more prevalent. Finally, the fact that involuntary temporary workers with short contracts present the largest gaps in job satisfaction raises another question: Are they less satisfied because of the lack of job security or because they experience poorer job quality in general?

## **1.6 Supplementary Tables**

**Table 5: Full results of linear regression models in Figure 1. Difference in job satisfaction between permanent (ref.) and different kinds of temporary workers for the overall sample.**

	B (Robust SE)	B (Robust SE)	B (Robust SE)	B (Robust SE)
<b>Age (ref: 35 to 44)</b>				
15 to 24	1.483*** (0.160)			
25 to 34	-0.107 (0.111)			
45 to 54	0.0186 (0.101)			
55 to 64	0.0429 (0.119)			
<b>Gender (ref: Man)</b>				
Woman	-0.0419 (0.0815)			
<b>Educational level</b>				
	-0.0325 (0.0277)			
<b>Working time (ref: Full-time)</b>				
Part-time	-0.956*** (0.115)			
Marginal work	-0.0811 (0.220)			
<b>Nationality (ref: Local)</b>				
EU/EFTA	-1.664*** (0.212)			
Non-EU/EFTA	-1.244*** (0.234)			
<b>Work contract</b>				
Permanent	(ref)	4.056*** (0.159)	-2.168*** (0.240)	-0.433 (0.288)
Involuntary temporary	-4.056*** (0.159)	(ref)	-6.224*** (0.274)	-4.489*** (0.317)
Instrumental temporary	2.168*** (0.240)	6.224*** (0.274)	(ref)	1.734*** (0.360)
Voluntary temporary	0.433 (0.288)	4.489*** (0.317)	-1.734*** (0.360)	(ref)

<b>Supervisory role (ref: No / DK)</b>	
Yes	1.685*** (0.0976)
<b>Occupation (ref: Elementary occupations)</b>	
Managers	11.54*** (0.232)
Professionals	10.89*** (0.183)
Technicians and associate professionals	8.836*** (0.170)
Clerical support workers	6.815*** (0.179)
Service and sales workers	4.781*** (0.161)
Skilled agricultural, forestry and fisheries	5.336*** (0.400)
Craft and related trades workers	4.818*** (0.176)
Plant and machine operators, and assemblers	2.762*** (0.186)
<b>Tenure</b>	0.00297*** (0.000373)
<b>Country (ref: Italy)</b>	
Austria	-1.867*** (0.215)
Belgium	-4.319*** (0.208)
Bulgaria	-14.75*** (0.251)
Switzerland	0.907** (0.308)
Cyprus	-4.877*** (0.415)
Czech Republic	-3.720*** (0.207)
Germany	-11.70*** (0.218)
Denmark	0.972*** (0.237)
Estonia	-1.427***

	(0.306)	
Spain	-3.348*** (0.177)	
Finland	-9.615*** (0.239)	
France	-9.895*** (0.361)	
Greece	-7.928*** (0.250)	
Hungary	-6.379*** (0.201)	
Ireland	-3.461*** (0.245)	
Lithuania	-1.209*** (0.299)	
Luxembourg	-13.86*** (0.471)	
Malta	3.929*** (0.342)	
Netherlands	-9.912*** (0.155)	
Norway	-2.593*** (0.221)	
Poland	-7.701*** (0.204)	
Portugal	-9.767*** (0.236)	
Romania	-9.020*** (0.193)	
Sweden	2.082*** (0.196)	
Slovak Republic	-12.62*** (0.315)	
United Kingdom	-10.43*** (0.198)	
<b>Constant</b>	73.19*** (0.240)	77.68*** (0.351)
<b>Observations</b>	77.25*** (0.207)	79.42*** (0.306)
<b>Adjusted R-squared</b>	37812 0.073	

Note: \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001.

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**Table 6: Full results of linear regression models in Figure 2. Difference in job satisfaction between permanent (ref.) and different kinds of temporary workers, by country.**

	Finland B (Robust SE)	Luxembourg B (Robust SE)	Cyprus B (Robust SE)	Norway B (Robust SE)	Sweden B (Robust SE)	Malta B (Robust SE)	Denmark B (Robust SE)	Estonia B (Robust SE)	France B (Robust SE)
<b>Age (ref: 35 to 44)</b>									
15 to 24	2.400** (0.897)	-0.210 (2.151)	-4.092* (1.829)	1.575* (0.795)	-0.0443 (0.731)	2.117 (1.095)	1.538 (0.835)	1.250 (1.242)	0.692 (1.591)
25 to 34	-0.121 (0.637)	-2.750* (1.356)	-2.273* (1.094)	-0.627 (0.588)	-1.626** (0.500)	1.795 (0.970)	0.588 (0.702)	1.790* (0.836)	-2.931** (1.073)
45 to 54	1.108 (0.608)	-1.829 (1.204)	-0.523 (1.036)	2.185*** (0.546)	0.849 (0.451)	1.005 (1.001)	-0.396 (0.651)	-0.886 (0.777)	0.513 (0.944)
55 to 64	2.055** (0.719)	1.869 (1.650)	-2.564* (1.291)	3.108*** (0.633)	2.024*** (0.499)	2.400* (1.021)	0.589 (0.705)	-0.939 (0.882)	2.092 (1.173)
<b>Gender (ref: Man)</b>									
Woman	-0.298 (0.469)	-0.714 (0.995)	2.201* (0.867)	0.782 (0.418)	-0.981** (0.339)	0.920 (0.692)	0.140 (0.439)	-0.806 (0.630)	-1.004 (0.775)
<b>Educational level</b>									
Working time (ref: Full-time)	-0.902*** (0.165)	0.101 (0.313)	-0.544 (0.311)	-0.665*** (0.141)	-0.509*** (0.127)	0.0210 (0.240)	-0.496** (0.168)	-0.109 (0.205)	-0.290 (0.269)
Part-time	0.539 (0.702)	2.383 (1.319)	-8.015*** (1.615)	-1.257* (0.579)	-1.950** (0.595)	0.714 (0.895)	0.239 (0.659)	-2.074 (1.291)	0.436 (1.005)
Marginal work	2.339* (1.144)	6.360** (i) (2.412)	-15.77*** (4.713)	-2.973** (0.989)	-0.577 (1.057)	-2.511 (i) (2.585)	0.948 (0.755)	-8.185** (2.822)	-0.125 (2.466)
<b>Nationality (ref: Local)</b>									
EU/EFTA	0.0543 (1.916)	-3.029** (0.990)	0.579 (1.247)	-4.411*** (0.897)	-2.527* (1.231)	-2.540 (j) (2.746)	-3.840* (1.582)	-3.762 (i) (3.308)	-0.338 (2.699)
Non-EU/EFTA	2.526 (2.207)	-6.665* (2.752)	14.22*** (1.490)	-3.796** (1.361)	-4.377** (1.458)	-	-0.178 (1.553)	-6.548*** (1.002)	0.544 (2.097)
<b>Work contract (ref: Permanent)</b>									
Involuntary temporary	3.209*** (0.701)	1.551 (2.261)	-0.109 (1.308)	-0.247 (1.010)	-0.955 (0.771)	-1.330 (2.045)	-1.403 (1.003)	-1.756 (i) (4.227)	-2.191 (1.363)
Instrumental temporary	7.685*** (2.240)	7.370* (i) (3.095)	0.962 (5.621)	4.161* (1.953)	1.249 (1.342)	1.138 (2.192)	3.485*** (0.994)	-5.560 (3.159)	5.093* (2.093)
Voluntary temporary	2.068 (1.256)	na	na	0.0672 (1.387)	2.274* (0.923)	3.958 (2.493)	1.118 (1.058)	na	0.343 (1.941)

<b>Supervisory role (ref: No / DK)</b>										
Yes	2.479*** (0.572)	0.919 (1.014)	2.307* (1.087)	1.177** (0.432)	0.965** (0.355)	2.853*** (0.697)	2.166*** (0.610)	1.322 (0.698)	1.166 (1.025)	
<b>Occupation (ref: Elementary occupations)</b>										
Managers	12.84*** (1.606)	-0.00433 (k) (0.00272)	9.727*** (2.382)	6.699*** (1.356)	8.447*** (1.130)	-0.00456* (k) (0.00183)	5.452*** (1.576)	17.86*** (1.497)	8.785*** (2.008)	
Professionals	7.676*** (1.071)	-	8.234*** (1.918)	4.767*** (1.282)	6.048*** (1.068)	-	2.923** (0.966)	18.46*** (1.387)	7.396*** (1.659)	
Technicians and associate professionals	7.242*** (1.020)	-	3.750* (1.783)	4.601*** (1.261)	4.991*** (1.021)	-	3.895*** (0.857)	14.56*** (1.399)	8.119*** (1.406)	
Clerical support workers	5.012*** (1.194)	-	1.040 (1.665)	3.058* (1.380)	2.354* (1.150)	-	2.813** (1.002)	11.22*** (1.587)	4.673** (1.565)	
Service and sales workers	3.168** (0.982)	-	-3.330* (1.586)	2.506* (1.229)	0.792 (1.018)	-	0.743 (0.782)	8.952*** (1.375)	4.497** (1.488)	
Skilled agricultural, forestry and fisheries	6.739** (2.212)	-	2.587 (4.611)	6.962*** (2.093)	2.770 (2.052)	-	4.414 (2.469)	11.37*** (l) (2.641)	3.372 (2.797)	
Craft and related trades workers	4.054*** (1.100)	-	-2.179 (1.789)	3.807** (1.344)	3.733*** (1.100)	-	2.954** (1.042)	9.946*** (1.404)	2.621 (1.798)	
Plant and machine operators, and assemblers	3.579** (1.184)	-	-2.162 (2.355)	2.249 (1.417)	1.864 (1.175)	-	0.319 (1.223)	5.411*** (1.407)	-0.639 (1.717)	
<b>Tenure</b>	-0.00859*** (0.00216)	-0.00732 (0.00470)	0.0315*** (0.00419)	-0.00291 (0.00202)	0.000472 (0.00141)	0.00148 (0.00285)	-0.000283 (0.00222)	0.00448 (0.00317)	-0.0127*** (0.00346)	
<b>Constant</b>	72.27*** (1.175)	74.61*** (1.824)	74.51*** (1.824)	80.63*** (1.338)	85.76*** (1.103)	87.66*** (1.722)	84.19*** (1.011)	72.76*** (1.451)	72.38*** (1.646)	
<b>Observations</b>	9553	2944	3763	11314	16657	4379	11020	5615	5134	
<b>Adjusted R-squared</b>	0.021	0.013	0.104	0.018	0.021	0.009	0.007	0.099	0.016	



	Austria	Netherlands	Italy	Czechia	Greece	Portugal	Belgium	Spain	Poland
	B	B	B	B	B	B	B	B	B
	(Robust SE)	(Robust SE)	(Robust SE)	(Robust SE)	(Robust SE)	(Robust SE)	(Robust SE)	(Robust SE)	(Robust SE)
<b>Age (ref: 35 to 44)</b>									
15 to 24	1.463 (0.757)	1.419*** (0.414)	2.566*** (0.553)	0.379 (0.789)	-3.347** (1.091)	1.818 (0.984)	2.469** (0.796)	2.604*** (0.707)	0.950 (0.803)
25 to 34	0.219 (0.569)	-0.458 (0.342)	0.480 (0.351)	0.409 (0.511)	-2.695*** (0.650)	1.901** (0.632)	-0.481 (0.503)	0.0260 (0.420)	0.190 (0.462)
45 to 54	0.866 (0.531)	0.522 (0.316)	-0.130 (0.297)	-0.832 (0.464)	0.818 (0.557)	-0.896 (0.537)	-0.182 (0.486)	-0.492 (0.362)	-1.201* (0.479)
55 to 64	1.727** (0.663)	0.932** (0.347)	-2.087*** (0.372)	-1.275* (0.530)	0.181 (0.737)	-1.418* (0.689)	0.0628 (0.603)	0.584 (0.453)	-0.412 (0.541)
<b>Gender (ref: Man)</b>									
Woman	1.895*** (0.443)	0.459 (0.249)	1.071*** (0.258)	-1.585*** (0.376)	-0.878 (0.454)	0.287 (0.447)	-0.221 (0.402)	0.688* (0.305)	-1.693*** (0.370)
<b>Educational level</b>									
Working time (ref: Full-time)	0.432 (0.516)	-1.193*** (0.279)	-1.103*** (0.291)	1.371 (0.824)	-9.034*** (0.600)	-2.607** (0.945)	-0.807 (0.474)	-2.431*** (0.426)	1.252 (0.716)
Marginal work	1.981* (0.899)	-1.310** (0.421)	-8.364*** (0.953)	4.963* (1.957)	-24.40*** (2.008)	-10.69*** (1.991)	-0.770 (1.311)	-8.810*** (0.877)	-2.026 (2.082)
<b>Nationality (ref: Local)</b>									
EU/EFTA	-3.418*** (0.732)	-2.766** (0.871)	0.115 (0.550)	-1.711 (1.584)	-1.078 (1.713)	2.442 (2.151)	-0.411 (0.649)	0.819 (0.946)	2.494 (j) (2.814)
Non-EU/EFTA	-3.348*** (0.850)	-4.194*** (0.998)	-1.124** (0.427)	1.303 (2.088)	-2.080* (0.903)	2.453 (1.867)	-4.695*** (1.278)	-2.060* (0.867)	-
<b>Work contract (ref: Permanent)</b>									
Involuntary temporary	-4.955 (3.088)	-1.341** (0.445)	-1.999*** (0.387)	-2.071** (0.747)	-2.173** (0.785)	-2.245*** (0.646)	-2.316** (0.768)	-2.927*** (0.388)	-5.197*** (0.549)
Instrumental temporary	3.695*** (0.957)	2.672*** (0.446)	0.0605 (0.642)	na	1.250 (1.623)	1.387 (1.357)	4.445* (2.158)	1.011 (1.180)	-0.910 (0.906)
Voluntary temporary	1.177 (1.051)	-1.537* (0.601)	2.329 (1.653)	1.472 (1.328)	1.132 (2.865)	1.985 (2.052)	0.260 (1.371)	0.660 (1.572)	-0.827 (0.771)
<b>Supervisory role (ref: No / DK)</b>									
Yes	2.622*** (0.451)	0.587* (0.279)	2.106*** (0.293)	2.372*** (0.500)	0.281 (0.675)	2.344*** (0.494)	2.684*** (0.467)	0.807* (0.373)	2.073*** (0.486)

**Occupation (ref: Elementary occupations)**

Managers	8.503*** (1.143)	4.264*** (0.663)	8.482*** (1.049)	14.97*** (1.197)	18.25*** (1.851)	5.701*** (1.438)	5.032*** (1.056)	9.744*** (0.995)	19.83*** (1.063)
Professionals	7.567*** (0.931)	2.571*** (0.491)	9.853*** (0.531)	16.30*** (0.993)	20.74*** (1.016)	4.843*** (1.093)	7.058*** (0.822)	10.26*** (0.649)	20.25*** (0.899)
Technicians and associate professionals	7.820*** (0.817)	2.773*** (0.475)	5.189*** (0.470)	12.72*** (0.878)	16.72*** (1.025)	2.136* (0.896)	5.340*** (0.794)	5.242*** (0.610)	15.87*** (0.849)
Clerical support workers	5.727*** (0.904)	1.572** (0.500)	3.805*** (0.472)	10.20*** (0.934)	12.01*** (0.898)	-0.470 (0.934)	4.781*** (0.777)	4.574*** (0.594)	11.23*** (0.939)
Service and sales workers	4.026*** (0.811)	1.676*** (0.438)	3.330*** (0.431)	6.845*** (0.903)	6.422*** (0.826)	-0.560 (0.780)	3.168*** (0.759)	2.755*** (0.508)	7.657*** (0.830)
Skilled agricultural, forestry and fisheries	8.972*** (2.010)	3.765*** (1.108)	3.248** (1.132)	6.636** (2.046)	-1.977 (2.575)	1.206 (1.627)	2.288 (2.617)	3.041* (1.308)	4.745 (3.219)
Craft and related trades workers	4.933*** (0.874)	1.380* (0.550)	3.468*** (0.476)	4.275*** (0.901)	6.208*** (1.011)	-0.709 (0.891)	3.043*** (0.830)	2.992*** (0.598)	8.550*** (0.838)
Plant and machine operators, and assemblers	2.680* (1.062)	1.799** (0.629)	2.005*** (0.538)	1.365 (0.882)	5.673*** (1.064)	-0.426 (0.917)	3.327*** (0.855)	0.251 (0.632)	6.614*** (0.876)
<b>Tenure</b>	-0.000163 (0.00185)	-0.00704*** (0.00101)	0.000816 (0.00114)	0.00391* (0.00177)	0.0388*** (0.00240)	-0.00262 (0.00213)	-0.00235 (0.00176)	0.00212 (0.00141)	0.00707*** (0.00172)
<b>Constant</b>	75.61*** (0.957)	73.70*** (0.540)	80.80*** (0.498)	70.61*** (0.969)	60.33*** (0.959)	76.97*** (0.872)	76.86*** (0.781)	77.72*** (0.592)	61.99*** (0.903)
<b>Observations</b>	14752	30871	35925	14530	11336	13186	15728	29157	18963
<b>Adjusted R-squared</b>	0.023	0.009	0.024	0.088	0.202	0.014	0.014	0.031	0.122

(continued)

	Germany B (Robust SE)	UK B (Robust SE)	Switzerland B (Robust SE)	Ireland B (Robust SE)	Hungary B (Robust SE)	Bulgaria B (Robust SE)	Romania B (Robust SE)	Lithuania B (Robust SE)	Slovakia B (Robust SE)
<b>Age (ref: 35 to 44)</b>									
15 to 24	1.801* (0.834)	-0.851 (0.624)	-0.613 (1.214)	-1.443 (0.910)	-1.412* (0.699)	0.454 (1.203)	-1.063 (0.807)	0.313 (1.322)	2.623* (1.326)
25 to 34	1.178 (0.602)	-1.425** (0.462)	-0.850 (0.929)	-0.00302 (0.611)	-0.605 (0.473)	1.329* (0.652)	0.295 (0.431)	-0.674 (0.862)	-0.512 (0.843)
45 to 54	-0.455 (0.566)	1.310** (0.457)	0.149 (0.822)	1.421* (0.607)	-0.860* (0.426)	0.507 (0.561)	0.0619 (0.382)	-2.070** (0.741)	-0.642 (0.773)
55 to 64	-0.248 (0.627)	2.393*** (0.532)	-0.164 (0.964)	2.865*** (0.748)	-0.939 (0.508)	-0.105 (0.604)	-0.490 (0.497)	-2.685*** (0.802)	-0.684 (0.878)
<b>Gender (ref: Man)</b>									
Woman	-0.619 (0.451)	1.834*** (0.359)	-1.429* (0.671)	1.211* (0.502)	-1.632*** (0.354)	-2.317*** (0.444)	-1.519*** (0.321)	-2.299*** (0.605)	-3.045*** (0.616)
<b>Educational level</b>									
0-296 (0.155)	-0.296 (0.155)	0.409*** (0.108)	-0.00803 (0.192)	0.229 (0.166)	0.737*** (0.170)	0.909*** (0.180)	0.643*** (0.144)	1.698*** (0.234)	0.795*** (0.214)
<b>Working time (ref: Full-time)</b>									
Part-time	0.430 (0.548)	-1.742*** (0.443)	1.027 (0.849)	-1.081 (0.580)	-2.944*** (0.856)	-14.11*** (i) -1,722	0.228 (i) -1,595	-4.737*** (1.126)	-5.665*** (1.711)
Marginal work	3.025*** (0.770)	0.685 (0.828)	2.526* (1.158)	0.463 (1.256)	-2.085 (3.207)	-	-	-10.49*** (3.019)	-19.70*** (-3.312)
<b>Nationality (ref: Local)</b>									
EU/EFTA	0.147 (0.940)	-1.945** (0.650)	-3.429*** (0.679)	-5.118*** (0.809)	7.603** (2.939)	-	-	-5.579 (j) (l) (-4.780)	-
Non-EU/EFTA	-1.479 (0.929)	-2.864** (0.892)	-4.601*** (1.271)	-3.124* (1.323)	0.986 (6.377)	-	-	-	-
<b>Work contract (ref: Permanent)</b>									
Involuntary temporary	-5.413*** (1.481)	-8.119*** (1.572)	-8.651** (3.153)	-9.562*** (1.353)	-10.54*** (0.728)	-13.15*** -1,485	-13.39*** -2,581	-14.31*** (3.718)	-14.60*** (-1.587)
Instrumental temporary	2.064* (0.851)	2.549 (2.306)	6.877*** (1.147)	5.034* (2.254)	2.459 (1.601)	-5.113* -2,592	na	-6.025 (l) (4.004)	na
Voluntary temporary	0.430 (3.887)	-1.577 (1.481)	5.569* (2.811)	-1.540 (1.904)	-2.827 (2.062)	-7.687* (3.545)	na	na	12.36*** (-2.617)
<b>Supervisory role (ref: No / DK)</b>									
Yes	1.885*** (0.499)	1.657*** (0.372)	0.797 (0.689)	0.115 (0.535)	2.912*** (0.508)	4.794*** (0.751)	1.826** (0.596)	2.622** (0.832)	2.676** (0.940)

Occupation (ref: Elementary occupations)										
Managers	9.762*** (1.294)	11.12*** (0.822)	5.321** (1.951)	10.83*** (1.267)	16.43*** (1.066)	20.83*** (1.444)	15.41*** (1.356)	13.83*** (1.485)	25.06*** (1.964)	
Professionals	8.986*** (1.001)	10.06*** (0.759)	5.311** (1.783)	11.57*** (1.094)	17.71*** (0.935)	20.75*** (1.133)	15.23*** (0.867)	14.20*** (1.268)	23.53*** (1.584)	
Technicians and associate professionals	6.546*** (0.874)	8.316*** (0.771)	5.032** (1.724)	8.955*** (1.084)	14.44*** (0.733)	16.62*** (1.064)	13.00*** (0.834)	13.52*** (1.340)	19.60*** (1.441)	
Clerical support workers	6.065*** (0.903)	5.564*** (0.788)	4.605* (1.847)	8.272*** (1.104)	11.15*** (0.808)	14.88*** (1.069)	9.297*** (0.886)	10.14*** (1.580)	16.53*** (1.486)	
Service and sales workers	4.072*** (0.881)	5.128*** (0.719)	0.803 (1.764)	4.630*** (1.016)	9.980*** (0.704)	4.821*** (0.867)	5.862*** (0.714)	4.643*** (1.259)	11.64*** (1.401)	
Skilled agricultural, forestry and fisheries	6.923** (2.110)	14.76*** (2.456)	0.278 (3.163)	9.383*** (2.051)	7.216*** (1.183)	1.170 (1.976)	5.867** (1.883)	4.480* (2.261)	12.96*** (3.617)	
Craft and related trades workers	3.528*** (0.927)	7.439*** (0.906)	3.530 (1.845)	9.382*** (1.165)	6.897*** (0.699)	7.191*** (0.894)	4.468*** (0.694)	5.412*** (1.274)	8.628*** (1.446)	
Plant and machine operators, and assemblers	2.381* (1.084)	3.995*** (0.999)	1.673 (2.319)	4.569*** (1.310)	3.753*** (0.676)	6.975*** (0.886)	4.083*** (0.712)	5.502*** (1.273)	5.908*** (1.425)	
<b>Tenure</b>	-0.00219 (0.00179)	-0.0136*** (0.00180)	0.00394 (0.00329)	0.00196 (0.00229)	0.0160*** (0.00165)	0.0118*** (0.00246)	0.0168*** (0.00186)	0.0187*** (0.00332)	0.0111*** (0.00281)	
<b>Constant</b>	68.21*** (1.051)	65.96*** (0.798)	82.97*** (1.902)	71.89*** (1.130)	65.59*** (0.794)	55.02*** (0.972)	63.20*** (0.793)	67.95*** (1.438)	56.26*** (1.538)	
<b>Observations</b>	15221	28979	5770	11754	20102	10877	17325	5918	7339	

**Note:** \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001. (i) Indicates that the categories "Part-time" and "Marginal work" are included under the same category. (j) Indicates that the categories "EU/EFTA" and "Non-EU/EFTA" were included under the same category. (k) Indicates that Occupation was included as a continuous (instead of categorical) variable. (l) Indicates that the coefficient is unreliable because of few observations, according to Eurostat guidelines. na Refers to coefficients that are not shown because of the low number of observations. The descriptive statistics of each sample can be found in Table D1 in the Appendix.

**Table 7: Full results of linear regression models in Figure 3. Difference in job satisfaction between permanent (ref.) and different kinds of temporary workers with different contract durations for the overall sample.**

	Involuntary temporary vs. Permanent		Instrumental temporary vs. Permanent B (Robust SE)	Voluntary temporary vs. Permanent B (Robust SE)
	B (Robust SE)	B (Robust SE)		
<b>Age (ref: 35 to 44)</b>				
15 to 24	1.132*** (0.173)		0.871*** (0.178)	0.704*** (0.180)
25 to 34	-0.205 (0.112)		-0.325** (0.115)	-0.311** (0.115)
45 to 54	0.196 (0.101)		0.181 (0.102)	0.174 (0.102)
55 to 64	0.310** (0.113)		0.350** (0.114)	0.392*** (0.114)
<b>Gender (ref: Man)</b>				
Woman	-0.106 (0.0839)		-0.284*** (0.0852)	-0.292*** (0.0854)
<b>Educational level</b>				
	-0.0279 (0.0285)		-0.00512 (0.0289)	-0.00543 (0.0290)
<b>Working time (ref: Full-time)</b>				
Part-time	-0.876*** (0.120)		-0.501*** (0.123)	-0.459*** (0.123)
Marginal work	0.0653 (0.240)		0.996*** (0.245)	1.179*** (0.238)
<b>Nationality (ref: Local)</b>				
EU/EFTA	-1.703*** (0.218)		-1.823*** (0.223)	-1.828*** (0.224)
Non-EU/EFTA	-1.156*** (0.243)		-2.075*** (0.252)	-2.127*** (0.257)
<b>Contract duration (ref: Permanent)</b>				
Permanent	(ref)	5.917*** (0.270)	(ref)	(ref)
6 months or less	-5.917*** (0.270)	3.749*** (0.253)	2.677*** (0.343)	0.0608 (0.504)
Between 7 and 12 months	-3.749*** (0.253)	-2.168*** (0.361)	-3.239*** (0.431)	-0.883 (0.485)
		(ref)	-1.072* (0.420)	-0.351 (0.553)

More than one year	-2.677*** (0.343)	3.239*** (0.431)	1.072* (0.420)	(ref)	4.467*** (0.377)	0.643 (0.544)
<b>DK</b>						
<b>Supervisory role (ref: No / Yes)</b>						
Yes	1.759*** (0.0989)				1.861*** (0.0998)	1.879*** (0.0997)
<b>Occupation (ref: Elementary occupations)</b>						
Managers	11.50*** (0.237)				10.79*** (0.242)	10.82*** (0.241)
Professionals	10.93*** (0.189)				10.23*** (0.196)	10.25*** (0.195)
Technicians and associate professionals	8.879*** (0.176)				8.189*** (0.182)	8.227*** (0.182)
Clerical support workers	6.943*** (0.185)				6.319*** (0.192)	6.337*** (0.192)
Service and sales workers	4.845*** (0.168)				4.150*** (0.175)	4.195*** (0.175)
Skilled agricultural, forestry and fisheries	5.601*** (0.416)				4.944*** (0.431)	5.221*** (0.432)
Craft and related trades workers	4.720*** (0.182)				4.163*** (0.188)	4.122*** (0.189)
Plant and machine operators, and assemblers	2.706*** (0.192)				1.900*** (0.200)	1.850*** (0.200)
<b>Country (ref: Italy)</b>						
Austria	-2.155*** (0.223)				-1.658*** (0.220)	-1.664*** (0.223)
Belgium	-4.490*** (0.211)				-4.260*** (0.218)	-4.266*** (0.218)
Bulgaria	-14.67*** (0.252)				-13.68*** (0.252)	-13.65*** (0.254)
Switzerland	0.264 (0.328)				1.042*** (0.313)	0.831* (0.329)
Cyprus	-5.075*** (0.417)				-5.905*** (0.443)	-5.866*** (0.443)
Czech Republic	-4.011*** (0.210)				-3.511*** (0.216)	-3.455*** (0.216)
Germany	-11.98*** (0.226)				-11.56*** (0.223)	-11.58*** (0.230)
Denmark	0.451 (0.246)				0.729*** (0.247)	0.699*** (0.249)
Estonia	-1.554***				-1.059***	-0.977**

	(0.306)	(0.308)	(0.309)
Spain	-3.446*** (0.185)	-3.322*** (0.192)	-3.338*** (0.194)
Finland	-9.992*** (0.244)	-10.33*** (0.255)	-10.27*** (0.254)
France	-10.19*** (0.374)	-10.05*** (0.383)	-10.11*** (0.383)
Greece	-7.894*** (0.253)	-6.930*** (0.263)	-6.812*** (0.266)
Hungary	-6.523*** (0.203)	-4.802*** (0.206)	-4.835*** (0.207)
Ireland	-3.554*** (0.251)	-2.995*** (0.252)	-3.041*** (0.253)
Lithuania	-1.447*** (0.299)	-0.868** (0.300)	-0.805** (0.301)
Luxembourg	-14.23*** (0.478)	-13.88*** (0.484)	-14.00*** (0.489)
Malta	3.703*** (0.349)	4.065*** (0.350)	4.101*** (0.352)
Netherlands	-10.34*** (0.162)	-10.23*** (0.166)	-10.23*** (0.167)
Norway	-3.024*** (0.226)	-2.519*** (0.228)	-2.572*** (0.229)
Poland	-7.609*** (0.213)	-6.558*** (0.221)	-6.503*** (0.221)
Portugal	-9.814*** (0.243)	-9.960*** (0.256)	-10.02*** (0.258)
Romania	-9.252*** (0.195)	-8.660*** (0.197)	-8.638*** (0.198)
Sweden	1.823*** (0.201)	2.199*** (0.205)	2.194*** (0.205)
Slovak Republic	-12.86*** (0.318)	-10.82*** (0.314)	-10.75*** (0.313)
United Kingdom	-10.67*** (0.200)	-10.20*** (0.202)	-10.23*** (0.203)
<b>Constant</b>	71.83*** (0.324)	73.99*** (0.316)	77.83*** (0.216)
	75.07*** (0.398)		
<b>Observations</b>	357222	339346	337257
<b>Adjusted R-squared</b>	0.073	0.068	0.068

Note: \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001.

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**Table 8: Full results of linear regression models in Figure 4. Difference in job satisfaction between permanent (ref.) and involuntary temporary workers with different contract durations, by country.**

	Luxembourg B (Robust SE)	Finland B (Robust SE)	Norway B (Robust SE)	Sweden B (Robust SE)	Denmark B (Robust SE)	France B (Robust SE)	Netherlands B (Robust SE)	Malta B (Robust SE)
<b>Age (ref: 35 to 44)</b>								
15 to 24	2.256 (2.172)	3.007** (0.944)	1.102 (0.831)	-0.265 (0.820)	0.992 (0.898)	1.818 (1.831)	2.026*** (0.455)	2.428* (1.083)
25 to 34	-2.531 (1.333)	0.201 (0.641)	-0.521 (0.593)	-1.793*** (0.507)	0.695 (0.718)	-2.436* (1.091)	-0.0644 (0.361)	1.946* (0.954)
45 to 54	-2.379* (1.176)	0.469 (0.597)	1.977*** (0.540)	0.787 (0.449)	-0.307 (0.648)	-0.486 (0.918)	0.174 (0.323)	1.163 (0.998)
55 to 64	0.766 (1.578)	0.782 (0.648)	2.600*** (0.590)	2.000*** (0.468)	0.602 (0.670)	0.240 (1.094)	0.0385 (0.334)	2.539* (1.021)
<b>Gender (ref: Man)</b>								
Woman	-0.591 (1.011)	-0.351 (0.480)	0.576 (0.427)	-0.964** (0.348)	0.160 (0.459)	-1.073 (0.806)	0.389 (0.269)	0.849 (0.703)
<b>Educational level</b>								
	0.0852 (0.314)	-0.845*** (0.168)	-0.644*** (0.144)	-0.543*** (0.131)	-0.516** (0.175)	-0.108 (0.281)	0.0489 (0.0766)	0.000533 (0.246)
<b>Working time (ref: Full-time)</b>								
Part-time	2.482 (1.331)	0.580 (0.727)	-1.130 (0.600)	-1.848** (0.639)	0.449 (0.694)	0.588 (1.041)	-1.081*** (0.301)	0.925 (0.926)
Marginal work	8.191** (!) (2.575)	2.510 (1.305)	-2.734* (1.088)	-1.634 (1.417)	1.647 (0.851)	-0.251 (2.843)	-1.133* (0.467)	-3.220 (!) (2.988)
<b>Nationality (ref: Local)</b>								
EU/EFTA	-2.700** (0.983)	0.455 (1.978)	-4.262*** (0.915)	-2.146 (1.260)	-3.406* (1.660)	0.843 (2.722)	-2.174* (0.914)	-3.255 (!) (2.882)
Non-EU/EFTA	-6.718* (2.774)	3.431 (2.289)	-3.897*** (1.448)	-3.562* (1.559)	-1.064 (1.672)	1.419 (2.204)	-3.814*** (1.152)	-
<b>Contract duration (ref: Permanent)</b>								
6 months or less	na	4.153*** (0.977)	-0.217 (3.018)	-1.360 (1.362)	-1.601 (2.288)	-1.882 (1.760)	-2.063 (1.214)	-3.462 (!) (3.713)
Between 7 and 12 months	6.051 (!) (4.404)	4.552*** (1.075)	3.546 (2.147)	0.325 (1.445)	1.538 (1.594)	0.726 (2.206)	-0.462 (0.599)	0.751 (!) (3.290)
More than one year	4.901 (2.594)	2.106 (1.438)	-3.966* (1.761)	0.0586 (1.170)	-2.729* (1.373)	-1.581 (3.321)	1.289 (1.331)	-2.272 (!) (3.469)



	Cyprus	Ireland	Austria	Italy	Portugal	Czechia	Spain	Belgium
	B	B	B	B	B	B	B	B
	(Robust SE)	(Robust SE)	(Robust SE)	(Robust SE)	(Robust SE)	(Robust SE)	(Robust SE)	(Robust SE)
<b>Age (ref: 35 to 44)</b>								
15 to 24	-6.756*** (1.843)	-1.960* (0.939)	0.942 (0.796)	2.018** (0.618)	2.456* (1.091)	0.601 (0.808)	3.545*** (0.841)	3.036*** (0.819)
25 to 34	-4.039*** (1.081)	-0.187 (0.610)	0.443 (0.580)	0.418 (0.356)	2.227*** (0.638)	0.175 (0.505)	0.0900 (0.446)	-0.354 (0.497)
45 to 54	0.885 (1.024)	1.357* (0.605)	0.971 (0.526)	-0.0963 (0.291)	-0.907 (0.529)	-0.629 (0.460)	-0.313 (0.365)	-0.312 (0.473)
55 to 64	0.120 (1.239)	3.029*** (0.704)	1.757** (0.619)	-2.041*** (0.341)	-1.913** (0.647)	-1.020* (0.510)	0.777 (0.418)	-0.300 (0.559)
<b>Gender (ref: Man)</b>								
Woman	2.242* (0.876)	1.156* (0.512)	2.210*** (0.465)	0.961*** (0.265)	0.0661 (0.457)	-1.645*** (0.380)	0.455 (0.322)	-0.217 (0.409)
<b>Educational level</b>								
Part-time	-0.624* (0.313)	0.280 (0.169)	-0.163 (0.159)	-0.554*** (0.0811)	-1.341*** (0.164)	0.358* (0.145)	-0.489*** (0.107)	-0.203 (0.128)
<b>Working time (ref: Full-time)</b>								
Part-time	-9.077*** (1.622)	-0.874 (0.592)	0.297 (0.533)	-1.049*** (0.300)	-1.817 (0.994)	1.422 (0.867)	-2.222*** (0.459)	-0.867 (0.482)
Marginal work	-16.05** (4.967)	0.407 (1.346)	2.098* (0.940)	-8.346*** (1.002)	-11.78*** (2.302)	5.321* (2.615)	-8.108*** (1.005)	-1.622 (1.482)
<b>Nationality (ref: Local)</b>								
EU/EFTA	-0.936 (1.239)	-5.470*** (0.819)	-3.150*** (0.764)	0.303 (0.551)	2.447 (1.624)	-1.732 (1.624)	0.910 (1.028)	-0.406 (0.654)
Non-EU/EFTA	12.19*** (1.601)	-3.514* (1.389)	-3.250*** (0.886)	-1.103* (0.436)	3.725* (1.857)	1.289 (2.093)	-0.998 (0.933)	-4.582*** (1.325)
<b>Contract duration (ref: Permanent)</b>								
6 months or less	-4.677 (2.517)	-5.711 (4.038)	-6.225 (!) (6.217)	-2.244*** (0.519)	-3.674*** (0.947)	-4.484* (1.867)	-4.549*** (0.604)	-4.967*** (1.064)
Between 7 and 12 months	-3.420* (1.585)	-10.80** (3.563)	-6.889 (!) (4.427)	-0.324 (0.554)	-0.734 (0.826)	-2.616* (1.165)	-0.507 (0.804)	1.201 (1.192)
More than one year	2.976 (1.846)	-11.32*** (3.071)	na	-1.103 (1.419)	3.633* (1.656)	-1.617 (1.020)	0.568 (1.265)	-0.169 (1.778)
<b>Supervisory role (ref: No / DK)</b>								
Yes	3.182** (1.086)	0.171 (0.537)	2.806*** (0.456)	2.169*** (0.296)	2.248*** (0.501)	2.445*** (0.502)	0.886* (0.381)	2.744*** (0.470)

Occupation (ref: Elementary occupations)										
Managers	10.61*** (1.064)	10.58*** (1.293)	8.039*** (1.169)	8.275*** (1.064)	5.800*** (1.218)	15.35*** (1.218)	9.142*** (1.025)	4.445*** (1.061)		
Professionals	9.643*** (1.191)	11.19*** (1.126)	7.315*** (0.960)	9.484*** (0.540)	4.793*** (1.119)	16.79*** (1.009)	9.563*** (0.692)	6.293*** (0.825)		
Technicians and associate professionals	5.542** (1.773)	8.766*** (1.114)	7.546*** (0.837)	4.928*** (0.479)	1.938* (0.908)	13.07*** (0.894)	4.657*** (0.650)	4.817*** (0.798)		
Clerical support workers	2.570 (1.672)	8.160*** (1.134)	5.670*** (0.923)	3.681*** (0.480)	-0.688 (0.957)	10.55*** (0.950)	4.263*** (0.631)	4.392*** (0.781)		
Service and sales workers	-2.725 (1.602)	4.507*** (1.055)	4.074*** (0.835)	3.070*** (0.443)	-0.529 (0.797)	7.109*** (0.927)	2.688*** (0.550)	2.804*** (0.771)		
Skilled agricultural, forestry and fisheries	3.109 (4.530)	9.776*** (2.096)	9.303*** (2.191)	3.102** (1.174)	1.073 (1.674)	7.077*** (2.084)	2.943* (1.410)	2.742 (2.535)		
Craft and related trades workers	-1.099 (1.802)	9.170*** (1.194)	4.740*** (0.902)	3.315*** (0.489)	-0.832 (0.909)	4.634*** (0.918)	2.477*** (0.663)	2.701** (0.836)		
Plant and machine operators, and assemblers	-1.688 (2.392)	4.324** (1.349)	2.594* (1.087)	1.669** (0.553)	-0.593 (0.939)	1.657 (0.900)	-0.0858 (0.679)	3.138*** (0.864)		
<b>Constant</b>	77.69*** (1.780)	72.18*** (1.129)	75.27*** (0.965)	81.24*** (0.481)	76.92*** (0.857)	70.84*** (0.973)	78.19*** (0.618)	76.78*** (0.777)		
<b>Observations</b>	3724	11263	13558	34183	12379	14231	25517	15371		
<b>Adjusted R-squared</b>	0.094	0.038	0.022	0.023	0.015	0.088	0.026	0.015		

	Germany B (Robust SE)	Greece B (Robust SE)	Poland B (Robust SE)	UK B (Robust SE)	Switzerland B (Robust SE)	Slovakia B (Robust SE)	Hungary B (Robust SE)
<b>Age (ref: 35 to 44)</b>							
15 to 24	1.710 (0.919)	-6.408*** (1.133)	1.096 (0.951)	-0.0262 (0.628)	-1.075 (1.316)	1.980 (1.329)	-2.183** (0.703)
25 to 34	1.347* (0.611)	-4.512*** (0.653)	-0.0833 (0.477)	-0.888 (0.461)	-0.913 (0.948)	-0.976 (0.831)	-1.412** (0.469)
45 to 54	-0.565 (0.554)	3.427*** (0.538)	-0.437 (0.472)	0.801 (0.455)	0.293 (0.821)	-0.0122 (0.754)	-0.241 (0.421)
55 to 64	-0.488 (0.597)	4.797*** (0.686)	0.219 (0.510)	1.295* (0.518)	0.199 (0.919)	0.277 (0.825)	0.174 (0.491)
<b>Gender (ref: Man)</b>							
Woman	-0.607 (0.474)	-1.101* (0.464)	-2.003*** (0.387)	1.846*** (0.364)	-1.470* (0.728)	-3.091*** (0.619)	-1.850*** (0.358)
<b>Educational level</b>							
Working time (ref: Full-time)	-0.297 (0.161)	0.514** (0.170)	0.717*** (0.134)	0.462*** (0.109)	-0.0197 (0.200)	0.694** (0.216)	0.677*** (0.172)
Part-time	0.320 (0.562)	-9.207*** (0.619)	1.603* (0.814)	-1.744*** (0.450)	0.938 (0.894)	-7.218*** (1.826)	-2.842** (0.884)
Marginal work	2.736*** (0.794)	-26.06*** (2.108)	-4.061 (3.041)	1.120 (0.863)	2.617* (1.194)	-24.15*** (3.791)	-3.892 (3.340)
<b>Nationality (ref: Local)</b>							
EU/EFTA	0.317 (0.964)	-1.914 (1.729)	3.326 (j) (3.295)	-1.500* (0.658)	-3.836*** (0.717)	-	6.013* (2.943)
Non-EU/EFTA	-1.645 (0.992)	-2.779** (0.918)	-	-2.346** (0.904)	-5.249*** (1.400)	-	0.664 (6.527)
<b>Contract duration (ref: Permanent)</b>							
6 months or less	-6.955* (3.320)	-7.533*** (1.073)	-8.236*** (1.199)	-9.962* (3.977)	-10.26* (4.016)	-14.93*** (2.073)	-15.70*** (1.214)
Between 7 and 12 months	-6.909** (2.106)	-5.926*** (1.106)	-5.969*** (0.854)	-3.065 (3.489)	-7.431 (5.338)	-14.72*** (2.220)	-9.403*** (0.877)
More than one year	-0.441 (2.470)	-0.407 (1.821)	-5.065*** (0.690)	-5.035 (3.141)	na	-15.38*** (4.155)	-11.54*** (2.177)
<b>Supervisory role (ref: No / DK)</b>							
Yes	1.807*** (0.506)	1.020 (0.687)	1.961*** (0.505)	1.372*** (0.373)	0.826 (0.697)	2.929** (0.942)	3.187*** (0.511)

**Occupation (ref: Elementary occupations)**

Managers	9.052*** (1.315)	20.12*** (1.896)	19.11*** (1.116)	10.89*** (0.834)	5.734** (2.005)	25.56*** (1.983)	17.40*** (1.075)
Professionals	8.454*** (1.030)	22.93*** (1.031)	19.48*** (0.953)	9.739*** (0.774)	5.894** (1.844)	24.28*** (1.599)	19.03*** (0.941)
Technicians and associate professionals	5.708*** (0.899)	18.70*** (1.034)	15.32*** (0.902)	8.050*** (0.784)	5.582** (1.781)	20.01*** (1.458)	15.41*** (0.736)
Clerical support workers	5.537*** (0.924)	13.59*** (0.912)	10.75*** (0.999)	5.354*** (0.803)	5.400** (1.915)	16.73*** (1.510)	11.84*** (0.815)
Service and sales workers	3.741*** (0.904)	6.910*** (0.845)	6.975*** (0.896)	5.115*** (0.735)	1.185 (1.833)	11.81*** (1.425)	10.48*** (0.714)
Skilled agricultural, forestry and fisheries	7.048** (2.187)	-0.673 (2.781)	3.286 (3.424)	15.34*** (2.427)	-0.149 (3.851)	14.98*** (3.580)	7.340*** (1.198)
Craft and related trades workers	2.645** (0.956)	7.212*** (1.028)	7.627*** (0.893)	7.147*** (0.921)	3.468 (1.953)	8.807*** (1.466)	7.547*** (0.707)
Plant and machine operators, and assemblers	1.597 (1.112)	5.872*** (1.083)	5.957*** (0.930)	4.031*** (1.018)	2.257 (2.405)	5.877*** (1.448)	4.177*** (0.685)
<b>Constant</b>	68.61*** (1.055)	64.43*** (0.956)	63.38*** (0.942)	64.69*** (0.800)	83.11*** (1.943)	57.68*** (1.548)	66.92*** (0.797)
<b>Observations</b>	14109	11059	16983	28276	5221	7199	19702
<b>Adjusted R-squared</b>	0.015	0.184	0.123	0.023	0.020	0.190	0.142

	Bulgaria B (Robust SE)	Romania B (Robust SE)
<b>Age (ref: 35 to 44)</b>		
15 to 24	-0.232 (1.235)	-2.227** (0.799)
25 to 34	0.784 (0.649)	-0.388 (0.425)
45 to 54	0.762 (0.554)	0.574 (0.379)
55 to 64	0.526 (0.590)	0.639 (0.482)
<b>Gender (ref: Man)</b>		
Woman	-2.296*** (0.447)	-1.563*** (0.322)
<b>Educational level</b>		
	0.933*** (0.181)	0.599*** (0.144)
<b>Working time (ref: Full-time)</b>		
Part-time	-15.10*** (1.844)	0.329 (1.613)
Marginal work	-	-
<b>Nationality (ref: Local)</b>		
EU/EFTA	-	-
Non-EU/EFTA	-	-
<b>Work contract (ref: Permanent)</b>		
6 months or less	-16.28*** (1.818)	-17.77*** (I) (3.733)
Between 7 and 12 months	-6.732* (3.226)	-14.88*** (4.254)
More than one year	na	na
<b>Supervisory role (ref: No / DK)</b>		
Yes	4.960*** (0.752)	1.968** (0.599)
<b>Occupation (ref: Elementary occupations)</b>		
Managers	20.64***	16.02***

Professionals	(1.451)	(1.353)
	21.14***	16.15***
	(1.138)	(0.861)
Technicians and associate professionals	16.94***	13.75***
	(1.074)	(0.831)
Clerical support workers	14.85***	9.834***
	(1.081)	(0.884)
Service and sales workers	4.711***	6.032***
	(0.885)	(0.713)
Skilled agricultural, forestry and fisheries	2.797	6.418***
	(2.106)	(1.887)
Craft and related trades workers	7.257***	4.974***
	(0.906)	(0.691)
Plant and machine operators, and assemblers	7.022***	4.497***
	(0.897)	(0.710)
<b>Constant</b>	56.05***	64.58***
	(0.976)	(0.778)
<b>Observations</b>	10644	17301
<b>Adjusted R-squared</b>	0.185	0.090

**Note:** \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001. (i) Indicates that the categories "Part-time" and "Marginal work" are included under the same category. (j) Indicates that the categories "EU/EFTA" and "Non EU/EFTA" were included under the same category. (k) Indicates that Occupation was included as a continuous instead of categorical variable. (l) Indicates that the coefficient is unreliable because of few observations, according to Eurostat guidelines. na Refers to coefficients that are not shown because of the low number of observations. The descriptive statistics of each sample can be found in Table 2 in the Appendix.



**Table 9: Full results of linear regression models in Figure 5. Difference in job satisfaction between permanent (ref.) and instrumental temporary workers with different contract durations, by country.**

	Ireland	Finland	Sweden	Switzerland	Portugal	UK	Greece	Spain	Italy
	B	B	B	B	B	B	B	B	B
	(Robust SE)	(Robust SE)	(Robust SE)	(Robust SE)	(Robust SE)	(Robust SE)	(Robust SE)	(Robust SE)	(Robust SE)
<b>Age (ref: 35 to 44)</b>									
15 to 24	-1.997* (0.950)	3.037** (1.048)	-0.680 (0.864)	-1.007 (1.244)	1.758 (1.398)	0.0189 (0.630)	-5.761*** (1.200)	4.607*** (0.984)	1.999** (0.665)
25 to 34	-0.197 (0.611)	0.271 (0.687)	-1.716*** (0.517)	-0.893 (0.921)	1.736* (0.701)	-0.822 (0.462)	-5.047*** (0.684)	0.322 (0.482)	0.330 (0.376)
45 to 54	1.506* (0.606)	0.346 (0.626)	0.858 (0.451)	0.391 (0.818)	-0.898 (0.553)	0.858 (0.456)	3.624*** (0.561)	-0.551 (0.379)	-0.152 (0.304)
55 to 64	3.170*** (0.707)	0.728 (0.679)	2.044*** (0.473)	0.348 (0.913)	-2.099** (0.672)	1.302* (0.519)	4.963*** (0.711)	0.882* (0.431)	-1.942*** (0.351)
<b>Gender (ref: Man)</b>									
Woman	1.182* (0.513)	-0.306 (0.506)	-1.047** (0.357)	-1.338* (0.677)	0.293 (0.488)	1.842*** (0.364)	-1.491** (0.482)	0.394 (0.338)	0.837** (0.277)
<b>Educational level</b>									
	0.273 (0.169)	-0.778*** (0.179)	-0.471*** (0.134)	-0.0135 (0.192)	-1.183*** (0.175)	0.488*** (0.109)	0.773*** (0.175)	-0.357** (0.113)	-0.625*** (0.0840)
<b>Working time (ref: Full-time)</b>									
Part-time	-1.055 (0.596)	0.612 (0.792)	-2.124** (0.675)	1.153 (0.855)	-1.235 (1.229)	-1.685*** (0.451)	-8.253*** (0.652)	-1.638** (0.498)	-0.943** (0.316)
Marginal work	-0.0958 (1.368)	3.600* (1.489)	-1.096 (1.626)	2.860* (1.172)	-8.062** (2.567)	1.212 (0.866)	-24.64*** (2.414)	-6.750*** (1.173)	-7.514*** (1.137)
<b>Nationality (ref: Local)</b>									
EU/EFTA	-5.350*** (0.816)	0.458 (2.055)	-2.374 (1.317)	-3.489*** (0.679)	1.305 (2.724)	-1.443* (0.660)	-2.503 (2.038)	1.383 (1.113)	0.542 (0.591)
Non-EU/EFTA	-3.008* (1.360)	2.800 (2.494)	-5.108** (1.789)	-4.550*** (1.282)	3.099 (2.397)	-2.274* (0.904)	-4.239*** (1.004)	-0.766 (1.039)	-1.029* (0.456)
<b>Contract duration (ref: Permanent)</b>									
6 months or less	na	6.924* (3.067)	3.008* (1.431)	3.322 (2.711)	1.304 (2.203)	0.506 (4.724)	0.206 (2.436)	-0.0901 (1.866)	-0.540 (0.931)
Between 7 and 12 months	5.558 (4.243)	na	-3.597 (3.967)	3.997 (2.641)	1.868 (2.009)	na	0.317 (3.108)	-1.655 (2.189)	-0.858 (1.599)
More than one year	4.916 (4.234)	5.597 (4.360)	na	7.834*** (1.261)	na	5.638 (3.479)	-4.566 (2.803)	3.125 (2.136)	1.796 (0.938)



	Germany B (Robust SE)	Denmark B (Robust SE)	France B (Robust SE)	Poland B (Robust SE)	Austria B (Robust SE)
<b>Age (ref: 35 to 44)</b>					
15 to 24	1.751* (0.845)	1.186 (0.882)	2.976 (2.061)	1.516 (1.104)	1.162 (0.772)
25 to 34	1.335* (0.603)	0.442 (0.722)	-1.887 (1.129)	-0.0291 (0.503)	0.307 (0.575)
45 to 54	-0.519 (0.553)	-0.259 (0.653)	-0.606 (0.944)	-0.371 (0.491)	0.945 (0.526)
55 to 64	-0.468 (0.596)	0.788 (0.670)	-0.505 (1.135)	1.071* (0.523)	1.741** (0.618)
<b>Gender (ref: Man)</b>					
Woman	-0.728 (0.455)	0.173 (0.461)	-1.026 (0.825)	-1.976*** (0.403)	2.086*** (0.450)
<b>Educational level</b>					
	-0.265 (0.156)	-0.535** (0.175)	-0.0550 (0.287)	0.776** (0.138)	-0.218 (0.156)
<b>Working time (ref: Full-time)</b>					
Part-time	0.510 (0.553)	0.481 (0.697)	0.708 (1.110)	2.559** (i) (0.840)	0.186 (0.526)
Marginal work	2.848*** (0.779)	1.151 (0.833)	1.290 (3.043)	-	2.290* (0.931)
<b>Nationality (ref: Local)</b>					
EU/EFTA	0.267 (0.955)	-4.203* (1.679)	-0.101 (2.825)	0.927 (j) (3.837)	-3.203*** (0.754)
Non-EU/EFTA	-1.293 (0.930)	-0.164 (1.670)	0.444 (2.334)	-	-3.072*** (0.852)
<b>Contract duration (ref: Permanent)</b>					
6 months or less	-0.649 (2.220)	-1.796 (2.872)	-1.882 (4.349)	-2.567 (1.338)	-6.357* (2.731)
Between 7 and 12 months	-1.169 (1.879)	5.506** (2.028)	na	-1.528 (1.536)	7.780*** (1.943)
More than one year	3.637*** (0.952)	4.634*** (1.092)	5.153 (3.002)	-0.965 (1.642)	5.585*** (1.041)
<b>Supervisory role (ref: No / DK)</b>					
Yes	1.872*** (0.502)	2.264*** (0.617)	1.372 (1.053)	1.988*** (0.522)	2.734*** (0.456)

Occupation (ref: Elementary occupations)					
Managers	9.208*** (1.300)	4.772** (1.601)	7.841*** (2.131)	18.95*** (1.207)	8.035*** (1.162)
Professionals	8.391*** (1.013)	2.211* (1.013)	6.187*** (1.783)	19.35*** (1.045)	7.125*** (0.948)
Technicians and associate professionals	5.815*** (0.880)	3.111*** (0.891)	7.640*** (1.527)	15.12*** (1.002)	7.611*** (0.822)
Clerical support workers	5.345*** (0.908)	2.091* (1.047)	4.794** (1.684)	10.61*** (1.111)	5.449*** (0.910)
Service and sales workers	3.466*** (0.888)	0.259 (0.841)	4.371** (1.632)	6.985*** (1.022)	3.891*** (0.821)
Skilled agricultural, forestry and fisheries workers	5.695** (2.114)	3.250 (2.538)	6.386* (2.914)	3.004 (3.999)	9.435*** (2.091)
Craft and related trades workers	2.806** (0.932)	2.321* (1.067)	2.317 (1.951)	7.480*** (1.016)	4.713*** (0.882)
Plant and machine operators, and assemblers	1.916 (1.098)	-0.172 (1.254)	-0.283 (1.909)	6.244*** (1.053)	2.430* (1.074)
<b>Constant</b>	68.46*** (1.031)	84.84*** (1.022)	70.22*** (1.741)	62.90*** (1.050)	75.67*** (0.955)
<b>Observations</b>	14849	10029	4461	14948	14181
<b>Adjusted R-squared</b>	0.014	0.008	0.013	0.104	0.024

**Note:** \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001. (f) Indicates that the categories "Part-time" and "Marginal work" are included under the same category. (j) Indicates that the categories "EU/EFTA" and "Non-EU/EFTA" were included under the same category. (l) Indicates that the coefficient is unreliable because of few observations, according to Eurostat guidelines. **na** Refers to coefficients that are not shown because of the low number of observations. The descriptive statistics of each sample can be found in Table D3 in the Appendix.

**Table 10: Full results of linear regression models in Figure 6. Difference in job satisfaction between permanent (ref.) and voluntary temporary with different contract durations, by country.**

	Denmark	Sweden	Italy	Norway	Finland	Czechia	Austria	Slovakia	Spain
	B	B	B	B	B	B	B	B	B
	(Robust SE)	(Robust SE)	(Robust SE)	(Robust SE)	(Robust SE)	(Robust SE)	(Robust SE)	(Robust SE)	(Robust SE)
<b>Age (ref: 35 to 44)</b>									
15 to 24	0.874 (0.892)	-0.151 (0.819)	1.847* (0.750)	1.008 (0.849)	3.311** (1.008)	-0.788 (0.858)	0.991 (0.774)	1.546 (1.383)	4.478*** (1.028)
25 to 34	0.290 (0.725)	-1.774*** (0.515)	0.383 (0.384)	-0.813 (0.600)	0.159 (0.684)	0.189 (0.519)	0.253 (0.569)	-1.209 (0.844)	0.450 (0.485)
45 to 54	-0.485 (0.650)	0.863 (0.451)	-0.130 (0.304)	1.992*** (0.543)	0.434 (0.627)	-0.583 (0.466)	0.920 (0.519)	0.159 (0.756)	-0.499 (0.379)
55 to 64	0.671 (0.665)	2.094*** (0.470)	-1.915*** (0.352)	2.525*** (0.593)	0.949 (0.677)	-0.975 (0.514)	1.749** (0.611)	0.606 (0.822)	0.975* (0.431)
<b>Gender (ref: Man)</b>									
Woman	0.367 (0.462)	-1.066** (0.350)	0.824** (0.282)	0.568 (0.429)	-0.432 (0.498)	-1.694*** (0.385)	2.031*** (0.459)	-3.988*** (0.624)	0.403 (0.339)
<b>Educational level</b>									
	-0.537** (0.176)	-0.505*** (0.132)	-0.633*** (0.0850)	-0.612*** (0.145)	-0.819*** (0.177)	0.372* (0.147)	-0.176 (0.156)	0.635** (0.214)	-0.344** (0.113)
<b>Working time (ref: Full-time)</b>									
Part-time	0.263 (0.694)	-1.970** (0.646)	-0.946** (0.323)	-1.054 (0.605)	0.473 (0.772)	1.457 (0.878)	0.431 (0.522)	5.297** (1.948)	-1.688*** (0.502)
Marginal work	1.466 (0.831)	-0.480 (1.246)	-7.735*** (1.148)	-2.146* (1.073)	3.355* (1.311)	5.612** (2.126)	2.156* (0.906)	-4.122 (4.593)	-6.806*** (1.151)
<b>Nationality (ref: Local)</b>									
EU/EFTA	-4.133* (1.720)	-2.809* (1.323)	0.773 (0.599)	-3.970*** (0.918)	0.317 (2.033)	-1.327 (1.504)	-3.423*** (0.741)	-	1.385 (1.107)
Non-EU/EFTA	-0.495 (1.755)	-5.159** (1.753)	-0.797 (0.467)	-2.401 (1.473)	2.996 (2.513)	0.491 (2.182)	-3.254*** (0.872)	-	-0.603 (1.053)
<b>Contract duration (ref: Permanent)</b>									
6 months or less	4.333* (1.706)	3.691** (1.277)	2.219 (2.458)	1.584 (3.369)	1.553 (1.492)	1.276 (3.434)	0.801 (1.840)	0.315 (4.242)	-0.384 (2.416)
Between 7 and 12 months	2.288 (2.144)	0.337 (2.221)	0.985 (2.887)	na	5.515* (2.654)	2.202 (1.842)	0.355 (1.703)	6.765* (3.373)	2.475 (4.480)
More than one year	-1.073 (1.514)	0.578 (1.621)	na	0.206 (3.280)	0.0647 (3.452)	-0.218 (1.843)	3.177* (1.614)	3.883 (4.899)	na

**Supervisory role (ref: No / DK)**

Yes 2.285\*\*\* (0.618) 1.110\*\* (0.360) 2.260\*\*\* (0.305) 1.222\*\* (0.436) 2.501\*\*\* (0.590) 2.402\*\*\* (0.512) 2.741\*\*\* (0.449) 3.054\*\* (0.948) 0.902\* (0.388)

**Occupation (ref: Elementary occupations)**

Managers 4.759\*\* (1.597) 8.130\*\*\* (1.203) 8.604\*\*\* (1.052) 6.480\*\*\* (1.391) 12.98\*\*\* (1.676) 14.01\*\*\* (1.227) 8.013\*\*\* (1.150) 23.09\*\*\* (2.037) 9.070\*\*\* (1.059)

Professionals 2.225\* (1.004) 5.960\*\*\* (1.151) 9.329\*\*\* (0.576) 4.607\*\*\* (1.324) 7.613\*\*\* (1.161) 15.33\*\*\* (1.027) 7.143\*\*\* (0.941) 22.02\*\*\* (1.652) 9.317\*\*\* (0.738)

Technicians and associate professionals 3.038\*\*\* (0.886) 4.907\*\*\* (1.097) 4.810\*\*\* (0.513) 4.404\*\*\* (1.298) 7.061\*\*\* (1.107) 11.66\*\*\* (0.909) 7.334\*\*\* (0.827) 17.78\*\*\* (1.513) 4.687\*\*\* (0.685)

Clerical support workers 2.054\* (1.045) 2.388 (1.232) 3.524\*\*\* (0.517) 2.913\* (1.421) 4.794\*\*\* (1.304) 9.059\*\*\* (0.970) 5.494\*\*\* (0.912) 14.60\*\*\* (0.671) 4.226\*\*\* (0.671)

Service and sales workers 0.149 (0.830) 0.758 (1.108) 2.732\*\*\* (0.484) 2.274 (1.271) 3.045\*\* (1.074) 5.625\*\*\* (0.943) 3.708\*\*\* (0.826) 8.924\*\*\* (1.492) 2.932\*\*\* (0.595)

Skilled agricultural, forestry and fisheries 4.578 (2.736) 0.375 (2.368) 3.955\*\* (1.489) 7.233\*\* (2.199) 6.150\* (2.488) 4.494\* (2.130) 8.574\*\*\* (2.111) 11.54\*\* (3.641) 2.413 (1.549)

Craft and related trades workers 2.613\* (1.109) 3.440\*\* (1.175) 3.124\*\*\* (0.528) 3.506\* (1.388) 4.285\*\*\* (1.178) 3.364\*\*\* (0.934) 4.389\*\*\* (0.890) 6.372\*\*\* (1.540) 2.649\*\*\* (0.705)

Plant and machine operators, and assemblers -0.382 (1.257) 1.625 (1.253) 1.538\*\* (0.596) 1.718 (1.460) 3.380\*\* (1.266) 0.264 (0.919) 2.562\* (1.071) 3.729\* (1.520) 0.144 (0.735)

**Constant** 84.91\*\*\* (1.021) 85.95\*\*\* (1.160) 81.63\*\*\* (0.520) 80.51\*\*\* (1.364) 71.17\*\*\* (1.245) 72.20\*\*\* (0.992) 75.67\*\*\* (0.950) 60.21\*\*\* (1.602) 77.43\*\*\* (0.658)

**Observations** 9963 15190 30515 10557 8448 13434 13969 6786 22178

**Adjusted R-squared** 0.006 0.020 0.019 0.016 0.017 0.084 0.022 0.105 0.020

	France B (Robust SE)	Portugal B (Robust SE)	UK B (Robust SE)	Belgium B (Robust SE)	Poland B (Robust SE)	Netherlands B (Robust SE)	Hungary B (Robust SE)
<b>Age (ref: 35 to 44)</b>							
15 to 24	1.537 (1.973)	2.284 (1.506)	0.0133 (0.629)	2.992*** (0.875)	0.224 (1.141)	2.131*** (0.469)	-2.242* (0.706)
25 to 34	-1.795 (1.121)	1.802* (0.708)	-0.785 (0.462)	-0.235 (0.511)	-0.0389 (0.499)	-0.166 (0.369)	-1.700*** (0.473)
45 to 54	-0.531 (0.940)	-0.927 (0.555)	0.824 (0.455)	-0.352 (0.481)	-0.446 (0.486)	0.0252 (0.327)	-0.657 (0.426)
55 to 64	-0.167 (1.114)	-2.153** (0.672)	1.310* (0.519)	-0.334 (0.565)	1.091* (0.514)	-0.140 (0.337)	-0.0325 (0.497)
<b>Gender (ref: Man)</b>							
Woman	-1.403 (0.822)	0.446 (0.492)	1.797*** (0.364)	-0.263 (0.418)	-2.035*** (0.399)	0.494 (0.273)	-2.372*** (0.361)
<b>Educational level</b>							
	-0.137 (0.287)	-1.240*** (0.176)	0.493*** (0.109)	-0.281* (0.130)	0.776*** (0.137)	0.0481 (0.0777)	1.052*** (0.171)
<b>Working time (ref: Full-time)</b>							
Part-time	0.737 (1.107)	-1.027 (1.190)	-1.627*** (0.450)	-0.755 (0.497)	1.777* (0.810)	-1.064*** (0.308)	-2.611** (0.918)
Marginal work	2.254 (2.681)	-7.478** (2.437)	1.386 (0.853)	1.432 (1.427)	-1.983 (2.670)	-1.289** (0.472)	2.386 (3.606)
<b>Nationality (ref: Local)</b>							
EU/EFTA	0.459 (2.739)	2.838 (2.711)	-1.427* (0.659)	-0.546 (0.678)	1.566 (j) (3.562)	-2.295* (0.924)	5.694 (3.357)
Non-EU/EFTA	-0.0445 (2.348)	3.259 (2.406)	-2.230* (0.903)	-6.430*** (1.450)	-	-3.000* (1.167)	-0.764 (6.938)
<b>Contract duration (ref: Permanent)</b>							
6 months or less	-0.834 (2.343)	-1.580 (2.859)	-1.933 (3.170)	-2.002 (1.740)	-2.091 (1.832)	-2.629 (1.369)	-7.339 (4.094)
Between 7 and 12 months	-1.967 (5.087)	0.911 (4.280)	-6.300 (4.685)	-2.558 (2.941)	-1.647 (1.308)	-0.935 (1.042)	-4.256 (2.774)
More than one year	9.846** (3.464)	na	-1.066 (3.982)	6.826** (2.642)	-1.126 (0.992)	3.803 (2.377)	3.300 (2.739)
<b>Supervisory role (ref: No / DK)</b>							
Yes	1.017	2.564***	1.412***	2.719***	1.992***	0.696*	3.023***

Occupation (ref: Elementary occupations)	(1.046)	(0.523)	(0.373)	(0.475)	(0.511)	(0.291)	(0.506)
Managers	8.608*** (2.111)	5.342*** (1.542)	10.89*** (0.834)	4.911*** (1.076)	19.45*** (1.178)	4.387*** (0.707)	15.51*** (1.100)
Professionals	7.106*** (1.778)	4.672*** (1.236)	9.674*** (0.773)	6.684*** (0.848)	19.79*** (1.015)	2.445*** (0.550)	16.81*** (0.970)
Technicians and associate professionals	8.411*** (1.522)	2.361* (0.989)	7.980*** (0.784)	4.996*** (0.816)	15.93*** (0.973)	2.420*** (0.531)	13.97*** (0.780)
Clerical support workers	5.012** (1.693)	-0.198 (1.059)	5.483*** (0.803)	4.616*** (0.804)	10.63*** (1.088)	1.984*** (0.557)	10.69*** (0.873)
Service and sales workers	4.979** (1.620)	0.190 (0.896)	5.248*** (0.734)	3.414*** (0.794)	7.524*** (0.986)	1.687*** (0.496)	9.120*** (0.768)
Skilled agricultural, forestry and fisheries	8.627** (2.908)	0.938 (1.943)	15.41*** (2.426)	3.139 (2.488)	5.615 (3.766)	3.180** (1.209)	5.350*** (1.299)
Craft and related trades workers	2.408 (1.961)	-0.367 (1.012)	7.356*** (0.922)	2.922*** (0.857)	8.343*** (0.991)	1.372* (0.609)	6.085*** (0.764)
Plant and machine operators, and assemblers	-0.330 (1.864)	0.0986 (1.045)	4.302*** (1.018)	2.837** (0.893)	6.574*** (1.027)	1.509* (0.717)	2.721*** (0.738)
<b>Constant</b>	70.22*** (1.726)	76.01*** (0.945)	64.46*** (0.801)	76.86*** (0.796)	62.52*** (1.026)	72.57*** (0.576)	67.39*** (0.838)
<b>Observations</b>	4477	10512	28223	14533	15048	26537	17757
<b>Adjusted R-squared</b>	0.014	0.010	0.022	0.014	0.108	0.005	0.095

**Note:** \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001. (j) Indicates that the categories "EU/EFTA" and "Non-EU/EFTA" were included under the same category. (l) Indicates that the coefficient is unreliable because of few observations, according to Eurostat guidelines. na Refers to coefficients that are not shown because of the low number of observations. The descriptive statistics of each sample can be found in Table D4 in the Appendix.





## **CHAPTER 2**

### **Are unions and the EPL to blame for outsiders' job dissatisfaction? A cross-European analysis of involuntary temporary workers**

#### **2.1 Introduction**

The previous chapter's findings illustrated that among temporary workers, it is mainly those who have a temporary job because they could not achieve a permanent position (the involuntary temporary workers) who have lower job satisfaction than permanent employees. Nonetheless, we observed that these job satisfaction differences presented a substantial cross-national variation; in some countries differences between these two groups were not significant and in others these differences were large. Our goal in this chapter is to analyse how institutional factors might explain the cross-national variation in job satisfaction gap between permanent and involuntary temporary workers, and their how they are related with involuntary temporary workers' job satisfaction. We follow previous studies in the field and analyse two labour market institutions that have succented a prolific debate in the academic literature concerning their consequences for permanent and temporary workers: the employment protection legislation (EPL) and labour unions. This debate is broadly represented by two opposed positions. Some argue that the effects of these two labour market institutions are positive for workers' employment opportunities and job quality, whereas others claim that they benefit some workers at the expense of the others. This second view is supported by theorists of labour market dualization (also called labour market segmentation theory or insider-outsider theory), who claim that the labour market is divided into two groups with opposing interests (Linbeck and Snower, 2002; Rueda, 2007b; Palier and Thelen, 2010): the insiders, who have secure positions and good quality jobs; and the outsiders, who must cope with job insecurity, labour market instability and poor job quality. Their findings have largely suggested that a strict EPL for permanent workers and strong labour unions benefit the insiders but harm the outsiders (Linbeck and Snower, 2002; Palier and Thelen, 2010). Other contributions added more complexity and nuances to the primary assumptions of the theory, showing that these institutions have dualizing effects only under particular conditions (e.g. Blanchard and Landier, 2002; Thelen, 2014). Although many of the assumptions of the labour market dualization theory have been strongly challenged, the social

comparison theory and the relative deprivation framework also give support to the dualizing consequences of these institutions. This literature, stemming from social and organizational psychology, suggests that better standards for the better off group (i.e. the insiders) could have negative impacts on those who are worse off (i.e. the outsiders) (Feldman and Turnley, 2004).

We contribute to this debate by analysing the non-pecuniary impacts of the EPL and labour unions, analysing job satisfaction as a measure of subjective job quality. The study of job satisfaction is relevant both from public policy and managerial perspectives. It is a measure of well-being at work associated with workers' physical and psychological well-being (Faragher et al., 2005; Bowling et al., 2010;), business outcomes (namely, productivity and customer satisfaction), as well as turnover behaviour (Clark, 2001; Harter et al., 2002; Böckerman and Ilmakunnas, 2009; Green, 2010). While our primary goal refers to the relative effects of the EPL and labour unions, our secondary goal is to understand their absolute impacts on involuntary temporary workers' well-being. The academic literature has generally explored the relative effects of labour market institutions on labour market outcomes, analysing how they affect inequalities between an advantaged group (e.g. permanent workers) and a disadvantaged one (e.g. involuntary temporary workers). We follow this approach, but we also explore the absolute effects of these institutions on the disadvantaged group. This allows us to understand if institutions increase (reduce) labour market inequalities between two groups because they improve (worsen) the standards of the better-off, or because they worsen (improve) the standard of the worse-off. Understanding the precise mechanisms why some institutions could widen or reduce labour market inequalities is crucial to design effective policies aimed at improving overall standards rather than only reducing inequalities.

Previous articles have studied the effects of labour market institutions on the job satisfaction of the overall workforce (e.g. Pichler and Wallace, 2009; Salvatori, 2010; Hipp, 2016), however this study is the first to explore the effects of labour market institutions on the job satisfaction of involuntary temporary workers across Europe. We consider this is a crucial distinction since the dualization theory points that unions and the EPL have negative consequences for temporary workers because they hamper temporary workers' opportunities of becoming permanent employees. Nonetheless, for voluntary temporary workers -and to a lesser extent, for certain instrumental temporary workers- the reduced opportunities of becoming permanent employees should not

necessarily have negative impacts on their job satisfaction. For this reason, we consider that our analyses can provide a better assessment of the effects on job satisfaction that labour unions and the employment protection legislation have among those temporary workers who aspire to become permanent employees. In doing so, our study contributes to the knowledge about the effects of labour market institutions and workers' well-being by exploring two questions: Are the EPL and unions detrimental for the occupational well-being of involuntary temporary workers? Do they increase or reduce inequalities in well-being between these involuntary temporary workers and permanent employees? We study this question by applying multilevel models matching individual observations from survey data with country-level data.

## **2.2 Literature review**

### ***How do labour market institutions affect job satisfaction?***

The EPL and labour unions are two labour market institutions that determine workers' objective job quality, especially their job security, wages, and working conditions. The EPL constitutes the set of norms and rules that regulate how workers are hired and fired. Traditionally it is measured on a yearly basis at the country level by the OECD, with an index for permanent contracts and another one for temporary ones. For permanent contracts, the EPL index reflects the regulations to dismiss permanent employees, where higher values indicate higher firing costs and restrictions and hence more employment protection. In practice, stricter EPL might mean that workers receive high severance pay, that they must be notified in advance before being fired, or that dismissals might be considered unfair in certain cases (see OECD, 2020 for more details). For temporary contracts, the index synthesizes hiring regulations. Higher values reflect stricter regulations and more requirements to hire workers on temporary contracts rather than on a permanent basis. These stricter regulations might imply that temporary agency work is not allowed, that workers can be hired on temporary contracts only in specific circumstances, or that there are limitations on the number of consecutive temporary contracts that a worker may have. Labour unions, on the other hand, are stakeholders involved in negotiating the material aspects of work and represent workers' interests in bargaining processes with employers and policymakers.

It is frequently argued that union strength and the EPL for permanent workers have negative consequences for temporary workers' job security and job quality, thus deepening the inequalities between both types of workers. Temporary positions

provide inherently lower job security than permanent ones, but also poorer job quality in general, such as fewer opportunities for training and advancement (Forrier and Sels, 2003; OECD, 2014; Eurofound, 2015; OECD, 2015) and lower autonomy and wages (Wagenaar et al., 2012; Westhoff, 2022). Because job quality and especially job security determine job satisfaction, the job dissatisfaction of temporary workers can be largely attributed to the poor quality and insecurity of their jobs (De Graaf-Zijl, 2005; Brown et al., 2012; Dawson et al., 2017). Consequently, if the EPL and unions feed inequalities in job security and job quality between permanent and temporary employees, these institutions could also be responsible for the difference in job satisfaction between permanent and involuntary temporary workers.

In addition to affecting job satisfaction due to their direct influence on job security and job quality, unions and the EPL could also moderate the association of job security and job quality with job satisfaction. This means that if these institutions boost (hinder) the negative effects of job insecurity and poor job quality on job satisfaction, they might also have negative (positive) consequences for workers' job satisfaction.

Nonetheless, the precise mechanisms behind these moderating effects are still unclear. This ambiguity stems from the uncertain interplay between job satisfaction and the three facets of job security described by Anderson and Pontusson (2007): (1) "affective job insecurity", that is, the extent to which a worker worries about a potential job loss; (2) "cognitive job insecurity" or a worker's estimation about the possibility of losing the job; and (3) "labour market insecurity" (sometimes also assessed as "employability" or "perceived employability"<sup>1</sup>), which refers to a worker's confidence in finding another (similar) job. Berglund et al. (2014) found that labour market security compensates the positive effects of cognitive job insecurity on affective job insecurity, or to put it more simply: individuals worry less about losing their job when they perceive that they can easily find another one. Other authors have also reported similar results. They observed that job insecurity has fewer negative consequences for the life satisfaction, health and well-being of those who perceive they have more chances of finding a job (Silla et al., 2009; Green, 2011; Otterbach and Sousa-Poza, 2016).

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<sup>1</sup> Rather than "labour market security" and "employability", other authors use the terms "perceived employability" or "employment security". For example, Kirves et al. (2011) assessed perceived employability with the item "Given my qualifications and experience, getting a new job would not be very hard at all". By contrast, Svetek (2020) assessed "employment security" with the question "How would you assess your possibilities of getting a new job if you lost your current job?" and De Cuyper et al. (2010b) measured "employability" with the question "What do you think would be the likelihood of you finding a new job?".

Although these findings suggest that labour market security could also mitigate the negative consequences of job insecurity on job satisfaction, Svetek's (2020) results do not support this assumption.<sup>2</sup> The evidence on the direct effect of employability on job satisfaction appears to be equally inconsistent. Whereas De Cuyper et al. (2010b) found the effect to be positive, De Cuyper et al. (2009) observed the opposite effect among temporary workers. This uncertainty about the relationships between job satisfaction and different facets of job insecurity raises a crucial question that cannot yet be answered: To what extent can institutions intensify or mitigate the negative effects of temporary jobs for workers' satisfaction?

Still, even if institutions had no effect on the job satisfaction of involuntary temporary workers, their effects on permanent employees could affect the job satisfaction of involuntary temporary workers too. Drawing on the social comparison theory and the relative deprivation framework, some authors have suggested that temporary workers might experience lower job satisfaction because they perceive themselves as disadvantaged compared to permanent employees (De Cuyper et al., 2008). A good example of how social comparison can undermine workers' well-being is that low-wage earners experience a decline in job satisfaction when they realise that their colleagues earn more than them (Petrescu and Simmons, 2008; Card et al., 2012). When involuntary temporary workers compare themselves with permanent employees, feelings of unfairness and deprivation can be triggered and negatively impact their well-being (Feldman and Turnley, 2004; De Cuyper et al., 2008). For this reason, involuntary temporary workers could be less satisfied with their jobs if their standards are notably lower than those of their peers with permanent jobs. This means that, even if labour market institutions had no consequences for outsiders' job security and job quality, their effects on insiders' job security and job quality could still impact outsiders' satisfaction too.

In summary, there are several possible mechanisms by which labour market institutions might affect job satisfaction, but many of them remain unknown. The following sections review the most relevant empirical and theoretical studies about the consequences that unions and the EPL have for the outsiders. Based on them we will

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<sup>2</sup> The moderating effects of employability on the negative association between job insecurity and well-being (and especially job satisfaction) are investigated in the fourth chapter of this thesis.

formulate hypotheses to explore the effects of these institutions for outsiders' job satisfaction.

### ***Employment Protection Legislation***

According to the dualization framework, when the EPL for permanent contracts is high, insiders gain in terms of job security, but outsiders face more obstacles to achieve a permanent position (Bentolila and Dolado, 1994; Polavieja, 2003). The theory posits that when it is more difficult and costly to fire permanent employees, employers are less likely to hire workers, leading to higher unemployment rates (Bentolila and Dolado, 1994; Polavieja, 2003). Also, to avoid the strict dismissal protection and high firing costs that permanent contracts involve, employers tend to rely more on temporary arrangements. Compared to permanent contracts, temporary ones allow employers to adapt more quickly to changes in demand without incurring in high dismissals costs (Polavieja, 2006). More employment protection for permanent contracts grants greater job security for permanent employees but should also cause higher rates of unemployment and temporary employment, leading to more job and labour market insecurity among the non-permanent workforce.

The consequences of the EPL on temporary workers' job satisfaction are still unclear. In a cross-national analysis, Salvatori (2010) reported that temporary workers are more satisfied with their jobs in countries with a stricter EPL. Conversely, studies analysing samples of permanent and temporary workers together found that the associations between EPL and job security were non-significant (Erlinghagen, 2007; Esser and Olsen, 2012; Lübke and Erlinghagen, 2014; Berglund; 2015; Hipp, 2016) or negative (Clark and Postel-Vinay, 2009). Other studies partially confirmed that the EPL has unequal effects for permanent and temporary workers. Berglund (2015) observed that the EPL contributed to widening the job security gap between permanent and temporary workers, and Chung (2016) and Chung and van Oorschot (2011) found the same effect for labour market security. However, this occurred because a stricter EPL entailed more job security for permanent workers, without being negatively related with the job security of temporary ones (Chung, 2016). Following the dualization theory and the relative deprivation framework, we test the following hypotheses:

(H1a) The EPL for permanent contracts is associated with a larger difference in job satisfaction between permanent and involuntary temporary workers.

(H1b) The EPL for permanent contracts is negatively associated with involuntary temporary workers' job satisfaction.

Other studies suggest that the high dismissal costs for permanent workers only have pernicious consequences for temporary workers when restrictions for hiring workers on temporary contracts are low (Blanchard and Landier, 2002; Cahuc and Postel-Vinay, 2002). This situation, in which dismissal protection for permanent workers remains high while restrictions on the use of temporary contracts are relaxed, is commonly known as “partial reform” or “partial deregulation”. Because this incentivizes temporary hirings and hinders permanent ones, employers tend to substitute part of their permanent workforce with temporary employees (Blanchard and Landier, 2002; Kahn, 2010). According to Noeke (2016), these reforms also lead to higher youth unemployment rates. Likewise, Gebel and Giesecke (2016) concluded that these reforms increase the risk of temporary jobs among young workers, without reducing their risk of unemployment. Following the same argument, other authors studied the EPL gap for permanent and temporary contracts, that is, the flexibility of hiring regulations for temporary workers with respect to the strictness of protection against dismissals for permanent employees. Barbieri and Cutuli (2016) observed that permanent positions became scarcer after reforms that expanded the EPL gap. Berglund et al. (2021) equally concluded that widening the EPL gap between permanent and temporary contracts in Sweden reduced transitions from temporary to permanent positions. Following the dualization theory and the relative deprivation framework, we hypothesize that:

(H2a) The EPL gap is associated with a larger difference in job satisfaction between permanent and involuntary temporary workers.

(H2b) The EPL gap is negatively associated with involuntary temporary workers' job satisfaction.

### ***Labour unions***

According to the dualization scholars, labour unions also contribute to exacerbating job inequalities between insiders and outsiders (Lindbeck and Snower, 2002; Saint-Paul, 2002). Unions represent workers' interests in bargaining processes with employers and lawmakers. The agreements they reach generally affect all workers, regardless of whether they are union members or not. The reason why labour unions can widen inequalities between insiders and outsiders is because they only represent the



interests of their own members, who are mostly permanent employees with full-time jobs (Lindbeck and Snower, 2002; Rueda, 2007b; Emmenegger et al., 2012a). Hence, some authors have observed that to maintain or improve the employment protection and working conditions of insiders, unions accept more flexibility and poorer working conditions for outsiders (Palier and Thelen, 2010). Besides protecting insiders at the expense of outsiders, union corporatism is claimed to indirectly impair the job opportunities and labour market stability of non-permanent workers. Since unions' demands impose higher labour costs on permanent employees, employers avoid permanent hires and opt for temporary ones (Polavieja, 2003). As a result, when unions have more power to affect material job quality through negotiations with employers and policymakers, temporary workers face poorer job quality and more barriers to obtain permanent contracts.

While these theoretical assumptions imply that union strength has negative consequences for outsiders' job satisfaction, the evidence generally points in the opposite direction. Hipp and Givan's (2015) cross-national analyses of job satisfaction show that both unionized and non-unionized workers are more satisfied with their jobs when collective bargaining coverage is higher. Stasiowski and Kłobuszewska (2018) also observed that the negative association between temporary employment and job satisfaction is weaker in countries with stronger unions. Similarly, Chung's (2016) cross-national analysis did not find a negative association between union strength and the labour market security of temporary workers. The gap between permanent and temporary workers was larger in countries with higher rates of collective bargaining coverage and union density, in line with the dualization assumptions. However, this occurred because permanent workers reported greater labour market security in countries where these institutions were stronger. According to the dualization assumptions and the social deprivation framework, we test the following hypotheses:

(H3a) Union strength is associated with a greater difference in job satisfaction between permanent and involuntary temporary workers.

(H3b) Union strength is negatively associated with involuntary temporary workers' job satisfaction.

Other authors have argued that unions do not systematically act against outsiders' interests, which might explain the above findings. This has been acknowledged in part of the dualization literature (e.g. Emmenegger et al., 2012a; Thelen, 2014), but it is the

industrial relations literature which more frequently notes that unions benefit outsiders too. Carver and Doellgast (2020) analysed multiple cases of unions' behaviour and strategies towards peripheral workers in Europe. They reported that unions usually bargained in favour of outsiders, even if dualization strategies existed in some cases. Similarly, Benassi and Vlandas (2021) found only partial support for the dualization hypothesis in their analysis of the effects of unions on wages in Germany. The authors found that in sectors with high union density, non-unionized members had a greater risk of earning a low wage, but the risk of low pay was smaller in sectors with high collective bargaining coverage, even for workers not covered by these agreements. Other analyses of collective bargaining processes have even suggested that unions do not have negative effects on temporary workers' job and labour market security. For example, unions sometimes promote regulations and agreements which facilitate converting fixed-term and temporary agency workers into permanent employees. These bargaining processes have been observed in several industry sectors in a variety of countries, such as Belgium (Pulignano et al., 2020), Croatia (Butkovič et al., 2016), Greece (Koukiadaki and Kokkinou, 2016), Poland (Mrozowicki et al., 2018), Sweden (Doellgast, 2016), Germany and Italy (Benassi and Dorigatti, 2018). What we do not know is whether these encompassing strategies towards the outsiders are the norm or the exception.

Part of the literature suggests that inclusiveness is one of the key factors that determines if unions adopt encompassing rather than dualizing strategies towards outsiders (Obinger et al., 2012; Thelen, 2014; Vlandas, 2018). Because unions defend the interests of their constituency, it is argued that they are more likely to bargain in favour of outsiders when these workers represent a larger share of the union members. This would partly explain, for example, why temporary and permanent workers in the Nordic countries enjoy similar levels of protection and working conditions, in contrast to what occurs in the Continental European countries (Häusermann and Schawnder, 2012). It should be noted that the mechanism by which union inclusiveness leads to better outcomes for outsiders is self-reinforcing, since unions also work in favour of the outsiders to incentivize them to join the union (Doellgast et al., 2018). According to these arguments, we hypothesize that:

(H4a) Union inclusiveness is associated with a smaller difference in job satisfaction between permanent and involuntary temporary workers.

(H4b) Union inclusiveness is positively associated with involuntary temporary workers' job satisfaction.

## 2.3 Data and methods

### *Sample characteristics*

As in the previous chapter, the analyses rely on data from the ad-hoc module of the 2017 European Labour Force Survey. This cross-sectional dataset is the only one that contains cross-national information about job satisfaction and the reason why workers have a temporary job, thus allowing us to identify involuntary temporary workers. Because some countries had a small sample of involuntary temporary workers, the analyses only include observations from 27 countries: Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Germany, Denmark, Estonia, Spain, Finland, France, Greece, Hungary, Ireland, Italy, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Sweden, Switzerland, the Slovak Republic, and the UK. Moreover, some analyses are only carried out in 23 countries due to the unavailability of the independent variables (see below for more details). Our sample was composed of employees (this is, excluding self-employed workers and family workers), who are between 15 and 64 years old, who do not have an occupation as armed forces (this group of workers is very small and they tend to have specific working conditions), who reside and work in the same country (workers who do not fall under this category might be subject to different institutional regulations), and who do not devote more than 10 hours per week to a second job.<sup>3</sup>

In addition, we discarded those observations presenting missing values for the dependent variable, independent variables, control variables, as well as those with missings in filters or variables that derived control variables. Hence, observations with missing values for the next variables were excluded: proxy interview (whether the questionnaire was answered by the worker or the workers' relatives), job satisfaction, professional status, type of work contract (permanent or involuntary temporary), occupation, education, nationality, working time, number of hours worked in the second job (among those with a second job), duration of temporary contract (observations with

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<sup>3</sup> As in Chapter 1, we opt for not including workers who have a second job that provides a relevant source of income. We considered that workers with a second job might be less negatively affected by having an insecure job if this second job constitutes a relevant source of income. Whereas the threshold of *10 hours per week* might seem arbitrary, it allows us to reduce this source of bias without losing many observations.

missing values for this variable were only discarded when contract duration was used as a control variable). This selection of observations unavoidably induced some bias, mostly due to the different methodological regulations that apply across countries. As a result, in Italy or Spain very few observations are discarded because of the low number of missing cases, whereas in Switzerland or the UK the loss of observations is considerably larger. The combined full sample of permanent and involuntary temporary workers contains 362,233 observations (331,940 permanent and 30,293 involuntary temporary employees). The analyses involving involuntary temporary workers alone are performed using a smaller sample (ranging between 25,282 and 24,176 observations, depending on the analysis) due to the inclusion of an additional control variable (duration of temporary contract) that contains missing cases.<sup>4</sup> In Table 17 and Table 18 (in the Supplementary Tables section, at the end of this chapter) we compare the descriptive statistics of the original sample and the analytical sample, demonstrating that none of the different categories is notably over or underrepresented.

### ***Independent (macro-level) variables***

The EPL indexes for permanent and temporary workers, which are country-level variables, are obtained from the OECD database<sup>5</sup> for the year 2016, allowing a 1-year lag with respect to the measurement of job satisfaction (see Barbieri and Cutuli, 2016). Given that the OECD provides several versions of the EPL indicators based on different methodologies, we used the first version (V1) and the last version (V4) as they differ the most. To calculate the EPL gap, we followed Barbieri and Cutuli (2016) and subtracted the EPL index for temporary workers from the EPL index for permanent contracts. Observations from Bulgaria, Cyprus, Malta, and Romania were excluded from the analyses involving the EPL as the OECD does not provide the EPL indicator for these countries. Inevitably, this induced some bias in the analyses, given that these countries share a common set of characteristics (such as a low GDP).

To assess union strength, we used union density and collective bargaining coverage in different models, in line with similar studies in the field (see Hipp and Givan, 2015; Chung, 2016). These variables were obtained at the country level from the ICTWSS

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<sup>4</sup> These missing cases can be attributed to recall bias, but in some countries the duration of certain temporary job contracts might be undetermined.

<sup>5</sup> See: [https://stats.oecd.org/Index.aspx?DataSetCode=EPL\\_OV](https://stats.oecd.org/Index.aspx?DataSetCode=EPL_OV)

database (Visser, 2019). In most cases union density and collective bargaining coverage are available for 2016, but in other cases only previous years were available.

**Table 1: Values of independent macro variables by country**

	<b>EPL for permanent contracts (V1)</b>	<b>EPL for permanent contracts (V4)</b>	<b>EPL-gap (V1)</b>	<b>EPL-gap (V4)</b>
<b>Austria</b>	2.29	1.8	0.978	0.3299999
<b>Belgium</b>	2.07	2.67	0.008	0.7500001
<b>Bulgaria</b>	.	.	.	.
<b>Switzerland</b>	1.43	1.61	0.18	0.45
<b>Cyprus</b>	.	.	.	.
<b>Czech Republic</b>	3.26	3.03	1.823	1.02
<b>Germany</b>	2.6	2.33	1.475	0.77
<b>Denmark</b>	1.53	1.94	-0.095	0.34
<b>Estonia</b>	1.81	1.93	-1.19	-0.5600001
<b>Spain</b>	1.96	2.39	-0.508	-0.0699999
<b>Finland</b>	2.08	2.52	0.518	0.9
<b>France</b>	2.5	2.81	-0.5	0.21
<b>Greece</b>	2.45	2.59	0.2	0.26
<b>Hungary</b>	1.59	1.77	0.34	0.17
<b>Ireland</b>	1.23	2.13	0.605	1.27
<b>Italy</b>	2.47	2.83	0.845	0.8699999
<b>Lithuania</b>	2.63	2.63	0.255	0
<b>Luxembourg</b>	2.14	2.54	-1.61	-1.02
<b>Malta</b>	.	.	.	.
<b>Netherlands</b>	3.44	2.79	2.253	1.33
<b>Norway</b>	2.33	2.37	-0.17	-0.0200002
<b>Poland</b>	2.33	2.39	0.705	0.6200001
<b>Portugal</b>	3.14	2.87	1.203	0.5799999
<b>Romania</b>	.	.	.	.
<b>Sweden</b>	2.45	2.54	1.638	0.99
<b>Slovak Republic</b>	2.51	2.33	0.26	0.0899999
<b>United Kingdom</b>	1.35	1.9	0.975	1.49

**(continued)**

	<b>Union density</b>	<b>Collective bargaining coverage</b>	<b>Inclusiveness</b>
<b>Austria</b>	26.92521	98	0.059524
<b>Belgium</b>	52.84424	96	0.085350
<b>Bulgaria</b>	13.87928	22.90406	0.015248
<b>Switzerland</b>	17.63341	57.90305	0.069937

<b>Cyprus</b>	43.73455	43.73455	0.100755
<b>Czech Republic</b>	12.00972	30.37926	0.051043
<b>Germany</b>	16.99061	56	0.080109
<b>Denmark</b>	67.09079	82	0.108236
<b>Estonia</b>	4.43885	18.56061	0.046963
<b>Spain</b>	14.7895	83.64578	0.080626
<b>Finland</b>	64.57751	89.31519	0.146065
<b>France</b>	7.881591	98.45747	0.036023
<b>Greece</b>	20.23755	25.45765	0.052611
<b>Hungary</b>	8.503127	22.79712	0.014963
<b>Ireland</b>	25.50798	32.45391	0.078541
<b>Italy</b>	34.36658	80	0.114357
<b>Lithuania</b>	7.694248	7.05	0.003688
<b>Luxembourg</b>	32.25076	59	.
<b>Malta</b>	51.70776	48.13559	.
<b>Netherlands</b>	17.32406	78.56878	0.128532
<b>Norway</b>	50.90011	72.5	0.053994
<b>Poland</b>	12.31666	17.15899	0.124431
<b>Portugal</b>	15.30582	73.86876	0.109391
<b>Romania</b>	19.16583	23	0.006984
<b>Sweden</b>	62.44355	90	0.095409
<b>Slovak Republic</b>	10.67771	25.01068	0.077679
<b>United Kingdom</b>	23.7155	26.3	0.031623

To measure union inclusiveness, previous studies have also relied on union density (e.g. Vlandas, 2018); the same variable that is used to capture union strength. Because this approach has obvious limitations, we elaborated a different indicator. We estimated the share of unionized workers with a temporary contract. This variable was calculated based on the number of permanent and temporary workers (provided by Eurostat), the union density among permanent workers, and the union density among temporary workers for each country (both extracted from the ICTWSS database). For most countries the indicator refers to the year 2016, and for some it takes the most recent year between 2012 and 2016 in the case of missing values. The variable takes the value of year 2008 only for Romania, while Luxembourg and Malta have not been included in the analysis due to the lack of more recent data. The exact value of all the macro-variables by country are provided in Table 1.

Even though the small number of countries can significantly limit the power of our analyses, we consider that some macro-level confounders that should be accounted for. For example, countries with strong union density also tend to have more generous welfare provisions, and both might be caused by certain collective egalitarian beliefs

about redistribution, which could also reduce inequalities between socio-demographic groups.<sup>6</sup> Countries with higher unemployment rates tend to have stricter rules for

**Table 2: Values of control macro variables by country**

	<b>Investment in LMP</b>	<b>Euro per capita</b>	<b>Labour market slack</b>
<b>Austria</b>	104.5838	41990	13.1
<b>Belgium</b>	128.2925	39120	13.5
<b>Bulgaria</b>	.	.	.
<b>Switzerland</b>	69.0923	73830	16.2
<b>Cyprus</b>	.	.	.
<b>Czech Republic</b>	46.9464	18330	4.2
<b>Germany</b>	110.8341	39440	9.1
<b>Denmark</b>	137.7247	51140	12.6
<b>Estonia</b>	29.1019	18130	10.9
<b>Spain</b>	51.4327	24970	26.6
<b>Finland</b>	101.0227	41080	18.4
<b>France</b>	135.5486	34250	17.8
<b>Greece</b>	12.0518	16470	29.2
<b>Hungary</b>	47.103	12960	7.5
<b>Ireland</b>	98.7603	62550	13.9
<b>Italy</b>	40.7061	28690	23.3
<b>Lithuania</b>	23.7877	14950	9.9
<b>Luxembourg</b>	123.1088	95170	12.7
<b>Malta</b>	.	.	.
<b>Netherlands</b>	139.3137	43090	13.9
<b>Norway</b>	82.6378	66950	9.6
<b>Poland</b>	21.635	12170	9.1
<b>Portugal</b>	41.6075	19020	16.7
<b>Romania</b>	.	.	.
<b>Sweden</b>	97.0951	47730	13.2
<b>Slovak Republic</b>	19.6297	15540	12.1
<b>United Kingdom</b>	.	35730	11.4

dismissing permanent workers. For this reason, we ran additional models introducing three macro-variables as confounders. First, we accounted for cross-national differences in living standards by controlling for *Euro per capita* (obtained from the Eurostat database). Second, we accounted for labour demand by controlling for *labour*

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<sup>6</sup> In this particular example, generous welfare provisions would only affect our dependent variable (job satisfaction), but not the independent one (union strength). However, controlling for generosity of welfare provisions can block the influence of the (unobserved) confounder *collective beliefs about redistribution* (see Cinelli et al., 2022)

*market slack*<sup>7</sup> (obtained from the Eurostat database). Third, we accounted for the generosity of the employment programmes – which might reduce job insecurity concerns – by controlling for *investment in labour programmes (LMP's) as hundreds of euros per person wanting to work* (obtained from the European Commission database). In Table 2 we provide the specific values of these variables for each country.

### ***Individual-level variables and methods***

As in the previous chapter, the dependent variable, *job satisfaction*, is originally coded using a 4-point Likert scale, but it is transformed to simulate a continuous variable to facilitate the interpretation of the results: the category “not satisfied at all” is coded as 0 and the category “satisfied to a large extent” is coded with the value 100. The intermediate categories “satisfied to a small extent” and “satisfied to some extent” are coded with the values 33.33 and 66.66, respectively.

To analyse the association of country-level variables with individuals' job satisfaction, we applied multilevel models, which allow accounting for the nested structure of the data (i.e. individuals within countries). Whereas multilevel modelling can be performed following different techniques, we follow Following Heisig et al. (2017) and use mixed models due to their highest performance. First, to test the association of the independent macro-level variables with the job satisfaction gap between permanent and involuntary temporary workers, introduced a cross-level interaction between the individual-level predictor (the dichotomous variable *permanent vs. involuntary temporary worker*) and the macro (i.e. country-level) predictor. In the models including macro-level control variables, we also introduced a cross-level interaction between the macro-level confounder and the individual-level predictor (i.e the variable *permanent vs. involuntary temporary worker*), as the assumption is that the effects of the control variables are conditional on the kind of contract. Following Heisig and Schaeffer (2019), we always included a random slope for the level-1 variable involved in the cross-level interaction (i.e. the variable *permanent vs. involuntary temporary worker*). Because the number of clusters is low, the mixed models are estimated using Restricted Maximum Likelihood rather than Maximum Likelihood (see Elff et al., 2020). In addition to macro-level control variables, these models also included individual level

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<sup>7</sup> Although the unemployment rate is more frequently used to control for labour demand, we consider the labour market slack as a superior alternative as it also includes long-term unemployed and involuntary part-timers.



variables, which might confound the association between the independent predictors and the dependent variables. These individual-level confounders are *gender*, *age* (in intervals), *education* (as a continuous variable, from 0 to 8, following the ISCED 2011 scale), *supervisory role* (*yes* vs. *no* and *does not know*), *working time* (*full-time*, *part-time*, or *marginal work*<sup>8</sup>), *nationality* (*native* or *foreigner*), and *occupation* (ISCO-08, 1-digit). Temporary agency work is not included as a control variable due to the few temporary agency workers in the sample.

To test the associations between the macro-level independent variables and the job satisfaction of involuntary temporary workers, we ran mixed models too. These models also included individual-level confounders mentioned above – except for *nationality* (due to few observations) –, in addition to the *duration of the involuntary temporary contract*. We include this variable as we observed in the previous chapter that contract duration might affect involuntary temporary workers' job satisfaction. Whereas in this case the absence of a cross-level interaction did not require to introduce a random slope, we followed Heisig et al. (2017) and opted for introducing individual-level confounders as random slopes to improve the accuracy of our estimates. According to Heisig et al. (2017), not allowing the level-1 coefficients to vary across clusters leads to biased estimates, but introducing all of them as random slopes also leads to the same problem. For this reason, the authors developed a guideline following a method developed by Bates et al. (2015) to select the level-1 variables that should be allowed to have cluster-varying coefficients. With this method the selection of random slopes is based on technical criteria – namely changes in the BIC and results from principal components analyses – following an iterative procedure (see Heisig et al., 2017 for more details).<sup>9</sup> As a result of this procedure, the variables that are allowed to have cluster-varying coefficients are not the same for each model. Once again, due to the low number of clusters, we estimated these mixed models using Restricted Maximum Likelihood rather than Maximum Likelihood (Elff et al., 2020). In the tables below (3a-4) we present the analytical samples of the models including permanent and

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<sup>8</sup> For a detailed explanation of the codification of this variable, refer to the Measurements and methods section in Chapter 1.

<sup>9</sup> Unfortunately, this process could not be applied with the sample that included both permanent and involuntary temporary workers as the large sample size requires strong computational power. Heisig et al. (2017) also recommend estimating standard errors using non-parametric cluster bootstrap, but this technique is not applied here due to computational limitations. Instead, we report the analytic confidence intervals, which tend to show anticonservative standard errors.

involuntary temporary workers, as well as involuntary temporary workers alone, for each macro-variable.

**Table 3a: Descriptive statistics of sample of permanent and involuntary temporary workers in models including *EPL for permanent contracts (V1)*, *EPL for permanent contracts (V4)*, *EPL-gap (V1)* and *EPL-gap (V4)* as macro-level variables.**

	<b>Total sample</b>	<b>Permanent workers</b>	<b>Involuntary temporary workers</b>
	Percentage/ Mean ( <i>SD</i> )	Percentage/ Mean ( <i>SD</i> )	Percentage/ Mean ( <i>SD</i> )
<b>Job satisfaction</b>	78.62 (23.06)	79.17 (22.68)	73.11 (26.05)
<b>Age</b>			
15 to 24	7.07	6.13	16.69
25 to 34	19.46	18.58	28.49
35 to 44	25.86	26.03	24.11
45 to 54	28.32	29.16	19.81
55 to 64	19.28	20.10	10.91
<b>Gender</b>			
Man	49.78	50.02	47.37
Woman	50.22	49.98	52.63
<b>Education</b>	4.00 (1.85)	4.04 (1.84)	3.57 (1.87)
<b>Working time</b>			
Full-time	80.43	81.36	70.88
Part-time	15.83	15.19	22.40
Marginal work	3.74	3.45	6.72
<b>Nationality</b>			
Native	93.05	93.24	91.13
Foreigner	6.95	6.76	8.87
<b>Supervisory role</b>			
No	76.91	75.36	92.72
Yes	23.09	24.64	7.28
<b>Occupation</b>			
Managers	5.09	5.51	0.85
Professionals	21.02	21.62	14.95
Technicians and associate professionals	16.24	16.94	9.03
Clerks	10.70	10.88	8.87
Service and sales workers	17.28	16.82	21.93

Skilled agricultural, forestry and fishery	0.94	0.86	1.80
Craft and related trades workers	10.50	10.49	10.58
Plant and machine operators and assemblers	8.40	8.35	8.95
Elementary occupations	9.82	8.53	23.03
n (individuals)	326,260	297,131	29,129
N (countries)	23	23	23

**Table 3b: Descriptive statistics of sample of permanent and involuntary temporary workers in models including *Union density* and *Collective bargaining coverage*.**

	<b>Total sample</b>	<b>Permanent workers</b>	<b>Involuntary temporary workers</b>
	Percentage/ Mean ( <i>SD</i> )	Percentage/ Mean ( <i>SD</i> )	Percentage/ Mean ( <i>SD</i> )
<b>Job satisfaction</b>	78.24 (23.07)	78.73 (22.69)	72.84 (26.30)
<b>Age</b>			
15 to 24	6.93	6.06	16.52
25 to 34	19.57	18.76	28.39
35 to 44	26.12	26.30	24.15
45 to 54	28.32	29.10	19.85
55 to 64	19.06	19.79	11.09
<b>Gender</b>			
Man	50.08	50.34	47.27
Woman	49.92	49.66	52.73
<b>Education</b>	3.99 (1.84)	4.03 (1.83)	3.55 (1.87)
<b>Working time</b>			
Full-time	81.96	82.93	71.31
Part-time	14.64	13.95	22.17
Marginal work	3.40	3.12	6.52
<b>Nationality</b>			
Native	93.49	93.76	90.51
Foreigner	6.51	6.24	9.49
<b>Supervisory role</b>			
No	77.91	76.55	92.77
Yes	22.09	23.45	7.23
<b>Occupation</b>			
Managers	4.91	5.28	0.86

Professionals	20.70	21.25	14.73
Technicians and associate professionals	15.61	16.23	8.82
Clerks	10.43	10.58	8.79
Service and sales workers	17.54	17.14	21.84
Skilled agricultural, forestry and fishery	0.94	0.85	1.88
Craft and related trades workers	11.07	11.13	10.46
Plant and machine operators and assemblers	8.92	8.94	8.72
Elementary occupations	9.88	8.60	23.89
n (individuals)	362,233	331,940	30,293
N (countries)	27	27	27

**Table 3c: Descriptive statistics of sample of permanent and involuntary temporary workers in models including *Inclusiveness*.**

	<b>Total sample</b>	<b>Permanent workers</b>	<b>Involuntary temporary workers</b>
	Percentage/ Mean (SD)	Percentage/ Mean (SD)	Percentage/ Mean (SD)
<b>Job satisfaction</b>	78.17 (23.04)	78.67 (22.65)	72.78 (26.31)
<b>Age</b>			
15 to 24	6.87	5.98	16.41
25 to 34	19.50	18.68	28.39
35 to 44	26.12	26.29	24.21
45 to 54	28.37	29.16	19.89
55 to 64	19.14	19.89	11.10
<b>Gender</b>			
Man	49.99	50.24	47.23
Woman	50.01	49.76	52.77
<b>Education</b>	3.99 (1.84)	4.03 (1.83)	3.55 (1.87)
<b>Working time</b>			
Full-time	81.95	82.94	71.26
Part-time	14.62	13.92	22.20
Marginal work	3.43	3.14	6.55
<b>Nationality</b>			
Native	93.71	93.99	90.66
Foreigner	6.29	6.01	9.34
<b>Supervisory role</b>			

No	78.17	76.81	92.88
Yes	21.83	23.19	7.12
<b>Occupation</b>			
Managers	4.89	5.26	0.85
Professionals	20.63	21.18	14.63
Technicians and associate professionals	15.57	16.20	8.81
Clerks	10.40	10.55	8.74
Service and sales workers	17.56	17.16	21.87
Skilled agricultural, forestry and fishery	0.94	0.86	1.89
Craft and related trades workers	11.14	11.20	10.49
Plant and machine operators and assemblers	8.98	9.00	8.75
Elementary occupations	9.89	8.58	23.97
n (individuals)	355,114	325,080	30,034
N (countries)	25	25	25

**Table 4: Descriptive statistics of sample of involuntary temporary workers, by macro-variable.**

	EPL for permanent contracts (V1) EPL for permanent contracts (V4) EPL-gap (V1) EPL-gap (V4)	Union density Collective bargaining coverage	Inclusiveness
	Percentage/ Mean (SD)	Percentage/ Mean (SD)	Percentage/ Mean (SD)
<b>Job satisfaction</b>	72.97 (26.23)	72.71 (26.48)	72.64 (26.50)
<b>Age</b>	37.35 (12.18)	37.45 (12.20)	37.49 (12.18)
<b>Gender</b>			
Man	46.37	46.25	46.18
Woman	53.63	53.75	53.82
<b>Education</b>	3.61 (1.87)	3.59 (1.87)	3.59 (1.86)
<b>Working time</b>			
Full-time	71.91	72.38	72.32
Part-time	21.84	21.59	21.62
Marginal work	6.25	6.03	6.06
<b>Supervisory role</b>			
No	92.43	92.49	92.62

Yes	7.57	7.51	7.38
<b>Occupation</b>			
Managers and professionals	16.44	16.19	16.06
Technicians and associate professionals	9.36	9.11	9.10
Clerks	9.10	9.00	8.95
Service and sales workers	21.64	21.55	21.58
Skilled agricultural & craft and related trades	11.58	11.56	11.60
Plant and machine operators and assemblers	9.00	8.75	8.78
Elementary occupations	22.88	23.84	23.92
<b>Contract duration</b>			
Up to 6 months	40.68	40.52	40.66
6-12 months	38.91	38.92	39.00
> 1 year	20.40	20.55	20.34
n (individuals)	24176	25282	25024
N (countries)	23	27	25

## 2.4 Results

### ***Employment protection legislation***

The left column of Table 5 shows the association of each macro independent variable with the dummy variable *permanent vs. involuntary temporary worker*. The interaction with the EPL for permanent workers (version 1 of the index) is positive ( $\beta = 0.042$ ), suggesting that the job satisfaction gap is smaller in countries with a stricter EPL, although the association is not significant. The right column of Table 5 shows the association between the macro variable and the job satisfaction of the involuntary temporary workers. In this case, the association is negative ( $\beta = -0.016$ ) but not significant. All these results remain unaltered when euro per capita and labour market slack are included in the models as country-level controls (see results in Table 8 of the Supplementary Tables section at the end of this chapter). Table 5 also displays the results for the fourth version of the EPL index for permanent contracts. The results are similar to those using the first version of the indicator.

Next, we observe the results for the EPL gap (version 1 of the index) between permanent and temporary contracts. Positive values of the EPL gap indicate that the

EPL for permanent contracts is higher than the EPL for temporary contracts, which generally reflects a situation of partial deregulation. The results for this variable show that the cross-level interaction is not significant and presents a small coefficient ( $\beta = 0.001$ ). The association between the EPL gap and the job satisfaction of involuntary temporary workers is not significant either ( $\beta = -0.016$ ). Table 5 also shows that the

**Table 5: Estimates from mixed-effects models in different samples of permanent and involuntary temporary workers. Associations of different independent macro variables with job satisfaction**

Macro variable	Sample of permanent and involuntary temporary workers	Sample of involuntary temporary workers
	Cross-level interaction (involuntary temporary * macro variable)	Coefficient of macro variable
EPL for permanent contracts (V1)	0.042 (0.06)	-0.016 (0.04)
EPL for permanent contracts (V4)	0.088 (0.058)	0.004 (0.042)
EPL gap (permanent - temporary contracts, V1)	0.001 (0.062)	-0.016 (0.041)
EPL gap (permanent - temporary contracts, V4)	0.030 (0.062)	-0.001 (0.043)
Level-1 N of models above	326,260	24,176
Level-2 N of models above	23	23
Union density	0.174 ** (0.054)	0.111 ** (0.037)
Collective bargaining coverage	0.217 *** (0.047)	0.094 * (0.042)
Level-1 N of models above	362,233	25,282
Level-2 N of models above	27	27
Union inclusiveness	0.202 *** (0.053)	0.075 (*) (0.044)
Level-1 N of models above	355,114	25,024
Level-2 N of models above	25	25

**Notes:** (\*)  $p < 0.10$ ,  $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ . Standard errors in parentheses. All the continuous micro and macro variables are z-standardized, while the categorical and dichotomous variables were transformed applying weighted effect coding. Full results are available in the in Table 13 and Table 14 of the Supplementary Tables section at the end of this chapter.

same results are obtained when using the fourth version of the EPL indicator (rather than the first one) to calculate the EPL gap. As shown by the models in Table 9 (see the Supplementary Tables section at the end of this chapter), controlling for GDP per

capita and labour market slack does not change the statistical significance of the associations.

These results lead to the rejection of Hypothesis 1a. There is no evidence that a higher EPL for permanent contracts is associated with greater inequalities in job satisfaction between permanent and involuntary temporary workers. Hypothesis 1b is also rejected since a stronger EPL for permanent contracts is not negatively associated with involuntary temporary workers' job satisfaction. Hypotheses 2a and 2b are rejected too: the EPL gap is not associated with the job satisfaction gap between permanent and involuntary temporary workers, and it is not negatively related with the job satisfaction of involuntary temporary workers.

### ***Labour unions***

Table 5 shows that the cross-level interaction with union density presents a positive and statistically significant association ( $\beta = 0.174$ ), meaning that in countries with higher union density differences in job satisfaction between permanent and involuntary temporary workers are smaller. For the sample of involuntary temporary workers, union density is positive and significantly associated with job satisfaction ( $\beta = 0.111$ ), which is consistent with the previous results. Because collective bargaining coverage is commonly used as an indicator of union strength, it is also tested as a macro independent variable in Table 5. It presents equivalent associations when compared to the results of union density in the two different samples. Further analyses tested the association of union density and collective bargaining coverage including euro per capita, labour market slack, and investment in LMP as control variables in separate models (see results in Table 10 and Table 11 of the Supplementary Tables section at the end of this chapter). These results show that union density presents the same associations that were described above and are not affected by the inclusion of control variables. For collective bargaining coverage, the results including the macro control variables are the same as above, except in one case: controlling for labour market slack turned the significant associations not significant.

Regarding inclusiveness, Table 5 shows that the cross-level interaction of the mixed-effects models is positive and statistically significant ( $\beta = 0.202$ ), thus indicating that the job satisfaction gap is smaller where unions are more inclusive. For the sample of involuntary temporary workers, the association is positive ( $\beta = 0.075$ ) and significant slightly above the 95% threshold ( $p = 0.054$ ). However, this association becomes non-



significant when controlling for labour market slack, euro per capita, or investment in LMP (see Table 12 in the Supplementary Tables section). Conversely, the cross-level interaction remains significant and positive, regardless of the inclusion of control variables.

These results clearly lead to the rejection of Hypothesis 3a. The job satisfaction gap between permanent and involuntary temporary workers is smaller (rather than larger) at higher union density. The same applies to Hypothesis 3b. Union strength does not have a negative association with involuntary temporary workers' job satisfaction; the association is positive. The fourth group of hypotheses does not show comparable outcomes. Hypothesis 4a is accepted since inclusiveness is associated with smaller differences in job satisfaction between permanent and involuntary temporary workers. This association remains significant after controlling for other macro variables, including union density. In contrast, Hypothesis 4b cannot be accepted given that the positive and significant association between inclusiveness and involuntary temporary workers' job satisfaction becomes non-significant when country-level control variables are added. The reason why inclusiveness is not positively associated with involuntary temporary workers' satisfaction and also associated with smaller differences in job satisfaction might be because inclusiveness has negative effects for permanent employees. Still, these discrepancies could also be due to methodological differences. The models including only involuntary temporary workers were performed on a smaller sample and therefore might present larger standard errors. Similarly, the mixed models that were run on the sample of involuntary temporary workers contained more random slopes than the models performed on the sample of permanent and involuntary temporary workers, which could also affect the accuracy of the results.

### ***Robustness tests***

To test the robustness of our results we ran some additional analyses addressing specific methodological concerns. First, some readers might be sceptical about the validity of our analyses since we coded and analysed the categorical dependent variable (job satisfaction) as a continuous one. Our motivation for analysing job satisfaction as a continuous rather than as a categorical outcome was to provide more efficient results. Because analysing job satisfaction as an ordinal outcome would have entailed the violation of the parallel-lines assumption, the only alternative is to study job satisfaction as a categorical outcome applying multinomial logistic mixed models. To ensure that our analyses were not affected by our codification of job satisfaction,

we repeated our main analyses using multinomial mixed models rather than mixed linear models. As can be seen in the tables below, our main conclusions are not altered by these additional analyses.

**Table 6: Robustness tests. Estimates from multilevel multinomial logistic models in different samples of permanent and involuntary temporary workers. Associations of different independent macro variables with job satisfaction**

	Association with permanent-temporary job satisfaction gap		Association with involuntary temporary workers' job satisfaction	
	Satisfied to a large extent	Satisfied to some extent	Satisfied to a large extent	Satisfied to some extent
	vs Not satisfied (or to a small extent)	vs Not satisfied (or to a small extent)	vs Not satisfied (or to a small extent)	vs Not satisfied (or to a small extent)
<b>EPL for permanent contracts (V1)</b>	0.073 (0.13)	-0.013 (0.09)	0.05 (0.15)	0.204+ (0.11)
<b>EPL-gap (V1)</b>	-0.043 (0.13)	-0.044 (0.10)	0.083 (0.14)	0.139 (0.10)
<b>EPL for permanent contracts (V4)</b>	0.2 (0.13)	0.101 (0.09)	0.154 (0.15)	0.276* (0.11)
<b>EPL-gap (V4)</b>	0.056 (0.13)	0.052 (0.10)	0.116 (0.16)	0.124 (0.12)
<b>Union density</b>	0.425*** (0.12)	0.267*** (0.08)	0.404** (0.13)	0.134 (0.10)
<b>Collective bargaining</b>	0.510*** (0.11)	0.284*** (0.08)	0.441*** (0.13)	0.275*** (0.08)
<b>Inclusiveness</b>	0.516*** (0.11)	0.296*** (0.08)	0.398** (0.14)	0.312*** (0.09)

**Notes:** (\*)  $p < 0.10$ ,  $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ . Standard errors in parentheses. All the continuous micro and macro variables are z-standardized, while the categorical and dichotomous variables were transformed applying weighted effect coding. Full results are available in the in Table 15 and Table 16 of the Supplementary Tables section at the end of this chapter.

Second, we ran additional models to evaluate the association between the macro-level predictors and the job-satisfaction gap between permanent and involuntary temporary workers. In this case we followed a common approach and applied two-step multilevel models<sup>10</sup> instead of mixed models, as this method has been frequently used in the field. Our results, presented in Table 7, are virtually the same as in our main analyses.

<sup>10</sup> The two-step models are performed using the TWOSTEP Stata module developed by Kohler and Giesecke (2021).

**Table 7: Robustness tests. Estimates from two-step models in different samples of permanent and involuntary temporary workers. Associations of different independent macro variables with job satisfaction gap.**

Macro variable	Sample of permanent and involuntary temporary workers
	Two-step models
<b>EPL for permanent contracts (V1)</b>	1.781 (1.796)
<b>EPL for permanent contracts (V4)</b>	4.466 (*) (2.535)
<b>EPL gap (permanent - temporary contracts, V1)</b>	0.295 (1.165)
<b>EPL gap (permanent - temporary contracts, V4)</b>	0.127 (1.795)
Level-1 N of models above	326,260
Level-2 N of models above	23
<b>Union density</b>	0.158 ** (0.047)
Collective bargaining coverage	0.121 *** (0.027)
Level-1 N of models above	362,233
Level-2 N of models above	27
<b>Union inclusiveness</b>	0.911 *** (0.214)
Level-1 N of models above	355,114
Level-2 N of models above	25

**Notes:** (\*)  $p < 0.10$ ,  $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ . Standard errors in parentheses. None of the variables are z-standardized.

## 2.5 Conclusion

Labour market dualization theory has largely argued that unions and the EPL for permanent workers have negative consequences for outsiders and widen inequalities between them and insiders. This assumption is also in line with the social comparison theory and the relative deprivation framework, which posit that better standards for the better off group (i.e. the insiders) would have negative consequences for the worse off group (i.e. the outsiders) in terms of well-being. The purpose of this article was to test the association of the EPL and union strength with the job satisfaction gap between permanent and involuntary temporary workers as well as the job satisfaction of involuntary temporary employees. The analyses consisted of multilevel models that tested the effects of country-level variables on a cross-sectional dataset containing observations from 23 to 27 European countries.

Results provided no evidence that a higher EPL for permanent employees is negatively associated with the job satisfaction of involuntary temporary workers. Neither is it associated with differences in job satisfaction between these two groups. This applies

to the EPL for permanent contracts, and the difference between the EPL for permanent contracts and the EPL for temporary ones. Similarly, union strength was neither negatively associated with involuntary temporary workers' job satisfaction nor with a wider job satisfaction gap between these workers and permanent employees. Conversely, we observed that union strength is associated with a smaller job satisfaction gap between permanent and involuntary temporary workers, and positively related with the job satisfaction of involuntary temporary workers. Both findings suggest that differences in job satisfaction between permanent and temporary workers are not adequately explained by the labour market dualization theory nor the social comparison and relative deprivation frameworks. These results do not support the assumption that better standards for the better off group (i.e. insiders or permanent workers) will have negative consequences for the worse off (i.e. outsiders or involuntary temporary workers) due to social comparison. The fact that union density is positively – rather than negatively – associated with involuntary temporary workers' job satisfaction contradicts the dualization assumption that unions benefit the insiders at the expense of the outsiders.

These results are in line with previous studies suggesting that the EPL had no negative effects for the job security of temporary workers and that unions reduce inequalities between insiders and outsiders (Hipp and Givan, 2015; Chung, 2016; Stasiowski and Kłobuszewska, 2018). The simplest explanation for these findings might be that unions generally bargain in favour of the outsiders too (Carver and Doellgast, 2020) and therefore have a positive impact on their job quality, which affects their job satisfaction. Still, as job satisfaction is both influenced by job quality and workers' values and expectations, it is necessary to disentangle the mechanisms by which unions drive the job satisfaction of the involuntary temporary workers up: Do they have positive effects on involuntary temporary workers because they improve their material job quality or because they mitigate concerns about job insecurity by promoting transitions from temporary to permanent positions? The lack of association between the EPL and workers' job satisfaction, as found in previous studies, also questions the assumption that workers' well-being is reactive to and precisely shaped by regulatory changes. After all, workers might be simply unaware of the rights and regulations that apply to them, as Hipp's (2020) qualitative analysis suggests.

Although the results for EPL and union strength remained mostly unchanged despite the use of different techniques and the inclusion of potential country-level confounders,

the results for union inclusiveness are more uncertain. The models showed that the differences in job satisfaction between permanent and involuntary temporary workers are smaller in countries where unions have a higher share of temporary workers among their members. Nonetheless, the positive and significant association of inclusiveness with the involuntary temporary workers' job satisfaction does not remain significant after including other confounders. Although the discrepancy of these two results could be attributed to methodological issues, it might be possible that inclusiveness has a negative effect on permanent workers' job satisfaction. In inclusive contexts unions might allocate more resources to issues concerning temporary employees, but they do so at the expense of resources normally allocated to issues affecting permanent workers. Future studies could address this question in deeper detail.

Finally, although various statistical techniques were applied in the analyses to ensure the robustness of the results and followed the latest findings and guidelines in the field of multilevel modelling, more research is needed to reach solid conclusions. The analyses relied on cross-sectional data from a small number of countries. The results are subject to omitted variable bias and reversed causality, which strongly hinders the identification of effects. To study the effects of unions, using panel data could partly help to overcome this obstacle, although most surveys tend not to differentiate between voluntary and involuntary temporary positions, which is crucial to avoid spurious associations due to compositional differences. The difficulty in identifying causality is even greater in studies on the EPL, even when longitudinal data are used (e.g. Barbieri and Cutuli, 2016; Gebel and Giesecke, 2016), as EPL reforms occur under specific settings and are therefore affected by unobserved confounders. In addition, these reforms are normally marginal and gradual, thus hindering the identification of effects. Similarly, unsatisfied workers in unstable labour markets might be more likely to vote for parties that aim to strengthen employment protection, as this is one of the most relevant work regulations which depend on voters' choices. Another weakness of this study is that job satisfaction was measured by a one-item indicator instead of a composite indicator, which would have provided more precise results (Ock, 2010). Moreover, in about one third of the cases, job satisfaction was obtained from proxy interviews. This also induces some measurement bias, although it also allows to obtain a more representative sample. Whereas in the previous chapter we could show that our main findings remained unchanged regardless of whether proxy interviews were included or excluded. However, the inclusion of proxy interviews may still affect

some of our results. Finally, like previous studies in the field, the analyses of unions have focused exclusively on their strength measured by union density and collective bargaining coverage. This approach has certain limitations, since the effects that unions have on outsiders might depend to a greater extent on their level of coordination (Vladas, 2018) and unions' ideology and identity (Benassi and Vladas, 2016). The influence of these factors on the insider-outsider divide in objective and subjective job quality could be addressed in future studies.

## 2.6 Supplementary Tables

**Table 8: Estimates from mixed-effects models in different samples of permanent and involuntary temporary workers. Association of EPL for permanent contracts (V1) with job satisfaction, controlling for different macro variables.**

Control macro variable	Sample of permanent and involuntary temporary workers	Sample of involuntary temporary workers
	Cross-level interaction (Involuntary temporary * Macro variable )	Coefficient of macro variable
Labour Market Slack	0.042 (0.060)	-0.009 (0.041)
Euro per capita	0.042 (0.060)	-0.030 (0.045)
Level-1 N of models above	326,260	24,176
Level-2 N of models above	23	23

**Notes:** (\*)  $p < 0.10$ ,  $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ . Standard errors in parentheses. All the continuous micro and macro variables are z-standardized, while the categorical and dichotomous variables were transformed applying weighted effect coding. Full models available upon request.

**Table 9: Estimates from mixed-effects models in different samples of permanent and involuntary temporary workers. Associations of EPL gap (permanent – temporary contracts, V1) with job satisfaction, controlling for different macro variables.**

Control macro variable	Sample of permanent and involuntary temporary workers	Sample of involuntary temporary workers
	Cross-level interaction (Involuntary temporary * Macro variable )	Coefficient of macro variable
Labour Market Slack	-0.001 (0.062)	-0.015 (0.040)
Euro per capita	0.001 (0.062)	-0.035 (0.045)
Level-1 N of models above	326,260	24,176
Level-2 N of models above	23	23

**Notes:** (\*)  $p < 0.10$ ,  $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ . Standard errors in parentheses. All the continuous micro and macro variables are z-standardized, while the categorical and dichotomous variables were transformed applying weighted effect coding. Full models available upon request.

**Table 10: Estimates from mixed-effects models in different samples of permanent and involuntary temporary workers. Associations of union density with job satisfaction, controlling for different macro variables**

Control macro variable	Sample of permanent and involuntary temporary workers	Sample of involuntary temporary workers
	Cross-level interaction (Involuntary temporary * Macro variable )	Coefficient of macro variable
Labour Market Slack	0.174 ** (0.054)	0.127 *** (0.032)
Euro per capita	0.174 ** (0.054)	0.115 ** (0.042)
Level-1 N of models above	362,233	25,282
Level-2 N of models above	27	27
Investment in LMP	0.179 ** (0.057)	0.179 ** (0.063)
Level-1 N of models above	333,766	25,065
Level-2 N of models above	26	26

**Notes:** (\*)  $p < 0.10$ ,  $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ . Standard errors in parentheses. All the continuous micro and macro variables are z-standardized, while the categorical and dichotomous variables were transformed applying weighted effect coding. Full models available upon request.

**Table 11: Estimates from mixed-effects models in different samples of permanent and involuntary temporary workers. Associations of collective bargaining coverage with job satisfaction, controlling for different macro variables**

Control macro variable	Sample of permanent and involuntary temporary workers	Sample of involuntary temporary workers
	Cross-level interaction (Involuntary temporary * Macro variable )	Coefficient of macro variable
Labour Market Slack	0.217 *** (0.047)	0.095 (0.049)
Euro per capita	0.217 *** (0.047)	0.060 (*) (0.044)
Level-1 N of models above	362,233	25,282
Level-2 N of models above	27	27
Investment in LMP	0.226 *** (0.049)	0.152 *** (0.036)
Level-1 N of models above	333,766	25,065
Level-2 N of models above	26	26

**Notes:** (\*)  $p < 0.10$ ,  $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ . Standard errors in parentheses. All the continuous micro and macro variables are z-standardized, while the categorical and dichotomous variables were transformed applying weighted effect coding. Full models available upon request.

**Table 12: Estimates from mixed-effects models in different samples of permanent and involuntary temporary workers. Associations of (union) inclusiveness, controlling for different macro variables**

Control macro variable	Sample of permanent and involuntary temporary workers	Sample of involuntary temporary workers
	Cross-level interaction (Involuntary temporary * Macro variable )	Coefficient of macro variable
Labour Market Slack	0.202 *** (0.051)	0.052 (0.044)
Euro per capita	0.202 *** (0.053)	0.088 (*) (0.045)
Union density	0.203 *** (0.053)	0.045 (0.044)
Level-1 N of models above	355,114	25,024
Level-2 N of models above	25	25
Investment in LMP	0.212 *** (0.055)	0.078 (0.049)
Level-1 N of models above	326,647	24,807
Level-2 N of models above	24	24

**Notes:** (\*)  $p < 0.10$ ,  $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ . Standard errors in parentheses. All the continuous micro and macro variables are z-standardized, while the categorical and dichotomous variables were transformed applying weighted effect coding. Full models available upon request.



**Table 13: Full results of multilevel models in Table 5. Association of cross-level interaction of different macro variables with job satisfaction difference between permanent and involuntary temporary workers.**

	<u>EPL for permanent contracts (V1)</u>	
<b>Age (ref: 15-24 )</b>		
25-34	-0.0171	***
	(0.0035)	
35-44	-0.0044	
	(0.0029)	
45-54	0.0008	
	(0.0027)	
55-64	0.0071	*
	(0.0035)	
<b>Gender (ref: Man)</b>		
Woman	-0.0004	
	(0.0019)	
<b>Education</b>	-0.0104	***
	(0.0023)	
<b>Working time (ref: Full-time)</b>		
Part-time	-0.0312	***
	(0.0042)	
Marginal work	-0.0166	+
	(0.0091)	
<b>Nationality (ref: Native)</b>		
Foreigner	-0.0825	***
	(0.0065)	
<b>Temporary contract (ref: No)</b>		
Yes	-0.212	***
	(0.0593)	
<b>Supervisory role (ref: No)</b>		
Yes	0.0586	***
	(0.0035)	
<b>Occupation (ref: Managers)</b>		
Professionals	0.1707	***
	(0.0042)	
Technicians and associate professionals	0.0875	***
	(0.0039)	
Clerks	0.0047	
	(0.0050)	
Service and sales workers	-0.0704	***
	(0.0039)	
Skilled agricultural, forestry and fishery	-0.026	
	(0.0175)	
Craft and related trades workers	-0.0733	***
	(0.0054)	
Plant and machine operators and assemblers	-0.1766	***
	(0.0060)	
Elementary Occupations	-0.2641	***
	(0.0057)	
<b>EPL for permanent contracts (V1)</b>	-0.0546	
	(0.0436)	
<b>Temporary contract * EPL for permanent contracts (V1)</b>	0.0424	
	(0.0603)	
<b>Constant</b>	-0.0118	
	(0.0426)	
<b>Log-Likelihood</b>	-451434.83	
<b>ICC</b>	0.0428369	
<b>Random coefficients:</b>	Temporary contract	

	<b>EPL-gap (V1)</b>	
<b>Age (ref: 15-24 )</b>		
25-34	-0.0171 ***	(0.0035)
35-44	-0.0044	(0.0029)
45-54	0.0008	(0.0027)
55-64	0.0071 *	(0.0035)
<b>Gender (ref: Man)</b>		
Woman	-0.0004	(0.0019)
<b>Education</b>	-0.0104 ***	(0.0023)
<b>Working time (ref: Full-time)</b>		
Part-time	-0.0312 ***	(0.0042)
Marginal work	-0.0166 +	(0.0091)
<b>Nationality (ref: Native)</b>		
Foreigner	-0.0825 ***	(0.0065)
<b>Temporary contract (ref: No)</b>		
Yes	-0.2117 ***	(0.0601)
<b>Supervisory role (ref: No)</b>		
Yes	0.0586 ***	(0.0035)
<b>Occupation (ref: Managers)</b>		
Professionals	0.1707 ***	(0.0042)
Technicians and associate professionals	0.0875 ***	(0.0039)
Clerks	0.0047	(0.0050)
Service and sales workers	-0.0704 ***	(0.0039)
Skilled agricultural, forestry and fishery	-0.026	(0.0175)
Craft and related trades workers	-0.0733 ***	(0.0054)
Plant and machine operators and assemblers	-0.1766 ***	(0.0060)
Elementary Occupations	-0.2641 ***	(0.0057)
<b>EPL-gap (V1)</b>	0.0009	(0.0452)
<b>Temporary contract * EPL-gap (V1)</b>	0.00000	(0.0622)
<b>Constant</b>	-0.0118	(0.0442)
<b>Log-Likelihood</b>	-451435.92	
<b>ICC</b>	0.0459025	
<b>Random coefficients:</b>	Temporary contract	

	<u>EPL for permanent contracts (V4)</u>	
<b>Age (ref: 15-24 )</b>		
25-34	-0.0171 (0.0035)	***
35-44	-0.0044 (0.0029)	
45-54	0.0008 (0.0027)	
55-64	0.0071 (0.0035)	*
<b>Gender (ref: Man)</b>		
Woman	-0.0004 (0.0019)	
<b>Education</b>	-0.0104 (0.0023)	***
<b>Working time (ref: Full-time)</b>		
Part-time	-0.0312 (0.0042)	***
Marginal work	-0.0166 (0.0091)	+
<b>Nationality (ref: Native)</b>		
Foreigner	-0.0825 (0.0065)	***
<b>Temporary contract (ref: No)</b>		
Yes	-0.2136 (0.0567)	***
<b>Supervisory role (ref: No)</b>		
Yes	0.0586 (0.0035)	***
<b>Occupation (ref: Managers)</b>		
Professionals	0.1707 (0.0042)	***
Technicians and associate professionals	0.0875 (0.0039)	***
Clerks	0.0047 (0.0050)	
Service and sales workers	-0.0704 (0.0039)	***
Skilled agricultural, forestry and fishery	-0.026 (0.0175)	
Craft and related trades workers	-0.0733 (0.0054)	***
Plant and machine operators and assemblers	-0.1766 (0.0060)	***
Elementary Occupations	-0.2641 (0.0057)	***
<b>EPL for permanent contracts (V4)</b>	-0.0519 (0.0437)	
<b>Temporary contract * EPL for permanent contracts (V4)</b>	0.0886 (0.0585)	
<b>Constant</b>	-0.012 (0.0427)	
<b>Log-Likelihood</b>	-451433.91	
<b>ICC</b>	0.0430792	
<b>Random coefficients:</b>	Temporary contract	

	<u>EPL-gap (V4)</u>
<b>Age (ref: 15-24 )</b>	
25-34	-0.0171 *** (0.0035)
35-44	-0.0044 (0.0029)
45-54	0.0008 (0.0027)
55-64	0.0071 * (0.0035)
<b>Gender (ref: Man)</b>	
Woman	-0.0004 (0.0019)
<b>Education</b>	-0.0104 *** (0.0023)
<b>Working time (ref: Full-time)</b>	
Part-time	-0.0312 *** (0.0042)
Marginal work	-0.0166 + (0.0091)
<b>Nationality (ref: Native)</b>	
Foreigner	-0.0824 *** (0.0065)
<b>Temporary contract (ref: No)</b>	
Yes	-0.2126 *** (0.0597)
<b>Supervisory role (ref: No)</b>	
Yes	0.0586 *** (0.0035)
<b>Occupation (ref: Managers)</b>	
Professionals	0.1707 *** (0.0042)
Technicians and associate professionals	0.0875 *** (0.0039)
Clerks	0.0047 (0.0050)
Service and sales workers	-0.0704 *** (0.0039)
Skilled agricultural, forestry and fishery	-0.026 (0.0175)
Craft and related trades workers	-0.0733 *** (0.0054)
Plant and machine operators and assemblers	-0.1766 *** (0.0060)
Elementary Occupations	-0.2641 *** (0.0057)
<b>EPL-gap (V4)</b>	0.0073 (0.0452)
<b>Temporary contract * EPL-gap (V4)</b>	0.0299 (0.0620)
<b>Constant</b>	-0.0119 (0.0441)
<b>Log-Likelihood</b>	-451435.79
<b>ICC</b>	0.0458278
<b>Random coefficients:</b>	Temporary contract

	<u>Union density</u>	
<b>Age (ref: 15-24 )</b>		
25-34	-0.0179 ***	
	0.0033	
35-44	-0.0058 *	
	0.0027	
45-54	0.0028	
	0.0026	
55-64	0.0095 **	
	0.0033	
<b>Gender (ref: Man)</b>		
Woman	-0.002	
	0.0018	
<b>Education</b>	-0.0051 *	
	0.0022	
<b>Working time (ref: Full-time)</b>		
Part-time	-0.0336 ***	
	0.0042	
Marginal work	-0.0104	
	0.009	
<b>Nationality (ref: Native)</b>		
Foreigner	-0.0704 ***	
	0.0064	
<b>Temporary contract (ref: No)</b>		
Yes	-0.2327 ***	
	0.0527	
<b>Supervisory role (ref: No)</b>		
Yes	0.062 ***	
	0.0034	
<b>Occupation (ref: Managers)</b>		
Professionals	0.1869 ***	
	0.004	
Technicians and associate professionals	0.0971 ***	
	0.0038	
Clerks	0.013 **	
	0.0048	
Service and sales workers	-0.0788 ***	
	0.0037	
Skilled agricultural, forestry and fishery	-0.0399 *	
	0.0165	
Craft and related trades workers	-0.0834 ***	
	0.0049	
Plant and machine operators and assemblers	-0.175 ***	
	0.0055	
Elementary Occupations	-0.268 ***	
	0.0053	
<b>Union density</b>	0.0892 *	
	0.0416	
<b>Temporary contract * Union density</b>	0.1741 **	
	0.0536	
<b>Constant</b>	-0.0047	
	0.0408	
<b>Log-Likelihood</b>	-499476.42	
<b>ICC</b>	0.046379	
<b>Random coefficients:</b>	Temporary contract	

	<u>Collective bargaining</u>	
<b>Age (ref: 15-24 )</b>		
25-34	-0.0179 ***	0.0033
35-44	-0.0058 *	0.0027
45-54	0.0028	0.0026
55-64	0.0096 **	0.0033
<b>Gender (ref: Man)</b>		
Woman	-0.002	0.0018
<b>Education</b>	-0.0051 *	0.0022
<b>Working time (ref: Full-time)</b>		
Part-time	-0.0336 ***	0.0042
Marginal work	-0.0104	0.009
<b>Nationality (ref: Native)</b>		
Foreigner	-0.0704 ***	0.0064
<b>Temporary contract (ref: No)</b>		
Yes	-0.2333 ***	0.0461
<b>Supervisory role (ref: No)</b>		
Yes	0.062 ***	0.0034
<b>Occupation (ref: Managers)</b>		
Professionals	0.1869 ***	0.004
Technicians and associate professionals	0.0971 ***	0.0038
Clerks	0.013 **	0.0048
Service and sales workers	-0.0788 ***	0.0037
Skilled agricultural, forestry and fishery	-0.0399 *	0.0165
Craft and related trades workers	-0.0834 ***	0.0049
Plant and machine operators and assemblers	-0.175 ***	0.0055
Elementary Occupations	-0.2679 ***	0.0053
<b>Collective bargaining</b>	0.0464	0.0443
<b>Temporary contract * Collective bargaining</b>	0.2168 ***	0.0472
<b>Constant</b>	-0.0047	0.0435
<b>Log-Likelihood</b>	-499474.37	
<b>ICC</b>	0.05235	
<b>Random coefficients:</b>	Temporary contract	

	<u>Inclusiveness</u>
<b>Age (ref: 15-24 )</b>	
25-34	-0.0178 *** 0.0033
35-44	-0.0057 * 0.0027
45-54	0.0032 0.0026
55-64	0.0087 ** 0.0034
<b>Gender (ref: Man)</b>	
Woman	-0.0022 0.0018
<b>Education</b>	-0.0048 * 0.0022
<b>Working time (ref: Full-time)</b>	
Part-time	-0.035 *** 0.0042
Marginal work	-0.0107 0.0091
<b>Nationality (ref: Native)</b>	
Foreigner	-0.0675 *** 0.0065
<b>Temporary contract (ref: No)</b>	
Yes	-0.2533 *** 0.0517
<b>Supervisory role (ref: No)</b>	
Yes	0.0621 *** 0.0035
<b>Occupation (ref: Managers)</b>	
Professionals	0.1893 *** 0.004
Technicians and associate professionals	0.0989 *** 0.0038
Clerks	0.015 ** 0.0048
Service and sales workers	-0.0805 *** 0.0037
Skilled agricultural, forestry and fishery	-0.0404 * 0.0167
Craft and related trades workers	-0.0832 *** 0.005
Plant and machine operators and assemblers	-0.1758 *** 0.0055
Elementary Occupations	-0.272 *** 0.0054
<b>Inclusiveness</b>	0.0274 0.0429
<b>Temporary contract * Inclusiveness</b>	0.2016 *** 0.0528
<b>Constant</b>	-0.0062 0.042
<b>Log-Likelihood</b>	-489942.63
<b>ICC</b>	0.0455216
<b>Random coefficients:</b>	Temporary contract

**Notes:** + p < 0.10, \*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001. All coefficients are z-standardised. Standard errors are provided in brackets.

**Table 14: Full results of multilevel models in Table 5. Association of different macro variables with involuntary temporary workers' job satisfaction**

	<u>EPL for permanent contracts (V1)</u>	
<b>Age</b>	-0.0090 (0.0063)	
<b>Gender (ref: Man)</b>		
Woman	0.0108 + (0.0061)	
<b>Education</b>	-0.0590 *** (0.0085)	
<b>Working time (ref: Full-time)</b>		
Part-time	-0.0787 *** (0.01)	
Marginal work	-0.2792 *** (0.0813)	
<b>Supervisory role (ref: No)</b>		
Yes	0.0135 (0.0217)	
<b>Occupation (ref: Managers and professionals)</b>		
Technicians and associate professionals	0.1758 *** (0.0193)	
Clerks	0.061 ** (0.0191)	
Service and sales workers	-0.0321 ** (0.0120)	
Skilled agricultural & craft and related trades	-0.0476 ** (0.0180)	
Plant and machine operators and assemblers	-0.0948 *** (0.0200)	
Elementary Occupations	-0.2611 *** (0.0442)	
<b>Contract duration (ref: up to 6 months )</b>		
7-12 months	0.039 *** (0.0079)	
> 1 year	0.0477 *** (0.0131)	
<b>EPL for permanent contracts (V1)</b>	-0.0165 (0.0405)	
<b>Constant</b>	-0.0204 (0.0569)	
<b>Log-Likelihood</b>	-32521.875	
<b>ICC</b>	0.0761563	
<b>Random coefficients:</b>	Marginal work Elementary occupations	



	<u>EPL-gap (V1)</u>	
<b>Age</b>	-0.0110	+
	(0.0062)	
<b>Gender (ref: Man)</b>		
	0.0097	
	(0.0061)	
<b>Education</b>	-0.0584	***
	(0.0085)	
<b>Working time (ref: Full-time)</b>		
Part-time	-0.0850	*
	(0.0350)	
Marginal work	-0.2634	***
	(0.0791)	
<b>Supervisory role (ref: No)</b>		
Yes	0.0141	
	(0.0216)	
<b>Occupation (ref: Managers and professionals)</b>		
Technicians and associate professionals	0.1763	***
	(0.0193)	
Clerks	0.0574	**
	(0.0191)	
Service and sales workers	-0.0382	**
	(0.0120)	
Skilled agricultural & craft and related trades	-0.0455	*
	(0.0180)	
Plant and machine operators and assemblers	-0.0548	
	(0.0418)	
Elementary Occupations	-0.2626	***
	(0.0364)	
<b>Contract duration (ref: up to 6 months )</b>		
7-12 months	0.0370	***
	(0.0079)	
> 1 year	0.0517	***
	(0.0131)	
<b>EPL-gap (V1)</b>	-0.0161	
	(0.0408)	
<b>Constant</b>	-0.0227	
	(0.0558)	
<b>Log-Likelihood</b>	-32467.999	
<b>ICC</b>	0.0736143	
<b>Random coefficients:</b>	Part-time work	
	Marginal work	
	Plant and machine	
	operators and assemblers	
	Elementary occupations	

**EPL for permanent contracts (V4)**

<b>Age</b>	-0.0090 (0.0063)	
<b>Gender (ref: Man)</b>	0.0108 (0.0061)	+
<b>Education</b>	-0.059 (0.0085)	***
<b>Working time (ref: Full-time)</b>		
Part-time	-0.0786 (0.0121)	***
Marginal work	-0.2784 (0.0813)	***
<b>Supervisory role (ref: No)</b>		
Yes	0.0135 (0.0217)	
<b>Occupation (ref: Managers and professionals)</b>		
Technicians and associate professionals	0.1758 (0.0193)	***
Clerks	0.061 (0.0191)	**
Service and sales workers	-0.0321 (0.0120)	**
Skilled agricultural & craft and related trades	-0.0476 (0.0180)	**
Plant and machine operators and assemblers	-0.0949 (0.0200)	***
Elementary Occupations	-0.2607 (0.0443)	***
<b>Contract duration (ref: up to 6 months )</b>		
7-12 months	0.0389 (0.0079)	***
> 1 year	0.0476 (0.0131)	***
<b>EPL for permanent contracts (V4)</b>	0.0038 (0.0423)	
<b>Constant</b>	-0.021 (0.0568)	
<b>Log-Likelihood</b>	-32521.912	
<b>ICC</b>	0.0757413	
<b>Random coefficients:</b>	Marginal work Elementary occupations	

	<b><u>EPL-gap (V4)</u></b>	
<b>Age</b>	-0.0090	
	(0.0063)	
<b>Gender (ref: Man)</b>		
	0.0108 +	
	(0.0061)	
<b>Education</b>	-0.059 ***	
	(0.0085)	
<b>Working time (ref: Full-time)</b>		
Part-time	-0.0786 ***	
	(0.0121)	
Marginal work	-0.2787 ***	
	(0.0813)	
<b>Supervisory role (ref: No)</b>		
Yes	0.0135	
	(0.0217)	
<b>Occupation (ref: Managers and professionals)</b>		
Technicians and associate professionals	0.1758 ***	
	(0.0193)	
Clerks	0.061 **	
	(0.0191)	
Service and sales workers	-0.0321 **	
	(0.0120)	
Skilled agricultural & craft and related trades	-0.0476 **	
	(0.0180)	
Plant and machine operators and assemblers	-0.0949 ***	
	(0.0200)	
Elementary Occupations	-0.2608 ***	
	(0.0443)	
<b>Contract duration (ref: up to 6 months )</b>		
7-12 months	0.0390 ***	
	(0.0079)	
> 1 year	0.0476 ***	
	(0.0131)	
<b>EPL-gap (V4)</b>	-0.0002	
	(0.0429)	
<b>Constant</b>	-0.0208	
	(0.0569)	
<b>Log-Likelihood</b>	-32521.902	
<b>ICC</b>	0.0760293	
<b>Random coefficients:</b>	Marginal work	
	Elementary	
	occupations	

	<u>Union density</u>	
<b>Age</b>	-0.0125	*
	(0.0061)	
<b>Gender (ref: Man)</b>	0.0132	*
	(0.0058)	
<b>Education</b>	-0.0609	**
	(0.0186)	
<b>Working time (ref: Full-time)</b>		
Part-time	-0.1108	**
	(0.0387)	
Marginal work	-0.3	***
	(0.0793)	
<b>Supervisory role (ref: No)</b>		
Yes	0.0258	
	(0.0211)	
<b>Occupation (ref: Managers and professionals)</b>		
Technicians and associate professionals	0.1765	***
	(0.0190)	
Clerks	0.0509	**
	(0.0186)	
Service and sales workers	-0.0409	***
	(0.0117)	
Skilled agricultural & craft and related trades	-0.0547	**
	(0.0175)	
Plant and machine operators and assemblers	-0.0848	***
	(0.0196)	
Elementary Occupations	-0.2211	***
	(0.0351)	
<b>Contract duration (ref: up to 6 months )</b>		
7-12 months	0.0360	***
	(0.0076)	
> 1 year	0.0606	***
	(0.0126)	
<b>Union density</b>	0.1115	**
	(0.0369)	
<b>Constant</b>	-0.0547	
	(0.0554)	
<b>Log-Likelihood</b>	-33717.46	
<b>ICC</b>	0.0861217	
<b>Random coefficients:</b>	Par-time work	
	Marginal work	
	Elementary	
	occupations	
	Education	

	<u>Collective bargaining</u>	
<b>Age</b>	-0.0140	*
	(0.0060)	
<b>Gender (ref: Man)</b>		
	0.0133	*
	(0.0059)	
<b>Education</b>	-0.064	***
	(0.0082)	
<b>Working time (ref: Full-time)</b>		
Part-time	-0.1089	**
	(0.0411)	
Marginal work	-0.2766	***
	(0.0244)	
<b>Supervisory role (ref: No)</b>		
Yes	0.0253	
	(0.0211)	
<b>Occupation (ref: Managers and professionals)</b>		
Technicians and associate professionals	0.176	***
	(0.0190)	
Clerks	0.052	**
	(0.0187)	
Service and sales workers	-0.0381	**
	(0.0117)	
Skilled agricultural & craft and related trades	-0.057	**
	(0.0175)	
Plant and machine operators and assemblers	-0.0892	***
	(0.0197)	
Elementary Occupations	-0.2186	***
	(0.0385)	
<b>Contract duration (ref: up to 6 months )</b>		
7-12 months	0.0352	***
	(0.0076)	
> 1 year	0.0621	***
	(0.0126)	
<b>Collective bargaining</b>	0.0938	*
	(0.0426)	
<b>Constant</b>	-0.0429	
	(0.0569)	
<b>Log-Likelihood</b>	-33791.11	
<b>ICC</b>	0.0898937	
<b>Random coefficients:</b>	Par-time work	
	Elementary	
	occupations	

	<u>Inclusiveness</u>	
<b>Age</b>	-0.0123	*
	(0.0061)	
<b>Gender (ref: Man)</b>		
	0.0136	*
	(0.0059)	
<b>Education</b>	-0.0596	***
	(0.0083)	
<b>Working time (ref: Full-time)</b>		
Part-time	-0.1197	**
	(0.0385)	
Marginal work	-0.3439	***
	(0.0808)	
<b>Supervisory role (ref: No)</b>		
Yes	0.0249	
	(0.0214)	
<b>Occupation (ref: Managers and professionals)</b>		
Technicians and associate professionals	0.1772	***
	(0.0191)	
Clerks	0.0511	**
	(0.0188)	
Service and sales workers	-0.0415	***
	(0.0117)	
Skilled agricultural & craft and related trades	-0.0535	**
	(0.0176)	
Plant and machine operators and assemblers	-0.0868	***
	(0.0197)	
Elementary Occupations	-0.221	***
	(0.0381)	
<b>Contract duration (ref: &lt; 6 months )</b>		
7-12 months	0.0344	***
	(0.0076)	
> 1 year	0.0608	***
	(0.0128)	
<b>Inclusiveness</b>	0.0755	+
	(0.0443)	
<b>Constant</b>	-0.0731	
	(0.0615)	
<b>Log-Likelihood</b>	-33392.668	
<b>ICC</b>	0.0975311	
<b>Random coefficients:</b>	Marginal work	
	Par-time work	
	Elementary	
	occupations	

**Table 15: Full results of multilevel multinomial logistic models in Table 6. Association of cross-level interaction of different macro variables with job satisfaction difference between permanent and involuntary temporary workers**

	<u>EPL for permanent contracts (V1)</u>	
	Satisfied to a large extent vs Not satisfied (or to a small extent)	Satisfied to some extent vs Not satisfied (or to a small extent)
<b>Age (ref: 15-24)</b>		
25-34	-0.065*** (0.014)	-0.034* (0.014)
35-44	0.006 (0.012)	0.029* (0.012)
45-54	0.018 (0.011)	0.023* (0.011)
55-64	-0.002 (0.014)	-0.046** (0.014)
<b>Gender (ref: Man)</b>		
Woman	-0.006 (0.008)	0 (0.008)
<b>Education</b>	-0.058*** (0.01)	-0.061*** (0.009)
<b>Working time (ref: Full-time)</b>		
Part-time	-0.167*** (0.016)	-0.170*** (0.016)
Marginal work	-0.137*** (0.033)	-0.213*** (0.033)
<b>Nationality (ref: Native)</b>		
Foreigner	-0.252*** (0.024)	-0.078*** (0.023)
<b>Temporary contract (ref: No)</b>		
Yes	-0.549*** (0.127)	-0.387*** (0.092)
<b>Supervisory role (ref: No)</b>		
Yes	0.171*** (0.015)	0.043** (0.015)
<b>Occupation (ref: Managers)</b>		
Professionals	0.548*** (0.018)	0.238*** (0.018)
Technicians and associate professionals	0.296*** (0.017)	0.151*** (0.017)
Clerks	0.013 (0.02)	0.018 (0.02)
Service and sales workers	-0.255*** (0.015)	-0.133*** (0.015)
Skilled agricultural, forestry and fishery	-0.09 (0.07)	-0.009 (0.069)
Craft and related trades workers	-0.209*** (0.022)	-0.018 (0.021)
Plant and machine operators and assemblers	-0.554*** (0.023)	-0.193*** (0.022)
Elementary Occupations	-0.841*** (0.02)	-0.466*** (0.019)
<b>EPL for permanent contracts (V1)</b>	-0.030 (0.131)	0.187* (0.091)
<b>Temporary contract * EPL for permanent contracts (V1)</b>	0.073 (0.128)	-0.013 (0.093)
<b>Constant</b>	1.746*** (0.128)	1.726*** (0.089)
<b>Random coefficients:</b>	Temporary contract	

	<b>EPL-gap (V1)</b>	
	<b>Satisfied to a large extent vs Not satisfied (or to a small extent)</b>	<b>Satisfied to some extent vs Not satisfied (or to a small extent)</b>
<b>Age (ref: 15-24 )</b>		
25-34	-0.065*** (0.014)	-0.034* (0.014)
35-44	0.006 (0.012)	0.029* (0.012)
45-54	0.018 (0.011)	0.023* (0.011)
55-64	-0.002 (0.014)	-0.046** (0.014)
<b>Gender (ref: Man)</b>		
Woman	-0.006 (0.008)	0 (0.008)
<b>Education</b>	-0.057*** (0.01)	-0.061*** (0.009)
<b>Working time (ref: Full-time)</b>		
Part-time	-0.167*** (0.016)	-0.170*** (0.016)
Marginal work	-0.138*** (0.033)	-0.213*** (0.033)
<b>Nationality (ref: Native)</b>		
Foreigner	-0.251*** (0.024)	-0.078*** (0.023)
<b>Temporary contract (ref: No)</b>		
Yes	-0.543*** (0.128)	-0.384*** (0.092)
<b>Supervisory role (ref: No)</b>		
Yes	0.171*** (0.015)	0.043** (0.015)
<b>Occupation (ref: Managers)</b>		
Professionals	0.548*** (0.018)	0.238*** (0.018)
Technicians and associate professionals	0.296*** (0.017)	0.151*** (0.017)
Clerks	0.013 (0.02)	0.018 (0.02)
Service and sales workers	-0.255*** (0.015)	-0.133*** (0.015)
Skilled agricultural, forestry and fishery	-0.09 (0.07)	-0.009 (0.069)
Craft and related trades workers	-0.209*** (0.022)	-0.018 (0.021)
Plant and machine operators and assemblers	-0.554*** (0.023)	-0.193*** (0.022)
Elementary Occupations	-0.841*** (0.02)	-0.466*** (0.019)
<b>EPL-gap (V1)</b>	0.100 (0.13)	0.168+ (0.093)
<b>Temporary contract * EPL-gap (V1)</b>	-0.043 (0.134)	-0.044 (0.097)
<b>Constant</b>	1.746*** (0.127)	1.726*** (0.09)
<b>Random coefficients:</b>	Temporary contract	



**EPL for permanent contracts (V4)**

	Satisfied to a large extent vs Not satisfied (or to a small extent)	Satisfied to some extent vs Not satisfied (or to a small extent)
<b>Age (ref: 15-24 )</b>		
25-34	-0.065*** (0.014)	-0.034* (0.014)
35-44	0.006 (0.012)	0.029* (0.012)
45-54	0.018 (0.011)	0.023* (0.011)
55-64	-0.002 (0.014)	-0.046** (0.014)
<b>Gender (ref: Man)</b>		
Woman	-0.006 (0.008)	0 (0.008)
<b>Education</b>	-0.058*** (0.01)	-0.061*** (0.009)
<b>Working time (ref: Full-time)</b>		
Part-time	-0.167*** (0.016)	-0.170*** (0.016)
Marginal work	-0.137*** (0.033)	-0.213*** (0.033)
<b>Nationality (ref: Native)</b>		
Foreigner	-0.252*** (0.024)	-0.078*** (0.023)
<b>Temporary contract (ref: No)</b>		
Yes	-0.555*** (0.123)	-0.393*** (0.09)
<b>Supervisory role (ref: No)</b>		
Yes	0.171*** (0.015)	0.043** (0.015)
<b>Occupation (ref: Managers)</b>		
Professionals	0.548*** (0.018)	0.238*** (0.018)
Technicians and associate professionals	0.296*** (0.017)	0.151*** (0.017)
Clerks	0.013 (0.02)	0.018 (0.02)
Service and sales workers	-0.255*** (0.015)	-0.133*** (0.015)
Skilled agricultural, forestry and fishery	-0.09 (0.07)	-0.009 (0.069)
Craft and related trades workers	-0.209*** (0.022)	-0.019 (0.021)
Plant and machine operators and assemblers	-0.554*** (0.023)	-0.194*** (0.022)
Elementary Occupations	-0.841*** (0.02)	-0.466*** (0.019)
<b>EPL for permanent contracts (V4)</b>	-0.051 (0.135)	0.143 (0.094)
<b>Temporary contract * EPL for permanent contracts (V4)</b>	0.200 (0.127)	0.101 (0.094)
<b>Constant</b>	1.745*** (0.132)	1.726*** (0.092)
<b>Random coefficients:</b>	Temporary contract	

**EPL-gap (V4)**

	Satisfied to a large extent vs Not satisfied (or to a small extent)	Satisfied to some extent vs Not satisfied (or to a small extent)
<b>Age (ref: 15-24 )</b>		
25-34	-0.065*** (0.014)	-0.034* (0.014)
35-44	0.006 (0.012)	0.029* (0.012)
45-54	0.018 (0.011)	0.023* (0.011)
55-64	-0.002 (0.014)	-0.046** (0.014)
<b>Gender (ref: Man)</b>		
Woman	-0.006 (0.008)	0 (0.008)
<b>Education</b>	-0.058*** (0.01)	-0.061*** (0.009)
<b>Working time (ref: Full-time)</b>		
Part-time	-0.167*** (0.016)	-0.170*** (0.016)
Marginal work	-0.138*** (0.033)	-0.213*** (0.033)
<b>Nationality (ref: Native)</b>		
Foreigner	-0.252*** (0.024)	-0.078*** (0.023)
<b>Temporary contract (ref: No)</b>		
Yes	-0.551*** (0.126)	-0.392*** (0.089)
<b>Supervisory role (ref: No)</b>		
Yes	0.171*** (0.015)	0.043** (0.015)
<b>Occupation (ref: Managers)</b>		
Professionals	0.548*** (0.018)	0.238*** (0.018)
Technicians and associate professionals	0.296*** (0.017)	0.151*** (0.017)
Clerks	0.013 (0.02)	0.018 (0.02)
Service and sales workers	-0.255*** (0.015)	-0.133*** (0.015)
Skilled agricultural, forestry and fishery	-0.09 (0.07)	-0.009 (0.069)
Craft and related trades workers	-0.209*** (0.022)	-0.018 (0.021)
Plant and machine operators and assemblers	-0.554*** (0.023)	-0.193*** (0.022)
Elementary Occupations	-0.841*** (0.02)	-0.466*** (0.019)
<b>EPL-gap (V4)</b>	0.091 (0.129)	0.121 (0.095)
<b>Temporary contract * EPL-gap (V4)</b>	0.056 (0.132)	0.052 (0.095)
<b>Constant</b>	1.746*** (0.126)	1.726*** (0.093)
<b>Random coefficients:</b>	Temporary contract	

	<u>Union density</u>	
	Satisfied to a large extent vs Not satisfied (or to a small extent)	Satisfied to some extent vs Not satisfied (or to a small extent)
<b>Age (ref: 15-24 )</b>		
25-34	-0.073*** (0.013)	-0.044*** (0.013)
35-44	-0.003 (0.011)	0.022* (0.011)
45-54	0.028** (0.01)	0.033** (0.01)
55-64	0.012 (0.013)	-0.033* (0.013)
<b>Gender (ref: Man)</b>		
Woman	-0.011 (0.007)	-0.002 (0.007)
<b>Education</b>	-0.037*** (0.009)	-0.051*** (0.009)
<b>Working time (ref: Full-time)</b>		
Part-time	-0.178*** (0.016)	-0.183*** (0.016)
Marginal work	-0.115*** (0.033)	-0.198*** (0.032)
<b>Nationality (ref: Native)</b>		
Foreigner	-0.211*** (0.024)	-0.057* (0.023)
<b>Temporary contract (ref: No)</b>		
Yes	-0.598*** (0.118)	-0.403*** (0.079)
<b>Supervisory role (ref: No)</b>		
Yes	0.182*** (0.015)	0.045** (0.015)
<b>Occupation (ref: Managers)</b>		
Professionals	0.612*** (0.018)	0.271*** (0.018)
Technicians and associate professionals	0.330*** (0.017)	0.169*** (0.017)
Clerks	0.041* (0.019)	0.036+ (0.019)
Service and sales workers	-0.291*** (0.014)	-0.160*** (0.014)
Skilled agricultural, forestry and fishery	-0.168** (0.064)	-0.087 (0.062)
Craft and related trades workers	-0.238*** (0.02)	-0.016 (0.019)
Plant and machine operators and assemblers	-0.553*** (0.021)	-0.179*** (0.02)
Elementary Occupations	-0.871*** (0.019)	-0.515*** (0.018)
<b>Union density</b>	0.257* (0.118)	0.085 (0.085)
<b>Temporary contract * Union density</b>	0.425*** (0.12)	0.267*** (0.081)
<b>Constant</b>	1.705*** (0.116)	1.698*** (0.083)
<b>Random coefficients:</b>	Temporary contract	

**Collective bargaining**

	Satisfied to a large extent vs Not satisfied (or to a small extent)	Satisfied to some extent vs Not satisfied (or to a small extent)
<b>Age (ref: 15-24)</b>		
25-34	-0.073*** (0.013)	-0.044*** (0.013)
35-44	-0.003 (0.011)	0.022* (0.011)
45-54	0.028** (0.01)	0.033** (0.01)
55-64	0.012 (0.013)	-0.032* (0.013)
<b>Gender (ref: Man)</b>		
Woman	-0.011 (0.007)	-0.002 (0.007)
<b>Education</b>	-0.037*** (0.009)	-0.051*** (0.009)
<b>Working time (ref: Full-time)</b>		
Part-time	-0.178*** (0.016)	-0.183*** (0.016)
Marginal work	-0.115*** (0.033)	-0.198*** (0.032)
<b>Nationality (ref: Native)</b>		
Foreigner	-0.211*** (0.024)	-0.057* (0.023)
<b>Temporary contract (ref: No)</b>		
Yes	-0.600*** (0.106)	-0.404*** (0.076)
<b>Supervisory role (ref: No)</b>		
Yes	0.182*** (0.015)	0.045** (0.015)
<b>Occupation (ref: Managers)</b>		
Professionals	0.612*** (0.018)	0.271*** (0.018)
Technicians and associate professionals	0.330*** (0.017)	0.169*** (0.017)
Clerks	0.041* (0.019)	0.036+ (0.019)
Service and sales workers	-0.291*** (0.014)	-0.160*** (0.014)
Skilled agricultural, forestry and fishery	-0.168** (0.064)	-0.087 (0.062)
Craft and related trades workers	-0.238*** (0.02)	-0.016 (0.019)
Plant and machine operators and assemblers	-0.553*** (0.021)	-0.179*** (0.02)
Elementary Occupations	-0.871*** (0.019)	-0.515*** (0.018)
<b>Collective bargaining</b>	0.203+ (0.122)	0.180* (0.079)
<b>Temporary contract * Collective bargaining</b>	0.510*** (0.108)	0.284*** (0.078)
<b>Constant</b>	1.705*** (0.12)	1.698*** (0.077)
<b>Random coefficients:</b>	Temporary contract	

	<b><u>Inclusiveness</u></b>	
	<b>Satisfied to a large extent</b> vs Not satisfied (or to a small extent)	<b>Satisfied to some extent</b> vs Not satisfied (or to a small extent)
<b>Age (ref: 15-24 )</b>		
25-34	-0.070*** (0.013)	-0.038** (0.013)
35-44	-0.004 (0.011)	0.019 (0.011)
45-54	0.029** (0.01)	0.033** (0.01)
55-64	0.009 (0.014)	-0.035** (0.013)
<b>Gender (ref: Man)</b>		
Woman	-0.011 (0.007)	-0.002 (0.007)
<b>Education</b>	-0.037*** (0.009)	-0.052*** (0.009)
<b>Working time (ref: Full-time)</b>		
Part-time	-0.185*** (0.016)	-0.190*** (0.016)
Marginal work	-0.119*** (0.033)	-0.205*** (0.033)
<b>Nationality (ref: Native)</b>		
Foreigner	-0.211*** (0.024)	-0.069** (0.024)
<b>Temporary contract (ref: No)</b>		
Yes	-0.655*** (0.111)	-0.440*** (0.077)
<b>Supervisory role (ref: No)</b>		
Yes	0.180*** (0.015)	0.043** (0.015)
<b>Occupation (ref: Managers)</b>		
Professionals	0.622*** (0.018)	0.277*** (0.018)
Technicians and associate professionals	0.337*** (0.017)	0.173*** (0.017)
Clerks	0.050* (0.02)	0.044* (0.02)
Service and sales workers	-0.297*** (0.014)	-0.163*** (0.014)
Skilled agricultural, forestry and fishery	-0.178** (0.064)	-0.104+ (0.063)
Craft and related trades workers	-0.240*** (0.02)	-0.02 (0.019)
Plant and machine operators and assemblers	-0.560*** (0.021)	-0.187*** (0.02)
Elementary Occupations	-0.883*** (0.019)	-0.523*** (0.018)
<b>Inclusiveness</b>	0.160 (0.122)	0.182* (0.081)
<b>Temporary contract * Inclusiveness</b>	0.516*** (0.114)	0.296*** (0.078)
<b>Constant</b>	1.715*** (0.12)	1.734*** (0.08)
<b>Random coefficients:</b>	Temporary contract	

**Notes:** + p < 0.10, \*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001. All variables are z-standardised. Standard errors are provided in brackets.

**Table 16: Full results of multilevel multinomial logistic models in Table 6. Association of different macro variables with involuntary temporary workers' job satisfaction**

	<b>EPL for permanent contracts (V1)</b>	
	<b>Satisfied to a large extent</b>	<b>Satisfied to some extent</b>
	vs Not satisfied (or to a small extent)	vs Not satisfied (or to a small extent)
<b>Age</b>	-0.027 (0.022)	-0.01 (0.021)
<b>Gender (ref: Man)</b>		
Woman	0.037+ (0.022)	0.045* (0.02)
<b>Education</b>	-0.233*** (0.031)	-0.174*** (0.03)
<b>Working time (ref: Full-time)</b>		
Part-time	-0.310*** (0.043)	-0.257*** (0.041)
Marginal work	-0.748*** (0.176)	-0.575*** (0.156)
<b>Supervisory role (ref: No)</b>		
Yes	0.071 (0.088)	0.02 (0.086)
<b>Occupation (ref: Managers and professionals)</b>		
Technicians and associate professionals	0.601*** (0.079)	0.273*** (0.078)
Clerks	0.226** (0.074)	0.189** (0.071)
Service and sales workers	-0.135** (0.043)	-0.089* (0.042)
Skilled agricultural & craft and related trades	-0.180** (0.065)	-0.071 (0.062)
Plant and machine operators and assemblers	-0.313*** (0.072)	-0.056 (0.068)
Elementary Occupations	-0.801*** (0.122)	-0.557*** (0.099)
<b>Contract duration (ref: &gt; up to months )</b>		
7-12 months	0.126*** (0.029)	0.103*** (0.027)
> 1 year	0.170*** (0.048)	0.116* (0.045)
<b>EPL for permanent contracts (V1)</b>	0.05 (0.152)	0.204+ (0.107)
<b>Intercept</b>	1.030*** (0.178)	1.266*** (0.13)
<b>Random coefficients:</b>	Marginal work Elementary occupations	

	<b>EPL-gap (V1)</b>	
	<b>Satisfied to a large extent vs Not satisfied (or to a small extent)</b>	<b>Satisfied to some extent vs Not satisfied (or to a small extent)</b>
<b>Age</b>	-0.034 (0.022)	-0.014 (0.021)
<b>Gender (ref: Man)</b>		
Woman	0.035 (0.022)	0.043* (0.021)
<b>Education</b>	-0.233*** (0.031)	-0.173*** (0.03)
<b>Working time (ref: Full-time)</b>		
Part-time	-0.220* (0.102)	-0.178+ (0.095)
Marginal work	-0.733*** (0.163)	-0.568*** (0.146)
<b>Supervisory role (ref: No)</b>		
Yes	0.071 (0.088)	0.02 (0.086)
<b>Occupation (ref: Managers and professionals)</b>		
Technicians and associate professionals	0.594*** (0.079)	0.268*** (0.078)
Clerks	0.209** (0.074)	0.176* (0.071)
Service and sales workers	-0.158*** (0.044)	-0.106* (0.042)
Skilled agricultural & craft and related trades	-0.179** (0.065)	-0.067 (0.062)
Plant and machine operators and assemblers	-0.222+ (0.124)	-0.016 (0.108)
Elementary Occupations	-0.821*** (0.112)	-0.558*** (0.091)
<b>Contract duration (ref: &gt; up to months )</b>		
7-12 months	0.126*** (0.029)	0.102*** (0.027)
> 1 year	0.185*** (0.048)	0.125** (0.046)
<b>EPL-gap (V1)</b>	0.083 (0.142)	0.139 (0.103)
<b>Intercept</b>	1.025*** (0.173)	1.267*** (0.122)
<b>Random coefficients:</b>	Part-time work Marginal work Plant and machine operators and assemblers Elementary occupations	

	<b>EPL for permanent contracts (V4)</b>	
	<b>Satisfied to a large extent</b>	<b>Satisfied to some extent</b>
	vs	vs
	Not satisfied (or to a small extent)	Not satisfied (or to a small extent)
<b>Age</b>	-0.027 (0.022)	-0.01 (0.021)
<b>Gender (ref: Man)</b>		
Woman	0.036+ (0.022)	0.045* (0.02)
<b>Education</b>	-0.233*** (0.031)	-0.175*** (0.03)
<b>Working time (ref: Full-time)</b>		
Part-time	-0.309*** (0.043)	-0.257*** (0.041)
Marginal work	-0.744*** (0.18)	-0.560*** (0.158)
<b>Supervisory role (ref: No)</b>		
Yes	0.071 (0.088)	0.02 (0.086)
<b>Occupation (ref: Managers and professionals)</b>		
Technicians and associate professionals	0.601*** (0.079)	0.273*** (0.078)
Clerks	0.226** (0.074)	0.189** (0.071)
Service and sales workers	-0.135** (0.043)	-0.088* (0.042)
Skilled agricultural & craft and related trades	-0.181** (0.065)	-0.071 (0.062)
Plant and machine operators and assemblers	-0.314*** (0.072)	-0.057 (0.068)
Elementary Occupations	-0.798*** (0.123)	-0.556*** (0.1)
<b>Contract duration (ref: &gt; up to months )</b>		
7-12 months	0.127*** (0.029)	0.104*** (0.027)
> 1 year	0.169*** (0.048)	0.115* (0.045)
<b>EPL for permanent contracts (V4)</b>	0.154 (0.153)	0.276* (0.108)
<b>Intercept</b>	1.021*** (0.171)	1.254*** (0.121)
<b>Random coefficients:</b>	Marginal work	
	Elementary occupations	



	<b>EPL-gap (V4)</b>	
	<b>Satisfied to a large extent</b>	<b>Satisfied to some extent</b>
	vs	vs
	Not satisfied (or to a small extent)	Not satisfied (or to a small extent)
<b>Age</b>	-0.028 (0.022)	-0.011 (0.021)
<b>Gender (ref: Man)</b>		
Woman	0.037+ (0.022)	0.045* (0.02)
<b>Education</b>	-0.234*** (0.031)	-0.175*** (0.03)
<b>Working time (ref: Full-time)</b>		
Part-time	-0.312*** (0.043)	-0.260*** (0.041)
Marginal work	-0.748*** (0.173)	-0.570*** (0.151)
<b>Supervisory role (ref: No)</b>		
Yes	0.071 (0.088)	0.02 (0.086)
<b>Occupation (ref: Managers and professionals)</b>		
Technicians and associate professionals	0.602*** (0.079)	0.274*** (0.078)
Clerks	0.225** (0.074)	0.188** (0.071)
Service and sales workers	-0.135** (0.043)	-0.088* (0.041)
Skilled agricultural & craft and related trades	-0.179** (0.065)	-0.07 (0.062)
Plant and machine operators and assemblers	-0.311*** (0.072)	-0.053 (0.068)
Elementary Occupations	-0.801*** (0.12)	-0.554*** (0.095)
<b>Contract duration (ref: &gt; up to months )</b>		
7-12 months	0.127*** (0.029)	0.104*** (0.027)
> 1 year	0.170*** (0.048)	0.116* (0.045)
<b>EPL-gap (V4)</b>	0.116 (0.157)	0.124 (0.117)
<b>Intercept</b>	1.026*** (0.175)	1.267*** (0.13)
<b>Random coefficients:</b>	Marginal work Elementary occupations	

	<u>Union density</u>	
	Satisfied to a large extent	Satisfied to some extent
	vs Not satisfied (or to a small extent)	vs Not satisfied (or to a small extent)
<b>Age</b>	-0.041+ (0.022)	-0.019 (0.02)
<b>Gender (ref: Man)</b>		
Woman	0.048* (0.021)	0.049* (0.02)
<b>Education</b>	-0.208** (0.073)	-0.155* (0.062)
<b>Working time (ref: Full-time)</b>		
Part-time	-0.274** (0.1)	-0.249** (0.091)
Marginal work	-0.844*** (0.143)	-0.671*** (0.131)
<b>Supervisory role (ref: No)</b>		
Yes	0.135 (0.087)	0.077 (0.085)
<b>Occupation (ref: Managers and professionals)</b>		
Technicians and associate professionals	0.604*** (0.079)	0.280*** (0.078)
Clerks	0.191** (0.072)	0.172* (0.07)
Service and sales workers	-0.166*** (0.043)	-0.100* (0.04)
Skilled agricultural & craft and related trades	-0.191** (0.064)	-0.084 (0.06)
Plant and machine operators and assemblers	-0.270*** (0.072)	-0.027 (0.067)
Elementary Occupations	-0.734*** (0.098)	-0.528*** (0.079)
<b>Contract duration (ref: &gt; up to months )</b>		
7-12 months	0.124*** (0.028)	0.103*** (0.026)
> 1 year	0.214*** (0.047)	0.124** (0.045)
<b>Union density</b>	0.404** (0.127)	0.134 (0.098)
<b>Intercept</b>	0.896*** (0.165)	1.208*** (0.114)
<b>Random coefficients:</b>	Par-time work	
	Marginal work	
	Elementary occupations	
	Education	

**Collective bargaining**

	<b>Satisfied to a large extent vs Not satisfied (or to a small extent)</b>	<b>Satisfied to some extent vs Not satisfied (or to a small extent)</b>
<b>Age</b>	-0.043+ (0.022)	-0.02 (0.02)
<b>Gender (ref: Man)</b>		
Woman	0.050* (0.021)	0.051* (0.02)
<b>Education</b>	-0.247*** (0.031)	-0.182*** (0.029)
<b>Working time (ref: Full-time)</b>		
Part-time	-0.307** (0.094)	-0.271** (0.085)
Marginal work	-0.910*** (0.081)	-0.677*** (0.076)
<b>Supervisory role (ref: No)</b>		
Yes	0.13 (0.087)	0.074 (0.085)
<b>Occupation (ref: Managers and professionals)</b>		
Technicians and associate professionals	0.614*** (0.079)	0.288*** (0.078)
Clerks	0.199** (0.072)	0.175* (0.07)
Service and sales workers	-0.155*** (0.042)	-0.094* (0.04)
Skilled agricultural & craft and related trades	-0.200** (0.063)	-0.086 (0.059)
Plant and machine operators and assemblers	-0.288*** (0.072)	-0.032 (0.067)
Elementary Occupations	-0.729*** (0.105)	-0.517*** (0.077)
<b>Contract duration (ref: &gt; up to months )</b>		
7-12 months	0.121*** (0.028)	0.101*** (0.026)
> 1 year	0.218*** (0.047)	0.131** (0.044)
<b>Collective bargaining</b>	<b>0.441*** (0.129)</b>	<b>0.275*** (0.081)</b>
<b>Intercept</b>	<b>0.914*** (0.158)</b>	<b>1.225*** (0.094)</b>
<b>Random coefficients:</b>	Par-time work Elementary occupations	

	<b><u>Inclusiveness</u></b>	
	Satisfied to a large extent vs Not satisfied (or to a small extent)	Satisfied to some extent vs Not satisfied (or to a small extent)
<b>Age</b>	-0.038+ (0.022)	-0.015 (0.02)
<b>Gender (ref: Man)</b>		
Woman	0.049* (0.021)	0.050* (0.02)
<b>Education</b>	-0.236*** (0.031)	-0.175*** (0.029)
<b>Working time (ref: Full-time)</b>		
Part-time	-0.318** (0.106)	-0.268** (0.095)
Marginal work	-0.891*** (0.156)	-0.704*** (0.141)
<b>Supervisory role (ref: No)</b>		
Yes	0.132 (0.089)	0.082 (0.087)
<b>Occupation (ref: Managers and professionals)</b>		
Technicians and associate professionals	0.607*** (0.079)	0.274*** (0.078)
Clerks	0.200** (0.073)	0.180* (0.07)
Service and sales workers	-0.164*** (0.043)	-0.101* (0.041)
Skilled agricultural & craft and related trades	-0.194** (0.064)	-0.089 (0.06)
Plant and machine operators and assemblers	-0.286*** (0.072)	-0.036 (0.067)
Elementary Occupations	-0.724*** (0.115)	-0.510*** (0.086)
<b>Contract duration (ref: &gt; up to months )</b>		
7-12 months	0.119*** (0.028)	0.102*** (0.026)
> 1 year	0.214*** (0.047)	0.124** (0.045)
<b>Inclusiveness</b>	0.398** (0.141)	0.312*** (0.086)
<b>Intercept</b>	0.823*** (0.175)	1.176*** (0.102)
<b>Random coefficients:</b>	Marginal work Par-time work Elementary occupations	

**Table 17: Sample descriptive statistics of permanent and involuntary temporary workers: analytical sample vs. original sample.**

	Analytical sample	Original sample
	Percentage/ Mean (SD)	Percentage/ Mean (SD)
<b>Job satisfaction</b>	78.62 (23.06)	78.18 (23.07)
<b>Age</b>		
15 to 24	7.07	7.65
25 to 34	19.46	19.54
35 to 44	25.86	25.88
45 to 54	28.32	28.06
55 to 64	19.28	18.86
<b>Gender</b>		
Man	49.78	50.15
Woman	50.22	49.85
<b>Education</b>	4 (1.85)	3.98 (1.84)
<b>Working time</b>		
Full-time	80.43	80.78
Part-time	15.83	14.99
Marginal work	3.74	4.23
<b>Nationality</b>		
Native	93.05	93.26
Foreigner	6.95	6.74
<b>Supervisory role</b>		
No	76.91	78.09
Yes	23.09	21.91
<b>Occupation</b>		
Managers	5.09	4.86
Professionals	21.02	20.64
Technicians and associate professionals	16.24	15.43
Clerks	10.7	10.30
Service and sales workers	17.28	17.74
Skilled agricultural, forestry and fishery	0.94	0.95
Craft and related trades workers	10.5	10.93
Plant and machine operators and assemblers	8.4	8.76
Elementary occupations	9.82	10.11
<b>N</b>	326,260	381,812

**Note:** For simplicity we only present the results for the sample used the in models including *EPL for permanent contracts (V1)*, *EPL for permanent contracts (V4)*, *EPL-gap (V1)* and *EPL-gap (V4)* as macro-level variables.

**Table 18: Sample descriptive statistics of and involuntary temporary workers: analytical sample vs. original sample.**

	Analytical sample	Original sample
	Percentage/ Mean (SD)	Percentage/ Mean (SD)
<b>Job satisfaction</b>	73.11 (26.05)	72.90 (26.28)
<b>Age</b>		
15 to 24	16.69	16.59
25 to 34	28.49	28.50
35 to 44	24.11	24.08
45 to 54	19.81	19.78
55 to 64	10.91	11.05
<b>Gender</b>		
Man	47.37	47.44
Woman	52.63	52.56
<b>Education</b>	3.57 (1.87)	3.56 (1.87)
<b>Working time</b>		
Full-time	70.88	70.79
Part-time	22.4	22.58
Marginal work	6.72	6.64
<b>Nationality</b>		
Native	91.13	90.45
Foreigner	8.87	9.55
<b>Supervisory role</b>		
No	92.72	92.73
Yes	7.28	7.27
<b>Occupation</b>		
Managers	0.85	0.86
Professionals	14.95	14.89
Technicians and associate professionals	9.03	8.79
Clerks	8.87	8.76
Service and sales workers	21.93	21.90
Skilled agricultural, forestry and fishery	1.8	1.88
Craft and related trades workers	10.58	10.40
Plant and machine operators and assemblers	8.95	8.66
Elementary occupations	23.03	23.69
<b>N</b>	29,129	31,470

**Note:** For simplicity we only present the results for the sample used the in models including *EPL for permanent contracts (V1)*, *EPL for permanent contracts (V4)*, *EPL-gap (V1)* and *EPL-gap (V4)* as macro-level variables.



## **CHAPTER 3**

### **Unions and temporary workers' wages in Spain: Testing solidarity in the good times and in the bad times**

#### **3.1 Introduction**

Temporary workers generally have lower quality jobs than those of permanent employees. They not only have little or no job security (Parker et al., 2002), but also lower hourly wages compared to permanent workers (Westhoff, 2022). Among the multiple institutional factors that seem to influence the wage differential between permanent and temporary workers, the effects of industrial relations institutions and unions stand out (Arranz et al., 2021). Industrial relations scholars generally argue that labour unions improve workers' job quality, although they also cast doubt on the capacity of unions to deal with the issues that specifically affect temporary workers. Labour market dualization theorists, on the contrary, argue that unions only benefit labour market insiders (i.e. permanent workers), frequently at the expense of the outsiders (i.e. temporary workers) (Lindbeck and Snower, 2002; Palier and Thelen, 2010). However, they also state that unions could be interested in improving outsiders' wages to benefit the insiders (Lindbeck and Snower, 2002). Despite this debate, the consequences of unions for temporary workers' wages and the permanent-to-temporary wage gap have rarely been empirically tested (see Arranz et al., 2021 for an exception).

The goal of this article is twofold: first, to explore how unions affect the wage gap between permanent and temporary workers. Second, to investigate the potential effects of unions on temporary workers' wages. While the first objective concerns the relative effect of unions on temporary workers' income, the second refers to the absolute effect. This study evaluates unions' consequences for temporary workers in Spain, which has been traditionally considered one of the paradigmatic cases of labour market dualization in Europe (Polavieja, 2003; Cárdenas and Villanueva, 2020). More specifically, it explores the effects of three institutions – works councils, union density and collective agreements – during a period of economic growth (2006-2007) and a period of recession (2008-2010).



This article makes three contributions to the current literature. First, it explores for the first time the *absolute* effect of unions on temporary workers' wages, as previous articles focused on the permanent-temporary wage gap (Arranz et al., 2021). Studying both outcomes is necessary to disentangle the origin of the wage gap, since inequalities might increase (decrease) because of better (poorer) standards for the privileged group or due to lower (higher) standards for the disadvantaged one (Pulignano et al., 2020). Second, this study pioneers the exploration of the consequences of works councils for temporary workers' wages. Due to the characteristics of the industrial relation system in Spain, such an analysis allows obtaining individual – rather than merely aggregate – evidence of the potential effects of unions. Third, this is the first article that performs these analyses for the case of Spain. Most of the literature in the field focuses on the British and German cases. Extending these analyses to other institutional settings contributes to building more comprehensive insight into the consequences of unions for non-standard workers. Moreover, as the analyses are performed during a period of economic growth and a period of recession, they enable exploring whether unions' consequences for temporary workers might have varied depending on the economic climate.

Understanding how industrial relations institutions affect wage inequalities between temporary and permanent workers is crucial as wage inequality is one of the main dimensions of social inequality. This is especially true for temporary workers, whose contracts entail a double disadvantage in terms of both job security and compensation. The findings of this article are therefore especially relevant for legislators, who must evaluate the effects of industrial relations institutions to regulate them, but also for labour unions aiming to assess their capacity to represent the interests of the labour market outsiders.

### **3.2 Literature review**

#### ***Theoretical approaches: between inclusiveness and dualization***

The effects that labour unions have for non-standard employees is a recurrent topic at the intersection of sociology, economics and political science. Across disciplines researchers have debated whether labour unions and industrial relations institutions are beneficial or harmful for temporary workers' job quality and labour market

prospects. Two partially opposed views are defended by the industrial relations literature and proponents of the dualization theory.

The industrial relations literature, relying on the power resources theory (Korpi, 1983) and critical sociology, holds a mostly positive view of the consequences of unions for temporary workers (see Doellgast et al., 2018 for a review). Scholars in this field argue that unions tend to improve atypical workers' outcomes by exerting and coordinating collective action, although they also acknowledge a certain incapacity of unions to defend and represent the interests of atypical workers. These scholars recurrently study whether unions adopt 'inclusive' – rather than 'exclusive' – (Benassi and Dorigatti, 2015) strategies towards atypical workers and negotiate 'encompassing' agreements (Benassi and Vlandas, 2016) that favour 'convergence' and 'solidarity' instead of 'divergence' and 'dualism' (Doellgast et al., 2018; Pulignano et al., 2020) between standard and non-standard employees. Most of these studies provide an insightful and detailed qualitative analysis of the strategies that unions pursue and the outcomes that they achieve regarding atypical workers. However, it is hard to assess to what extent these outcomes are the rule rather than the exception. By reviewing multiple case-specific studies of unions' bargaining outcomes and strategies across Europe, Carver and Doellgast (2020) find that unions generally benefitted both insiders and outsiders, although in a minority of cases (mostly in Germany) unions also fostered dualization.

As opposed to this, the labour market dualization theory, which is more prominent in economics and political science, considers that permanent and temporary workers comprise two groups with opposing interests (Rueda, 2007a). Their core argument is that labour unions defend and protect the interests of insiders (i.e. permanent workers, union members and full-timers) at the expense of outsiders (i.e. temporary workers, the unemployed, part-timers and non-members) (Rueda, 2007a; Palier and Thelen, 2010). They argue that unions would neglect and even bargain against outsiders' interests because they are not sufficiently represented: whereas permanent workers constitute the core constituency of unions, temporary workers form only a minority of it (Emmenegger et al., 2012b). In terms of employment protection, they claim that unions would be interested in fostering inequalities between the two groups to benefit the insiders (Bentolila and Dolado, 1994; Lindbeck and Snower, 2002). Hence, by imposing high dismissal costs for permanent workers, employers would use temporary contracts as a buffer in labour market fluctuations (Polavieja, 2006). This would

improve the job security of the permanent workers at the expense of the temporary ones, who would have fewer chances of attaining a permanent contract due to the reluctance of employers to hire workers that are costly to dismiss. While the theory makes claims about the effects of unions for the insider-outsider divide in employment protection and job security, their conclusions are less certain concerning wage inequalities. Lindbeck and Snower (2002:13) state that unions could be interested in both widening and reducing the wage gap, as well as improving and lowering temporary workers' wages, always to benefit the labour market insiders. If outsiders' wages are significantly lower than insiders', then employers could end up substituting the permanent workforce with temporary employees, thus threatening the insiders' positions. Conversely, if unions set higher wages for permanent workers, employers would compensate these greater labour costs by lowering the wages of the temporary ones. Evidence tends to support the dualization assumption in terms of employment protection: stricter dismissals regulations reduce outsiders' chances of finding a permanent job – at least during some time and for some socio-demographic groups (Barbieri and Cutili, 2016; Gebel and Giesecke, 2016). It is unclear, nonetheless, whether the theory assumptions hold in terms of wages. Benassi and Vlandas (2021) found evidence of wage dualization in Germany by showing that non-unionised workers are at a higher risk of earning low wages in highly unionized sectors of economic activity. In contrast, in sectors with high collective bargaining coverage, workers without collective agreements have less risk of being low-wage earners, which questions Fitzenberger et al.'s (2013) results for the same country.

These two bodies of literature offer mostly opposite views about the *intentions* of unions towards atypical workers: for the industrial relations literature, unions act in favour of the collective good, frequently motivated by ideological reasons, while for the dualization theory, unions are corporatist actors that try to maximize profits. However, these two frameworks are *less contrasting* when it comes to the consequences of unions for wage inequalities. In the end, both provide theoretical arguments and empirical findings that suggest that unions might produce *dualizing* or *solidary* outcomes; that is, unions might promote or hinder wage convergence as well as exert positive or negative effects on temporary workers' wages.

### ***The permanent to temporary wage gap in Spain***

The (hourly) wage gap between permanent and temporary workers has been documented across time in a variety of countries with distinct labour market institutions (Westhoff, 2022), but the causes and mechanisms that are at the origin of this wage difference are not fully clear. In Spain, De La Rica (2004) estimates that 42% of the wage gap can be explained by the segregation of temporary workers in lower-paying firms. After accounting for workers' unobserved characteristics, Mertens et al. (2007) observe that the wage gap between permanent and temporary in the country remained at 4.4 percentage points over the period 1995–2000. Although since 2001 the Workers' Statute (article 15.6<sup>1</sup>) explicitly prohibits differences in pay for permanent and temporary workers, studies analysing datasets after the law's implementation still detect the wage difference (Comi and Grasseni, 2012<sup>2</sup>; Dias Da Silva and Turrini, 2015; Oliver and Sard, 2019).

Other findings indicate that this disadvantage might stem from the inherent situation of vulnerability and lack of job security faced by temporary workers. Engellandt and Riphahn (2005) show that temporary workers are more likely to do unpaid extra hours if their contracts provide higher chances of becoming permanent workers. Polavieja (2006) likewise suggests that temporary workers might have more incentives to display greater effort to obtain a permanent position. This 'incentive effect of temporary contracts' might be especially strong in the case of Spain due to the high structural unemployment and the high protection against dismissal for permanent workers (Jimeno and Toharia, 1993: 477; Polavieja, 2006: 72). Obtaining a permanent position would then free temporary workers from the constant threat of unemployment, while obtaining a temporary contract renewal would be a sub-optimal alternative to the persistent unemployment. As a result of this 'incentive effect', temporary workers would obtain the same salary as permanent employees for a greater unit of work. For these same reasons, temporary workers might be also more likely to accept other kinds of abusive and illegal conditions. Because the compensation against (unfair) dismissals for permanent workers is high, employers face strong barriers to fire non-complying permanent workers, whereas retaliating against non-complying temporary workers

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<sup>1</sup> This article prohibited all kinds of discrimination, except for severance pay.

<sup>2</sup> Part of the wage gap observed by Comi and Grasseni (2012) might be attributed to workers with apprenticeship and traineeship contracts.

comes at a lower cost. Severance pay is notably lower for temporary workers, but not offering a contract renewal frequently entails a dismissal in practice. In consequence, employers in Spain could offer temporary workers a lower compensation than to permanent employees for the same unit of work. Still, the inequalities that emerge on the fringes of the law are insufficient to account for the lower salaries of temporary workers as the wage difference is also detected in studies using surveys that do not capture informal employment (e.g. Dias da Silva and Turrini, 2015; Oliver and Sard, 2019).

Considering some of the mechanisms through which wage inequalities between permanent and temporary workers could arise, the effects of unions on the permanent-to-temporary wage gap must depend on unions' capacity and will to mitigate or strengthen these mechanisms. Unions' effects on temporary workers' wages will not only depend on their talent and capacity to bargain in a broad sense, but on their ability and will to specifically address the precise causes of precariousness and low remuneration among temporary employees. Unions' influence can then occur through multiple institutions and instruments. For example, unions might widen the wage gap if they are more likely to exert industrial actions for issues that concern permanent workers than for those that concern temporary ones. Collective agreements might also systematically grant benefits and bonuses that in practice only permanent workers can achieve.<sup>3</sup> Alternatively, inequalities could result from the unions' inability to oppose employers' abusive and illegal employment conditions towards the temporary workers. Conversely, if unions can effectively enforce encompassing collective agreements, develop industrial action to tackle issues that especially affect temporary employees, negotiate on-the-job training for temporary workers with the aim to improve their productivity (Adolfsson et al., 2022) or provide legal assistance to temporary workers who face abusive working conditions (Heery, 2009), they could then reduce the wage gap and promote higher wages for the temporary workforce.

### ***The industrial relations system in Spain***

For the dualization literature, Spain constitutes a classic and prominent case of dualization. The fact that the reforms resulting in a dualized labour market were

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<sup>3</sup> A similar effect could have the benefits *ad personam*, whereby employers can grant additional benefits to workers with certain characteristics, such as specific qualifications or skills.

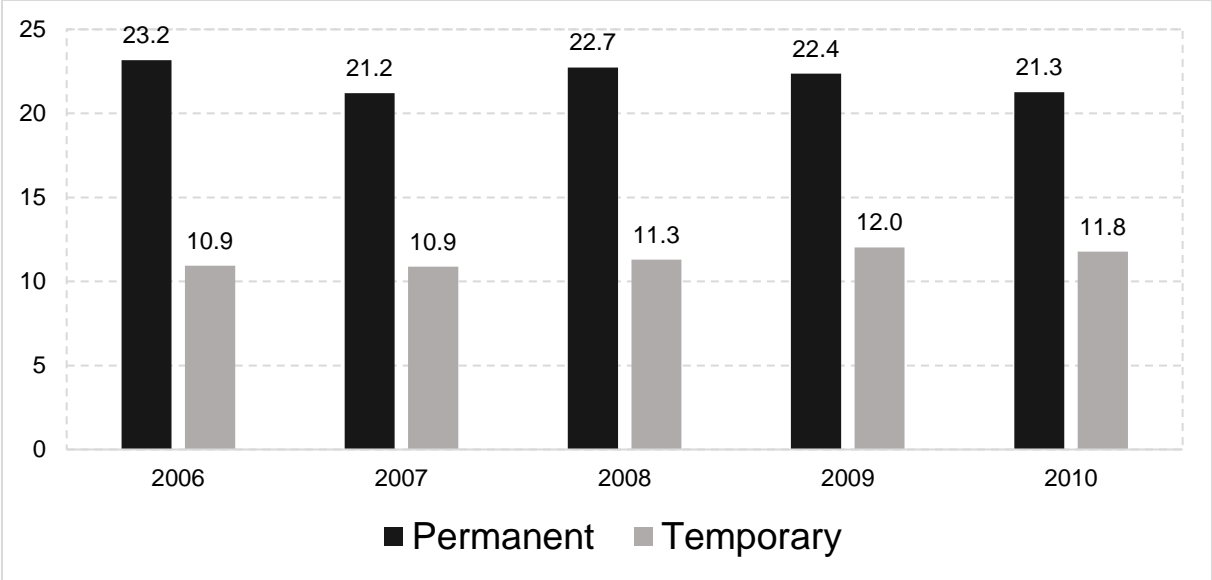
negotiated and supported by labour unions corresponds well with the dualization narrative (Dolado et al., 2002; Polavieja, 2003 and 2006; Rueda, 2007a). Labour unions encouraged maintaining the high protection against dismissals for permanent workers but accepted more flexibility for the temporary ones (Dolado et al., 2002). This would have resulted in a disproportionate rate of temporary employment – it reached 35% in 2006 and was above 30% in the 1990s – and significantly reduced the possibilities of temporary workers to attain a permanent position (Polavieja, 2006; Dolado et al., 2002).

From the industrial relations perspective, labour unions in Spain have not systematically and extensively promoted dualization and exclusiveness. Pulignano et al. (2016) show that while unions were not actively developing inclusive strategies, they did not pursue exclusion either. The issues that concerned atypical workers were not a priority for unions, but they were at least addressed by the associations of young workers within unions. According to Benassi and Vlandas (2016), Spanish unions instead developed inclusive strategies; for example, by setting an equal pay agreement for temporary agency workers. The authors find that what motivated their solidaristic and inclusive strategies was the union working-class ideology. Jódar et al. (2011) similarly show that union members' motivation to participate in the union was mostly collectivist instead of individualistic.

As most European countries, Spain has a system of multiparty bargaining, where unions are stakeholders involved in developing policies together with policymakers and the employers' representatives (even though policy reforms do not need to be accepted by all parties to be implemented). The country combines high collective agreement coverage (about 80%) and low union density (about 18%). Most union members (around 70%) belong to the main nationally representative organisations: the Workers' General Union (*Unión General de Trabajadores*) and Workers' Commissions (*Comisiones Obreras*), both with a leftist ideology. The remaining 30% of union members belong mostly to regional unions and to the public sector union. As shown in Figure 1, union membership rates are twice as high for permanent workers compared to temporary ones. During the first years of financial crisis, this gap became smaller, as unionization rates seem to have grown among temporary workers but decreased among the permanent ones. Figure 2 indicates that collective bargaining coverage has also been considerably higher among permanent workers (about 40 %) than among

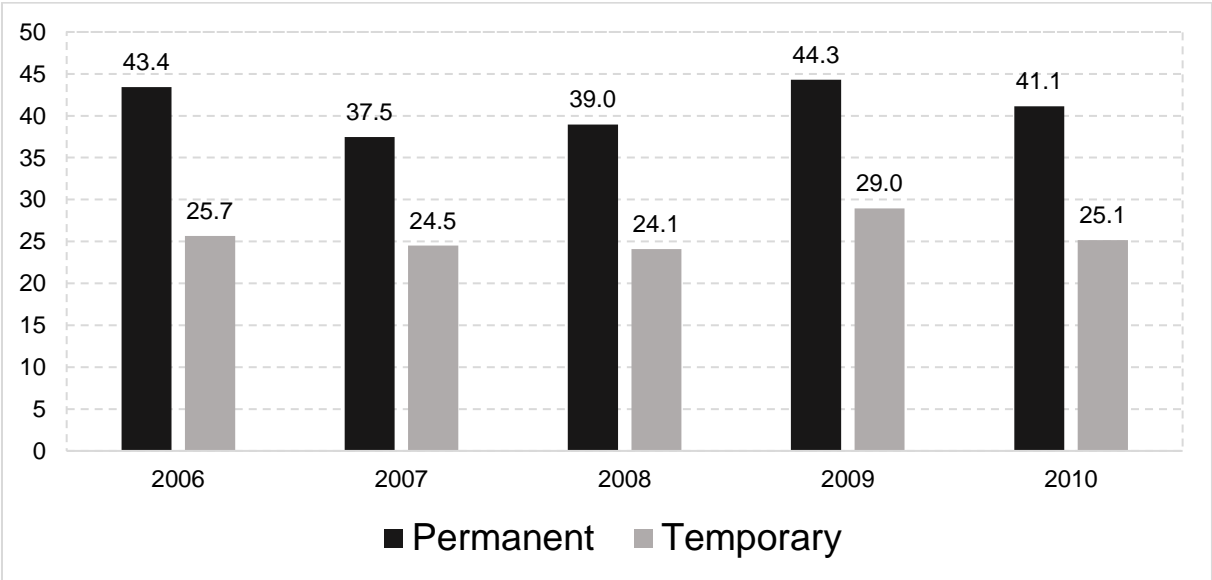
temporary workers (about 25 %), but not as much as unionization rates.<sup>4</sup> These numbers remained almost unchanged during the first of recession, without showing a clear trend.

**Figure 1: Union membership in Spain, by kind of contract**



**Source:** Own elaboration from QoWLS

**Figure 2: Collective bargaining coverage in Spain, by kind of contract**



**Source:** Own elaboration from QoWLS

<sup>4</sup> As we explain in the methods section, whereas the ILO considers that in Spain collective bargaining coverage is around 80%, the Quality of Working Life Survey does not reflect these numbers, something that might be attributed to methodological differences and recall bias, among other limitations.

The principal institutions of workers' representation are works councils (*comité de empresa*) and the union sections (*sección sindical*), which is composed of the members of a union at the workplace. Most of the union power and influence is determined by the results of the works council elections (Izquierdo et al., 2003). In these elections, union members from different unions – as well as the non-unionized workers – can compete to become representatives, either as workers' delegates or within the works council, depending on the size of the company. The elected representatives negotiate firm-level agreements with employers, while the regional and sectoral agreements are negotiated exclusively by the unions with more representation in the sector. For this reason, it is argued that unions in Spain represent voters instead of members, as *all* workers, regardless of their membership, can influence the union's power and relevance (Martin Valverde 1991: 24-5; Martínez-Lucio, 1992: 501; Jódar et al., 2011: s164). Although these elections are open to both union members and non-members, it could be argued that the electoral process is biased against temporary workers as six months of tenure are required to be elected as a representative, and one month is needed to participate in the election. In any case, differences in the share of permanent and temporary workers with works councils are not as striking as those for union density. As observed in Figure 3, between 2006 and 2010, about 54% of permanent workers had a works council in their company, compared to approximately 36% of temporary workers. A significant decline in the share of permanent workers with works councils was observed from 2009 to 2010, whereas this decrease is smaller for temporary workers. Of course, this decline might be attributed to the significant number of factories that ceased their activity during the years of recession.

Our analysis focuses on three institutions from among the multiple ones through which unions can exert power: works councils, collective agreements and union density. Analysing multiple institutions provides a wider picture of unions' influence, as institutions might present different effects (Hübler and Meyer, 2000).<sup>5</sup> Studying these institutions during a period of economic growth and economic downturn contributes to our understanding of whether union strategies and outcomes towards the outsiders were shaped by the economic climate. In this regard, we adopt an exploratory approach. Following the dualization framework, it could be expected that unions would adopt more corporatist strategies during periods of economic recession than during

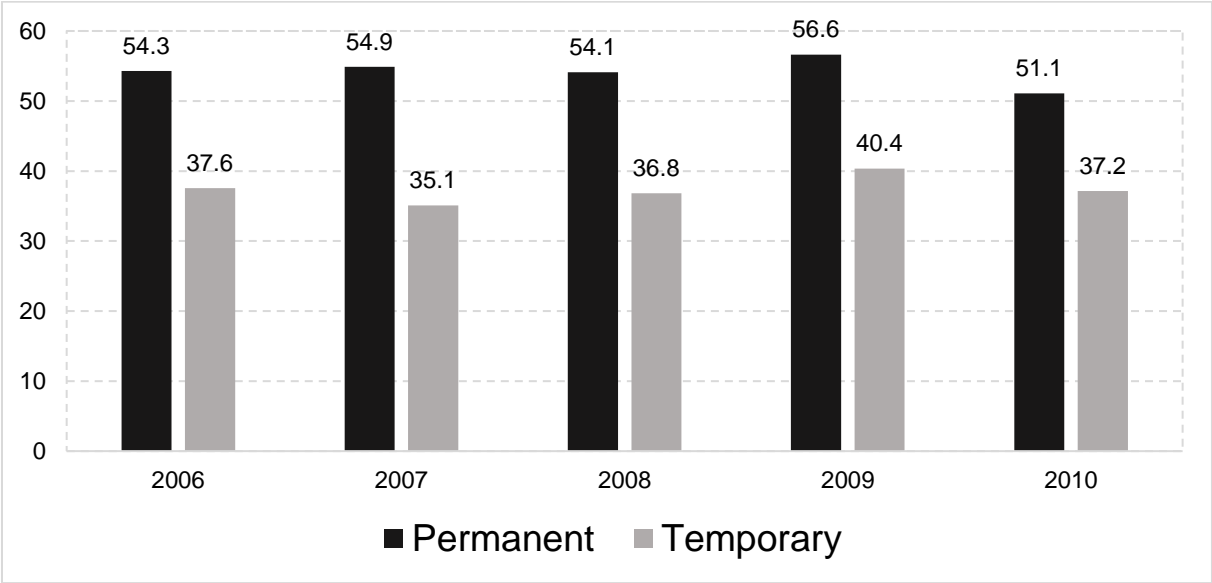
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<sup>5</sup> Other institutions have not been analysed due to data availability and space constraints.



periods of growth. Hence, they might improve outsiders' wages when resources are widely available but benefit insiders at the expense of the outsiders when facing pressures to reduce labour costs. Conversely, if unions' strategies and decisions are motivated by a working-class ideology, as suggested by Benassi and Vlandas (2016), the economic recession might have promoted solidarity and inclusiveness towards the outsiders, who were at greater risk of becoming unemployed.

**Figure 3: Share of workers with works councils in Spain, by kind of contract**



**Source:** Own elaboration from QoWLS

The next sections describe the characteristics of works councils, union density and collective agreements in the context of Spain; review the evidence about their potential effects on wages and wage inequality and set the hypotheses that will guide the analyses. As both the labour market dualization theory and the industrial relations framework provide reasonable theoretical arguments regarding how industrial relations institutions could both reduce and increase temporary workers' wages and the permanent-temporary wage gap, we rely on empirical findings to formulate the hypotheses that will guide our analyses. For simplicity, the term 'solidarity' will be used to describe a situation in which unions have equalising and positive effects on temporary workers' wages, and 'dualization' for the opposite case.

### **Works councils**

All workers in companies with more than six employees are entitled to have an employee delegate (*delegado de personal*) and to form a works council in companies with more than 50 employees. The main role of works councils is to negotiate collective agreements at the firm level, but they also have the right to consultation and information, which allows them to potentially influence hirings, wages and working conditions. Although workers can elect and become works councils' representatives regardless of their union membership, in most cases the representatives are also union members (Fulton, 2021).

Research about the consequences of works councils on wages is scarce and based on Germany, where works councils have a similar role than in Spain. Results suggest that they reduce overall wage inequality (Hübler and Meyer, 2000) and the gender wage gap (Heinze and Wolf, 2010) and also exert positive effects on wages across different socio-demographic groups. As previous findings support the solidarity assumption, it is hypothesized that:

(H1a) Works councils are associated with a smaller wage gap between permanent and temporary workers and (H1b) temporary workers in firms with works councils have higher wages than temporary workers in firms without works councils.

Conversely, we would find support for dualization if works councils are associated with a *larger* wage gap between permanent and temporary workers, and if temporary workers in firms with works councils have *lower* wages than temporary workers in firms without works councils.

### **Collective agreements**

Negotiations of collective agreements take place at different levels, with a predominance of company and regional bargaining agreements. This system has been largely inclusive, since lower-order agreements could not provide poorer wages and conditions than those agreed at higher levels, but also due to *erga omnes* (i.e. collective agreements are automatically extended to all workers within a company). In practice, this means that permanent and temporary workers have a similar bargaining

coverage and that unions affect most segments of the workforce, regardless of workers' membership and kind of contract.

Research into collective agreements shows that firm agreements in Spain generate greater wage dispersion (Dell'Aringa et al., 2007; Domínguez et al., 2016; Domínguez et al., 2020) and benefit workers in the upper end of the income distribution more (Card and De La Rica, 2006; Ramos et al., 2022) compared to sectoral and regional agreements. Nonetheless, collective agreements tend to reduce overall wage dispersion and workers at the lower end of the income distribution benefit from the wage floors that these agreements set (Ramos et al., 2022). Similar equalising effects are observed for the gender wage gap too (Felgueroso et al., 2008). Because of the support for the solidarity assumption, the following hypothesis is tested:

(H2a) Collective agreements are associated with a smaller wage gap between permanent and temporary workers and (H2b) temporary workers with collective agreements have higher wages than temporary workers without collective agreements.

Opposite results would suggest dualization. This is, if collective agreements are associated with a *larger* wage gap between permanent and temporary workers, and if temporary workers with collective agreements have *lower* wages than temporary workers without collective agreements. In fact, results for Germany do raise doubts about the effects that collective bargaining coverage has on uncovered workers. Fitzenberger et al. (2013) observe that collective bargaining coverage seems to exert a downward pressure on the wages of uncovered workers, whereas Benassi and Vlandas (2021) find the opposite: in sectors with high collective bargaining coverage, uncovered workers have higher wages. Given the contradictory evidence, the solidarity assumption is tested among uncovered temporary workers:

(H2c) Temporary workers without collective agreements have higher wages in sectors with high collective bargaining coverage.

Opposite results – temporary workers with collective agreements have *lower* wages in sectors with high collective bargaining coverage – would show support for the dualization assumption.

### ***Union density***

Union density is commonly considered to reflect unions' strength and power to exert collective action in different forms. The association between union density and wages in Spain has not been studied, but the research for other countries is somewhat mixed. Some authors find that union density is related to lower wage dispersion and higher wages for lower earners in Germany (Fitzenberger et al., 2013), Portugal (Addison et al., 2022) and in cross-country studies (Koeniger et al., 2007; Checchi et al., 2008). Conversely, Hübler and Meyer's (2000) results for Germany suggest that union density does not reduce wage inequality between skilled and unskilled workers, and Arranz et al.'s (2020) cross-national analyses indicate that it slightly widens the permanent-to-temporary wage gap. Since the evidence is more inclined towards the solidarity assumption, it is hypothesized that:

(H3a) In sectors with higher union density, the wage gap between permanent and temporary workers is smaller and (H3b) temporary workers have higher wages.

Contrary results would give support for the dualization theory instead: in sectors with higher union density, the wage gap between permanent and temporary workers is *greater* and temporary workers have *lower* wages.

Besides the permanent-to-temporary workers divide, the effects of union density might also differ for unionized and non-unionized temporary workers. The dualization theory points out that unions do not defend the interests of temporary workers because they are less likely to be union members and hence to conform the union's core constituency. However, according to Benassi and Vlandas (2016), unions in Spain have been relatively inclusive towards atypical workers, who presented similar membership rates than permanent employees. It could be argued, then, that union density in the Spanish context might have negative consequences only for non-unionized temporary employees. This is in line with what Benassi and Vlandas' (2021) results for Germany suggest. Following these findings, the dualization assumption is tested among the non-unionized temporary workers:

(H3c) Non-unionized temporary workers have lower wages in sectors with higher union density.

Instead, observing that non-unionized temporary workers have *higher* wages in sectors with higher union density, would show support for solidarity.

### 3.3 Data and methods

#### *Sample characteristics*

The analyses primarily draw on the Quality of Working Life Survey (QoWLS), which consists of a series of cross-sectional surveys conducted by the Spanish Ministry of Labour between 2006 and 2010.<sup>6</sup> This survey is representative of the Spanish workforce and includes about 5,700 employees in each round. Its main strength is that it contains individual information about respondents' union membership, their collective agreement coverage and the presence of a works council in their company. Its main weakness is that the source of the dependent variable (monthly wage) is provided in intervals that are very wide in some segments. This blurs wage differences in hourly wages, even though the analyses do reflect the fact that temporary workers earn significantly less than permanent employees. In addition, the QoWLS does not allow distinguishing between different kinds of temporary workers, such as temporary agency workers and apprentices and trainees, who tend to have lower wages than other temporary workers. The analytical sample only contains employees - therefore excluding the self-employed, independent workers, workers of cooperatives and family workers – who are younger than 69, who have only one job, who do not have an occupation as armed forces. In addition, we excluded observations with an educational level that does not fit standard ISCED categories, observations within the highest income bracket (more than € 6000 per month), and those who report the lowest income category while working less than 40 hours per week.<sup>7</sup> This selection of observations is expected to have reduced the number of (unidentified) temporary agency workers and apprentices and trainees. First, eliminating workers with more than one job should have lowered the number of temporary agency workers as they tend to have different employers. Second, eliminating workers who claimed to earn 'up to 600€' per month but worked less than 40 hours per week should have reduced the number of apprentices and trainees as they tend to earn below the minimum wage and work less

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<sup>6</sup> The surveys were conducted between 1999 and 2010. The analyses focus on the 2006-2010 period due to the higher data quality.

<sup>7</sup> €600 per month (the lowest income category) is close to the minimum wage for a full-time worker in Spain for the period 2006–2010. Assuming a monthly salary of €600 per month for part-timers would result in overestimating the real hourly wage of these workers.

than 40 hours. There were virtually no missing values for the control variables or other variables used to obtain the dependent variable. Instead, the independent variable *collective agreement* was missing for about one third of the observations, which were discarded – only from the analyses including this variable. The independent variable *Works council* was missing for about one fourth of the observations, which were also discarded – only from the analyses including this variable.

With the purpose of overcoming some of the weaknesses of the QoWLS, the analyses additionally relied on the Spanish Structure of Earnings Survey (SES) of 2006 and 2010 to explore the effects of union density on wages (hypotheses 3a and 3b). The SES gathers matched employer-employee data of almost 250,000 employees within more than 20,000 organisations. Its information is provided by the organisations instead of the workers. As the questionnaire instructs organisations to draw on pay slips to complete the questionnaire, this information is similar to administrative data and is therefore more accurate regarding wages and hours of work. In contrast to the QoWLS, the SES cannot capture situations of undeclared work and unpaid working hours, which tend to be more prevalent among temporary workers. This bias might be significant in the case of Spain, where the weight of the informal economy and employment is non-negligible (European Commission, 2018). Using the SES of 2006 and 2010 helps to overcome the two main limitations of the QoWLS. First, regarding the heterogeneity of the temporary workforce, the SES in Spain does not include apprentices and trainees (since 2006) or temporary agency workers. Second, the wage variable is fully continuous and based on pay slips. In contrast, the SES cannot capture situations of non-declared or undeclared employment, since the employees whose information is reported by employers are randomly selected from administrative registers. Not only might employers face administrative sanctions by reporting illegal or irregular work, but they are also instructed in the questionnaire to report information based on pay slips. Therefore, it is more likely that situations of irregular employment will be captured by the QoWLS, as reporting undeclared hours entails little or no penalization for employees. In addition, the SES does not include workers from sectors such as agriculture, fishing and activities of households as employers, which might be especially affected by precariousness and informality. These methodological differences seem to cause some mismatches between the QoWLS and the SES. For example, according to the SES, 95% of workers are covered by a collective agreement,

but according to the QoWLS this figure is only about 50% (the ILO indicates that the rate ranged from 75% to 81% for the period 2006–2010).

The analytical sample of the 2006 SES only excluded observations of workers who received a lower wage in the month of the interview due to maternity, end of contract, festivities and other reasons. None of the independent or control variables presented missing values. Due to methodological changes in the survey, the sample selection for the 2010 dataset was slightly different. Workers who were not employed during the whole month, workers with a permanent discontinuous contract (*fijo discontinuo*) and workers in special situations (e.g. workers on leave, on strike, working fewer hours due to care responsibilities, etc.) were discarded from the analyses.

### ***Variables and analytical strategy***

To calculate the hourly wage in the QoWLS, we divided the number of hours of work per month (calculated from the number of hours of work per week) by the monthly wage. Because the monthly wage was provided in income brackets, we attributed to each observation the mean value of its corresponding wage interval. In the SES the hourly wage is provided in a much more precise and direct manner. We calculated the total monthly wage by adding up the base salary, the additional pay for overtime hours, and the salary supplements. We divide that amount by the total number of hours worked (the weekly working hours multiplied by 4.43 weeks per month, plus the total number of overtime hours per month). As most studies, in all the analyses we obtained the logarithm of the hourly wages, which allowed us to ease the interpretation of results and reduce heteroskedasticity.

To explore the effects of *collective agreements* and *works councils* on temporary workers' wages and on the permanent-temporary wage gap, we followed similar studies in the field (e.g. Comi and Grasseni, 2012; Westhoff, 2022) and used quantile regression models. Our preference for using quantile regression models over conventional (non-quantile) linear regression models was motivated for two reasons. The main one is that quantile regression models provide estimates across the wage distribution rather than only at the mean, which avoids the influence of outliers. A secondary reason is that quantile regression models improve the precision of our results and enable us to identify potential systematic patterns that would otherwise remain hidden under conventional linear regression models. Hence, to test the

association of *works council* (H1a) and *collective agreement* (H2a) with wages conditional on kind of contract (temporary or permanent), the dummy variable *temporary contract* was interacted with the respective dummy variables for each institution in separate quantile regression models. Then, to test the association of *works council* (H1b) and *collective agreement*<sup>8</sup> (H2b) with the wages of temporary workers, these two independent variables were included in (different) quantile regression models containing only temporary workers. These quantile regression models were executed independently for each year to explore the associations across the period of economic growth and recession. As the variance of the residuals was still heteroskedastic after obtaining the logarithm of the dependent variable, we used wild bootstrap to obtain the standard errors.<sup>9</sup> We also included as control variables different confounders that could simultaneously affect the independent variables (*temporary contract*, *works council*, and *collective agreement*) and the dependent one (*hourly wage*): *age* (and *age squared*), *gender*, *education*, *nationality* (native vs. foreigner), *occupation* (ISCO- 1 digit), *public sector* (vs. private), *company size*, *supervisory role*, *activity sector* (NACE, 9 categories), *part-time employment* (vs. full-time), whether it is the *first job* of the worker, *work at weekends*, *work at night* and *fixed wage* (whether the wage is the same every month or it varies due to incentives or bonuses, for example). We additionally included different interactions as controls. Although some authors suggest that in moderation analyses all confounders should be interacted with the predictors, this approach also presents disadvantages (Keller, 2013). For this reason, we opted for including those interactions that we deemed most relevant.<sup>10</sup> The models analysing the associations of works councils and collective agreements with the permanent-temporary wage gap, and with temporary workers' wages included two interactions: First, we interacted *gender* and *part-time employment* to control for the impact of *part-time employment* conditional on *gender* (as suggested by Whesthoff, 2022). Second, we included an interaction between *age* and *first job* to account for the wage penalty that *very young* and *very old* new entrants in the labour market might suffer. The models assessing the permanent-temporary wage gap included three

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<sup>8</sup> To analyse works councils, the sample was restricted to companies with more than ten employees, since companies with less than six workers have no right to representation. This was the smallest category for the variable *company size*.

<sup>9</sup> All the quantile regression models were executed with the *quantreg* (Koenker, 2022) package for R.

<sup>10</sup> Although some readers might be sceptical about our selection of interaction terms, opting for different interactions did not alter the main conclusion of our findings, as was also observed by Keller (2013).



additional interactions. First, we interacted *temporary contract* and *part-time employment* to account for the multiplicative negative effects of non-standard contracts on wages and for the fact that workers with a marginal engagement in the labour market might be less willing to conform works councils. Second, we interacted *temporary contract* and *public sector*. We considered that, because of stricter wage regulations, temporary workers in the public sector suffer a smaller wage penalty. We also considered that public sector workers might be more likely to conform a works council compared to workers in the private sector due to stricter protections against dismissal. Third, we interacted *public sector* with each respective institution (*collective agreement* or *works council*) because the effects of these two labour market institutions might be conditional on sector, given that private and public sector organizations are subject to different industrial relations regulations.<sup>11</sup> The descriptive statistics of our analytical samples can be found in the Appendix (tables A1- A4).

To explore the association with sectoral collective bargaining coverage (H2c, models 1.1-1.2), we applied multilevel (mixed) models with random intercepts and coefficients. These models allowed us to account for the nested structure of the data (workers within activity sectors) and exploit the variation in collective bargaining coverage across activity sectors. Considering the sector as the cluster unit not only replicates the approaches of similar studies in the field (i.e. Benassi and Vlandas, 2021), but also allows us to reflect the system of collective bargaining coverage in Spain, where collective agreements are generally determined at the sectoral and regional level, as we showed in the literature review. We provide the values of union density, collective bargaining coverage, share of workers with works councils and temporary employment rate by activity sector in Table C1 and C2 in the Appendix.

These analyses were performed by conforming two groups, each containing two yearly datasets: one set for the period of economic growth (using the 2006 and 2007 samples) and another set for the period of recession (using the 2009 and 2010 samples).<sup>12</sup> This resulted in between 49 and 71 clusters (i.e., activity sectors, coded as NACE 2-digits). The independent macro variable – sectoral collective bargaining coverage – was

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<sup>11</sup> Industrial relations in the private sector are ruled by the Workers Statute (*El Estatuto de los Trabajadores*), while public firms are ruled by the Basic Statute of Public Workers (*Estatuto Básico del Empleado Público*). Similarly, whereas Works Councils (*Comité de Empresa*) exist in the private sector, the Board of Personnel (*Junta de Personal*) has similar functions in the public one.

<sup>12</sup> The 2008 dataset was not included in the analysis, as it was a period of both growth and recession.

obtained for each period from the QoWLS. The model also included the sectoral rate of temporary employment (obtained from the QoWLS) as a macro-level control variable: a higher reliance on temporary hirings might lower productivity – and therefore wages – but also impact workers' capacity to negotiate and enforce collective agreements. Similarly, in those sectors where temporary workers account for a larger share of the workforce, unions might negotiate agreements that are more beneficial for temporary workers. The individual-level control variables were virtually the same as in previous models: *age, gender, education, nationality, occupation, public sector, company size, supervisory role, part-time employment, first job, work at weekends, work at night, fixed wage* and *year*. The interaction terms between the individual-level variables were not included to reduce the computational demands. Observations with missing values for the macro variables were discarded, while other individual-level variables presented virtually no missing values.

To analyse sectoral union density, multilevel models with random intercepts and slopes were also used, performing separate analyses for the period of growth (2006-2007) and recession (2009-2010). In this case, thanks to greater data availability, we consider each activity sector (NACE 1 digit) by region (NUTS 1 digit) as the cluster unit, which results in between 127 to 164 clusters. Accounting for union density at the industry and regional level (rather than only at the industry level, as in the previous analyses) is advantageous for two reasons. First, it allows us to reflect more accurately the distribution of power in the Spanish system of industrial relations. As we mentioned in the literature review, unions with more representation at the sector level must negotiate sectoral and regional agreements. Second, by relying on a larger number of clusters we increase the power of our analyses. Therefore, we can test the association of union density with wages by exploiting the variation in union density across multiple industry sectors and regions. We obtained the independent variable, sectoral and regional *union density*, for each of the two periods, from the QoWLS. As in the previous analyses, we also introduced the sectoral rate of temporary employment (by region) as a level-2 control variable. The association of union density with the permanent-temporary wage gap (H3a; models 2.1-2.4) was tested with a cross-level interaction between the independent macro variable (*union density*) and the individual-level variable (the dummy *temporary contract*). To overcome the limitations of the QoWLS dataset, these analyses were also performed using the SES. The mixed models

studying the association of the macro variable *union density* with temporary workers' wages (H3b; Model 3.1-3.4) were also executed with the two different sets of microdata (QoWLS and SES). Finally, the mixed models that tested the association of union density with the wages of the non-unionized temporary workers (H3c; models 4.1-4.2) were only executed with the QoWLS, since unionized individuals cannot be identified in the SES. Again, observations with missing values for the macro variables were discarded, while other individual-level variables presented almost no missing values.

While for the QoWLS the mixed models had two levels (individuals within sectors), the mixed models executed on SES microdata had a three-level structure: individuals, within companies, within sectors. For this reason, all the analyses using SES microdata were executed using three-level multilevel models. These analyses using the SES included *age, gender, education, nationality, occupation, public sector, supervisory role, part-time employment* and *main market* (where the product is traded)<sup>13</sup> as individual-level control variables. Although the variable *company size* is a relevant confounder that is provided in the survey, it was not included because its codification was imprecise (the categories were not mutually exclusive) and caused convergence issues. As in the previous cases, the analyses using the QoWLS included *age, gender, education, nationality, occupation, public sector, company size, supervisory role, part-time employment, first job, work at weekends, work at night, fixed wage* and *year* as individual-level controls. Interactions between the individual-level variables were also avoided to reduce computational demands and convergence problems. In addition, for the multilevel analyses: (1) observations with missing values for the macro variables were discarded and, (2) since it was not possible to execute quantile regression analyses with the mixed models, approximately the top 0.3% of earners was discarded from the analyses to reduce the influence of extreme values on the mean.

One of the points of debate in multilevel modelling is the selection of variables with cluster-varying coefficients. Given Heisig et al.'s (2017) findings, the introduction of random slopes in the two-level multilevel models (those using the QoWLS microdata) was based on changes in the Bayesian information criterion and the results of a principal components analysis, following the authors' recommendations. However, due

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<sup>13</sup> The SES includes information about the number of extra hours worked, compensation for this overtime and other wage complements. As they are all integrated in the hourly wage, it is not necessary to add control variables about the wage composition.

to convergence issues caused by the large number of covariates, we followed a different procedure than the one described by the authors. They propose starting the iterative procedure with a model including all the terms as random slopes and progressively remove them as random components. Unlike Heisig et al. (2017), our procedure started with a model without random slopes (except for the individual-level variable involved in a cross-level interaction) and progressively added other random terms. Although some tests were performed in smaller datasets to ensure that both approaches led to the same *optimized* model, this should be formally tested in other studies. The method proposed by Heisig et al. (2017) could not be applied to the three-level models (those using SES data), as it is only designed for models with two levels. More details about the procedure can be found in the Appendix (section 3).

### 3.4 Results

#### *Works councils*

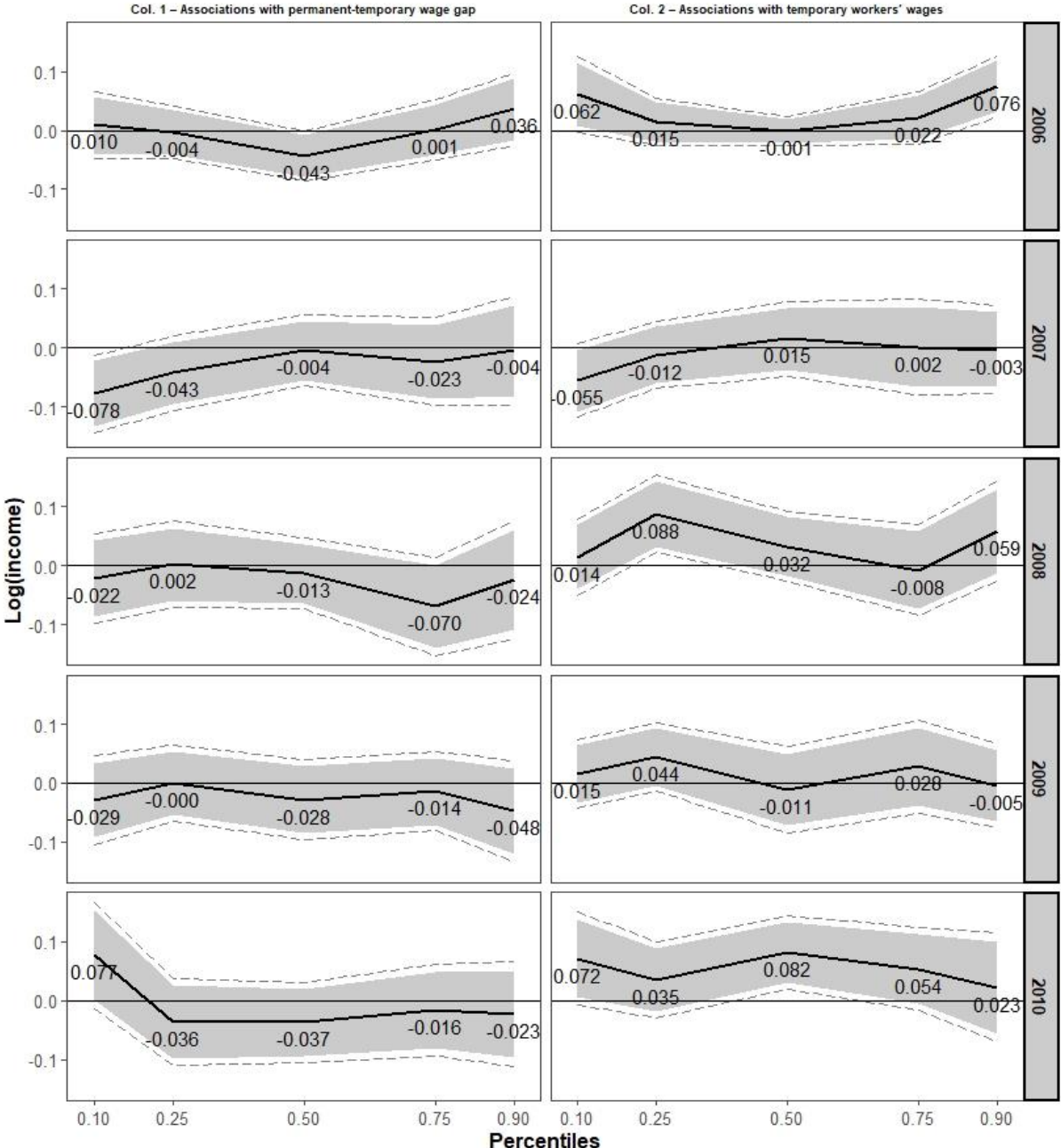
The first column of Figure 4 shows the association between having a *works council* (yes = 1) and wages conditional on the kind of contract (temporary = 1, permanent = 0) along the wage distribution. The coefficients present negative signs, suggesting a link between works councils and wider permanent-temporary wage gaps, but the associations are rarely significant. Similar results are observed during the period of economic growth (2006–2007) and recession (2008–2010): there is no relationship between works councils and larger or smaller permanent-temporary wage gaps. Only two negative significant associations (in 2006 and 2007) and a positive one (in 2010) can be found. Still, they do not reflect systematic patterns that allow drawing significant conclusions and might be partially attributed to sampling error.

The second column of Figure 4 shows the coefficient of the association between works councils and temporary workers' wages along the wage distribution. Again, most associations are insignificant, indicating that, normally, there is no relationship between works councils and temporary workers' wages. Still, some positive associations are observed, especially between the bottom and the median of the wage distribution. This occurs in 2006 ( $\beta = 0.062$ ), 2008 ( $\beta = 0.088$ ) and 2010 ( $\beta = 0.072$  and  $\beta = 0.082$ ), while in 2007 the association at the first decile is significantly negative ( $\beta = -0.055$ ).

Overall, the results suggest that works' councils and wage inequalities between permanent and temporary workers are not related, thus showing no support for

solidarity or dualization. Therefore, Hypothesis 1a must be rejected. The same applies to Hypothesis 1b. Even though works councils and temporary workers' wages were positively and significantly associated between the bottom and middle of the wage distribution both before and during the recession period, these results are not consistent enough to confirm the hypothesis. While sceptical readers might attribute

**Figure 4: Quantile regression results for the period 2006–2010. Associations between works councils and the permanent-temporary wage gap (Col. 1) and temporary workers' wages (Col. 2)**



**Notes:** Column 1 reflects the results of the interaction *Works council* (= 1, No works council = 0) with *Temporary contract* (= 1, permanent = 0). Column 2 reflects the associations of *Works council* (= 1, No works council = 0) with temporary workers' wages. Shaded areas indicate a 90% confidence interval and dashed lines a 95% confidence interval. All models include control variables. Full models are available in tables 7.1.1-7.2.5 of the Supplementary Tables section at the end of this chapter.

the lack of significant associations to the overall lack of the effect of works councils on wages, full models show that they are positively and significantly related to wages (in tables 7.1.1-7.2.5 of the Supplementary Tables section at the end of this chapter).

### ***Collective agreements***

The first column of Figure 5 shows the association between having a collective agreement (*covered* = 1) and wages conditional on the kind of contract (temporary = 1, permanent = 0) along the wage distribution. In the period 2006–2009, none of the associations are significant and present both positive and negative signs. In 2010, however, the associations are consistently negative and significant along most of the wage distribution, indicating that works councils are related to larger wage differences between permanent and temporary workers. The coefficients range from -0.069 to -0.054 in 2010, showing that works councils are associated with a 5.5–7.1% larger permanent-temporary wage gap.

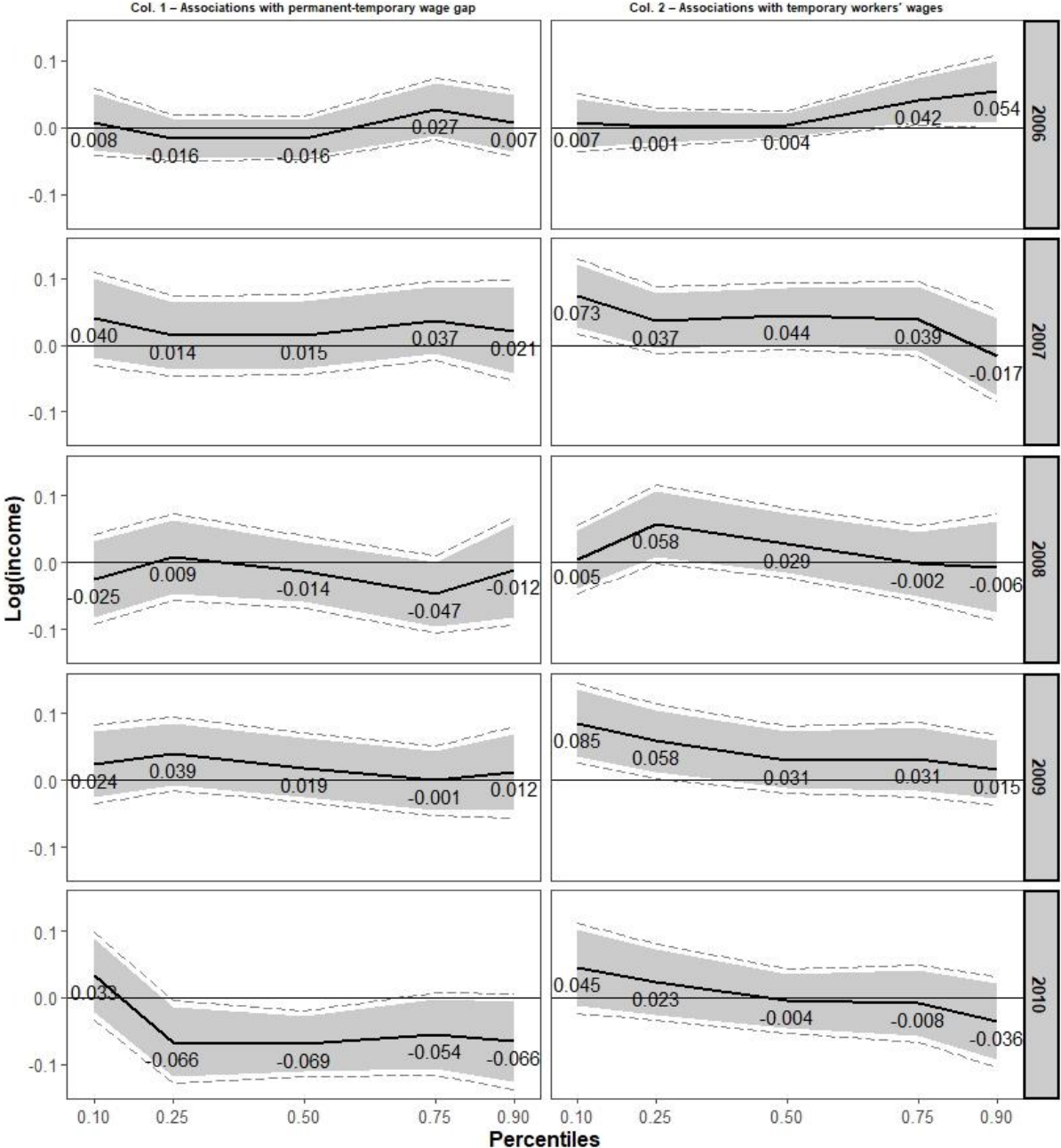
The second column of Figure 5 shows the association between collective agreements and temporary workers' wages along the wage distribution. Most associations are not significant and some are positive and significant. For temporary workers, collective agreements are related with higher wages at different points between the bottom and the median in 2007 ( $\beta = 0.073$ ;  $\beta = 0.044$ ), 2008 ( $\beta = 0.058$ ) and in 2009 ( $\beta = 0.085$ ;  $\beta = 0.058$ ), while in 2006 the associations are positive and significant at the upper end ( $\beta = 0.042$ ;  $\beta = 0.054$ ). In other words, at these specific points, temporary workers with collective agreements on the left-side of the distribution appear to earn 6–8.8% more than their peers without collective agreements. However, there are no significant associations in 2010.

Finally, Table 1 shows the association of sectoral bargaining coverage with the wages of the uncovered temporary workers. The association is significant for the period of economic growth ( $\beta = 0.112$ ) but not for the period of recession ( $\beta = 0.062$ ). This suggests that uncovered temporary workers had higher salaries in sectors with higher collective bargaining coverage for the period 2006–2007 but not for 2009-2010.

Results indicate that Hypothesis 2a must be rejected since collective agreements are not related with smaller permanent-temporary wage gaps. Conversely, collective agreements relate to wider wage gaps in 2010. Hypothesis H2b can be only partially accepted since temporary workers earn higher wages than their uncovered

counterparts at different points between the bottom and the median of the distribution, only from 2007 to 2009. In this case, the insignificant associations in 2008 and 2009 could be attributed to the overall lack of association between collective agreements and wages, whereas in the other periods these associations are significant and positive

**Figure 5: Quantile regression results for the period 2006–2010. Associations between Collective agreement and the permanent-temporary wage gap (Col. 1) and temporary workers' wages (Col. 2)**



**Notes:** Column 1 reflects the results of the interaction *Collective agreement* (= 1, No collective agreement = 0) with *Temporary contract* (= 1, permanent = 0). Column 2 reflects the associations between *Collective agreement* (= 1, no collective agreement = 0) and temporary workers' wages. Shaded areas indicate a 90% confidence interval and dashed lines a 95% confidence interval. All models include control variables. Full models are available in tables 8.1.1-8.2.5 of the Supplementary Tables section at the end of this chapter.

(see full models in tables 8.1.1 – 8.2.5 of the Supplementary Tables section at the end of this chapter). Hypothesis H2c can be only partially accepted as the uncovered temporary workers had higher wages in sectors with higher collective bargaining coverage, but only during the period of economic growth.

**Table 1: Results of multilevel models. Association of sectoral collective bargaining coverage with temporary workers' wages for the period 2006 to 2010.**

		Period of growth	Period of recession
		2006-2007	2009-2010
		<i>Model 1.1</i>	<i>Model 1.2</i>
<b>Uncovered temporary workers' wages</b>	<i>B</i>	0.112*	0.062
	( <i>SE</i> )	(0.046)	(0.053)
	N (sectors)	49	71
	n (individuals)	981	1,012

**Notes:** +*p* < 0.10, \**p* < 0.05, \*\**p* < 0.01, \*\*\**p* < 0.001. All models included individual-level and macro-level control variables. All coefficients are z-standardised. Full results are available in Table 9 of the Supplementary Tables section at the end of this chapter. Descriptive statistics of the analytical samples can be found in Table B1 in the Appendix.

***Union density***

Table 2 presents the results of the cross-level interaction between the sectoral and regional union density with the kind of contract (temporary = 1, permanent = 0) in 2006 and 2010 using the SES microdata and for the periods 2006-2007 and 2009-2010 using the QoWLS microdata. Results using the SES show that none of the associations is significant, indicating that during both periods the wage gap between permanent and temporary workers was not significantly larger or smaller in sectors with higher union density. Instead, the analyses using the QoWLS show that only in the period of recession the wage gap was wider in sectors with higher union density ( $\beta = -0.034$ ).

The first row of results in Table 3 (models 3.1-3.4) presents the association of union density with temporary workers' wages using the SES and QoWLS microdata. In both periods (growth and recession) and for both datasets, the associations are positive and significant. They indicate that temporary workers had higher wages in more heavily unionized sectors. The last row of Table 3 (models 4.1 and 4.2) shows the association of union density with non-unionized temporary workers' wages. The associations are positive and significant – only at 10% for the period of recession – suggesting that non-unionized temporary workers had higher wages in sectors with greater union density.



**Table 2: Results of multilevel models. Association of cross-level interaction (sectoral union density X temporary contract) with wages for different datasets for the period 2006-2010.**

Survey source(year)	Period of growth		Period of recession		
	SES (2006)	QoWLS (2006-2007)	SES (2010)	QoWLS (2009-2010)	
	<i>Model 2.1</i>	<i>Model 2.2</i>	<i>Model 2.3</i>	<i>Model 2.4</i>	
$\beta$ (SE)	0.007 (0.007)	-0.003 (0.018)	0.015 (0.009)	-0.034 + (0.020)	
<b>Permanent-temporary wage gap</b>	Level-3 N (sectors)	127	147	152	164
	Level-2 N (companies)	25,334	-	23,184	-
	n (individuals)	217,096	10,996	186,192	11,315

**Notes:** + $p < 0.10$ , \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ . All models included individual-level and macro-level control variables. All coefficients are z-standardised. Full results are available in tables 10.1 and 10.2 of the Supplementary Tables section at the end of this chapter. Descriptive statistics of the analytical samples can be found in tables B2.1-B2.2 in the Appendix.

**Table 3: Results of multilevel models. Association of sectoral union density with temporary workers' wages, for different datasets and samples for the period 2006-2010.**

Survey source(year)	Period of growth		Period of recession		
	SES (2006)	QoWLS (2006-2007)	SES (2010)	QoWLS (2009-2010)	
	<i>Model 3.1</i>	<i>Model 3.2</i>	<i>Model 3.3</i>	<i>Model 3.4</i>	
$\beta$ (SE)	0.071 *** (0.019)	0.091 ** (0.030)	0.069 *** (0.017)	0.057 + (0.030)	
<b>Temporary workers' wages</b>	Level-3 N (sectors)	127	136	152	157
	Level-2 N (companies)	15,182	-	11,970	-
	n (individuals)	57,932	2,501	44,265	2,227
		<i>Model 4.1</i>		<i>Model 4.2</i>	
$\beta$ (SE)		0.075 * (0.033)		0.059 + (0.032)	
<b>Non-unionized temporary workers' wages</b>	N (sectors)		135	156	
	n (individuals)		2,170	1,968	

**Notes:** + $p < 0.10$ , \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ . All models included individual-level and macro-level control variables. All coefficients are z-standardised. Full results are available in tables 11.1-11.3 of the Supplementary Tables section at the end of this chapter. Descriptive statistics of the analytical samples can be found in tables B3.1-B3.3 in the Appendix.

These results lead to reject Hypothesis 3a, since the wage gap is not smaller in sectors with higher union density, and in one year it is larger. Hypothesis 3b is accepted

instead, as union density is associated with higher wages for temporary workers. Finally, Hypothesis 3c is rejected. Contrary to what was hypothesized, non-unionized temporary workers had higher wages in sectors with higher union density.

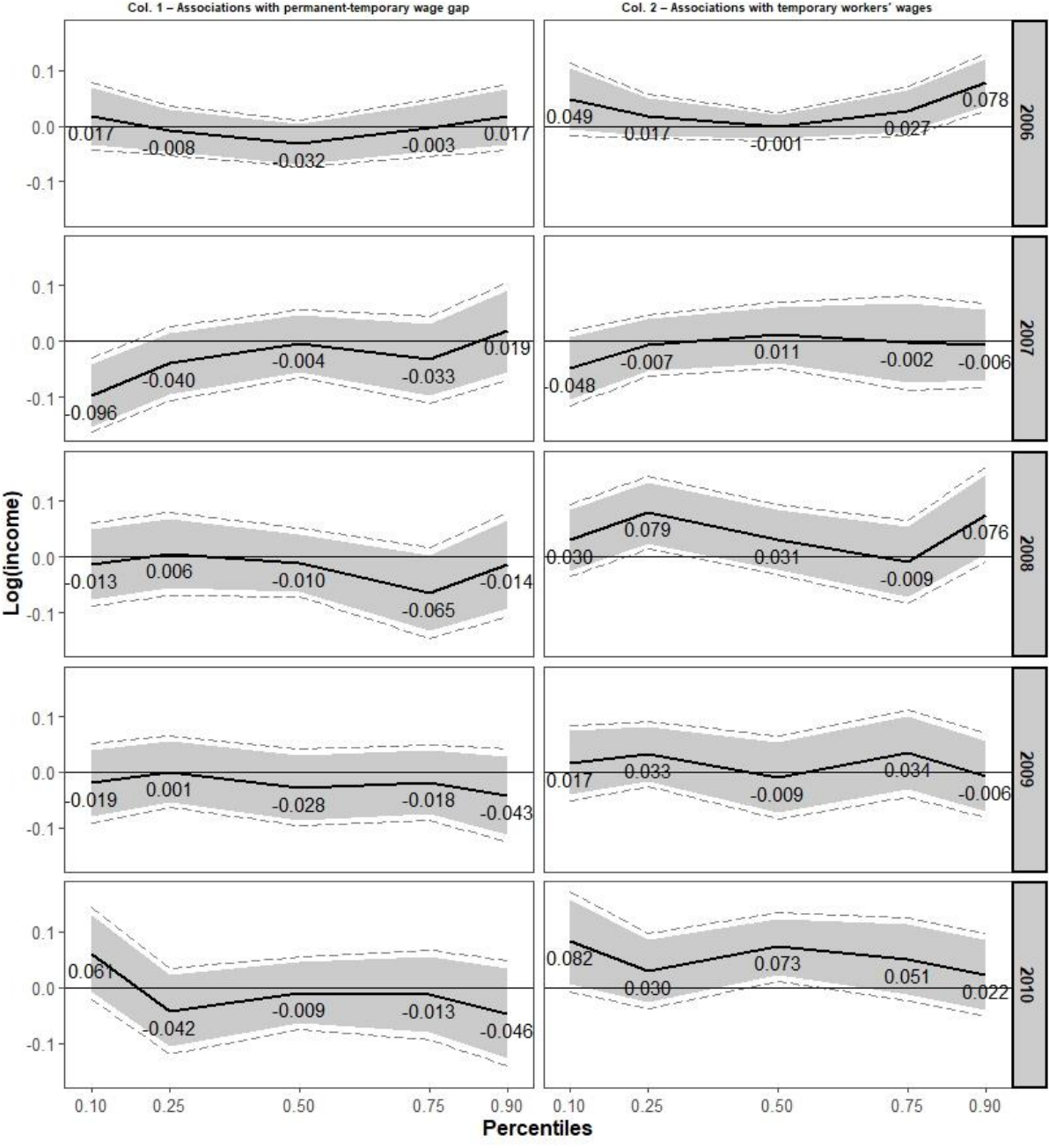
### ***Robustness tests***

We performed additional analyses to address specific concerns about the validity of our results.

First, in our primary analyses we opted not to include *union membership* as a control variable as it could also be considered as a mediator in the association between *works councils* and *collective agreements* with wages. However, it could be argued that the positive associations between *works council* and *collective agreement* with temporary workers' wages might be influenced by a larger share of unionized temporary workers in companies with works councils and collective agreements. For similar reasons, *union membership* could also be a confounder in the association between *works council* and *collective agreement* with the permanent-temporary wage gap. Therefore, we conducted additional analyses that included *union membership* as a control variable in the models testing the association of *works councils* (Figure 6) and *collective agreements* (Figure 7) with temporary workers' wages and with the permanent-temporary wage gap. In the models assessing the permanent-temporary wage gap, *union membership* was also included as an interaction with *temporary contract*, given that the underlying assumption is that the effects of *union membership* are conditional on kind of contract. As shown in the figures below, these results are in line with our primary analyses.

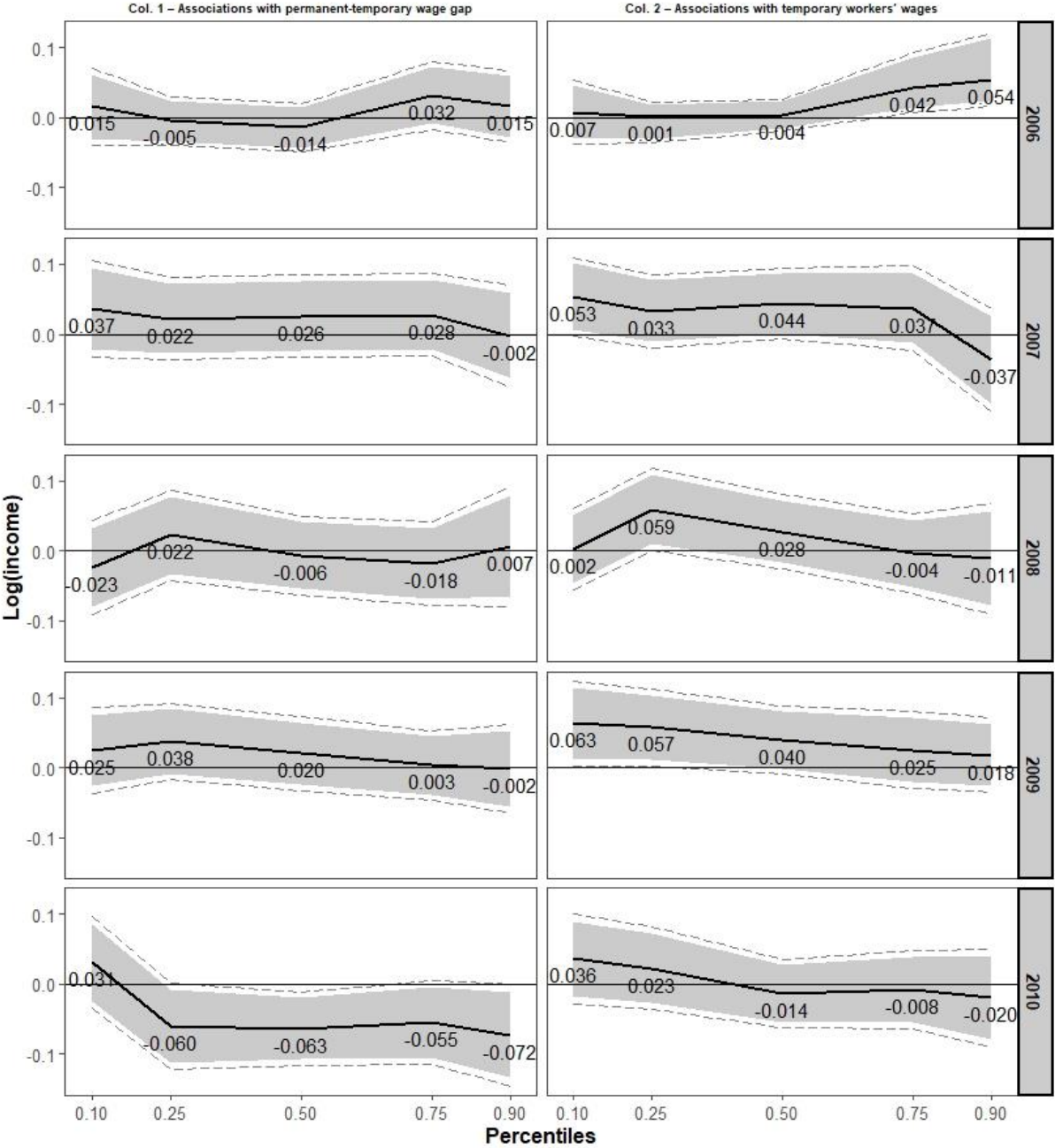
Secondly, we were concerned about the results provided in the mixed models. Contrary to the previous analyses, we could not assess the effect of union density and collective agreement coverage across the wage distribution. Instead, we had to rely on mean effects, which could be affected by outliers. To provide more precise results, we repeated our analyses running different mixed models for each occupational group. This approach, however, could only be applied to evaluate the association of union density with wages using SES data. It was not possible to perform these analyses by occupational groups using the QoWLS due to the small size of these samples. For the same reason, we could neither assess the effects of collective agreement coverage on

**Figure 6: Robustness tests. Quantile regression results for the period 2006–2010. Associations between works councils and the permanent-temporary wage gap (Col. 1) and temporary workers' wages (Col. 2), including Union membership as a control variable.**



Notes: Column 1 reflects the results of the interaction *Works council* (= 1, No works council = 0) with *Temporary contract* (= 1, permanent = 0). Column 2 reflects the associations of *Works council* (= 1, No works council = 0) with temporary workers' wages. Shaded areas indicate a 90% confidence interval and dashed lines a 95% confidence interval. All models include control variables.

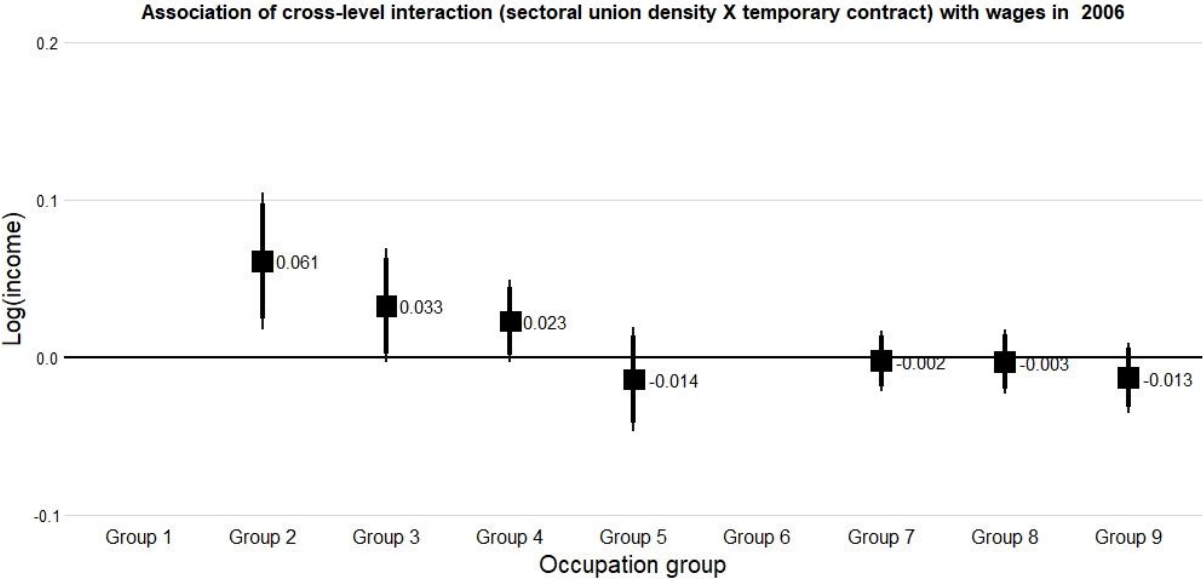
**Figure 7: Robustness tests. Quantile regression results for the period 2006–2010. Associations between Collective agreement and the permanent-temporary wage gap (Col. 1) and temporary workers' wages (Col. 2), including Union membership as a control variable.**



Notes: Column 1 reflects the results of the interaction *Collective agreement* (= 1, No collective agreement = 0) with *Temporary contract* (= 1, permanent = 0). Column 2 reflects the associations between *Collective agreement* (= 1, no collective agreement = 0) and temporary workers' wages. Shaded areas indicate a 90% confidence interval and dashed lines a 95% confidence interval. All models include control variables.

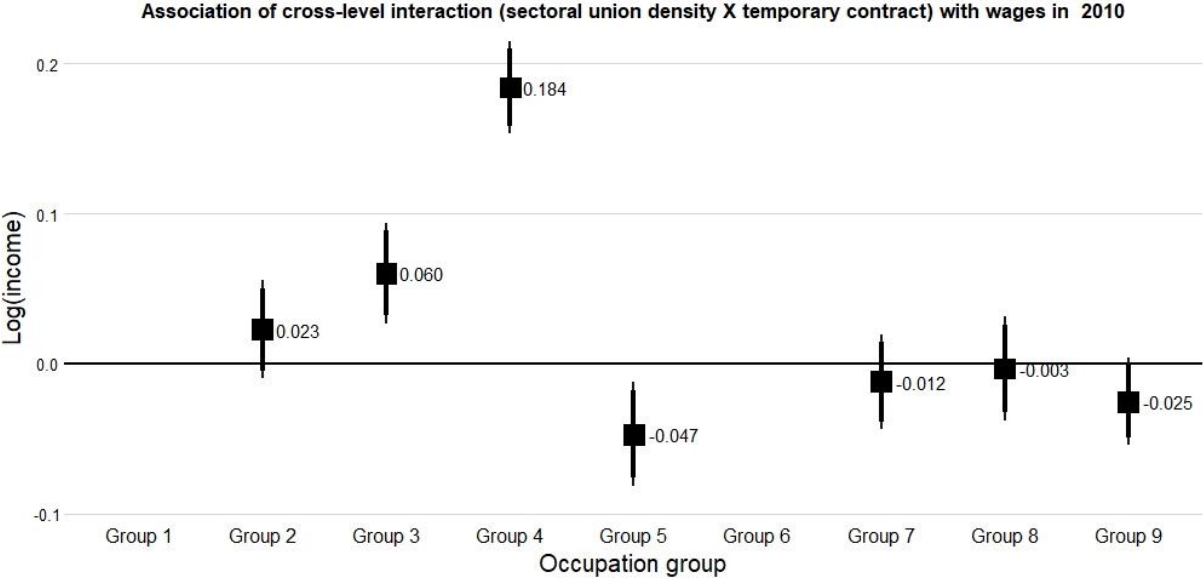
wages. The results of the associations of union density with the permanent-temporary wage gap are presented in Figure 8 for the period of economic growth and in Figure 9 for the period of recession. Results indicate that in 2006 union density was significantly associated with smaller wage gaps only among Professionals and intellectuals (second occupational group). The associations with Technicians and associate professionals

**Figure 8: Robustness tests. Multilevel model results. Association of union density with permanent-temporary wage gap by occupational group, for SES dataset in 2006.**



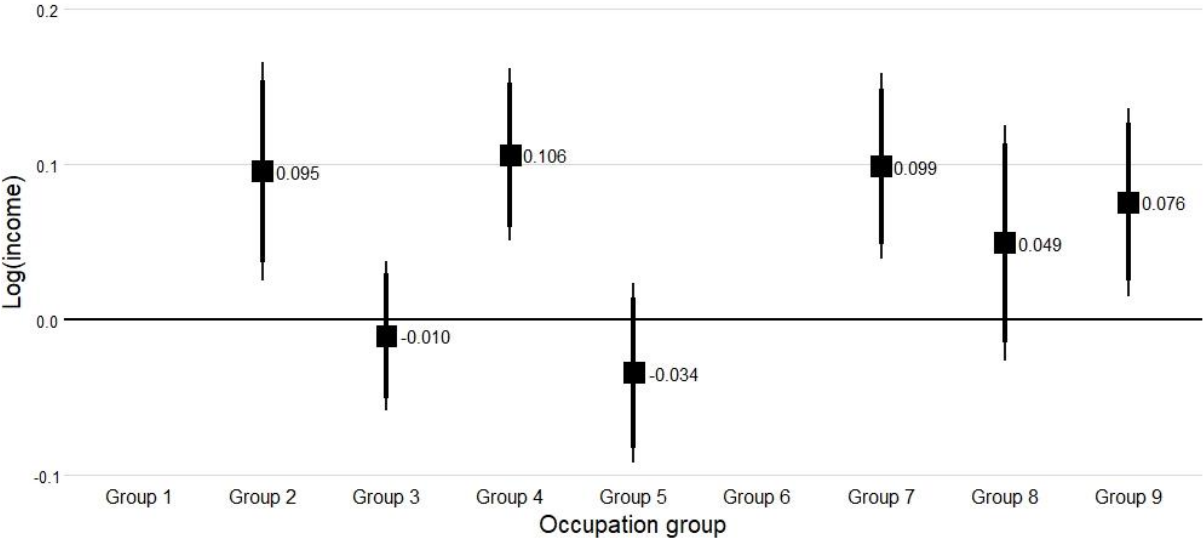
Notes: Thick lines indicate a 90% confidence interval and thin lines a 95% confidence interval. All models include control variables. Group 1: Legislators, senior officials and managers; Group 2: Professionals and intellectuals; Group 3: Technicians and associate professionals; Group 4: Clerks; Group 5: Service workers and shop and market sales workers; Group 6: Skilled agricultural and fishery workers; Group 7: Craft and related trades workers; Group 8: Plant and machine operators and assemblers; Group 9: Elementary occupations. Results for Group 1 and Group 6 are not provided due to the low number of observations.

**Figure 9: Robustness tests. Multilevel model results. Association of union density with permanent-temporary wage gap, for SES dataset in 2010.**



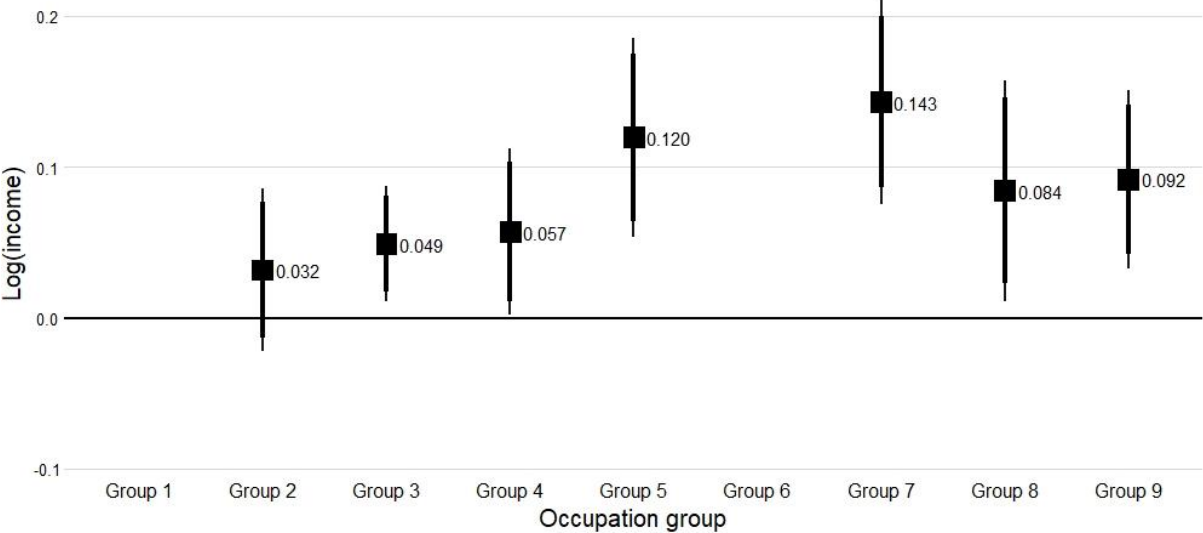
Notes: Thick lines indicate a 90% confidence interval and thin lines a 95% confidence interval. All models include control variables. Group 1: Legislators, senior officials and managers; Group 2: Professionals and intellectuals; Group 3: Technicians and associate professionals; Group 4: Clerks; Group 5: Service workers and shop and market sales workers; Group 6: Skilled agricultural and fishery workers; Group 7: Craft and related trades workers; Group 8: Plant and machine operators and assemblers; Group 9: Elementary occupations. Results for Group 1 and Group 6 are not provided due to the low number of observations.

**Figure 10: Robustness tests. Multilevel model results. Association of union density with temporary workers' wages by occupational group, for SES dataset in 2006.**



Notes: Thick lines indicate a 90% confidence interval and thin lines a 95% confidence interval. All models include control variables. Group 1: Legislators, senior officials and managers; Group 2: Professionals and intellectuals; Group 3: Technicians and associate professionals; Group 4: Clerks; Group 5: Service workers and shop and market sales workers; Group 6: Skilled agricultural and fishery workers; Group 7: Craft and related trades workers; Group 8: Plant and machine operators and assemblers; Group 9: Elementary occupations. Results for Group 1 and Group 6 are not provided due to the low number of observations.

**Figure 11: Robustness tests. Multilevel model results. Association of union density with temporary workers' wages by occupational group, for SES dataset in 2010.**



Notes: Thick lines indicate a 90% confidence interval and thin lines a 95% confidence interval. All models include control variables. Group 1: Legislators, senior officials and managers; Group 2: Professionals and intellectuals; Group 3: Technicians and associate professionals; Group 4: Clerks; Group 5: Service workers and shop and market sales workers; Group 6: Skilled agricultural and fishery workers; Group 7: Craft and related trades workers; Group 8: Plant and machine operators and assemblers; Group 9: Elementary occupations. Results for Group 1 and Group 6 are not provided due to the low number of observations.

and Clerks (third and fourth groups) also indicate smaller wage gaps, but they are marginally significant. Results for 2010 show that union density related to wider permanent-temporary wage gaps for Service workers and shop and market sales workers (fifth group), but to smaller wage gaps for Technicians and associate professionals, and Clerks.

Above, Figure 10 shows the association of union density with temporary workers' wages during the period of economic growth and Figure 11 presents the results for the period of recession. In both cases union density was associated with higher wages for temporary workers for all the occupational categories, except for Professionals and intellectuals in 2010, and Technicians and associate professionals and Service workers and shop and market sales workers in 2006. None of the occupational groups seem to earn lower wages in sectors with higher union density.

Finally, our analyses of union density included the rate of temporary employment as a macro-level control variable. However, this variable could also be considered as a collider: a higher union density might cause a higher use of temporary job contracts, whereas if wages are too high, employers might be more likely to employ workers on temporary contracts to reduce labour costs. At the same time, we did not consider changes in labour demand, which can be argued to be an even more relevant confounder: a decrease (increase) in labour demand might weaken (strengthen) unions' bargaining capacity and union density, but it can also affect wages negatively (positively). For this reason, whenever possible, we opted for repeating our multilevel

**Table 4: Robustness tests. Multilevel model results. Association of sectoral collective bargaining coverage with temporary workers' wages for the period 2006 to 2010, including sectoral variation in labour demand as a macro-level control variable.**

		Period of growth	Period of recession
		2006-2007	2009-2010
		<i>Replication of Model 1.1</i>	<i>Replication of Model 1.2</i>
<b>Uncovered temporary workers' wages</b>	<i>B</i>	0.125*	0.057
	( <i>SE</i> )	(0.042)	(0.045)
	N (sectors)	49	71
	n (individuals)	981	1,012

Notes: +*p* < 0.10, \**p* < 0.05, \*\**p* < 0.01, \*\*\**p* < 0.001. All models included individual-level and macro-level control variables. All coefficients are z-standardised.

**Table 5: Robustness tests. Multilevel model results. Association of cross-level interaction (sectoral union density X temporary contract) with wages for the period 2006-2010, including sectoral variation in labour demand as a macro-level control variable.**

Survey source(year)		Period of growth <b>QoWLS (2006-2007)</b> <i>Replication of Model 2.2</i>	Period of recession <b>QoWLS (2009-2010)</b> <i>Replication of Model 2.4</i>
<b>Permanent-temporary wage gap</b>	<i>B</i> ( <i>SE</i> )	-0.032 (0.022)	-0.035 (0.024)
	N (sectors) n (individuals)	48 11,037	68 11,309

Notes: + $p < 0.10$ , \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ . All models included individual-level and macro-level control variables. All coefficients are z-standardised

**Table 6: Robustness tests. Multilevel model results. Association of sectoral union density with temporary workers' wages, for the period 2006-2010, including sectoral variation in labour demand as a macro-level control variable.**

Survey source(year)		Period of growth <b>QoWLS (2006-2007)</b> <i>Replication of Model 3.2</i>	Period of recession <b>QoWLS (2009-2010)</b> <i>Replication of Model 3.4</i>
<b>Temporary workers' wages</b>	<i>B</i> ( <i>SE</i> )	0.084 * (0.038)	0.101 ** (0.032)
	N (sectors) n (individuals)	48 2,516	68 2,266
<b>Non-unionised temporary workers' wages</b>	<i>B</i> ( <i>SE</i> )	0.071 + (0.040)	0.124 *** (0.031)
	N (sectors) n (individuals)	48 2,188	68 1,961

Notes: + $p < 0.10$ , \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ . All models included individual-level and macro-level control variables. All coefficients are z-standardised.

analyses using changes in labour demand as a macro-level control variable instead of the rate of temporary employment. It must be noted that, due to data constraints, we



could not obtain this variable for each region by sector, but only for each sector. For the period of economic growth (2006–2007), the variable reflects the variation in the number of workers with respect to 2005, whereas for the period of recession (2009–2010) it reflects the variation in the number of workers with respect to 2008.<sup>14</sup> The results, in tables 4-6 (above), are virtually the same than in our primary models.

### 3.5 Conclusion

This article analyses the consequences that labour unions might have for temporary workers' wages in Spain; one of the most notable cases of labour market dualization. For this purpose, it explores the association of labour unions with the wage gap between permanent and temporary workers and with temporary workers' wages. More specifically, it examines three institutions: works councils, collective agreements and union density. The analyses are performed for a period of economic growth (2006-2007) and a period of economic crisis (2008-2010).

Overall, works councils are not related with wage inequalities between permanent and temporary workers or temporary workers' wages. Similarly, collective agreements are neither associated with smaller wage gaps – in one year (in 2010) they are associated with wider wage differences– and temporary workers with collective agreements tend to have the same or higher wages. Sectoral collective bargaining coverage, in contrast to Fitzenberger et al.'s (2013) findings for Germany, are positively related with the wages of uncovered temporary workers, but only during the period of economic growth. As regards union density, the results consistently show that it is not related with smaller wage gaps. An association with a larger wage gap was observed in the period of recession in only one of the two datasets analysed. Union density is also positively related with temporary workers' wages, also among the non-unionized ones, contrary to what Benassi and Vlandas (2021) observed for Germany.

In summary, after adjusting for confounders, the results indicate that labour unions in Spain are not associated with smaller wage differences between permanent and

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<sup>14</sup> The NACE classification of economic activities was updated in 2008, making it impossible to obtain the number of employees at the sector level before 2008. Therefore, to obtain the variation in the number of employees at the sector level in the recession period, a small lag was introduced between the reference year (2008) and the year of the surveys (2009 and 2010). Specifically, to calculate the increase/decrease in number of workers, the reference year reflected the average number of employees between the first and third quarters of 2008, and for the period 2009–2010 it was calculated as the average number of employees between the third quarter of 2009 and the second quarter of 2010.

temporary workers and, on a few occasions, they are even associated with increased wage gaps. These larger income differences are partly in line with the dualization theory and speak against the equalising effects of unions: unions are not associated with smaller wage differences and in some cases are associated with larger differences. Conversely, the dualization framework seems to inadequately describe the consequences of unions for temporary workers' wages in Spain. Its claim that unions benefit permanent workers at the expense of temporary ones is not supported by the findings of this article. Evidence does not indicate that unions have negative effects on temporary workers' wages; instead, associations are found to be insignificant or positive. All in all, the reason why wage inequalities between permanent and temporary workers are sometimes larger in the presence of unions could be that the positive influence of unions is often stronger for permanent than for temporary workers. Hence, the apparent consequences of labour unions for temporary workers' wages in Spain are more aligned with the recent findings in industrial relations: unions have overall positive but still limited consequences for outsiders (Carver and Doellgast, 2020). These conclusions – except for some differences observed in the analysis of collective agreements – are valid both in the periods of economic growth and recession. In other words, the findings suggest that unions did not follow *more* dualizing strategies when resources became scarcer.

Our results attempt to contribute to the theoretical and empirical literature addressing the consequences of labour unions for temporary workers' job quality. Due to the changes in the Spanish labour market during the years of the Great Recession it is risky to extrapolate our results beyond the period of analyses. In addition to the economic downturn, in 2010, and especially in 2012, two major labour reforms altered the industrial relations system in Spain and notably weakened the bargaining power of unions. In practise, these reforms put an end to the priority of multi-employer agreements over the company level-ones and they suppressed the automatic extension of collective agreements (see Meardi, 2014; Fernández Rodríguez et al., 2016). However, these reforms were mostly reversed in December of 2021, leading to a regulatory framework that resembles the one of the period analysed in this article. For this reason, further analyses are needed to shed light on how the erosion and recovery of unions' bargaining power affected temporary workers' wages and the permanent-temporary wage gap.

Whereas using different datasets and studying different institutions helped to improve the robustness of the findings, this article has several limitations. First, due to the use of cross-sectional data, the analyses do not allow the identification of causal relationships between institutions and wages. Even though identifying causality was not the aim of this article, the associations found here might result from unobserved confounders. Those companies that have works councils or collective agreements might be simply different from those that do not have them. Similarly, those sectors with greater union density and collective bargaining coverage could also differ in multiple aspects from other sectors where unions are weaker. Therefore, some of the associations that we observed might be driven by differences in terms of productivity, the characteristics of the workforce or even by different managerial practices across sectors and companies (e.g. Acemoglu et al., 2022; Litwin and Shay, 2022), rather than by industrial relations institutions. The risk of reversed causality also exists, but it is less likely to significantly alter the main conclusions of the article. Low wages might trigger unionisation, the formation of works councils and collective agreements. Therefore, if these effects were accounted for, the positive association between unions and temporary workers wages could only be strengthened. However, it is less clear how reversed causality would affect the results for the wage gap. Second, industrial relations institutions are complex to operationalise and relevant aspects, such as the coordination level, have not been included in the analyses. Finally, this study assesses the validity of the dualization framework to explain wage inequalities between permanent and temporary workers, although the main debate speaks about inequalities in employment protection and job security. Future analyses would then make a relevant contribution by exploring whether labour unions affect temporary workers' transitions towards permanent positions, especially during the recession. For instance, when the crisis began and companies carried out massive layoffs, unions reached agreements that guaranteed jobs at the expense of wages. However, it is unknown if unions also protected the positions of the temporary workers or only those of the insiders.

### **3.6 Supplementary Tables**

[This page has been intentionally left blank to facilitate the interpretation of the tables below]

**Table 7.1.1: Full results of quantile regression models in Column 1 in Figure 4. Association between Works council and the permanent-temporary wage gap in 2006.**

<b>Quantile:</b>	<b>0.1</b>	<b>0.25</b>	<b>0.5</b>	<b>0.75</b>	<b>0.9</b>
<b>Gender (ref: Man)</b>					
Woman	-0.027 * (0.012)	-0.024 ** (0.009)	-0.062 *** (0.010)	-0.094 *** (0.011)	-0.051 ** (0.015)
<b>Age</b>					
	-0.001 (0.004)	0.004 (0.003)	-0.001 (0.003)	0.005 (0.003)	0.005 (0.004)
<b>Age^2</b>					
	0.000 (0.000)	0.000 (0.000)	0.000 + (0.000)	0.000 (0.000)	0.000 (0.000)
<b>Education (ref: Basic secondary)</b>					
Elementary or less	-0.034 * (0.016)	-0.020 + (0.011)	-0.039 ** (0.013)	-0.040 * (0.018)	0.022 (0.020)
Advanced secondary and VET	0.010 (0.016)	0.016 (0.011)	0.024 + (0.013)	0.028 * (0.014)	0.065 ** (0.015)
University	0.080 ** (0.018)	0.090 *** (0.014)	0.091 *** (0.015)	0.111 *** (0.020)	0.135 *** (0.023)
<b>Occupation (ref: Service workers and shop and market sales workers)</b>					
Legislators, senior officials and managers	0.055 (0.055)	0.128 ** (0.037)	0.125 ** (0.034)	0.162 *** (0.034)	0.156 ** (0.046)
Professionals and intellectuals	0.084 ** (0.024)	0.139 *** (0.019)	0.145 *** (0.019)	0.126 *** (0.022)	0.115 ** (0.031)
Technicians and associate professionals	0.046 * (0.023)	0.058 ** (0.016)	0.084 ** (0.019)	0.109 *** (0.021)	0.072 ** (0.025)
Clerks	0.005 (0.022)	0.027 + (0.017)	0.018 (0.016)	0.020 (0.020)	-0.023 (0.022)
Skilled agricultural and fishery workers	-0.022 (0.095)	-0.034 (0.061)	-0.028 (0.043)	-0.087 (0.057)	-0.165 ** (0.061)
Craft and related trades workers	0.000 (0.026)	0.018 (0.016)	0.007 (0.020)	0.022 (0.024)	-0.010 (0.027)
Plant and machine operators and assemblers	0.011 (0.025)	0.020 (0.018)	0.035 + (0.020)	0.049 * (0.023)	0.045 + (0.027)
Elementary occupations	-0.023 (0.025)	0.008 (0.016)	-0.016 (0.017)	-0.030 (0.021)	-0.040 (0.025)
<b>Supervisory role (ref: No)</b>					
Yes	0.032 * (0.014)	0.052 *** (0.010)	0.076 *** (0.013)	0.069 *** (0.012)	0.088 *** (0.015)
<b>Nationality (ref: Native)</b>					
Foreigner	-0.046 (0.030)	-0.003 (0.019)	-0.012 (0.017)	-0.037 + (0.021)	-0.028 (0.025)
<b>Public sector company (ref: No)</b>					
Yes	0.024 (0.025)	0.043 + (0.024)	0.057 * (0.025)	0.078 ** (0.026)	0.056 + (0.033)
<b>Company size (ref: 1 to 10)</b>					
11 to 50	0.045 ** (0.017)	0.004 (0.010)	0.032 ** (0.012)	0.045 ** (0.015)	0.037 * (0.018)
51 to 250	0.069 *** (0.014)	0.031 ** (0.009)	0.061 *** (0.011)	0.069 *** (0.013)	0.073 *** (0.016)
<b>Part-time employment (ref: No)</b>					
Yes	0.116 ** (0.041)	0.126 ** (0.039)	0.139 ** (0.042)	0.264 ** (0.075)	0.829 *** (0.122)
<b>Fixed wage (ref: No)</b>					
Yes	0.021 (0.015)	0.009 (0.010)	0.017 + (0.010)	-0.017 (0.012)	-0.025 (0.015)
<b>First job (ref: No)</b>					
Yes	0.008 (0.054)	-0.016 (0.040)	0.018 (0.033)	0.010 (0.044)	0.022 (0.063)

(continued)

<b>Work at weekends (ref: Always)</b>					
Sometimes	0.068 ** (0.022)	0.031 * (0.014)	0.031 * (0.013)	0.022 (0.015)	0.050 * (0.020)
Never	0.104 *** (0.022)	0.042 ** (0.014)	0.042 ** (0.013)	0.042 * (0.017)	0.058 ** (0.019)
<b>Work at night (ref: No)</b>					
Yes	0.020 (0.016)	0.023 * (0.010)	0.039 ** (0.013)	0.047 ** (0.014)	0.037 * (0.017)
<b>Activity sector (ref: Construction)</b>					
Agriculture and fishing	-0.079 (0.068)	-0.021 (0.048)	-0.009 (0.039)	-0.012 (0.048)	-0.051 (0.047)
Manufacturing	-0.015 (0.021)	-0.005 (0.015)	-0.018 (0.019)	-0.034 (0.022)	-0.062 * (0.027)
Commerce and repairs	-0.033 (0.028)	-0.020 (0.018)	-0.055 * (0.023)	-0.081 ** (0.029)	-0.114 ** (0.032)
Accommodation and food service + Domestic service	-0.047 (0.035)	-0.074 ** (0.026)	-0.079 ** (0.027)	-0.058 + (0.034)	-0.107 ** (0.039)
Transportation, storage, communication	-0.025 (0.026)	-0.022 (0.023)	-0.016 (0.022)	-0.034 (0.029)	-0.020 (0.037)
Finance and insurance	0.003 (0.036)	0.069 + (0.036)	0.058 * (0.030)	0.052 (0.036)	0.007 (0.040)
Real Estate	-0.027 (0.025)	-0.017 (0.019)	-0.033 (0.023)	-0.051 + (0.027)	-0.063 + (0.036)
Public administration	-0.015 (0.027)	0.032 (0.022)	0.017 (0.027)	-0.021 (0.029)	-0.092 * (0.036)
Education	0.090 ** (0.029)	0.110 *** (0.023)	0.107 ** (0.030)	0.134 ** (0.034)	0.106 * (0.047)
Health and social work	-0.011 (0.029)	0.033 (0.023)	0.006 (0.024)	-0.020 (0.028)	-0.085 * (0.036)
Other social activities and personal services	-0.009 (0.039)	0.000 (0.024)	-0.022 (0.033)	0.016 (0.037)	-0.016 (0.039)
<b>Temporary contract (ref: No)</b>					
Yes	-0.067 ** (0.025)	-0.034 + (0.020)	-0.023 (0.019)	-0.048 * (0.022)	-0.073 ** (0.025)
<b>Works council (ref: No)</b>					
Yes	0.031 * (0.015)	0.046 ** (0.011)	0.043 ** (0.012)	0.044 ** (0.015)	0.041 * (0.018)
<b>Temporary contract * Part-time employment</b>					
	-0.014 (0.064)	-0.005 (0.052)	0.061 (0.046)	0.036 (0.066)	-0.101 (0.074)
<b>Part-time employment * Gender</b>					
	-0.023 (0.055)	0.049 (0.046)	0.130 ** (0.045)	0.080 (0.078)	-0.356 ** (0.121)
<b>Temporary contract * Public sector</b>					
	0.061 * (0.030)	0.003 (0.021)	0.013 (0.025)	0.000 (0.027)	-0.002 (0.033)
<b>Works council* Public sector</b>					
	-0.008 (0.027)	-0.037 (0.024)	-0.027 (0.024)	-0.025 (0.025)	0.019 (0.029)
<b>Age * First job</b>					
	0.000 (0.001)	0.001 (0.001)	0.000 (0.001)	-0.001 (0.001)	0.000 (0.001)
<b>Works council * Temporary contract</b>					
	0.010 (0.029)	-0.004 (0.022)	-0.043 * (0.022)	0.001 (0.026)	0.036 (0.031)
<b>Intercept</b>					
	1.216 *** (0.083)	1.260 *** (0.062)	1.431 *** (0.065)	1.486 *** (0.076)	1.590 *** (0.093)

Notes: + p < 0.10, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001. Standard errors are provided in brackets.

**Table 7.1.2: Full results of quantile regression models in Column 1 in Figure 4. Association between Works council and the permanent-temporary wage gap in 2007.**

<b>Quantile:</b>	<b>0.1</b>	<b>0.25</b>	<b>0.5</b>	<b>0.75</b>	<b>0.9</b>
<b>Gender (ref: Man)</b>					
Woman	-0.086 *** (0.016)	-0.131 *** (0.016)	-0.185 *** (0.016)	-0.178 *** (0.017)	-0.189 *** (0.020)
<b>Age</b>					
	0.013 ** (0.005)	0.013 ** (0.005)	0.011 * (0.005)	0.012 ** (0.005)	0.014 * (0.006)
<b>Age*2</b>					
	0.000 * (0.000)	0.000 + (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
<b>Education (ref: Basic secondary)</b>					
Elementary or less	-0.021 (0.020)	-0.038 + (0.022)	-0.050 * (0.020)	-0.031 (0.022)	-0.057 * (0.028)
Advanced secondary and VET	0.035 + (0.019)	0.027 (0.021)	0.035 * (0.017)	0.048 * (0.021)	0.062 * (0.026)
University	0.112 ** (0.028)	0.111 ** (0.029)	0.138 *** (0.027)	0.169 *** (0.029)	0.181 *** (0.034)
<b>Occupation (ref: Service workers and shop and market sales workers)</b>					
Legislators, senior officials and managers	0.269 *** (0.052)	0.323 *** (0.051)	0.331 *** (0.048)	0.394 *** (0.047)	0.343 *** (0.070)
Professionals and intellectuals	0.263 *** (0.037)	0.295 *** (0.032)	0.339 *** (0.033)	0.370 *** (0.039)	0.397 *** (0.041)
Technicians and associate professionals	0.051 (0.031)	0.126 ** (0.028)	0.133 *** (0.027)	0.153 *** (0.030)	0.144 ** (0.033)
Clerks	-0.009 (0.029)	0.050 + (0.029)	0.041 (0.028)	0.051 + (0.031)	0.025 (0.037)
Skilled agricultural and fishery workers	0.055 (0.059)	0.086 (0.078)	0.025 (0.076)	-0.039 (0.067)	-0.089 (0.099)
Craft and related trades workers	0.015 (0.026)	0.034 (0.030)	0.022 (0.030)	0.024 (0.031)	-0.015 (0.041)
Plant and machine operators and assemblers	0.017 (0.031)	0.063 * (0.029)	0.027 (0.030)	0.012 (0.032)	-0.019 (0.040)
Elementary occupations	-0.071 * (0.027)	-0.047 + (0.025)	-0.077 ** (0.026)	-0.052 + (0.031)	-0.076 * (0.038)
<b>Supervisory role (ref: No)</b>					
Yes	0.096 *** (0.019)	0.118 *** (0.020)	0.122 *** (0.018)	0.139 *** (0.021)	0.159 *** (0.024)
<b>Nationality (ref: Native)</b>					
Foreigner	-0.035 (0.025)	-0.042 + (0.024)	-0.028 (0.026)	-0.038 (0.028)	-0.030 (0.041)
<b>Public sector company (ref: No)</b>					
Yes	-0.003 (0.039)	0.055 (0.040)	0.089 ** (0.029)	0.061 (0.039)	0.042 (0.051)
<b>Company size (ref: 1 to 10)</b>					
11 to 50	0.031 + (0.019)	0.055 ** (0.019)	0.033 + (0.018)	0.005 (0.019)	0.032 (0.025)
51 to 250	0.059 ** (0.018)	0.098 *** (0.018)	0.085 *** (0.016)	0.069 ** (0.018)	0.087 ** (0.024)
<b>Part-time employment (ref: No)</b>					
Yes	-0.033 (0.050)	-0.012 (0.057)	0.003 (0.041)	-0.027 (0.052)	0.034 (0.062)
<b>Fixed wage (ref: No)</b>					
Yes	-0.030 (0.020)	-0.048 ** (0.018)	-0.053 ** (0.016)	-0.051 * (0.021)	-0.088 ** (0.024)
<b>First job (ref: No)</b>					
Yes	-0.114 + (0.060)	-0.077 (0.060)	0.007 (0.060)	-0.013 (0.056)	-0.053 (0.068)

(continued)

<b>Work on Saturdays (ref: Always)</b>					
Sometimes	0.042 (0.026)	0.060 * (0.027)	0.065 * (0.029)	0.060 * (0.027)	0.096 * (0.041)
Never	0.062 * (0.027)	0.072 ** (0.027)	0.092 ** (0.031)	0.088 ** (0.027)	0.108 ** (0.036)
<b>Work on Sundays (ref: Always)</b>					
Sometimes	0.051 (0.046)	0.046 (0.042)	-0.031 (0.041)	-0.034 (0.043)	-0.080 (0.059) *
Never	0.020 (0.049)	0.018 (0.042)	-0.057 (0.042)	-0.083 + (0.043)	-0.111 (0.055)
<b>Work at night (ref: No)</b>					
Yes	0.023 (0.023)	0.044 * (0.021)	0.059 ** (0.020)	0.038 + (0.022)	0.052 + (0.029)
<b>Activity sector (ref: Construction)</b>					
Agriculture and fishing	-0.028 (0.042)	-0.121 * (0.056)	-0.060 (0.078)	-0.103 * (0.043)	-0.227 ** (0.064)
Manufacturing	-0.047 + (0.027)	-0.053 * (0.027)	-0.021 (0.025)	-0.070 * (0.027)	-0.075 + (0.039)
Commerce and repairs	-0.055 + (0.033)	-0.051 + (0.030)	-0.056 + (0.031)	-0.078 * (0.032)	-0.089 + (0.047)
Accommodation and food service + Domestic service	-0.026 (0.045)	-0.022 (0.044)	-0.014 (0.044)	-0.073 (0.048)	-0.170 ** (0.053)
Transportation, storage, communication	-0.095 * (0.039)	-0.068 + (0.039)	-0.025 (0.037)	-0.021 (0.037)	-0.056 (0.047)
Finance and insurance	0.076 (0.077)	0.129 ** (0.047)	0.202 ** (0.045)	0.157 ** (0.051)	0.146 + (0.075)
Real Estate	-0.055 (0.034)	-0.059 + (0.034)	-0.039 (0.031)	-0.116 ** (0.033)	-0.133 ** (0.048)
Public administration	-0.025 (0.040)	0.007 (0.038)	-0.004 (0.033)	-0.012 (0.036)	-0.071 (0.047)
Education	0.043 (0.040)	0.107 * (0.042)	0.109 ** (0.039)	0.079 (0.049)	-0.003 (0.053)
Health and social work	-0.019 (0.040)	-0.022 (0.037)	-0.014 (0.036)	-0.065 + (0.038)	-0.126 ** (0.047)
Other social activities and personal services	-0.095 + (0.051)	-0.105 * (0.049)	-0.051 (0.045)	-0.068 (0.070)	0.041 (0.066)
<b>Temporary contract (ref: No)</b>					
Yes	-0.013 (0.028)	-0.034 (0.026)	-0.051 + (0.030)	-0.042 (0.033)	-0.056 (0.045)
<b>Works council (ref: No)</b>					
Yes	0.037 * (0.019)	0.030 (0.019)	0.036 + (0.019)	0.042 + (0.023)	-0.017 (0.028)
<b>Temporary contract * Part-time employment</b>	0.106 * (0.052)	0.029 (0.059)	-0.025 (0.048)	0.015 (0.066)	0.013 (0.076)
<b>Part-time employment * Gender</b>	0.091 + (0.054)	0.104 (0.064)	0.158 ** (0.048)	0.203 ** (0.062)	0.252 ** (0.075)
<b>Temporary contract * Public sector</b>	0.026 (0.043)	0.029 (0.037)	-0.050 + (0.030)	-0.014 (0.039)	-0.011 (0.040)
<b>Works council* Public sector</b>	0.037 (0.042)	-0.010 (0.037)	-0.015 (0.029)	-0.019 (0.039)	-0.054 (0.047)
<b>Age * First job</b>	0.003 * (0.001)	0.002 (0.001)	0.000 (0.001)	0.001 (0.001)	0.002 (0.002)
<b>Works council * Temporary contract</b>	-0.078 * (0.034)	-0.043 (0.033)	-0.004 (0.031)	-0.023 (0.037)	-0.004 (0.047)
<b>Intercept</b>	1.127 *** (0.113)	1.232 *** (0.108)	1.510 *** (0.111)	1.707 *** (0.112)	1.933 *** (0.130)

Notes: + p < 0.10, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001. Standard errors are provided in brackets.



**Table 7.1.3: Full results of quantile regression models in Column 1 in Figure 4. Association between Works council and the permanent-temporary wage gap in 2008.**

<b>Quantile:</b>	<b>0.1</b>	<b>0.25</b>	<b>0.5</b>	<b>0.75</b>	<b>0.9</b>
<b>Gender (ref: Man)</b>					
Woman	-0.108 *** (0.015)	-0.140 *** (0.013)	-0.139 *** (0.014)	-0.160 *** (0.014)	-0.168 *** (0.021)
<b>Age</b>					
	0.016 ** (0.005)	0.018 ** (0.005)	0.012 ** (0.004)	0.012 ** (0.005)	0.012 * (0.006)
<b>Age^2</b>					
	0.000 ** (0.000)	0.000 ** (0.000)	0.000 + (0.000)	0.000 (0.000)	0.000 (0.000)
<b>Education (ref: Basic secondary)</b>					
Elementary or less	-0.049 * (0.022)	-0.043 * (0.022)	-0.049 * (0.022)	-0.053 * (0.022)	-0.047 + (0.028)
Advanced secondary and VET	0.060 ** (0.021)	0.071 ** (0.019)	0.064 ** (0.019)	0.068 ** (0.018)	0.080 ** (0.025)
University	0.210 *** (0.025)	0.207 *** (0.021)	0.185 *** (0.023)	0.205 *** (0.025)	0.230 *** (0.035)
<b>Occupation (ref: Service workers and shop and market sales workers)</b>					
Legislators, senior officials and managers	0.076 (0.056)	0.189 ** (0.042)	0.259 *** (0.039)	0.264 *** (0.041)	0.271 *** (0.053)
Professionals and intellectuals	0.189 *** (0.035)	0.260 *** (0.026)	0.327 *** (0.028)	0.311 *** (0.031)	0.330 *** (0.045)
Technicians and associate professionals	0.047 + (0.027)	0.066 ** (0.025)	0.097 ** (0.026)	0.087 ** (0.026)	0.088 * (0.040)
Clerks	0.002 (0.027)	0.013 (0.025)	0.032 (0.026)	0.022 (0.026)	0.014 (0.036)
Skilled agricultural and fishery workers	-0.068 (0.069)	-0.063 (0.059)	-0.018 (0.067)	-0.089 (0.061)	-0.063 (0.109)
Craft and related trades workers	0.026 (0.032)	0.037 (0.027)	0.041 (0.029)	0.014 (0.029)	0.011 (0.038)
Plant and machine operators and assemblers	-0.005 (0.030)	0.009 (0.028)	0.043 (0.028)	0.031 (0.028)	0.016 (0.042)
Elementary occupations	-0.085 ** (0.027)	-0.101 ** (0.025)	-0.083 ** (0.029)	-0.074 ** (0.028)	-0.129 ** (0.039)
<b>Supervisory role (ref: No)</b>					
Yes	0.111 *** (0.019)	0.117 *** (0.015)	0.117 *** (0.015)	0.162 *** (0.018)	0.138 *** (0.024)
<b>Nationality (ref: Native)</b>					
Foreigner	-0.046 * (0.023)	-0.085 ** (0.026)	-0.039 (0.025)	-0.048 * (0.024)	-0.050 (0.039)
<b>Public sector company (ref: No)</b>					
Yes	0.126 ** (0.038)	0.135 ** (0.033)	0.145 ** (0.037)	0.155 *** (0.034)	0.132 ** (0.049)
<b>Company size (ref: 1 to 10)</b>					
11 to 50	-0.003 (0.019)	0.012 (0.017)	0.005 (0.017)	0.003 (0.016)	0.026 (0.023)
51 to 250	0.019 (0.017)	0.030 * (0.015)	0.049 ** (0.016)	0.063 ** (0.015)	0.094 ** (0.022)
<b>Part-time employment (ref: No)</b>					
Yes	0.047 (0.058)	0.036 (0.031)	0.047 (0.052)	0.066 (0.053)	0.161 * (0.065)
<b>Fixed wage (ref: No)</b>					
Yes	-0.025 (0.022)	-0.048 ** (0.019)	-0.033 + (0.019)	-0.053 * (0.020)	-0.093 ** (0.032)
<b>First job (ref: No)</b>					
Yes	-0.036 (0.062)	-0.075 (0.059)	-0.081 (0.055)	-0.076 (0.061)	-0.006 (0.085)

(continued)

<b>Work on Saturdays (ref: Always)</b>					
Sometimes	0.083 ** (0.032)	0.070 * (0.028)	0.080 ** (0.029)	0.050 (0.031)	0.061 (0.044) *
Never	0.107 ** (0.032)	0.097 ** (0.030)	0.109 ** (0.030)	0.091 ** (0.033)	0.093 (0.043)
<b>Work on Sundays (ref: Always)</b>					
Sometimes	-0.001 (0.046)	-0.005 (0.041)	-0.052 (0.038)	-0.039 (0.042)	-0.175 * (0.075)
Never	-0.016 (0.045)	-0.002 (0.043)	-0.057 (0.037)	-0.052 (0.041)	-0.232 ** (0.073)
<b>Work at night (ref: No)</b>					
Yes	0.018 (0.021)	0.051 * (0.021)	0.073 ** (0.017)	0.056 ** (0.020)	0.028 (0.027)
<b>Activity sector (ref: Construction)</b>					
Agriculture and fishing	-0.011 (0.064)	-0.090 + (0.052)	-0.125 * (0.061)	-0.128 ** (0.048)	-0.135 + (0.078)
Manufacturing	0.015 (0.033)	-0.028 (0.026)	0.001 (0.023)	-0.023 (0.024)	-0.014 (0.032)
Commerce and repairs	0.008 (0.039)	-0.041 (0.030)	0.005 (0.030)	-0.010 (0.032)	-0.003 (0.039)
Accommodation and food service + Domestic service	0.013 (0.047)	-0.044 (0.037)	-0.040 (0.043)	-0.033 (0.040)	-0.051 (0.058)
Transportation, storage, communication	0.014 (0.045)	-0.014 (0.034)	0.031 (0.030)	0.002 (0.028)	0.018 (0.045)
Finance and insurance	0.176 ** (0.045)	0.113 ** (0.037)	0.168 ** (0.042)	0.211 ** (0.063)	0.210 ** (0.060)
Real Estate	-0.055 (0.043)	-0.054 + (0.029)	-0.079 ** (0.029)	-0.100 ** (0.032)	-0.039 (0.046)
Public administration	0.076 + (0.043)	0.024 (0.033)	0.007 (0.031)	-0.033 (0.034)	-0.098 + (0.050)
Education	0.123 ** (0.046)	0.060 + (0.033)	0.060 + (0.035)	0.022 (0.042)	0.008 (0.056)
Health and social work	-0.028 (0.042)	-0.018 (0.031)	-0.021 (0.031)	-0.033 (0.035)	-0.123 ** (0.044)
Other social activities and personal services	-0.062 (0.052)	-0.082 (0.053)	-0.068 (0.043)	-0.077 + (0.043)	-0.089 (0.068)
<b>Temporary contract (ref: No)</b>					
Yes	-0.069 * (0.034)	-0.066 * (0.033)	-0.065 * (0.028)	-0.007 (0.035)	-0.030 (0.042)
<b>Works council (ref: No)</b>					
Yes	0.053 ** (0.020)	0.054 ** (0.018)	0.050 ** (0.018)	0.047 * (0.019)	0.018 (0.028)
<b>Temporary contract * Part-time employment</b>					
	-0.138 + (0.079)	-0.067 (0.063)	-0.054 (0.067)	-0.040 (0.088)	-0.091 (0.093)
<b>Part-time employment * Gender</b>					
	0.037 (0.064)	0.077 + (0.039)	0.056 (0.059)	0.140 * (0.065)	0.176 * (0.088)
<b>Temporary contract * Public sector</b>					
	-0.068 (0.044)	-0.036 (0.037)	-0.003 (0.033)	-0.004 (0.041)	-0.034 (0.054)
<b>Works council* Public sector</b>					
	-0.022 (0.039)	-0.038 (0.032)	-0.044 (0.032)	-0.072 * (0.030)	0.019 (0.047)
<b>Age * First job</b>					
	0.002 (0.001)	0.003 + (0.001)	0.003 * (0.001)	0.003 + (0.001)	0.002 (0.002)
<b>Works council * Temporary contract</b>					
	-0.022 (0.039)	0.002 (0.038)	-0.013 (0.030)	-0.070 (0.042)	-0.024 (0.050)
<b>Intercept</b>					
	1.048 *** (0.118)	1.197 *** (0.108)	1.472 *** (0.092)	1.687 *** (0.110)	2.040 *** (0.145)

Notes: + p < 0.10, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001. Standard errors are provided in brackets.

**Table 7.1.4: Full results of quantile regression models in Column 1 in Figure 4. Association between Works council and the permanent-temporary wage gap in 2009.**

<b>Quantile:</b>	<b>0.1</b>	<b>0.25</b>	<b>0.5</b>	<b>0.75</b>	<b>0.9</b>
<b>Gender (ref: Man)</b>					
Woman	-0.084 *** (0.016)	-0.108 *** (0.014)	-0.126 *** (0.013)	-0.132 *** (0.015)	-0.137 *** (0.018)
<b>Age</b>					
	0.015 * (0.006)	0.015 ** (0.004)	0.013 ** (0.004)	0.011 * (0.005)	0.005 (0.006)
<b>Age^2</b>					
	0.000 + (0.000)	0.000 * (0.000)	0.000 * (0.000)	0.000 (0.000)	0.000 (0.000)
<b>Education (ref: Basic secondary)</b>					
Elementary or less	-0.014 (0.024)	-0.042 * (0.020)	-0.026 (0.022)	-0.010 (0.021)	-0.016 (0.025)
Advanced secondary and VET	0.083 ** (0.021)	0.084 *** (0.018)	0.097 *** (0.016)	0.070 ** (0.017)	0.104 *** (0.021)
University	0.188 *** (0.027)	0.180 *** (0.023)	0.204 *** (0.023)	0.214 *** (0.027)	0.195 *** (0.030)
<b>Occupation (ref: Service workers and shop and market sales workers)</b>					
Legislators, senior officials and managers	0.259 *** (0.050)	0.330 *** (0.043)	0.384 *** (0.042)	0.362 *** (0.045)	0.431 *** (0.054)
Professionals and intellectuals	0.210 *** (0.035)	0.264 *** (0.031)	0.336 *** (0.030)	0.305 *** (0.035)	0.347 *** (0.036)
Technicians and associate professionals	0.088 ** (0.029)	0.114 *** (0.024)	0.095 ** (0.023)	0.065 * (0.027)	0.105 ** (0.030)
Clerks	0.022 (0.027)	-0.003 (0.028)	0.024 (0.026)	-0.014 (0.027)	0.009 (0.033)
Skilled agricultural and fishery workers	-0.073 (0.073)	-0.026 (0.095)	-0.003 (0.044)	-0.067 (0.061)	-0.113 (0.069)
Craft and related trades workers	0.014 (0.034)	0.051 + (0.029)	0.044 + (0.024)	-0.020 (0.028)	-0.012 (0.033)
Plant and machine operators and assemblers	-0.034 (0.036)	0.060 * (0.029)	0.056 * (0.026)	-0.015 (0.029)	-0.016 (0.030)
Elementary occupations	-0.061 * (0.028)	-0.059 * (0.026)	-0.055 * (0.025)	-0.114 ** (0.025)	-0.136 *** (0.029)
<b>Supervisory role (ref: No)</b>					
Yes	0.060 ** (0.020)	0.102 *** (0.017)	0.098 *** (0.015)	0.133 *** (0.016)	0.125 *** (0.020)
<b>Nationality (ref: Native)</b>					
Foreigner	-0.084 ** (0.027)	-0.059 ** (0.021)	-0.062 ** (0.020)	-0.040 + (0.022)	-0.019 (0.029)
<b>Public sector company (ref: No)</b>					
Yes	0.100 * (0.040)	0.115 ** (0.033)	0.170 *** (0.035)	0.154 ** (0.036)	0.122 * (0.051)
<b>Company size (ref: 1 to 10)</b>					
11 to 50	0.019 (0.021)	0.041 * (0.019)	0.039 * (0.017)	0.062 ** (0.019)	0.084 ** (0.023)
51 to 250	0.079 ** (0.018)	0.101 *** (0.016)	0.091 *** (0.015)	0.100 *** (0.016)	0.125 *** (0.021)
<b>Part-time employment (ref: No)</b>					
Yes	0.036 (0.053)	-0.013 (0.045)	0.012 (0.042)	0.004 (0.041)	-0.003 (0.051)
<b>Fixed wage (ref: No)</b>					
Yes	-0.019 (0.024)	-0.028 (0.021)	-0.031 * (0.016)	-0.040 + (0.021)	-0.055 * (0.025)
<b>First job (ref: No)</b>					
Yes	-0.179 * (0.075)	-0.118 + (0.064)	-0.113 * (0.051)	-0.075 (0.068)	-0.075 (0.074)

(continued)

<b>Work on Saturdays (ref: Always)</b>					
Sometimes	0.043 (0.028)	0.036 (0.029)	0.032 (0.021)	0.030 (0.028)	0.060 (0.033)
Never	0.074 * (0.029)	0.063 * (0.029)	0.052 * (0.021)	0.039 (0.027)	0.043 (0.035)
<b>Work on Sundays (ref: Always)</b>					
Sometimes	0.132 * (0.054)	0.069 (0.050)	0.048 (0.035)	0.050 (0.039)	-0.068 (0.052)
Never	0.157 ** (0.055)	0.091 + (0.050)	0.051 (0.035)	0.051 (0.038)	-0.015 (0.054)
<b>Work at night (ref: No)</b>					
Yes	0.033 (0.024)	0.059 ** (0.021)	0.052 ** (0.017)	0.079 ** (0.019)	0.088 ** (0.023)
<b>Activity sector (ref: Construction)</b>					
Agriculture, farming, silviculture, fishing	-0.109 + (0.063)	-0.093 (0.065)	-0.087 * (0.040)	-0.177 ** (0.047)	-0.082 (0.067)
Manufacturing	0.001 (0.029)	-0.008 (0.030)	-0.026 (0.022)	-0.031 (0.023)	-0.015 (0.029)
Wholesale and retail trade	-0.090 * (0.039)	-0.070 * (0.035)	-0.055 * (0.027)	-0.079 * (0.031)	-0.035 (0.037)
Transportation and storage	-0.019 (0.042)	-0.020 (0.042)	-0.003 (0.032)	0.017 (0.037)	0.067 (0.048)
Accommodation and food services + Households as employers	-0.035 (0.047)	-0.043 (0.042)	-0.044 (0.033)	-0.121 ** (0.035)	-0.115 ** (0.043)
Information, communication, financial and insurance	-0.001 (0.038)	0.049 (0.036)	0.071 + (0.038)	0.110 ** (0.037)	0.171 ** (0.043)
Real Estate, professional, scientific and technical, admin...	-0.090 * (0.039)	-0.060 + (0.036)	-0.076 ** (0.028)	-0.070 * (0.031)	0.004 (0.038)
Public Administration and Defence	-0.015 (0.034)	-0.016 (0.034)	-0.039 (0.031)	-0.036 (0.034)	-0.036 (0.043)
Education	0.008 (0.038)	0.008 (0.037)	-0.001 (0.035)	0.044 (0.041)	0.097 + (0.050)
Human Health and social Work	-0.009 (0.038)	-0.008 (0.035)	-0.050 (0.031)	-0.062 + (0.034)	-0.040 (0.041)
Arts, entertainment	-0.129 ** (0.047)	-0.117 * (0.058)	-0.161 ** (0.042)	-0.132 * (0.053)	-0.068 (0.054)
<b>Temporary contract (ref: No)</b>					
Yes	-0.089 ** (0.032)	-0.088 ** (0.029)	-0.087 ** (0.026)	-0.077 * (0.033)	-0.087 * (0.040)
<b>Works council (ref: No)</b>					
Yes	0.046 * (0.021)	0.036 * (0.018)	0.046 ** (0.015)	0.020 (0.019)	-0.019 (0.025)
<b>Temporary contract * Part-time employment</b>					
	0.110 + (0.058)	0.078 (0.049)	0.120 * (0.057)	0.161 * (0.064)	0.255 ** (0.078)
<b>Part-time employment * Gender</b>					
	0.013 (0.056)	0.138 ** (0.049)	0.084 (0.051)	0.142 ** (0.054)	0.118 + (0.062)
<b>Temporary contract * Public sector</b>					
	-0.052 (0.039)	-0.057 + (0.032)	-0.026 (0.040)	-0.051 (0.033)	0.013 (0.042)
<b>Works council* Public sector</b>					
	-0.006 (0.042)	-0.026 (0.032)	-0.069 * (0.034)	-0.075 * (0.031)	-0.053 (0.044)
<b>Age * First job</b>					
	0.004 * (0.002)	0.003 * (0.001)	0.003 * (0.001)	0.002 (0.002)	0.004 * (0.002)
<b>Works council * Temporary contract</b>					
	-0.029 (0.038)	0.000 (0.033)	-0.028 (0.034)	-0.014 (0.034)	-0.048 (0.044)
<b>Intercept</b>					
	0.967 *** (0.141)	1.125 *** (0.106)	1.386 *** (0.088)	1.683 *** (0.107)	1.972 *** (0.130)

Notes: (\*) p < 0.10, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001. Standard errors are provided in brackets.

**Table 7.1.5: Full results of quantile regression models in Column 1 in Figure 4. Association between Works council and the permanent-temporary wage gap in 2010.**

<b>Quantile:</b>	<b>0.1</b>	<b>0.25</b>	<b>0.5</b>	<b>0.75</b>	<b>0.9</b>
<b>Gender (ref: Man)</b>					
Woman	-0.085 *** (0.016)	-0.102 *** (0.015)	-0.116 *** (0.014)	-0.125 *** (0.016)	-0.146 *** (0.020)
<b>Age</b>					
	0.016 ** (0.005)	0.021 *** (0.004)	0.023 *** (0.005)	0.022 ** (0.005)	0.015 * (0.007)
<b>Age*2</b>					
	0.000 * (0.000)	0.000 ** (0.000)	0.000 ** (0.000)	0.000 ** (0.000)	0.000 (0.000)
<b>Education (ref: Basic secondary)</b>					
Elementary or less	-0.064 * (0.025)	-0.066 ** (0.024)	-0.063 ** (0.023)	-0.053 * (0.024)	-0.058 + (0.030)
Advanced secondary and VET	0.067 ** (0.020)	0.075 ** (0.021)	0.058 ** (0.017)	0.053 ** (0.017)	0.051 * (0.025)
University	0.219 *** (0.027)	0.240 *** (0.026)	0.219 *** (0.023)	0.219 *** (0.024)	0.248 *** (0.035)
<b>Occupation (ref: Service workers and shop and market sales workers)</b>					
Legislators, senior officials and managers	0.224 *** (0.048)	0.239 *** (0.041)	0.255 *** (0.038)	0.231 *** (0.040)	0.147 ** (0.050)
Professionals and intellectuals	0.207 *** (0.032)	0.280 *** (0.030)	0.251 *** (0.030)	0.278 *** (0.029)	0.197 *** (0.043)
Technicians and associate professionals	0.088 ** (0.027)	0.101 ** (0.027)	0.067 ** (0.025)	0.075 ** (0.024)	0.030 (0.036)
Clerks	0.012 (0.028)	0.025 (0.027)	-0.008 (0.030)	0.008 (0.027)	-0.018 (0.050)
Skilled agricultural and fishery workers	-0.060 (0.063)	-0.040 (0.088)	-0.017 (0.043)	-0.048 (0.046)	-0.066 (0.076)
Craft and related trades workers	0.084 ** (0.031)	0.133 *** (0.029)	0.074 ** (0.026)	0.039 (0.025)	-0.010 (0.037)
Plant and machine operators and assemblers	0.042 (0.032)	0.103 ** (0.031)	0.049 (0.030)	0.024 (0.029)	-0.057 (0.037)
Elementary occupations	-0.022 (0.027)	-0.023 (0.027)	-0.094 ** (0.025)	-0.097 ** (0.030)	-0.140 ** (0.033)
<b>Supervisory role (ref: No)</b>					
Yes	0.128 *** (0.020)	0.128 *** (0.017)	0.145 *** (0.015)	0.148 *** (0.015)	0.175 *** (0.023)
<b>Nationality (ref: Native)</b>					
Foreigner	-0.077 * (0.037)	-0.068 ** (0.025)	-0.037 (0.022)	-0.035 (0.024)	-0.059 * (0.029)
<b>Public sector company (ref: No)</b>					
Yes	0.005 (0.038)	0.028 (0.032)	0.042 (0.027)	0.027 (0.032)	0.081 * (0.039)
<b>Company size (ref: 1 to 10)</b>					
11 to 50	0.013 (0.022)	-0.009 (0.018)	0.029 + (0.017)	0.036 * (0.017)	0.046 * (0.023)
51 to 250	0.059 ** (0.020)	0.058 ** (0.017)	0.077 *** (0.016)	0.109 *** (0.016)	0.113 *** (0.023)
<b>Part-time employment (ref: No)</b>					
Yes	0.056 (0.047)	0.105 (0.064)	0.119 ** (0.042)	0.139 ** (0.048)	0.112 + (0.067)
<b>Fixed wage (ref: No)</b>					
Yes	-0.040 + (0.021)	-0.025 (0.021)	-0.047 * (0.020)	-0.068 ** (0.018)	-0.065 ** (0.024)
<b>First job (ref: No)</b>					
Yes	-0.091 (0.087)	0.019 (0.069)	-0.025 (0.062)	0.012 (0.060)	-0.042 (0.079)

(continued)

<b>Work on Saturdays (ref: Always)</b>					
Sometimes	0.009 (0.024)	0.039 (0.024)	0.049 * (0.023)	0.065 * (0.027)	0.059 (0.036) **
Never	0.053 + (0.028)	0.082 ** (0.024)	0.106 ** (0.024)	0.112 ** (0.029)	0.120 (0.037)
<b>Work on Sundays (ref: Always)</b>					
Sometimes	0.030 (0.044)	-0.009 (0.039)	-0.026 (0.037)	-0.013 (0.037)	0.056 (0.044) +
Never	0.033 (0.048)	0.011 (0.037)	-0.043 (0.037)	-0.025 (0.038)	0.077 (0.041)
<b>Work at night (ref: No)</b>					
Yes	0.071 ** (0.022)	0.072 ** (0.022)	0.054 ** (0.019)	0.051 ** (0.019)	0.065 ** (0.023)
<b>Activity sector (ref: Construction)</b>					
Agriculture, farming, silviculture, fishing	-0.207 ** (0.071)	-0.112 (0.071)	-0.119 ** (0.040)	-0.099 + (0.053)	-0.077 (0.069)
Manufacturing	-0.037 (0.032)	0.007 (0.027)	-0.018 (0.025)	0.014 (0.027)	0.031 (0.036)
Wholesale and retail trade	-0.068 + (0.038)	-0.025 (0.033)	-0.064 * (0.026)	-0.046 (0.032)	-0.030 (0.040)
Transportation and storage	-0.026 (0.045)	0.040 (0.038)	-0.014 (0.033)	0.041 (0.038)	0.086 + (0.049)
Accommodation and food services + Households as employers	-0.043 (0.046)	0.013 (0.037)	-0.079 * (0.034)	-0.055 (0.040)	0.016 (0.056)
Information, communication, financial and insurance	-0.006 (0.041)	0.062 (0.038)	0.058 + (0.032)	0.071 + (0.038)	0.119 * (0.053)
Real Estate, professional, scientific and technical, admin...	-0.121 ** (0.046)	-0.059 (0.037)	-0.075 ** (0.027)	-0.026 (0.034)	-0.020 (0.042)
Public Administration and Defence	0.027 (0.036)	0.051 (0.035)	-0.005 (0.030)	-0.004 (0.036)	-0.024 (0.041)
Education	0.061 (0.039)	0.092 + (0.039)	0.060 + (0.035)	0.080 + (0.042)	0.101 + (0.055)
Human health and social work	-0.085 * (0.038)	-0.042 (0.038)	-0.049 (0.034)	-0.020 (0.039)	-0.022 (0.046)
Arts, entertainment	-0.044 (0.055)	0.007 (0.049)	-0.077 + (0.044)	-0.004 (0.059)	-0.058 (0.048)
<b>Temporary contract (ref: No)</b>					
Yes	-0.186 *** (0.040)	-0.080 + (0.032)	-0.083 ** (0.027)	-0.102 ** (0.035)	-0.090 + (0.040)
<b>Works council (ref: No)</b>					
Yes	0.016 (0.020)	0.021 (0.016)	0.038 + (0.017)	0.028 (0.017)	0.053 + (0.023)
<b>Temporary contract * Part-time employment</b>					
	-0.128 * (0.061)	-0.088 (0.067)	-0.033 (0.058)	-0.080 (0.059)	0.172 (0.119)
<b>Part-time employment * Gender</b>					
	0.149 ** (0.053)	0.083 (0.069)	0.037 (0.048)	0.091 (0.056)	0.071 (0.078)
<b>Temporary contract * Public sector</b>					
	0.034 (0.041)	0.046 (0.044)	0.062 + (0.036)	0.097 ** (0.037)	0.023 (0.043)
<b>Works council* Public sector</b>					
	0.028 (0.041)	0.000 (0.033)	0.006 (0.027)	0.011 (0.033)	-0.022 (0.042)
<b>Age * First job</b>					
	0.003 (0.002)	0.001 (0.001)	0.002 (0.001)	0.001 (0.001)	0.002 (0.002)
<b>Works council * Temporary contract</b>					
	0.077 + (0.045)	-0.036 (0.039)	-0.037 (0.035)	-0.016 (0.039)	-0.023 (0.046)
<b>Intercept</b>					
	1.059 *** (0.122)	1.005 *** (0.105)	1.253 *** (0.109)	1.426 *** (0.118)	1.648 *** (0.148)

Notes: (\*) p < 0.10, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001. Standard errors are provided in brackets.

**Table 7.2.1: Full results of quantile regression models in Column 2 in Figure 4. Association between Works council and temporary workers' wages in 2006.**

<u>Quantile:</u>	<u>0.1</u>	<u>0.25</u>	<u>0.5</u>	<u>0.75</u>	<u>0.9</u>
<b>Gender (ref: Man)</b>					
Woman	0.005 (0.029)	-0.032 + (0.019)	-0.016 (0.012)	-0.028 (0.023)	-0.045 (0.033)
<b>Age</b>					
	-0.016 * (0.007)	-0.004 (0.005)	0.001 (0.004)	0.007 (0.007)	0.020 * (0.008)
<b>Age^2</b>					
	0.000 * (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 * (0.000)
<b>Education (ref: Basic secondary)</b>					
Elementary or less	-0.044 (0.042)	-0.028 (0.027)	-0.019 (0.016)	-0.002 (0.030)	0.088 * (0.044)
Advanced secondary and VET	0.003 (0.032)	-0.019 (0.023)	-0.010 (0.013)	-0.019 (0.024)	0.007 (0.032)
University	0.028 (0.042)	0.058 * (0.025)	0.028 (0.019)	0.046 (0.044)	0.071 (0.051)
<b>Occupation (ref: Service workers and shop and market sales workers)</b>					
Professionals and intellectuals + Legislators, senior officials and managers	0.123 + (0.073)	0.033 (0.039)	0.155 *** (0.047)	0.177 *** (0.051)	0.049 (0.070)
Technicians and associate professionals	0.136 * (0.068)	0.049 (0.034)	0.056 + (0.030)	0.058 (0.052)	0.051 (0.062)
Clerks	0.124 + (0.066)	0.063 + (0.036)	0.048 (0.031)	-0.010 (0.039)	-0.099 (0.061)
Skilled agricultural and fishery workers + Craft and related trades workers	0.065 (0.068)	0.047 (0.036)	0.062 * (0.031)	0.009 (0.039)	-0.012 (0.071)
Plant and machine operators and assemblers	0.184 ** (0.067)	0.105 * (0.041)	0.087 * (0.034)	0.206 *** (0.047)	0.065 (0.071)
Elementary occupations	0.080 (0.066)	0.037 (0.037)	0.047 (0.030)	-0.024 (0.034)	-0.090 (0.064)
<b>Supervisory role (ref: No)</b>					
Yes	0.052 (0.035)	0.045 + (0.024)	0.050 * (0.024)	0.029 (0.038)	0.107 * (0.047)
<b>Nationality (ref: Native)</b>					
Foreigner	0.090 * (0.039)	0.027 (0.027)	0.004 (0.021)	-0.010 (0.032)	0.024 (0.041)
<b>Public sector company (ref: No)</b>					
Yes	0.000 (0.043)	0.028 (0.024)	0.052 * (0.026)	0.017 (0.041)	0.020 (0.043)
<b>Company size (ref: 11 to 50)</b>					
51 to 250	0.046 (0.034)	0.053 * (0.026)	0.020 (0.015)	0.066 * (0.030)	0.063 + (0.032)
251 and more	0.070 * (0.035)	0.073 ** (0.026)	0.034 * (0.017)	0.059 * (0.029)	0.063 + (0.036)
<b>Part-time employment (ref: No)</b>					
Yes	0.177 * (0.073)	0.141 * (0.055)	0.282 *** (0.064)	0.473 *** (0.140)	0.587 *** (0.130)
<b>Fixed wage (ref: No)</b>					
Yes	-0.007 (0.028)	0.003 (0.020)	0.015 (0.015)	-0.017 (0.026)	-0.021 (0.031)
<b>First job (ref: No)</b>					
Yes	-0.114 (0.108)	-0.083 (0.070)	-0.015 (0.043)	0.105 (0.107)	0.190 (0.121)
<b>Work at weekends (ref: Always)</b>					
Sometimes	0.111 + (0.067)	0.010 (0.028)	0.003 (0.022)	-0.024 (0.037)	-0.047 (0.045)
Never	0.171 * (0.068)	0.025 (0.032)	0.013 (0.024)	0.025 (0.036)	-0.064 (0.040)

(continued)

<b>Work at night (ref: No)</b>					
Yes	0.009 (0.035)	-0.007 (0.026)	-0.008 (0.016)	0.024 (0.027)	0.008 (0.043)
<b>Activity sector (ref: Construction)</b>					
Agriculture and fishing	-0.106 (0.121)	0.076 + (0.045)	0.022 (0.030)	0.019 (0.076)	0.060 (0.097)
Manufacturing	0.002 (0.047)	0.004 (0.028)	-0.004 (0.016)	-0.062 (0.040)	-0.038 (0.044)
Commerce and repairs	-0.075 (0.061)	-0.054 + (0.032)	-0.035 (0.036)	-0.084 (0.064)	-0.065 (0.072)
Accommodation and food service + Domestic service	-0.047 (0.075)	-0.086 (0.066)	-0.010 (0.036)	-0.039 (0.052)	-0.002 (0.077)
Transportation, storage, communication	-0.089 (0.080)	0.004 (0.044)	0.018 (0.029)	-0.035 (0.052)	-0.060 (0.063)
Real Estate + Finance and insurance	0.043 (0.055)	0.037 (0.030)	0.010 (0.021)	-0.041 (0.049)	-0.061 (0.055)
Public administration	0.102 (0.069)	0.071 + (0.040)	0.060 + (0.034)	0.020 (0.056)	0.043 (0.072)
Education	0.236 ** (0.073)	0.247 *** (0.057)	0.192 *** (0.056)	0.214 ** (0.079)	0.319 *** (0.088)
Health and social work	0.052 (0.068)	0.095 * (0.044)	0.094 ** (0.034)	0.037 (0.064)	0.137 + (0.074)
Other social activities and personal services	0.084 (0.075)	0.070 (0.046)	0.018 (0.036)	-0.048 (0.064)	0.041 (0.100)
<b>Part-time employment * Gender</b>					
	-0.158 (0.104)	0.028 (0.079)	0.004 (0.087)	-0.055 (0.160)	-0.117 (0.147)
<b>Age * First job</b>					
	0.003 (0.003)	0.003 (0.002)	0.001 (0.001)	-0.002 (0.003)	-0.005 + (0.003)
<b>Works council (ref: No)</b>					
Yes	0.062 + (0.032)	0.015 (0.021)	-0.001 (0.012)	0.022 (0.022)	0.076 ** (0.027)
<b>Intercept</b>					
	1.317 *** (0.169)	1.393 *** (0.093)	1.423 *** (0.077)	1.471 *** (0.136)	1.366 *** (0.162)

**Notes:** + p < 0.10, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001. Standard errors are provided in brackets.



**Table 7.2.2: Full results of quantile regression models in Column 2 in Figure 4. Association between Works council and temporary workers' wages in 2007.**

<u>Quantile:</u>	<u>0.1</u>	<u>0.25</u>	<u>0.5</u>	<u>0.75</u>	<u>0.9</u>
<b>Gender (ref: Man)</b>					
Woman	-0.064 + (0.033)	-0.065 + (0.034)	-0.115 ** (0.037)	-0.134 ** (0.043)	-0.054 (0.046)
<b>Age</b>					
	-0.009 (0.009)	-0.006 (0.010)	-0.002 (0.009)	0.007 (0.011)	0.011 (0.012)
<b>Age^2</b>					
	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
<b>Education (ref: Basic secondary)</b>					
Elementary or less	-0.058 (0.045)	-0.054 (0.042)	-0.057 (0.040)	-0.039 (0.052)	-0.020 (0.055)
Advanced secondary and VET	0.071 + (0.036)	0.084 * (0.040)	0.036 (0.038)	0.047 (0.046)	0.050 (0.051)
University	0.115 * (0.057)	0.162 * (0.068)	0.146 ** (0.055)	0.217 *** (0.064)	0.167 * (0.069)
<b>Occupation (ref: Service workers and shop and market sales workers)</b>					
Professionals and intellectuals + Legislators, senior officials and managers	0.201 ** (0.072)	0.288 *** (0.081)	0.329 *** (0.072)	0.201 * (0.080)	0.355 *** (0.094)
Technicians and associate professionals	0.013 (0.066)	0.110 (0.072)	0.158 ** (0.061)	0.067 (0.066)	0.084 (0.080)
Clerks	0.067 (0.059)	0.106 + (0.055)	0.064 (0.054)	-0.004 (0.065)	-0.066 (0.076)
Skilled agricultural and fishery workers + Craft and related trades workers	0.097 + (0.058)	0.160 ** (0.060)	0.145 * (0.070)	0.055 (0.078)	0.046 (0.081)
Plant and machine operators and assemblers	0.055 (0.064)	0.205 ** (0.065)	0.143 * (0.063)	0.050 (0.075)	-0.010 (0.080)
Elementary occupations	0.005 (0.056)	0.097 + (0.052)	-0.010 (0.056)	-0.057 (0.073)	-0.094 (0.070)
<b>Supervisory role (ref: No)</b>					
Yes	0.030 (0.041)	0.021 (0.051)	-0.018 (0.042)	0.079 (0.077)	0.119 + (0.067)
<b>Nationality (ref: Native)</b>					
Foreigner	-0.066 (0.041)	-0.089 * (0.042)	-0.089 * (0.041)	-0.031 (0.053)	-0.076 (0.051)
<b>Public sector company (ref: No)</b>					
Yes	0.079 + (0.044)	0.075 + (0.040)	0.045 (0.035)	0.082 + (0.043)	0.104 + (0.055)
<b>Company size (ref: 11 to 50)</b>					
51 to 250	0.022 (0.039)	0.003 (0.036)	0.044 (0.037)	0.046 (0.041)	0.069 (0.051)
251 and more	0.072 * (0.034)	0.077 * (0.037)	0.104 ** (0.038)	0.124 * (0.048)	0.115 ** (0.044)
<b>Part-time employment (ref: No)</b>					
Yes	0.043 (0.089)	0.118 + (0.066)	0.021 (0.071)	0.038 (0.097)	0.192 (0.143)
<b>Fixed wage (ref: No)</b>					
Yes	-0.051 (0.037)	-0.079 * (0.033)	-0.083 ** (0.031)	-0.121 ** (0.046)	-0.238 *** (0.057)
<b>First job (ref: No)</b>					
Yes	-0.193 (0.120)	-0.099 (0.116)	-0.154 (0.115)	-0.068 (0.135)	-0.328 * (0.136)
<b>Work on Saturdays (ref: Always)</b>					
Sometimes	-0.038 (0.056)	0.027 (0.057)	0.093 + (0.052)	0.069 (0.067)	0.048 (0.074)
Never	-0.017 (0.057)	-0.021 (0.056)	0.094 + (0.051)	0.062 (0.065)	0.070 (0.066)

(continued)

<b>Work on Sundays (ref: Always)</b>					
Sometimes	0.041 (0.064)	-0.053 (0.073)	-0.049 (0.065)	-0.071 (0.077)	0.033 (0.096)
Never	-0.014 (0.066)	-0.054 (0.071)	-0.089 (0.067)	-0.132 + (0.072)	-0.111 (0.087)
<b>Work at night (ref: No)</b>					
Yes	-0.032 (0.047)	0.033 (0.052)	0.032 (0.044)	0.035 (0.054)	-0.025 (0.051)
<b>Activity sector (ref: Construction)</b>					
Agriculture and fishing	-0.069 (0.102)	-0.289 * (0.118)	-0.260 * (0.106)	-0.254 * (0.109)	-0.401 ** (0.125)
Manufacturing	-0.050 (0.047)	-0.100 * (0.049)	-0.084 + (0.048)	-0.074 (0.059)	-0.085 (0.065)
Commerce and repairs	-0.137 * (0.062)	-0.165 * (0.077)	-0.189 ** (0.072)	-0.190 * (0.080)	-0.179 + (0.095)
Accommodation and food service + Domestic service	-0.007 (0.074)	-0.063 (0.068)	-0.055 (0.067)	-0.133 (0.082)	-0.205 * (0.082)
Transportation, storage, communication	-0.047 (0.070)	-0.119 (0.075)	-0.123 (0.076)	-0.110 (0.088)	-0.202 ** (0.077)
Real Estate + Finance and insurance	-0.088 (0.075)	-0.067 (0.054)	-0.121 + (0.062)	-0.138 + (0.076)	-0.230 ** (0.080)
Public administration	-0.027 (0.075)	-0.032 (0.056)	-0.108 + (0.060)	-0.178 * (0.078)	-0.267 ** (0.089)
Education	-0.040 (0.086)	0.119 (0.081)	0.033 (0.073)	0.112 (0.091)	-0.093 (0.118)
Health and social work	0.041 (0.064)	0.057 (0.067)	-0.012 (0.061)	-0.123 (0.087)	-0.248 * (0.098)
Other social activities and personal services	0.084 (0.072)	-0.051 (0.080)	-0.038 (0.081)	-0.084 (0.105)	0.188 (0.188)
<b>Part-time employment * Gender</b>					
	0.059 (0.108)	-0.020 (0.087)	0.093 (0.091)	0.138 (0.131)	0.089 (0.164)
<b>Age * First job</b>					
	0.005 (0.003)	0.004 (0.003)	0.005 (0.003)	0.003 (0.004)	0.011 * (0.004)
<b>Works council (ref: No)</b>					
Yes	-0.055 + (0.030)	-0.012 (0.030)	0.015 (0.031)	0.002 (0.041)	-0.003 (0.037)
<b>Intercept</b>					
	1.648 *** (0.196)	1.667 *** (0.203)	1.825 *** (0.197)	1.920 *** (0.218)	2.117 *** (0.228)

**Notes:** + p < 0.10, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001. Standard errors are provided in brackets.

**Table 7.2.3: Full results of quantile regression models in Column 2 in Figure 4. Association between Works council and temporary workers' wages in 2008.**

<u>Quantile:</u>	<u>0.1</u>	<u>0.25</u>	<u>0.5</u>	<u>0.75</u>	<u>0.9</u>
<b>Gender (ref: Man)</b>					
Woman	-0.060 + (0.035)	-0.079 * (0.033)	-0.097 ** (0.030)	-0.162 *** (0.040)	-0.158 ** (0.048)
<b>Age</b>					
	-0.003 (0.009)	0.000 (0.008)	0.003 (0.009)	0.015 (0.010)	-0.002 (0.013)
<b>Age^2</b>					
	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
<b>Education (ref: Basic secondary)</b>					
Elementary or less	0.006 (0.048)	-0.059 (0.045)	-0.104 * (0.042)	-0.145 *** (0.043)	-0.241 *** (0.054)
Advanced secondary and VET	0.050 (0.040)	-0.011 (0.043)	0.005 (0.035)	-0.005 (0.048)	-0.055 (0.055)
University	0.126 * (0.057)	0.140 ** (0.053)	0.115 * (0.052)	0.110 + (0.064)	0.155 * (0.075)
<b>Occupation (ref: Service workers and shop and market sales workers)</b>					
Professionals and intellectuals + Legislators, senior officials and managers	0.119 (0.083)	0.218 * (0.088)	0.315 *** (0.073)	0.309 *** (0.071)	0.312 *** (0.073)
Technicians and associate professionals	0.021 (0.068)	0.078 (0.072)	0.100 (0.071)	0.174 * (0.074)	0.221 * (0.095)
Clerks	0.012 (0.055)	0.010 (0.056)	-0.042 (0.061)	-0.002 (0.067)	-0.003 (0.074)
Skilled agricultural and fishery workers + Craft and related trades workers	-0.033 (0.056)	0.008 (0.064)	0.014 (0.063)	-0.010 (0.073)	0.010 (0.076)
Plant and machine operators and assemblers	0.075 (0.064)	0.160 * (0.064)	0.075 (0.059)	0.086 (0.072)	0.046 (0.091)
Elementary occupations	-0.016 (0.052)	-0.045 (0.058)	-0.045 (0.060)	-0.074 (0.067)	-0.157 * (0.069)
<b>Supervisory role (ref: No)</b>					
Yes	0.020 (0.065)	0.071 (0.060)	0.071 (0.049)	0.050 (0.064)	0.130 + (0.078)
<b>Nationality (ref: Native)</b>					
Foreigner	0.039 (0.039)	-0.028 (0.043)	-0.012 (0.047)	-0.020 (0.045)	0.004 (0.063)
<b>Public sector company (ref: No)</b>					
Yes	0.069 (0.060)	0.085 + (0.049)	0.117 ** (0.043)	0.077 (0.052)	0.090 + (0.052)
<b>Company size (ref: 11 to 50)</b>					
51 to 250	-0.035 (0.048)	0.006 (0.047)	0.040 (0.035)	0.005 (0.041)	-0.034 (0.052)
251 and more	0.025 (0.042)	0.037 (0.039)	0.076 * (0.036)	0.103 ** (0.039)	0.060 (0.052)
<b>Part-time employment (ref: No)</b>					
Yes	0.022 (0.077)	0.001 (0.079)	0.059 (0.069)	-0.007 (0.080)	0.059 (0.102)
<b>Fixed wage (ref: No)</b>					
Yes	-0.041 (0.039)	-0.065 + (0.036)	-0.051 (0.033)	-0.029 (0.042)	-0.056 (0.057)
<b>First job (ref: No)</b>					
Yes	-0.432 ** (0.142)	-0.320 * (0.147)	-0.202 (0.125)	-0.334 * (0.133)	-0.466 * (0.185)
<b>Work on Saturdays (ref: Always)</b>					
Sometimes	0.120 (0.080)	0.142 * (0.069)	0.087 (0.074)	-0.024 (0.081)	-0.013 (0.062)
Never	0.093 (0.082)	0.153 * (0.075)	0.073 (0.083)	-0.017 (0.078)	0.015 (0.064)

(continued)

<b>Work on Sundays (ref: Always)</b>					
Sometimes	-0.057 (0.105)	-0.050 (0.079)	-0.002 (0.098)	-0.113 (0.127)	-0.123 (0.089)
Never	-0.036 (0.100)	-0.073 (0.084)	0.044 (0.100)	-0.155 (0.115)	-0.223 ** (0.081)
<b>Work at night (ref: No)</b>					
Yes	0.061 (0.046)	0.050 (0.042)	0.070 + (0.042)	0.070 (0.055)	0.175 ** (0.060)
<b>Activity sector (ref: Construction)</b>					
Agriculture and fishing	-0.126 (0.077)	-0.149 * (0.058)	-0.194 *** (0.057)	-0.293 *** (0.069)	-0.310 *** (0.085)
Manufacturing	-0.152 * (0.062)	-0.213 *** (0.059)	-0.106 * (0.053)	-0.156 * (0.068)	-0.172 * (0.073)
Commerce and repairs	-0.086 (0.090)	-0.064 (0.070)	-0.086 (0.057)	-0.149 (0.092)	-0.248 ** (0.083)
Accommodation and food service + Domestic service	-0.070 (0.076)	-0.037 (0.087)	0.056 (0.075)	-0.046 (0.095)	-0.095 (0.090)
Transportation, storage, communication	-0.110 (0.071)	-0.149 + (0.078)	-0.053 (0.069)	-0.141 (0.091)	-0.021 (0.110)
Real Estate + Finance and insurance	-0.078 (0.062)	-0.109 + (0.065)	-0.100 + (0.054)	-0.217 * (0.084)	-0.225 ** (0.082)
Public administration	-0.079 (0.091)	-0.117 (0.081)	-0.031 (0.078)	-0.111 (0.095)	-0.182 + (0.106)
Education	-0.048 (0.115)	-0.034 (0.083)	-0.076 (0.076)	-0.074 (0.100)	-0.129 (0.107)
Health and social work	-0.087 (0.079)	-0.075 (0.082)	-0.002 (0.072)	-0.061 (0.098)	-0.230 * (0.098)
Other social activities and personal services	0.042 (0.103)	-0.028 (0.084)	-0.035 (0.075)	-0.215 * (0.099)	-0.260 * (0.121)
<b>Part-time employment * Gender</b>					
	-0.139 (0.146)	0.052 (0.103)	0.095 (0.119)	0.269 * (0.128)	0.371 ** (0.136)
<b>Age * First job</b>					
	0.010 ** (0.004)	0.007 * (0.004)	0.005 (0.003)	0.008 * (0.004)	0.014 * (0.006)
<b>Works council (ref: No)</b>					
Yes	0.014 (0.033)	0.088 ** (0.033)	0.032 (0.030)	-0.008 (0.039)	0.059 (0.043)
<b>Intercept</b>					
	1.558 *** (0.201)	1.619 *** (0.182)	1.624 *** (0.183)	2.004 *** (0.244)	2.569 *** (0.275)

**Notes:** + p < 0.10, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001. Standard errors are provided in brackets.

**Table 7.2.4: Full results of quantile regression models in Column 2 in Figure 4. Association between Works council and temporary workers' wages in 2009.**

<u>Quantile:</u>	<u>0.1</u>	<u>0.25</u>	<u>0.5</u>	<u>0.75</u>	<u>0.9</u>
<b>Gender (ref: Man)</b>					
Woman	0.012 (0.035)	-0.034 (0.037)	-0.142 *** (0.035)	-0.101 ** (0.032)	-0.131 ** (0.045)
<b>Age</b>					
	0.024 + (0.013)	0.028 + (0.015)	0.016 (0.011)	0.014 (0.010)	0.016 (0.011)
<b>Age^2</b>					
	0.000 + (0.000)	0.000 + (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
<b>Education (ref: Basic secondary)</b>					
Elementary or less	-0.104 * (0.043)	-0.016 (0.046)	0.048 (0.046)	0.067 (0.044)	0.084 + (0.048)
Advanced secondary and VET	-0.004 (0.038)	-0.001 (0.039)	0.067 + (0.039)	0.027 (0.039)	0.057 (0.042)
University	0.127 ** (0.048)	0.099 * (0.048)	0.110 * (0.047)	0.108 (0.069)	0.109 (0.076)
<b>Occupation (ref: Service workers and shop and market sales workers)</b>					
Professionals and intellectuals + Legislators, senior officials and managers	0.170 * (0.080)	0.254 *** (0.066)	0.351 *** (0.079)	0.333 *** (0.084)	0.346 *** (0.094)
Technicians and associate professionals	0.009 (0.059)	0.094 (0.065)	0.101 (0.068)	0.037 (0.067)	0.090 (0.080)
Clerks	-0.057 (0.062)	-0.034 (0.065)	-0.035 (0.068)	-0.038 (0.067)	-0.067 (0.068)
Skilled agricultural and fishery workers + Craft and related trades workers	-0.005 (0.064)	-0.004 (0.072)	-0.028 (0.068)	-0.057 (0.060)	-0.030 (0.069)
Plant and machine operators and assemblers	-0.161 + (0.089)	-0.084 (0.098)	0.025 (0.096)	-0.026 (0.071)	0.075 (0.097)
Elementary occupations	-0.047 (0.053)	-0.085 (0.056)	-0.076 (0.066)	-0.109 * (0.055)	-0.060 (0.063)
<b>Supervisory role (ref: No)</b>					
Yes	0.082 (0.057)	0.078 (0.056)	0.108 + (0.062)	0.132 ** (0.049)	0.126 + (0.066)
<b>Nationality (ref: Native)</b>					
Foreigner	-0.117 ** (0.042)	-0.075 + (0.044)	-0.046 (0.041)	-0.016 (0.041)	0.032 (0.046)
<b>Public sector company (ref: No)</b>					
Yes	0.043 (0.036)	0.071 + (0.037)	0.102 * (0.049)	0.091 * (0.041)	0.031 (0.053)
<b>Company size (ref: 11 to 50)</b>					
51 to 250	0.022 (0.040)	0.062 (0.040)	0.098 * (0.045)	0.139 *** (0.040)	0.055 (0.043)
251 and more	0.052 + (0.031)	0.086 * (0.040)	0.133 ** (0.041)	0.085 * (0.041)	0.056 (0.046)
<b>Part-time employment (ref: No)</b>					
Yes	0.139 * (0.061)	0.086 (0.064)	-0.039 (0.091)	0.251 * (0.116)	0.213 + (0.110)
<b>Fixed wage (ref: No)</b>					
Yes	0.013 (0.050)	-0.072 + (0.042)	-0.052 (0.036)	-0.024 (0.035)	-0.033 (0.039)
<b>First job (ref: No)</b>					
Yes	-0.084 (0.162)	0.010 (0.148)	0.013 (0.166)	0.046 (0.217)	0.156 (0.206)
<b>Work on Saturdays (ref: Always)</b>					
Sometimes	-0.040 (0.057)	0.011 (0.059)	0.036 (0.062)	0.030 (0.072)	-0.055 (0.086)
Never	0.043 (0.052)	0.058 (0.052)	0.049 (0.060)	0.073 (0.068)	0.009 (0.088)

(continued)

<b>Work on Sundays (ref: Always)</b>					
Sometimes	0.202 *	0.127	0.056	0.052	-0.075
	(0.101)	(0.085)	(0.079)	(0.091)	(0.110)
Never	0.197 *	0.108	0.042	0.022	-0.150
	(0.097)	(0.083)	(0.075)	(0.079)	(0.102)
<b>Work at night (ref: No)</b>					
Yes	0.023	0.033	0.051	0.080 +	0.103 +
	(0.050)	(0.046)	(0.045)	(0.049)	(0.054)
<b>Activity sector (ref: Construction)</b>					
Agriculture, farming, silviculture, fishing	-0.103	-0.193 **	-0.183 **	-0.305 ***	-0.221 **
	(0.082)	(0.071)	(0.069)	(0.060)	(0.082)
Manufacturing	-0.102 *	-0.109 +	-0.077	-0.109 *	-0.076
	(0.046)	(0.059)	(0.052)	(0.051)	(0.048)
Wholesale and retail trade	-0.046	-0.096	-0.094	-0.039	-0.083
	(0.064)	(0.074)	(0.086)	(0.086)	(0.093)
Transportation and storage	-0.058	-0.076	-0.116 +	-0.169 *	-0.101
	(0.088)	(0.096)	(0.069)	(0.075)	(0.088)
Accommodation and food + Households as employers	-0.142	-0.067	-0.042	-0.125	-0.225 *
	(0.091)	(0.092)	(0.070)	(0.079)	(0.099)
Information, communication, financial and insurance	-0.219 *	-0.056	-0.091	-0.050	0.218 +
	(0.103)	(0.079)	(0.081)	(0.093)	(0.116)
Real Estate, professional, scientific and technical, admin...	-0.114 *	-0.138 *	-0.104	-0.139 *	-0.074
	(0.056)	(0.066)	(0.068)	(0.060)	(0.070)
Public administration and defence	-0.162 **	-0.155 *	-0.180 **	-0.120	0.088
	(0.058)	(0.062)	(0.070)	(0.074)	(0.088)
Education	-0.203 *	-0.119	0.055	0.043	0.246 **
	(0.079)	(0.078)	(0.108)	(0.074)	(0.093)
Human health and social work	-0.078	-0.090	-0.066	-0.073	0.008
	(0.068)	(0.078)	(0.080)	(0.065)	(0.070)
Arts, entertainment	-0.110 +	-0.177 +	-0.119	-0.170	-0.122
	(0.065)	(0.092)	(0.116)	(0.105)	(0.112)
<b>Part-time employment * Gender</b>					
	0.032	0.147 +	0.281 **	0.041	0.148
	(0.083)	(0.084)	(0.105)	(0.127)	(0.137)
<b>Age * First job</b>					
	-0.002	-0.002	-0.004	-0.003	-0.006
	(0.005)	(0.004)	(0.005)	(0.006)	(0.006)
<b>Works council (ref: No)</b>					
Yes	0.015	0.044	-0.011	0.028	-0.005
	(0.029)	(0.029)	(0.037)	(0.039)	(0.038)
<b>Intercept</b>					
	0.919 **	1.047 ***	1.436 ***	1.662 ***	1.943 ***
	(0.279)	(0.292)	(0.230)	(0.214)	(0.227)

**Notes:** + p < 0.10, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001. Standard errors are provided in brackets.

**Table 7.2.5: Full results of quantile regression models in Column 2 in Figure 4. Association between Works council and temporary workers' wages in 2010.**

<u>Quantile:</u>	<u>0.1</u>	<u>0.25</u>	<u>0.5</u>	<u>0.75</u>	<u>0.9</u>
<b>Gender (ref: Man)</b>					
Woman	-0.026 (0.040)	-0.018 (0.033)	-0.112 *** (0.033)	-0.131 ** (0.045)	-0.157 * (0.061)
<b>Age</b>					
	0.042 ** (0.014)	0.043 *** (0.012)	0.032 ** (0.011)	0.031 ** (0.012)	0.043 ** (0.016)
<b>Age^2</b>					
	-0.001 ** (0.000)	-0.001 *** (0.000)	0.000 ** (0.000)	0.000 * (0.000)	-0.001 ** (0.000)
<b>Education (ref: Basic secondary)</b>					
Elementary or less	0.039 (0.063)	-0.029 (0.056)	-0.002 (0.054)	-0.035 (0.051)	0.006 (0.060)
Advanced secondary and VET	0.090 + (0.054)	0.050 (0.044)	0.085 * (0.042)	-0.017 (0.049)	-0.012 (0.060)
University	0.182 ** (0.067)	0.146 ** (0.054)	0.205 *** (0.053)	0.135 * (0.067)	0.181 + (0.097)
<b>Occupation (ref: Service workers and shop and market sales workers)</b>					
Professionals and intellectuals + Legislators, senior officials and managers	0.322 *** (0.081)	0.372 *** (0.073)	0.290 *** (0.069)	0.312 *** (0.078)	0.197 (0.120)
Technicians and associate professionals	0.265 *** (0.074)	0.223 ** (0.075)	0.120 * (0.060)	0.076 (0.066)	0.055 (0.100)
Clerks	0.089 (0.082)	0.059 (0.072)	-0.029 (0.064)	0.010 (0.071)	-0.093 (0.110)
Skilled agricultural and fishery workers + Craft and related trades workers	0.121 (0.079)	0.148 + (0.076)	0.107 + (0.064)	0.148 * (0.071)	0.064 (0.107)
Plant and machine operators and assemblers	-0.027 (0.092)	0.076 (0.097)	0.090 (0.067)	0.078 (0.079)	-0.050 (0.118)
Elementary occupations	0.094 (0.062)	0.088 (0.072)	-0.001 (0.068)	0.014 (0.069)	-0.006 (0.097)
<b>Supervisory role (ref: No)</b>					
Yes	0.041 (0.049)	0.050 (0.046)	0.070 + (0.041)	0.113 * (0.055)	0.172 * (0.072)
<b>Nationality (ref: Native)</b>					
Foreigner	-0.148 * (0.069)	-0.032 (0.046)	-0.047 (0.042)	-0.067 (0.051)	-0.035 (0.069)
<b>Public sector company (ref: No)</b>					
Yes	0.073 (0.046)	0.069 (0.044)	0.065 (0.051)	0.106 (0.065)	0.016 (0.075)
<b>Company size (ref: 11 to 50)</b>					
51 to 250	-0.045 (0.051)	0.012 (0.039)	-0.061 (0.039)	0.002 (0.043)	-0.049 (0.059)
251 and more	0.029 (0.043)	0.063 + (0.038)	0.031 (0.033)	0.034 (0.044)	0.077 (0.061)
<b>Part-time employment (ref: No)</b>					
Yes	-0.186 (0.120)	0.127 (0.098)	0.073 (0.062)	0.015 (0.087)	0.101 (0.128)
<b>Fixed wage (ref: No)</b>					
Yes	0.040 (0.043)	0.033 (0.041)	-0.021 (0.039)	-0.019 (0.039)	0.003 (0.050)
<b>First job (ref: No)</b>					
Yes	-0.619 + (0.330)	-0.355 (0.263)	-0.378 ** (0.142)	-0.203 (0.154)	-0.192 (0.253)
<b>Work on Saturdays (ref: Always)</b>					
Sometimes	0.044 (0.076)	-0.004 (0.076)	0.006 (0.062)	0.035 (0.080)	-0.012 (0.100)
Never	0.052 (0.086)	0.045 (0.079)	-0.012 (0.065)	0.006 (0.086)	-0.095 (0.102)

(continued)

<b>Work on Sundays (ref: Always)</b>					
Sometimes	-0.115 (0.105)	0.032 (0.103)	-0.045 (0.084)	0.007 (0.094)	0.105 (0.124)
Never	-0.100 (0.108)	0.097 (0.105)	0.031 (0.077)	0.079 (0.094)	0.234 * (0.118)
<b>Work at night (ref: No)</b>					
Yes	-0.020 (0.053)	0.030 (0.051)	0.012 (0.043)	0.054 (0.058)	0.119 + (0.067)
<b>Activity sector (ref: Construction)</b>					
Agriculture, farming, silviculture, fishing	-0.238 * (0.104)	-0.213 ** (0.069)	-0.116 + (0.064)	-0.075 (0.084)	-0.037 (0.092)
Manufacturing	0.005 (0.069)	-0.159 ** (0.049)	0.001 (0.055)	0.096 (0.061)	0.178 ** (0.064)
Wholesale and retail trade	-0.004 (0.080)	-0.128 * (0.064)	-0.057 (0.058)	0.073 (0.079)	0.106 (0.094)
Transportation and storage	0.061 (0.096)	-0.039 (0.067)	0.053 (0.079)	0.125 (0.081)	0.262 * (0.119)
Accommodation and food + Households as employers	0.115 (0.087)	-0.001 (0.081)	0.007 (0.074)	0.098 (0.079)	0.105 (0.114)
Information, communication, financial and insurance	-0.052 (0.106)	-0.118 (0.084)	-0.065 (0.079)	0.208 + (0.123)	0.365 * (0.147)
Real Estate, professional, scientific and technical, admin...	-0.238 ** (0.089)	-0.242 *** (0.067)	0.008 (0.057)	0.038 (0.061)	0.169 + (0.096)
Public administration and defence	-0.090 (0.087)	-0.081 (0.068)	0.060 (0.075)	0.184 + (0.094)	0.271 * (0.111)
Education	0.027 (0.100)	-0.110 (0.077)	0.111 (0.098)	0.288 * (0.115)	0.604 *** (0.172)
Human health and social work	-0.095 (0.098)	-0.121 (0.074)	0.064 (0.084)	0.196 + (0.101)	0.307 * (0.135)
Arts, entertainment	-0.252 (0.172)	-0.020 (0.092)	0.057 (0.071)	0.169 + (0.100)	0.075 (0.116)
<b>Part-time employment * Gender</b>					
	0.309 * (0.143)	-0.037 (0.110)	0.058 (0.084)	0.233 + (0.121)	0.195 (0.155)
<b>Age * First job</b>					
	0.013 (0.009)	0.010 (0.007)	0.012 ** (0.004)	0.006 (0.004)	0.005 (0.006)
<b>Works council (ref: No)</b>					
Yes	0.072 + (0.041)	0.035 (0.032)	0.082 ** (0.031)	0.054 (0.036)	0.023 (0.047)
<b>Intercept</b>					
	0.521 + (0.310)	0.535 * (0.254)	0.994 *** (0.229)	1.083 *** (0.273)	0.992 ** (0.358)

**Notes:** + p < 0.10, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001. Standard errors are provided in brackets.



**Table 8.1.1: Full results of quantile regression models in Column 1 in Figure 5. Association between Collective agreement and the permanent-temporary wage gap in 2006.**

<u>Quantile:</u>	<u>0.1</u>	<u>0.25</u>	<u>0.5</u>	<u>0.75</u>	<u>0.9</u>
<b>Gender (ref: Man)</b>					
Woman	-0.035 ** (0.011)	-0.032 *** (0.009)	-0.061 *** (0.009)	-0.088 *** (0.012)	-0.063 *** (0.014)
<b>Age</b>					
	0.000 (0.003)	0.005 + (0.003)	0.002 (0.002)	0.005 (0.003)	0.009 ** (0.004)
<b>Age^2</b>					
	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
<b>Education (ref: Basic secondary)</b>					
Elementary or less	-0.042 ** (0.015)	-0.027 * (0.011)	-0.034 *** (0.010)	-0.033 * (0.016)	-0.003 (0.018)
Advanced secondary and VET	0.024 + (0.014)	0.021 * (0.011)	0.032 ** (0.010)	0.031 * (0.013)	0.033 * (0.015)
University	0.091 *** (0.017)	0.093 *** (0.014)	0.100 *** (0.013)	0.110 *** (0.018)	0.090 *** (0.021)
<b>Occupation (ref: Service workers and shop and market sales workers)</b>					
Legislators, senior officials and managers	0.056 (0.040)	0.097 ** (0.037)	0.109 *** (0.029)	0.127 *** (0.037)	0.176 *** (0.043)
Professionals and intellectuals	0.110 *** (0.025)	0.141 *** (0.019)	0.149 *** (0.017)	0.123 *** (0.020)	0.157 *** (0.029)
Technicians and associate professionals	0.056 * (0.022)	0.057 *** (0.016)	0.083 *** (0.016)	0.084 *** (0.019)	0.093 *** (0.024)
Clerks	0.016 (0.021)	0.026 (0.017)	0.008 (0.015)	0.005 (0.020)	0.007 (0.021)
Skilled agricultural and fishery workers	0.014 (0.062)	-0.026 (0.059)	-0.023 (0.035)	-0.039 (0.057)	0.033 (0.078)
Craft and related trades workers	0.031 (0.023)	0.033 * (0.017)	-0.001 (0.015)	-0.006 (0.021)	0.017 (0.025)
Plant and machine operators and assemblers	0.035 (0.023)	0.035 * (0.017)	0.019 (0.017)	0.022 (0.023)	0.065 * (0.026)
Elementary occupations	0.024 (0.025)	0.034 * (0.015)	-0.010 (0.016)	-0.038 + (0.020)	-0.021 (0.024)
<b>Supervisory role (ref: No)</b>					
Yes	0.029 * (0.013)	0.058 *** (0.010)	0.071 *** (0.011)	0.072 *** (0.012)	0.085 *** (0.015)
<b>Nationality (ref: Native)</b>					
Foreigner	-0.041 + (0.022)	-0.035 + (0.019)	-0.018 (0.013)	-0.017 (0.020)	-0.064 ** (0.020)
<b>Public sector company (ref: No)</b>					
Yes	0.033 + (0.020)	0.025 + (0.014)	0.045 ** (0.016)	0.051 * (0.025)	0.077 ** (0.029)
<b>Company size (ref: 1 to 10)</b>					
11 to 50	-0.029 (0.018)	-0.017 (0.011)	-0.015 (0.009)	-0.014 (0.016)	0.001 (0.017)
51 to 250	0.042 * (0.017)	0.018 (0.011)	0.035 ** (0.011)	0.046 ** (0.016)	0.049 ** (0.018)
251 and more	0.070 *** (0.015)	0.046 *** (0.010)	0.070 *** (0.010)	0.078 *** (0.015)	0.097 *** (0.016)
<b>Part-time employment (ref: No)</b>					
Yes	0.058 (0.043)	0.083 * (0.040)	0.152 *** (0.041)	0.239 *** (0.067)	0.500 *** (0.103)
<b>Fixed wage (ref: No)</b>					
Yes	0.024 + (0.014)	0.022 * (0.010)	0.019 * (0.009)	0.005 (0.013)	-0.028 + (0.016)

(continued)

<b>First job (ref: No)</b>					
Yes	-0.012 (0.047)	0.006 (0.033)	0.000 (0.030)	-0.038 (0.041)	-0.107 * (0.049)
<b>Work at weekends (ref: Always)</b>					
Sometimes	0.064 ** (0.022)	0.030 * (0.013)	0.030 ** (0.012)	0.026 + (0.015)	0.040 * (0.019)
Never	0.101 *** (0.022)	0.048 *** (0.013)	0.044 *** (0.011)	0.037 * (0.016)	0.037 * (0.017)
<b>Work at night (ref: No)</b>					
Yes	-0.020 (0.017)	0.010 (0.010)	0.031 ** (0.012)	0.036 ** (0.014)	0.026 (0.017)
<b>Activity sector (ref: Construction)</b>					
Agriculture and fishing	-0.110 * (0.048)	-0.011 (0.041)	0.006 (0.024)	-0.045 (0.029)	-0.030 (0.051)
Manufacturing	-0.009 (0.020)	-0.008 (0.013)	-0.018 (0.014)	-0.021 (0.019)	-0.038 + (0.023)
Commerce and repairs	-0.056 * (0.027)	-0.029 + (0.015)	-0.057 *** (0.017)	-0.099 *** (0.023)	-0.121 *** (0.027)
Accommodation and food service	-0.064 * (0.033)	-0.082 ** (0.027)	-0.082 *** (0.022)	-0.055 + (0.030)	-0.066 + (0.034)
Transportation, storage, communication	-0.031 (0.025)	-0.037 + (0.022)	-0.006 (0.019)	-0.022 (0.027)	-0.005 (0.035)
Finance and insurance	0.003 (0.032)	0.083 * (0.033)	0.066 * (0.027)	0.053 (0.035)	0.039 (0.037)
Real Estate	-0.028 (0.027)	-0.024 (0.016)	-0.049 ** (0.016)	-0.060 * (0.024)	-0.038 (0.030)
Public administration	-0.024 (0.025)	0.019 (0.021)	0.004 (0.022)	-0.049 + (0.027)	-0.056 + (0.033)
Education	0.049 + (0.029)	0.098 *** (0.021)	0.091 *** (0.024)	0.111 ** (0.035)	0.134 *** (0.043)
Health and social work	-0.029 (0.029)	0.032 + (0.019)	-0.010 (0.018)	-0.038 (0.029)	-0.046 (0.032)
Other social activities and personal services	-0.008 (0.036)	0.015 (0.020)	-0.010 (0.022)	0.014 (0.034)	0.039 (0.039)
Domestic service	-0.352 *** (0.095)	-0.222 *** (0.050)	-0.130 * (0.055)	-0.126 * (0.053)	0.018 (0.093)
<b>Temporary contract (ref: No)</b>					
Yes	-0.057 ** (0.021)	-0.018 (0.013)	-0.038 ** (0.012)	-0.072 *** (0.017)	-0.081 *** (0.023)
<b>Collective agreement (ref: No)</b>					
Yes	0.019 + (0.012)	0.016 + (0.009)	0.020 * (0.009)	0.019 (0.012)	0.007 (0.014)
<b>Temporary contract * Part-time employment</b>					
	-0.020 (0.069)	0.035 (0.053)	0.041 (0.042)	0.192 ** (0.071)	0.061 (0.068)
<b>Part-time employment * Gender</b>					
	0.085 (0.058)	0.115 * (0.048)	0.122 ** (0.043)	0.110 (0.073)	-0.013 (0.097)
<b>Temporary contract * Public sector</b>					
	0.040 (0.028)	0.004 (0.020)	-0.001 (0.022)	0.004 (0.026)	0.009 (0.034)
<b>Collective agreement * Public sector</b>					
	-0.027 (0.021)	-0.013 (0.017)	-0.012 (0.017)	0.019 (0.022)	-0.011 (0.027)
<b>Age * First job</b>					
	0.001 (0.001)	0.000 (0.001)	0.000 (0.001)	0.001 (0.001)	0.002 + (0.001)
<b>Collective agreement * Temporary contract</b>					
	0.008 (0.026)	-0.016 (0.018)	-0.016 (0.017)	0.027 (0.023)	0.007 (0.026)
<b>Intercept</b>					
	1.222 *** (0.077)	1.235 *** (0.057)	1.406 *** (0.053)	1.521 *** (0.074)	1.551 *** (0.083)

Notes: + p < 0.10, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001. Standard errors are provided in brackets.

**Table 8.1.2: Full results of quantile regression models in Column 1 in Figure 5. Association between Collective agreement and the permanent-temporary wage gap in 2007.**

<b>Quantile:</b>	<b>0.1</b>	<b>0.25</b>	<b>0.5</b>	<b>0.75</b>	<b>0.9</b>
<b>Gender (ref: Man)</b>					
Woman	-0.078 *** (0.015)	-0.111 *** (0.014)	-0.165 *** (0.015)	-0.143 *** (0.018)	-0.161 *** (0.021)
<b>Age</b>					
	0.014 ** (0.005)	0.010 * (0.004)	0.010 ** (0.004)	0.011 * (0.005)	0.006 (0.005)
<b>Age*2</b>					
	0.000 * (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
<b>Education (ref: Basic secondary)</b>					
Elementary or less	-0.051 ** (0.018)	-0.049 ** (0.018)	-0.037 * (0.017)	-0.052 ** (0.020)	-0.067 ** (0.023)
Advanced secondary and VET	-0.006 (0.019)	0.008 (0.017)	0.025 + (0.015)	0.020 (0.021)	0.035 (0.025)
University	0.052 * (0.025)	0.065 * (0.026)	0.109 *** (0.024)	0.137 *** (0.030)	0.170 *** (0.036)
<b>Occupation (ref: Service workers and shop and market sales workers)</b>					
Legislators, senior officials and managers	0.217 ** (0.071)	0.331 *** (0.058)	0.350 *** (0.043)	0.343 *** (0.047)	0.329 *** (0.065)
Professionals and intellectuals	0.318 *** (0.036)	0.331 *** (0.031)	0.335 *** (0.032)	0.362 *** (0.039)	0.387 *** (0.044)
Technicians and associate professionals	0.104 *** (0.027)	0.118 *** (0.027)	0.136 *** (0.024)	0.141 *** (0.030)	0.137 *** (0.032)
Clerks	0.013 (0.028)	0.050 * (0.025)	0.022 (0.027)	0.041 (0.031)	0.028 (0.035)
Skilled agricultural and fishery workers	-0.094 (0.072)	0.035 (0.052)	-0.006 (0.060)	-0.051 (0.059)	-0.059 (0.104)
Craft and related trades workers	0.027 (0.030)	0.023 (0.026)	0.034 (0.024)	0.029 (0.032)	0.003 (0.035)
Plant and machine operators and assemblers	0.040 (0.031)	0.054 + (0.027)	0.018 (0.028)	-0.005 (0.032)	-0.027 (0.038)
Elementary occupations	-0.038 (0.027)	-0.048 * (0.024)	-0.086 *** (0.021)	-0.080 * (0.032)	-0.107 ** (0.034)
<b>Supervisory role (ref: No)</b>					
Yes	0.077 *** (0.020)	0.121 *** (0.018)	0.132 *** (0.018)	0.158 *** (0.022)	0.193 *** (0.024)
<b>Nationality (ref: Native)</b>					
Foreigner	-0.046 + (0.026)	-0.035 (0.022)	-0.042 * (0.019)	-0.063 ** (0.024)	-0.021 (0.041)
<b>Public sector company (ref: No)</b>					
Yes	0.009 (0.031)	0.044 + (0.027)	0.071 ** (0.023)	0.046 + (0.025)	0.017 (0.036)
<b>Company size (ref: 1 to 10)</b>					
11 to 50	-0.014 (0.019)	-0.024 (0.018)	-0.005 (0.018)	-0.030 (0.020)	-0.065 ** (0.023)
51 to 250	0.038 + (0.020)	0.046 * (0.020)	0.048 * (0.019)	0.011 (0.021)	0.025 (0.028)
251 and more	0.072 *** (0.018)	0.088 *** (0.018)	0.103 *** (0.016)	0.069 *** (0.020)	0.061 * (0.024)
<b>Part-time employment (ref: No)</b>					
Yes	-0.031 (0.048)	-0.005 (0.046)	0.014 (0.043)	0.072 (0.059)	0.082 + (0.047)
<b>Fixed wage (ref: No)</b>					
Yes	-0.031 (0.020)	-0.054 ** (0.017)	-0.051 *** (0.015)	-0.071 ** (0.022)	-0.121 *** (0.025)
<b>First job (ref: No)</b>					
Yes	-0.036 (0.053)	-0.050 (0.051)	-0.077 (0.050)	-0.077 (0.056)	-0.045 (0.069)

(continued)

<b>Work on Sundays (ref: Always)</b>					
Sometimes	0.117 ** (0.040)	0.028 (0.037)	0.023 (0.037)	-0.046 (0.044)	-0.113 * (0.046)
Never	0.065 (0.040)	0.000 (0.036)	0.005 (0.038)	-0.088 * (0.043)	-0.156 *** (0.042)
<b>Work on Saturdays (ref: Always)</b>					
Sometimes	0.037 (0.024)	0.069 ** (0.021)	0.059 * (0.023)	0.099 *** (0.023)	0.126 *** (0.028)
Never	0.073 *** (0.022)	0.083 *** (0.022)	0.098 *** (0.024)	0.136 *** (0.022)	0.151 *** (0.027)
<b>Work at night (ref: No)</b>					
Yes	0.021 (0.024)	0.046 * (0.020)	0.051 ** (0.020)	0.045 * (0.022)	0.073 * (0.030)
<b>Activity sector (ref: Construction)</b>					
Agriculture and fishing	-0.032 (0.044)	-0.108 * (0.042)	-0.091 + (0.047)	-0.128 ** (0.044)	-0.149 ** (0.057)
Manufacturing	-0.037 (0.024)	-0.067 ** (0.026)	-0.040 + (0.021)	-0.061 * (0.026)	-0.055 + (0.031)
Commerce and repairs	-0.052 (0.032)	-0.071 * (0.028)	-0.066 ** (0.025)	-0.068 * (0.029)	-0.072 * (0.032)
Accommodation and food service	-0.020 (0.042)	-0.043 (0.041)	-0.005 (0.035)	-0.064 (0.042)	-0.123 ** (0.044)
Transportation, storage, communication	-0.088 * (0.039)	-0.082 * (0.039)	-0.035 (0.033)	-0.015 (0.038)	-0.050 (0.041)
Finance and insurance	0.152 ** (0.057)	0.130 ** (0.047)	0.167 *** (0.041)	0.180 ** (0.059)	0.162 * (0.063)
Real Estate	-0.090 ** (0.034)	-0.077 * (0.031)	-0.054 * (0.026)	-0.113 *** (0.034)	-0.135 *** (0.037)
Public administration	-0.034 (0.039)	-0.004 (0.037)	-0.019 (0.029)	-0.017 (0.038)	-0.072 (0.045)
Education	0.022 (0.037)	0.043 (0.037)	0.077 * (0.035)	0.036 (0.048)	0.009 (0.054)
Health and social work	-0.018 (0.035)	-0.059 + (0.035)	-0.045 (0.030)	-0.088 * (0.037)	-0.130 ** (0.044)
Other social activities and personal services	-0.064 (0.039)	-0.118 ** (0.042)	-0.055 (0.038)	-0.034 (0.065)	0.029 (0.060)
Domestic service	-0.154 ** (0.050)	-0.226 *** (0.057)	-0.139 + (0.072)	-0.078 (0.073)	0.037 (0.107)
<b>Temporary contract (ref: No)</b>					
Yes	-0.096 *** (0.025)	-0.066 ** (0.021)	-0.047 * (0.019)	-0.081 *** (0.022)	-0.100 *** (0.029)
<b>Collective agreement (ref: No)</b>					
Yes	0.026 + (0.015)	0.002 (0.016)	0.030 * (0.015)	0.010 (0.019)	0.006 (0.021)
<b>Temporary contract * Part-time employment</b>					
	0.043 (0.059)	-0.001 (0.053)	-0.009 (0.049)	-0.011 (0.074)	0.092 (0.083)
<b>Part-time employment * Gender</b>					
	0.104 + (0.058)	0.137 ** (0.052)	0.164 ** (0.050)	0.199 ** (0.069)	0.264 *** (0.064)
<b>Temporary contract * Public sector</b>					
	0.010 (0.042)	-0.009 (0.039)	-0.055 + (0.032)	-0.020 (0.039)	0.016 (0.042)
<b>Collective agreement * Public sector</b>					
	0.035 (0.036)	0.034 (0.031)	0.010 (0.025)	0.017 (0.031)	0.002 (0.034)
<b>Age * First job</b>					
	0.002 (0.001)	0.002 (0.001)	0.002 + (0.001)	0.002 (0.001)	0.002 (0.002)
<b>Collective agreement * Temporary contract</b>					
	0.040 (0.036)	0.014 (0.031)	0.015 (0.031)	0.037 (0.031)	0.021 (0.038)
<b>Intercept</b>					
	1.066 *** (0.108)	1.341 *** (0.093)	1.473 *** (0.093)	1.762 *** (0.109)	2.111 *** (0.114)

Notes: + p < 0.10, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001. Standard errors are provided in brackets.

**Table 8.1.3: Full results of quantile regression models in Column 1 in Figure 5. Association between Collective agreement and the permanent-temporary wage gap in 2008.**

<b>Quantile:</b>	<b>0.1</b>	<b>0.25</b>	<b>0.5</b>	<b>0.75</b>	<b>0.9</b>
<b>Gender (ref: Man)</b>					
Woman	-0.088 *** (0.013)	-0.142 *** (0.012)	-0.131 *** (0.013)	-0.142 *** (0.014)	-0.166 *** (0.018)
<b>Age</b>					
	0.016 *** (0.004)	0.021 *** (0.004)	0.015 *** (0.004)	0.016 *** (0.004)	0.007 (0.005)
<b>Age*2</b>					
	0.000 ** (0.000)	0.000 *** (0.000)	0.000 * (0.000)	0.000 * (0.000)	0.000 (0.000)
<b>Education (ref: Basic secondary)</b>					
Elementary or less	-0.068 *** (0.018)	-0.058 ** (0.018)	-0.056 ** (0.019)	-0.061 ** (0.019)	-0.049 * (0.022)
Advanced secondary and VET	0.031 + (0.018)	0.035 * (0.016)	0.042 * (0.017)	0.041 ** (0.015)	0.058 ** (0.020)
University	0.149 *** (0.022)	0.164 *** (0.020)	0.159 *** (0.021)	0.171 *** (0.024)	0.192 *** (0.030)
<b>Occupation (ref: Service workers and shop and market sales workers)</b>					
Legislators, senior officials and managers	0.133 ** (0.047)	0.163 *** (0.043)	0.239 *** (0.039)	0.295 *** (0.041)	0.259 *** (0.049)
Professionals and intellectuals	0.190 *** (0.032)	0.245 *** (0.027)	0.319 *** (0.024)	0.330 *** (0.033)	0.305 *** (0.039)
Technicians and associate professionals	0.042 + (0.025)	0.070 ** (0.023)	0.089 *** (0.022)	0.086 *** (0.025)	0.047 (0.034)
Clerks	0.000 (0.024)	0.011 (0.022)	0.024 (0.023)	0.028 (0.026)	-0.006 (0.031)
Skilled agricultural and fishery workers	-0.095 (0.062)	-0.085 (0.055)	-0.057 (0.059)	-0.043 (0.058)	-0.013 (0.084)
Craft and related trades workers	0.011 (0.027)	0.029 (0.024)	0.046 + (0.024)	0.027 (0.026)	-0.027 (0.033)
Plant and machine operators and assemblers	0.000 (0.026)	-0.004 (0.025)	0.013 (0.025)	0.012 (0.028)	-0.059 + (0.035)
Elementary occupations	-0.086 *** (0.024)	-0.108 *** (0.022)	-0.109 *** (0.027)	-0.079 ** (0.027)	-0.167 *** (0.032)
<b>Supervisory role (ref: No)</b>					
Yes	0.090 *** (0.019)	0.103 *** (0.014)	0.116 *** (0.015)	0.155 *** (0.017)	0.164 *** (0.022)
<b>Nationality (ref: Native)</b>					
Foreigner	-0.033 + (0.020)	-0.057 * (0.025)	-0.010 (0.022)	-0.014 (0.021)	-0.021 (0.028)
<b>Public sector company (ref: No)</b>					
Yes	0.117 *** (0.024)	0.098 *** (0.023)	0.103 *** (0.023)	0.098 *** (0.027)	0.125 *** (0.034)
<b>Company size</b>					
11 to 50	-0.053 ** (0.018)	-0.041 * (0.017)	-0.040 * (0.016)	-0.039 * (0.016)	-0.053 * (0.021)
51 to 250	0.019 (0.018)	0.031 + (0.016)	0.013 (0.018)	0.014 (0.017)	0.020 (0.023)
251 and more	0.026 + (0.016)	0.050 *** (0.015)	0.066 *** (0.016)	0.075 *** (0.015)	0.104 *** (0.021)
<b>Part-time employment (vs. Full-time)</b>					
	0.077 * (0.036)	0.048 (0.031)	0.041 (0.036)	0.035 (0.039)	0.078 (0.049)
<b>Fixed wage (vs. Variable pay)</b>					
	-0.023 (0.021)	-0.024 (0.018)	-0.030 + (0.018)	-0.051 ** (0.017)	-0.102 *** (0.024)
<b>First job: Yes (vs. No)</b>					
	-0.061 (0.053)	-0.053 (0.053)	-0.006 (0.050)	-0.034 (0.052)	-0.091 (0.073)

(continued)

<b>Work on Sundays (ref: Always)</b>					
Sometimes	0.019 (0.041)	0.018 (0.039)	-0.026 (0.041)	-0.034 (0.035)	-0.150 ** (0.056)
Never	0.017 (0.041)	0.018 (0.039)	-0.043 (0.040)	-0.048 (0.033)	-0.208 *** (0.055)
<b>Work on Saturdays (ref: Always)</b>					
Sometimes	0.085 ** (0.027)	0.074 ** (0.025)	0.085 *** (0.025)	0.068 ** (0.023)	0.088 ** (0.032)
Never	0.099 *** (0.028)	0.100 *** (0.025)	0.104 *** (0.025)	0.091 *** (0.022)	0.115 *** (0.032)
<b>Work at night (ref: No)</b>					
Yes	0.022 (0.019)	0.044 * (0.020)	0.061 *** (0.018)	0.060 ** (0.018)	0.015 (0.023)
<b>Activity sector (ref: Construction)</b>					
Agriculture and fishing	-0.008 (0.052)	-0.089 + (0.050)	-0.084 (0.054)	-0.167 *** (0.046)	-0.209 *** (0.048)
Manufacturing	0.012 (0.025)	-0.010 (0.022)	0.012 (0.020)	-0.002 (0.021)	-0.019 (0.027)
Commerce and repairs	-0.002 (0.034)	-0.026 (0.026)	-0.021 (0.024)	-0.005 (0.026)	-0.014 (0.034)
Accommodation and food service + Domestic service	-0.051 (0.039)	-0.101 ** (0.033)	-0.071 * (0.032)	-0.031 (0.038)	-0.078 + (0.041)
Transportation, storage, communication	-0.032 (0.037)	-0.033 (0.031)	0.011 (0.027)	0.001 (0.027)	-0.004 (0.037)
Finance and insurance	0.182 *** (0.042)	0.133 *** (0.038)	0.191 *** (0.039)	0.178 ** (0.060)	0.193 *** (0.059)
Real Estate	-0.062 + (0.033)	-0.082 ** (0.030)	-0.052 * (0.026)	-0.077 ** (0.026)	-0.045 (0.036)
Public administration	0.058 + (0.034)	0.025 (0.032)	0.010 (0.029)	-0.020 (0.034)	-0.068 (0.042)
Education	0.116 ** (0.037)	0.067 * (0.031)	0.058 + (0.031)	0.046 (0.037)	0.011 (0.045)
Health and social work	-0.026 (0.035)	-0.021 (0.030)	-0.037 (0.029)	-0.045 (0.035)	-0.096 * (0.041)
Other social activities and personal services	-0.092 * (0.043)	-0.094 * (0.041)	-0.067 (0.041)	-0.051 (0.037)	-0.036 (0.060)
<b>Temporary contract (ref: No)</b>					
Yes	-0.069 ** (0.023)	-0.066 ** (0.022)	-0.032 (0.021)	-0.015 (0.022)	-0.071 ** (0.025)
<b>Collective agreement (ref: No)</b>					
Yes	0.038 * (0.017)	0.020 (0.013)	0.022 (0.015)	0.032 * (0.015)	0.020 (0.018)
<b>Temporary contract * Part-time employment</b>					
	-0.158 ** (0.052)	-0.125 + (0.064)	-0.067 (0.049)	-0.021 (0.064)	0.034 (0.081)
<b>Part-time employment * Gender</b>					
	-0.002 (0.046)	0.083 * (0.039)	0.087 * (0.044)	0.162 ** (0.051)	0.186 ** (0.066)
<b>Temporary contract * Public sector</b>					
	-0.086 * (0.038)	-0.049 (0.035)	-0.053 (0.033)	-0.042 (0.035)	-0.015 (0.042)
<b>Collective agreement * Public sector</b>					
	0.018 (0.029)	0.015 (0.024)	0.025 (0.023)	-0.003 (0.024)	-0.031 (0.036)
<b>Age * First job</b>					
	0.002 (0.001)	0.002 (0.001)	0.001 (0.001)	0.002 (0.001)	0.003 + (0.002)
<b>Collective agreement * Temporary contract</b>					
	-0.025 (0.035)	0.009 (0.033)	-0.014 (0.028)	-0.047 (0.029)	-0.012 (0.042)
<b>Intercept</b>					
	1.090 *** (0.094)	1.135 *** (0.092)	1.415 *** (0.088)	1.611 *** (0.095)	2.190 *** (0.122)

Notes: + p < 0.10, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001. Standard errors are provided in brackets.

**Table 8.1.4: Full results of quantile regression models in Column 1 in Figure 5. Association between Collective agreement and the permanent-temporary wage gap in 2009.**

<b>Quantile:</b>	<b>0.1</b>	<b>0.25</b>	<b>0.5</b>	<b>0.75</b>	<b>0.9</b>
<b>Gender (ref: Man)</b>					
Woman	-0.090 *** (0.014)	-0.119 *** (0.013)	-0.140 *** (0.013)	-0.127 *** (0.013)	-0.152 *** (0.017)
<b>Age</b>					
	0.008 + (0.005)	0.015 *** (0.004)	0.013 *** (0.004)	0.011 ** (0.004)	0.006 (0.005)
<b>Age*2</b>					
	0.000 (0.000)	0.000 ** (0.000)	0.000 * (0.000)	0.000 (0.000)	0.000 (0.000)
<b>Education (ref: Basic secondary)</b>					
Elementary or less	-0.009 (0.022)	-0.019 (0.018)	-0.025 (0.017)	-0.032 + (0.017)	-0.024 (0.022)
Advanced secondary and VET	0.071 *** (0.017)	0.069 *** (0.016)	0.078 *** (0.014)	0.065 *** (0.015)	0.069 *** (0.018)
University	0.143 *** (0.023)	0.143 *** (0.020)	0.159 *** (0.022)	0.184 *** (0.024)	0.141 *** (0.026)
<b>Occupation (ref: Service workers and shop and market sales workers)</b>					
Legislators, senior officials and managers	0.303 *** (0.056)	0.349 *** (0.042)	0.406 *** (0.042)	0.377 *** (0.042)	0.443 *** (0.053)
Professionals and intellectuals	0.240 *** (0.029)	0.274 *** (0.028)	0.350 *** (0.031)	0.326 *** (0.033)	0.380 *** (0.036)
Technicians and associate professionals	0.082 *** (0.024)	0.107 *** (0.022)	0.108 *** (0.022)	0.066 ** (0.024)	0.116 *** (0.029)
Clerks	0.028 (0.023)	-0.015 (0.024)	0.037 (0.024)	-0.007 (0.026)	0.003 (0.034)
Skilled agricultural and fishery workers	-0.101 (0.075)	-0.037 (0.074)	-0.059 (0.038)	-0.055 (0.051)	-0.148 ** (0.052)
Craft and related trades workers	0.023 (0.029)	0.045 + (0.025)	0.042 + (0.022)	-0.010 (0.024)	-0.035 (0.027)
Plant and machine operators and assemblers	-0.017 (0.028)	0.039 (0.026)	0.049 + (0.025)	-0.014 (0.026)	-0.033 (0.030)
Elementary occupations	-0.069 ** (0.027)	-0.058 ** (0.022)	-0.060 * (0.024)	-0.093 *** (0.025)	-0.089 ** (0.029)
<b>Supervisory role (ref: No)</b>					
Yes	0.074 *** (0.019)	0.106 *** (0.016)	0.106 *** (0.014)	0.127 *** (0.015)	0.132 *** (0.018)
<b>Nationality (ref: Native)</b>					
Foreigner	-0.035 + (0.021)	-0.041 * (0.017)	-0.047 * (0.020)	-0.018 (0.019)	0.024 (0.028)
<b>Public sector company (ref: No)</b>					
Yes	0.094 *** (0.028)	0.121 *** (0.024)	0.148 *** (0.025)	0.094 *** (0.025)	0.075 * (0.035)
<b>Company size</b>					
11 to 50	-0.022 (0.018)	-0.013 (0.017)	0.000 (0.015)	-0.016 (0.015)	-0.019 (0.021)
51 to 250	0.009 (0.021)	0.051 ** (0.019)	0.052 ** (0.017)	0.063 *** (0.018)	0.076 *** (0.021)
251 and more	0.088 *** (0.017)	0.120 *** (0.014)	0.110 *** (0.014)	0.111 *** (0.016)	0.128 *** (0.020)
<b>Part-time employment (vs. Full-time)</b>					
	0.025 (0.054)	0.025 (0.046)	0.032 (0.037)	0.042 (0.040)	0.078 (0.064)
<b>Fixed wage (vs. Variable pay)</b>					
	-0.015 (0.022)	-0.016 (0.019)	-0.042 ** (0.016)	-0.048 * (0.019)	-0.082 *** (0.024)
<b>First job: Yes (vs. No)</b>					
	-0.088 (0.075)	-0.116 * (0.055)	-0.108 * (0.047)	-0.086 (0.059)	-0.096 (0.065)

(continued)

<b>Work on Sundays (ref: Always)</b>					
Sometimes	0.158 ** (0.052)	0.044 (0.037)	-0.003 (0.030)	0.040 (0.033)	-0.054 (0.041)
Never	0.172 ** (0.053)	0.084 * (0.038)	0.019 (0.031)	0.044 (0.033)	-0.022 (0.041)
<b>Work on Saturdays (ref: Always)</b>					
Sometimes	0.024 (0.022)	0.042 + (0.021)	0.060 ** (0.021)	0.031 (0.021)	0.042 (0.026)
Never	0.060 * (0.024)	0.047 * (0.023)	0.066 ** (0.022)	0.041 + (0.022)	0.048 + (0.027)
<b>Work at night (ref: No)</b>					
Yes	0.008 (0.022)	0.039 * (0.018)	0.045 ** (0.017)	0.083 *** (0.018)	0.080 *** (0.023)
<b>Activity sector (ref: Construction)</b>					
Agriculture, farming, silviculture, fishing	-0.103 + (0.062)	-0.114 + (0.058)	-0.082 ** (0.031)	-0.149 *** (0.034)	-0.114 * (0.054)
Manufacturing	-0.001 (0.026)	-0.005 (0.025)	-0.013 (0.019)	-0.028 (0.019)	-0.023 (0.024)
Wholesale and retail trade	-0.056 + (0.031)	-0.055 * (0.028)	-0.070 ** (0.022)	-0.107 *** (0.024)	-0.097 ** (0.030)
Transportation and storage	-0.007 (0.035)	-0.012 (0.035)	-0.004 (0.030)	0.020 (0.032)	0.086 (0.058)
Accommodation and food services + Households as employers	-0.016 (0.036)	-0.050 (0.035)	-0.031 (0.028)	-0.107 *** (0.030)	-0.115 ** (0.041)
Information, communication, financial and insurance	-0.007 (0.050)	0.061 + (0.032)	0.074 * (0.032)	0.101 ** (0.032)	0.178 *** (0.040)
Real Estate, professional, scientific and technical, admin...	-0.046 (0.034)	-0.066 * (0.030)	-0.054 * (0.024)	-0.054 * (0.025)	-0.004 (0.032)
Public administration and defence	0.007 (0.031)	-0.026 (0.030)	-0.037 (0.030)	-0.040 (0.031)	-0.058 (0.040)
Education	0.015 (0.034)	0.013 (0.033)	0.018 (0.031)	0.047 (0.039)	0.074 + (0.043)
Human health and social work	0.017 (0.034)	-0.013 (0.031)	-0.036 (0.029)	-0.061 + (0.031)	-0.055 (0.037)
Arts, entertainment	-0.092 * (0.041)	-0.070 + (0.039)	-0.109 ** (0.035)	-0.098 * (0.049)	-0.030 (0.048)
<b>Temporary contract (ref: No)</b>					
Yes	-0.083 *** (0.024)	-0.088 *** (0.019)	-0.087 *** (0.018)	-0.089 *** (0.022)	-0.121 *** (0.024)
<b>Collective agreement (ref: No)</b>					
Yes	0.023 (0.017)	0.008 (0.014)	0.010 (0.013)	-0.017 (0.013)	-0.034 + (0.018)
<b>Temporary contract * Part-time employment</b>					
	0.012 (0.062)	0.069 (0.052)	0.125 * (0.052)	0.149 * (0.065)	0.211 ** (0.074)
<b>Part-time employment * Gender</b>					
	0.093 (0.058)	0.132 ** (0.049)	0.152 ** (0.046)	0.154 ** (0.052)	0.156 * (0.071)
<b>Temporary contract * Public sector</b>					
	-0.075 * (0.033)	-0.099 ** (0.030)	-0.092 * (0.036)	-0.055 + (0.030)	-0.033 (0.038)
<b>Collective agreement * Public sector</b>					
	0.037 (0.029)	-0.006 (0.025)	-0.023 (0.024)	0.008 (0.024)	0.043 (0.029)
<b>Age * First job</b>					
	0.002 (0.002)	0.003 ** (0.001)	0.003 ** (0.001)	0.003 * (0.001)	0.004 * (0.002)
<b>Collective agreement * Temporary contract</b>					
	0.024 (0.030)	0.039 (0.028)	0.019 (0.026)	-0.001 (0.026)	0.012 (0.035)
<b>Intercept</b>					
	1.104 *** (0.115)	1.180 *** (0.087)	1.437 *** (0.082)	1.724 *** (0.093)	2.070 *** (0.119)

Notes: + p < 0.10, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001. Standard errors are provided in brackets.



**Table 8.1.5: Full results of quantile regression models in Column 1 in Figure 5. Association between Collective agreement and the permanent-temporary wage gap in 2010.**

<b>Quantile:</b>	<b>0.1</b>	<b>0.25</b>	<b>0.5</b>	<b>0.75</b>	<b>0.9</b>
<b>Gender (ref: Man)</b>					
Woman	-0.088 *** (0.015)	-0.115 *** (0.013)	-0.137 *** (0.013)	-0.151 *** (0.014)	-0.158 *** (0.018)
<b>Age</b>					
	0.023 *** (0.005)	0.024 *** (0.004)	0.020 *** (0.004)	0.013 ** (0.004)	0.010 + (0.006)
<b>Age*2</b>					
	0.000 *** (0.000)	0.000 *** (0.000)	0.000 *** (0.000)	0.000 + (0.000)	0.000 (0.000)
<b>Education (ref: Basic secondary)</b>					
Elementary or less	-0.050 * (0.025)	-0.052 ** (0.019)	-0.063 ** (0.020)	-0.050 * (0.020)	-0.045 + (0.026)
Advanced secondary and VET	0.052 ** (0.019)	0.055 *** (0.017)	0.051 ** (0.016)	0.041 ** (0.015)	0.045 * (0.021)
University	0.191 *** (0.026)	0.204 *** (0.022)	0.209 *** (0.021)	0.204 *** (0.023)	0.257 *** (0.035)
<b>Occupation (ref: Service workers and shop and market sales workers)</b>					
Legislators, senior officials and managers	0.165 *** (0.045)	0.203 *** (0.034)	0.223 *** (0.042)	0.232 *** (0.040)	0.205 *** (0.055)
Professionals and intellectuals	0.172 *** (0.031)	0.226 *** (0.028)	0.235 *** (0.028)	0.227 *** (0.030)	0.206 *** (0.041)
Technicians and associate professionals	0.051 + (0.026)	0.063 ** (0.024)	0.040 + (0.023)	0.051 * (0.023)	0.054 + (0.032)
Clerks	0.022 (0.026)	0.019 (0.024)	-0.030 (0.029)	-0.029 (0.024)	-0.028 (0.042)
Skilled agricultural and fishery workers	-0.104 (0.072)	-0.066 (0.056)	-0.053 (0.056)	-0.098 * (0.044)	-0.021 (0.070)
Craft and related trades workers	0.028 (0.031)	0.081 *** (0.024)	0.062 ** (0.024)	-0.006 (0.022)	-0.016 (0.031)
Plant and machine operators and assemblers	0.005 (0.032)	0.068 * (0.027)	0.037 (0.026)	-0.020 (0.028)	-0.040 (0.032)
Elementary occupations	-0.056 * (0.026)	-0.057 * (0.024)	-0.108 *** (0.023)	-0.131 *** (0.026)	-0.128 *** (0.030)
<b>Supervisory role (ref: No)</b>					
Yes	0.129 *** (0.018)	0.129 *** (0.016)	0.132 *** (0.014)	0.137 *** (0.014)	0.166 *** (0.021)
<b>Nationality (ref: Native)</b>					
Foreigner	-0.055 * (0.026)	-0.055 ** (0.019)	-0.044 * (0.019)	-0.046 * (0.020)	-0.046 + (0.024)
<b>Public sector company (ref: No)</b>					
Yes	-0.002 (0.031)	0.036 (0.026)	0.063 ** (0.023)	0.060 * (0.025)	0.083 * (0.036)
<b>Company size</b>					
11 to 50	-0.049 * (0.023)	-0.070 *** (0.017)	-0.025 (0.016)	-0.002 (0.016)	0.003 (0.022)
51 to 250	0.037 (0.023)	0.002 (0.018)	0.043 * (0.017)	0.054 ** (0.018)	0.074 ** (0.023)
251 and more	0.070 ** (0.021)	0.057 *** (0.017)	0.104 *** (0.015)	0.113 *** (0.016)	0.120 *** (0.021)
<b>Part-time employment (vs. Full-time)</b>					
	0.018 (0.063)	0.023 (0.052)	0.084 + (0.043)	0.116 ** (0.044)	0.206 * (0.094)
<b>Fixed wage (vs. Variable pay)</b>					
	-0.008 (0.021)	0.011 (0.021)	-0.029 (0.018)	-0.066 *** (0.016)	-0.078 *** (0.024)
<b>First job: Yes (vs. No)</b>					
	0.023 (0.063)	0.044 (0.053)	-0.056 (0.050)	-0.035 (0.051)	-0.064 (0.063)

(continued)

<b>Work on Sundays (ref: Always)</b>					
Sometimes	0.075 (0.049)	0.017 (0.033)	-0.031 (0.032)	-0.035 (0.030)	0.043 (0.044)
Never	0.066 (0.051)	0.015 (0.032)	-0.036 (0.033)	-0.029 (0.031)	0.058 (0.041)
<b>Work on Saturdays (ref: Always)</b>					
Sometimes	0.045 + (0.026)	0.055 * (0.022)	0.068 ** (0.021)	0.082 *** (0.023)	0.046 (0.035) **
Never	0.112 *** (0.028)	0.108 *** (0.022)	0.120 *** (0.022)	0.128 *** (0.024)	0.103 (0.033) ***
<b>Work at night (ref: No)</b>					
Yes	0.037 (0.023)	0.056 ** (0.020)	0.048 * (0.019)	0.050 ** (0.017)	0.074 (0.022) ***
<b>Activity sector (ref: Construction)</b>					
Agriculture, farming, silviculture, fishing	-0.154 * (0.062)	-0.108 * (0.054)	-0.135 ** (0.045)	-0.106 * (0.046)	-0.183 (0.046)
Manufacturing	-0.016 (0.026)	0.004 (0.023)	-0.037 + (0.022)	0.027 (0.022)	-0.002 (0.031)
Wholesale and retail trade	-0.065 + (0.034)	-0.039 (0.027)	-0.065 ** (0.023)	-0.048 + (0.026)	-0.050 (0.034)
Transportation and storage	-0.026 (0.041)	-0.015 (0.035)	-0.008 (0.027)	0.058 + (0.033)	0.058 (0.053)
Accommodation and food services + Households as employers	-0.016 (0.046)	-0.018 (0.033)	-0.058 + (0.033)	-0.051 (0.031)	-0.021 (0.052) *
Information, communication, financial and insurance	-0.031 (0.039)	0.033 (0.034)	0.032 (0.034)	0.084 * (0.035)	0.103 (0.050)
Real Estate, professional, scientific and technical, admin...	-0.077 * (0.035)	-0.042 (0.029)	-0.068 ** (0.025)	-0.003 (0.027)	-0.029 (0.038)
Public administration and defence	0.025 (0.035)	0.049 (0.032)	0.007 (0.029)	-0.001 (0.031)	-0.019 (0.039)
Education	0.053 (0.037)	0.093 ** (0.034)	0.021 (0.033)	0.084 * (0.037)	0.069 (0.050)
Human health and social work	-0.085 * (0.037)	-0.036 (0.033)	-0.053 (0.033)	-0.011 (0.033)	-0.029 (0.043)
Arts, entertainment	-0.091 (0.060)	-0.027 (0.039)	-0.102 ** (0.036)	-0.008 (0.046)	-0.073 (0.050)
<b>Temporary contract (ref: No)</b>					
Yes	-0.084 ** (0.027)	-0.077 *** (0.023)	-0.070 *** (0.020)	-0.085 *** (0.023)	-0.065 * (0.028)
<b>Collective agreement (ref: No)</b>					
Yes	0.007 (0.019)	0.040 ** (0.014)	0.036 ** (0.014)	0.038 ** (0.014)	0.044 * (0.021)
<b>Temporary contract * Part-time employment</b>					
	-0.010 (0.054)	-0.007 (0.057)	-0.020 (0.052)	0.033 (0.056)	0.052 (0.077)
<b>Part-time employment * Gender</b>					
	0.135 * (0.066)	0.153 ** (0.057)	0.138 ** (0.050)	0.130 ** (0.050)	0.072 (0.095)
<b>Temporary contract * Public sector</b>					
	-0.034 (0.046)	0.032 (0.035)	0.040 (0.027)	0.062 (0.043)	-0.024 (0.037)
<b>Collective agreement * Public sector</b>					
	0.065 + (0.034)	0.016 (0.028)	-0.018 (0.025)	-0.013 (0.026)	-0.032 (0.036) +
<b>Age * First job</b>					
	0.001 (0.001)	0.000 (0.001)	0.003 * (0.001)	0.002 (0.001)	0.002 (0.002) ***
<b>Collective agreement * Temporary contract</b>					
	0.033 (0.034)	-0.066 * (0.032)	-0.069 ** (0.026)	-0.054 + (0.031)	-0.066 (0.037)
<b>Intercept</b>					
	0.827 *** (0.119)	0.981 *** (0.103)	1.317 *** (0.106)	1.649 *** (0.097)	1.788 (0.120)

Notes: + p < 0.10, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001. Standard errors are provided in brackets.

**Table 8.2.1: Full results of quantile regression models in Column 2 in Figure 5 . Association between Collective agreement and temporary workers' wages in 2006.**

<b>Quantile:</b>	<b>0.1</b>	<b>0.25</b>	<b>0.5</b>	<b>0.75</b>	<b>0.9</b>
<b>Gender (ref: Man)</b>					
Woman	0.008 (0.026)	-0.025 (0.017)	-0.025 + (0.013)	-0.039 + (0.022)	-0.047 (0.029)
<b>Age</b>					
	-0.010 (0.008)	-0.001 (0.004)	0.001 (0.003)	-0.006 (0.006)	-0.001 (0.007)
<b>Age^2</b>					
	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
<b>Education (ref: Basic secondary)</b>					
Elementary or less	0.012 (0.041)	-0.045 * (0.021)	-0.016 (0.014)	-0.019 (0.026)	0.069 + (0.037)
Advanced secondary and VET	0.051 (0.034)	-0.008 (0.020)	0.001 (0.012)	0.018 (0.021)	0.024 (0.027)
University	0.119 ** (0.039)	0.056 * (0.023)	0.046 * (0.020)	0.094 * (0.037)	0.082 + (0.043)
<b>Occupation (ref: Service workers and shop and market sales workers)</b>					
Professionals and intellectuals + Legislators, senior officials and managers	0.025 (0.050)	0.061 (0.044)	0.123 ** (0.042)	0.163 ** (0.059)	0.163 ** (0.060)
Technicians and associate professionals	0.079 + (0.048)	0.026 (0.030)	0.038 (0.028)	0.014 (0.038)	0.147 ** (0.054)
Clerks	0.008 (0.050)	-0.005 (0.033)	0.013 (0.029)	-0.010 (0.038)	-0.016 (0.040)
Skilled agricultural and fishery workers + Craft and related trades workers	0.020 (0.056)	0.042 (0.033)	0.033 (0.027)	-0.023 (0.037)	0.005 (0.053)
Plant and machine operators and assemblers	0.107 * (0.051)	0.033 (0.036)	0.047 (0.029)	0.138 ** (0.053)	0.095 + (0.053)
Elementary occupations	-0.009 (0.056)	0.025 (0.030)	-0.001 (0.029)	-0.027 (0.036)	-0.042 (0.043)
<b>Supervisory role (ref: No)</b>					
Yes	0.058 + (0.034)	0.048 * (0.021)	0.044 * (0.019)	0.043 (0.032)	0.079 + (0.047)
<b>Nationality (ref: Native)</b>					
Foreigner	0.022 (0.035)	-0.019 (0.028)	-0.017 (0.017)	-0.021 (0.026)	0.031 (0.039)
<b>Public sector company (ref: No)</b>					
Yes	0.035 (0.037)	0.037 + (0.020)	0.055 * (0.022)	0.063 + (0.036)	0.063 (0.043)
<b>Company size (ref: 1 to 10)</b>					
11 to 50	-0.082 ** (0.030)	-0.040 + (0.024)	-0.013 (0.015)	-0.007 (0.020)	0.046 (0.036)
51 to 250	0.040 (0.030)	0.033 (0.021)	0.024 (0.016)	0.055 + (0.029)	0.071 * (0.030)
251 and more	0.026 (0.030)	0.043 * (0.018)	0.028 + (0.015)	0.072 ** (0.026)	0.086 * (0.033)
<b>Part-time employment (ref: No)</b>					
Yes	0.074 (0.095)	0.161 ** (0.057)	0.232 ** (0.072)	0.448 *** (0.103)	0.492 *** (0.075)
<b>Fixed wage (ref: No)</b>					
Yes	0.016 (0.028)	0.006 (0.015)	0.010 (0.012)	-0.022 (0.023)	-0.030 (0.028)
<b>First job (ref: No)</b>					
Yes	0.027 (0.102)	-0.122 + (0.062)	-0.074 (0.051)	-0.084 (0.081)	-0.136 (0.119)

(continued)

**Work at weekends (ref: Always)**

Sometimes	0.029 (0.051)	-0.005 (0.023)	0.013 (0.021)	0.031 (0.027)	0.000 (0.040)
Never	0.082 (0.052)	0.036 (0.025)	0.022 (0.021)	0.042 + (0.024)	-0.009 (0.038)

**Work at night (ref: No)**

Yes	-0.029 (0.038)	-0.004 (0.023)	-0.004 (0.015)	-0.003 (0.029)	0.019 (0.038)
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**Activity sector (ref: Construction)**

Agriculture and fishing	-0.024 (0.061)	0.050 (0.039)	0.028 (0.024)	-0.014 (0.043)	-0.077 (0.084)
Manufacturing	-0.018 (0.034)	0.015 (0.024)	-0.005 (0.014)	-0.045 (0.028)	-0.038 (0.044)
Commerce and repairs	-0.110 + (0.061)	-0.079 * (0.036)	-0.049 (0.031)	-0.104 * (0.041)	-0.163 ** (0.062)
Accommodation and food service + Domestic service	-0.220 ** (0.068)	-0.176 *** (0.052)	-0.054 (0.046)	-0.036 (0.050)	-0.118 + (0.065)
Transportation, storage, communication	0.071 (0.050)	0.043 (0.032)	0.003 (0.024)	-0.041 (0.036)	-0.125 + (0.049)
Real Estate + Finance and insurance	-0.032 (0.058)	0.025 (0.025)	-0.010 (0.020)	-0.093 * (0.038)	-0.127 * (0.052)
Public administration	0.040 (0.057)	0.027 (0.030)	0.030 (0.030)	-0.069 (0.049)	-0.082 (0.066)
Education	0.211 *** (0.051)	0.193 *** (0.045)	0.217 *** (0.064)	0.136 + (0.079)	0.202 + (0.107)
Health and social work	0.032 (0.059)	0.075 + (0.039)	0.063 * (0.028)	0.013 (0.061)	0.082 (0.084)
Other social activities and personal services	0.013 (0.054)	0.026 (0.046)	-0.001 (0.035)	-0.046 (0.054)	-0.018 (0.093)

**Part-time employment \* Gender**

	-0.015 (0.118)	0.096 (0.078)	0.084 (0.096)	0.093 (0.120)	0.146 (0.105)
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**Age \* First job**

	-0.001 (0.003)	0.003 + (0.002)	0.002 (0.001)	0.002 (0.002)	0.002 (0.003)
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**Collective agreement (ref: No)**

Yes	0.007 (0.023)	0.001 (0.015)	0.004 (0.010)	0.042 * (0.021)	0.054 * (0.027)
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**Intercept**

	1.384 *** (0.164)	1.435 *** (0.092)	1.466 *** (0.071)	1.648 *** (0.102)	1.690 *** (0.145)
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Notes: + p < 0.10, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001. Standard errors are provided in brackets.

**Table 8.2.2: Full results of quantile regression models in Column 2 in Figure 5. Association between Collective agreement and temporary workers' wages in 2007.**

<b>Quantile:</b>	<b>0.1</b>	<b>0.25</b>	<b>0.5</b>	<b>0.75</b>	<b>0.9</b>
<b>Gender (ref: Man)</b>					
Woman	-0.047 (0.034)	-0.026 (0.029)	-0.108 *** (0.031)	-0.085 * (0.034)	-0.087 * (0.037)
<b>Age</b>					
	0.031 * (0.012)	0.005 (0.009)	0.001 (0.008)	0.006 (0.010)	-0.007 (0.011)
<b>Age^2</b>					
	0.000 * (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
<b>Education (ref: Basic secondary)</b>					
Elementary or less	-0.029 (0.040)	-0.043 (0.033)	0.000 (0.031)	0.034 (0.039)	-0.015 (0.051)
Advanced secondary and VET	0.047 (0.034)	0.042 (0.035)	0.060 + (0.031)	0.071 + (0.036)	0.033 (0.038)
University	0.104 + (0.056)	0.119 * (0.053)	0.181 *** (0.044)	0.209 *** (0.055)	0.195 ** (0.064)
<b>Occupation (ref: Service workers and shop and market sales workers)</b>					
Professionals and intellectuals + Legislators, senior officials and managers	0.172 * (0.084)	0.226 ** (0.083)	0.256 *** (0.068)	0.211 ** (0.072)	0.321 *** (0.083)
Technicians and associate professionals	0.084 (0.074)	0.060 (0.067)	0.071 (0.053)	0.062 (0.059)	0.079 (0.064)
Clerks	0.060 (0.065)	0.050 (0.053)	-0.021 (0.051)	-0.091 (0.059)	-0.064 (0.063)
Skilled agricultural and fishery workers + Craft and related trades workers	0.114 + (0.063)	0.104 + (0.060)	0.074 (0.053)	0.082 (0.056)	0.090 (0.072)
Plant and machine operators and assemblers	0.168 * (0.067)	0.149 * (0.062)	0.127 * (0.063)	0.037 (0.062)	-0.050 (0.073)
Elementary occupations	0.029 (0.063)	0.033 (0.052)	-0.052 (0.049)	-0.049 (0.057)	-0.062 (0.063)
<b>Supervisory role (ref: No)</b>					
Yes	0.057 (0.043)	0.074 (0.049)	0.026 (0.049)	0.130 * (0.060)	0.215 *** (0.056)
<b>Nationality (ref: Native)</b>					
Foreigner	-0.040 (0.044)	-0.056 (0.036)	-0.057 + (0.032)	-0.104 ** (0.035)	-0.069 (0.043)
<b>Public sector company (ref: No)</b>					
Yes	0.051 (0.044)	0.029 (0.036)	0.025 (0.038)	0.037 (0.039)	0.096 * (0.046)
<b>Company size (ref: 1 to 10)</b>					
11 to 50	-0.028 (0.041)	-0.041 (0.035)	0.015 (0.034)	-0.004 (0.039)	-0.032 (0.040)
51 to 250	0.024 (0.046)	0.026 (0.044)	0.038 (0.035)	0.016 (0.042)	0.048 (0.049)
251 and more	0.020 (0.036)	0.056 (0.037)	0.094 ** (0.036)	0.060 (0.039)	0.086 * (0.042)
<b>Part-time employment (ref: No)</b>					
Yes	0.131 * (0.066)	0.058 (0.055)	0.009 (0.064)	0.060 (0.099)	0.129 (0.129)
<b>Fixed wage (ref: No)</b>					
Yes	0.019 (0.036)	-0.037 (0.038)	-0.100 ** (0.034)	-0.124 *** (0.037)	-0.251 *** (0.043)
<b>First job (ref: No)</b>					
Yes	0.167 (0.158)	0.139 (0.114)	-0.072 (0.115)	-0.119 (0.136)	-0.258 + (0.138)

(continued)

**Work on Saturdays (ref: Always)**

Sometimes	0.124 + (0.068)	0.048 (0.049)	0.034 (0.045)	0.081 (0.051)	0.088 (0.056)
Never	0.165 * (0.076)	0.024 (0.053)	0.075 (0.046)	0.106 * (0.050)	0.078 (0.052)

**Work on Sundays (ref: Always)**

Sometimes	-0.009 (0.088)	-0.049 (0.057)	-0.038 (0.062)	-0.137 + (0.072)	-0.035 (0.072)
Never	-0.137 (0.095)	-0.083 (0.061)	-0.099 (0.066)	-0.143 + (0.075)	-0.111 + (0.068)

**Work at night (ref: No)**

Yes	0.019 (0.049)	0.081 * (0.040)	0.064 (0.039)	0.092 + (0.048)	0.029 (0.049)
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**Activity sector (ref: Construction)**

Agriculture and fishing	-0.183 * (0.086)	-0.156 ** (0.058)	-0.280 *** (0.067)	-0.240 *** (0.068)	-0.350 *** (0.060)
Manufacturing	-0.058 (0.044)	-0.105 * (0.044)	-0.157 *** (0.046)	-0.082 (0.052)	0.017 (0.062)
Commerce and repairs	-0.024 (0.058)	-0.113 + (0.065)	-0.157 ** (0.049)	-0.126 * (0.060)	-0.097 (0.066)
Accommodation and food service + Domestic service	-0.091 (0.061)	-0.074 (0.060)	-0.116 * (0.054)	-0.119 * (0.057)	-0.125 * (0.060)
Transportation, storage, communication	-0.079 (0.073)	-0.128 + (0.068)	-0.222 * (0.090)	-0.011 (0.074)	-0.078 (0.075)
Real Estate + Finance and insurance	-0.080 (0.057)	-0.081 (0.052)	-0.135 * (0.057)	-0.070 (0.073)	-0.180 ** (0.065)
Public administration	-0.003 (0.068)	0.014 (0.051)	-0.083 (0.061)	-0.101 (0.064)	-0.089 (0.096)
Education	0.051 (0.104)	0.149 + (0.079)	0.062 (0.077)	0.130 (0.083)	0.043 (0.095)
Health and social work	-0.008 (0.074)	0.028 (0.070)	-0.050 (0.056)	-0.001 (0.074)	-0.107 (0.078)
Other social activities and personal services	-0.016 (0.069)	-0.067 (0.076)	-0.073 (0.076)	0.001 (0.101)	0.100 (0.110)

**Part-time employment \* Gender**

	0.043 (0.096)	0.047 (0.077)	0.172 * (0.082)	0.286 * (0.129)	0.306 * (0.142)
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**Age \* First job**

	-0.006 (0.005)	-0.003 (0.003)	0.001 (0.003)	0.003 (0.004)	0.007 + (0.004)
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**Collective agreement (ref: No)**

Yes	0.073 * (0.029)	0.037 (0.025)	0.044 + (0.026)	0.039 (0.029)	-0.017 (0.032)
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**Intercept**

	0.713 ** (0.263)	1.433 *** (0.194)	1.843 *** (0.172)	1.880 *** (0.189)	2.388 *** (0.195)
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Notes: + p < 0.10, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001. Standard errors are provided in brackets.

**Table 8.2.3: Full results of quantile regression models in Column 2 in Figure 5. Association between Collective agreement and temporary workers' wages in 2008.**

<b>Quantile:</b>	<b>0.1</b>	<b>0.25</b>	<b>0.5</b>	<b>0.75</b>	<b>0.9</b>
<b>Gender (ref: Man)</b>					
Woman	-0.054 + (0.029)	-0.051 + (0.031)	-0.090 ** (0.031)	-0.121 *** (0.032)	-0.092 * (0.043)
<b>Age</b>					
	0.005 (0.009)	0.018 * (0.009)	0.016 + (0.008)	0.006 (0.009)	-0.003 (0.010)
<b>Age^2</b>					
	0.000 (0.000)	0.000 * (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
<b>Education (ref: Basic secondary)</b>					
Elementary or less	-0.012 (0.034)	-0.018 (0.040)	-0.048 (0.037)	-0.071 + (0.039)	-0.183 *** (0.054)
Advanced secondary and VET	0.007 (0.034)	0.010 (0.041)	-0.028 (0.034)	-0.028 (0.038)	-0.069 (0.054)
University	0.016 (0.048)	0.083 (0.057)	0.070 (0.053)	0.092 + (0.055)	0.166 * (0.081)
<b>Occupation (ref: Service workers and shop and market sales workers)</b>					
Professionals and intellectuals + Legislators, senior officials and managers	0.108 (0.070)	0.254 ** (0.086)	0.358 *** (0.070)	0.277 *** (0.066)	0.219 * (0.098)
Technicians and associate professionals	0.059 (0.052)	0.157 ** (0.060)	0.092 (0.066)	0.133 + (0.070)	0.229 + (0.124)
Clerks	0.027 (0.047)	0.062 (0.054)	0.000 (0.061)	-0.076 (0.062)	-0.142 (0.089)
Skilled agricultural and fishery workers + Craft and related trades workers	-0.005 (0.049)	0.087 (0.058)	0.051 (0.061)	-0.046 (0.066)	-0.015 (0.084)
Plant and machine operators and assemblers	0.084 (0.054)	0.205 *** (0.057)	0.089 (0.061)	-0.065 (0.059)	-0.108 (0.092)
Elementary occupations	-0.023 (0.045)	0.008 (0.048)	-0.050 (0.057)	-0.136 * (0.063)	-0.153 * (0.074)
<b>Supervisory role (ref: No)</b>					
Yes	0.022 (0.057)	0.087 (0.061)	0.115 * (0.049)	0.104 * (0.044)	0.118 + (0.061)
<b>Nationality (ref: Native)</b>					
Foreigner	-0.014 (0.031)	-0.055 (0.037)	-0.013 (0.038)	-0.012 (0.041)	0.048 (0.051)
<b>Public sector company (ref: No)</b>					
Yes	0.086 * (0.039)	0.113 ** (0.040)	0.128 ** (0.042)	0.086 + (0.051)	0.108 + (0.059)
<b>Company size (ref: 1 to 10)</b>					
11 to 50	-0.029 (0.035)	-0.046 (0.039)	0.017 (0.036)	-0.021 (0.037)	-0.066 (0.043)
51 to 250	-0.003 (0.037)	-0.034 (0.045)	0.027 (0.040)	0.017 (0.047)	-0.011 (0.059)
251 and more	0.043 (0.034)	0.056 (0.039)	0.066 + (0.038)	0.069 + (0.041)	0.084 (0.053)
<b>Part-time employment (ref: No)</b>					
Yes	-0.038 (0.053)	0.010 (0.070)	0.002 (0.056)	-0.017 (0.054)	-0.046 (0.081)
<b>Fixed wage (ref: No)</b>					
Yes	-0.020 (0.036)	-0.044 (0.045)	-0.079 * (0.033)	-0.067 + (0.035)	-0.083 + (0.048)
<b>First job (ref: No)</b>					
Yes	-0.208 + (0.115)	-0.305 * (0.139)	0.087 (0.122)	-0.115 (0.139)	-0.102 (0.144)

(continued)

<b>Work on Saturdays (ref: Always)</b>					
Sometimes	0.178 ** (0.059)	0.101 + (0.059)	0.076 (0.054)	0.067 (0.056)	0.062 (0.062)
Never	0.161 ** (0.054)	0.102 + (0.061)	0.077 (0.062)	0.034 (0.052)	0.084 (0.066)
<b>Work on Sundays (ref: Always)</b>					
Sometimes	-0.088 (0.071)	-0.027 (0.074)	0.058 (0.079)	-0.053 (0.093)	-0.090 (0.106)
Never	-0.089 (0.062)	-0.059 (0.074)	0.053 (0.079)	-0.093 (0.093)	-0.134 (0.103)
<b>Work at night (ref: No)</b>					
Yes	0.019 (0.036)	0.003 (0.038)	0.025 (0.040)	0.023 (0.041)	0.152 * (0.071)
<b>Activity sector (ref: Construction)</b>					
Agriculture and fishing	-0.092 (0.057)	-0.116 * (0.054)	-0.200 *** (0.048)	-0.255 *** (0.048)	-0.301 *** (0.063)
Manufacturing	-0.068 (0.043)	-0.121 * (0.050)	-0.070 (0.043)	-0.059 (0.051)	-0.098 (0.065)
Commerce and repairs	-0.001 (0.052)	-0.015 (0.059)	-0.085 + (0.048)	-0.086 (0.081)	0.008 (0.088)
Accommodation and food service + Domestic service	-0.067 (0.058)	-0.066 (0.083)	0.046 (0.078)	0.027 (0.090)	0.026 (0.099)
Transportation, storage, communication	-0.092 (0.067)	-0.127 (0.087)	0.037 (0.067)	0.112 (0.086)	0.131 (0.101)
Real Estate + Finance and insurance	-0.056 (0.058)	-0.055 (0.060)	-0.078 (0.050)	-0.100 (0.063)	-0.080 (0.092)
Public administration	-0.066 (0.061)	-0.125 + (0.075)	-0.014 (0.078)	-0.081 (0.085)	-0.137 (0.105)
Education	-0.065 (0.087)	-0.007 (0.093)	-0.056 (0.075)	0.005 (0.089)	-0.032 (0.104)
Health and social work	-0.065 (0.067)	-0.012 (0.075)	0.030 (0.059)	-0.022 (0.082)	-0.105 (0.091)
Other social activities and personal services	0.078 (0.082)	0.095 (0.065)	0.018 (0.076)	-0.101 (0.079)	-0.126 (0.095)
<b>Part-time employment * Gender</b>					
	-0.069 (0.092)	0.072 (0.102)	0.211 * (0.095)	0.263 ** (0.085)	0.299 ** (0.115)
<b>Age * First job</b>					
	0.004 (0.003)	0.006 + (0.003)	-0.003 (0.003)	0.003 (0.004)	0.003 (0.004)
<b>Collective agreement (ref: No)</b>					
Yes	0.005 -0.027	0.058 + (0.031)	0.029 (0.027)	-0.002 (0.028)	-0.006 (0.041)
<b>Intercept</b>					
	1.353 *** (0.177)	1.217 *** (0.184)	1.371 *** (0.174)	1.998 *** (0.215)	2.345 *** (0.231)

Notes: + p < 0.10, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001. Standard errors are provided in brackets.



**Table 8.2.4: Full results of quantile regression models in Column 2 in Figure 5. Association between Collective agreement and temporary workers' wages in 2009.**

<b>Quantile:</b>	<b>0.1</b>	<b>0.25</b>	<b>0.5</b>	<b>0.75</b>	<b>0.9</b>
<b>Gender (ref: Man)</b>					
Woman	-0.017 (0.034)	-0.101 ** (0.032)	-0.137 *** (0.034)	-0.104 ** (0.033)	-0.144 *** (0.037)
<b>Age</b>					
	0.015 (0.012)	0.013 (0.011)	0.014 (0.009)	0.010 (0.008)	0.015 + (0.008)
<b>Age^2</b>					
	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 + (0.000)
<b>Education (ref: Basic secondary)</b>					
Elementary or less	-0.085 + (0.046)	-0.054 (0.038)	0.008 (0.031)	0.008 (0.045)	0.029 (0.037)
Advanced secondary and VET	-0.049 (0.039)	0.018 (0.030)	0.039 (0.032)	0.009 (0.040)	0.050 (0.036)
University	0.088 * (0.043)	0.060 (0.041)	0.058 (0.042)	0.022 (0.058)	0.044 (0.057)
<b>Occupation (ref: Service workers and shop and market sales workers)</b>					
Professionals and intellectuals + Legislators, senior officials and managers	0.229 *** (0.065)	0.325 *** (0.061)	0.470 *** (0.065)	0.443 *** (0.076)	0.468 *** (0.079)
Technicians and associate professionals	0.103 + (0.057)	0.118 * (0.057)	0.219 *** (0.052)	0.147 * (0.066)	0.130 * (0.064)
Clerks	-0.091 (0.066)	-0.003 (0.061)	0.063 (0.052)	0.035 (0.072)	-0.069 (0.060)
Skilled agricultural and fishery workers + Craft and related trades workers	0.007 (0.056)	0.017 (0.056)	0.059 (0.053)	0.004 (0.062)	0.011 (0.052)
Plant and machine operators and assemblers	-0.045 (0.077)	0.028 (0.071)	0.050 (0.061)	-0.012 (0.062)	0.050 (0.087)
Elementary occupations	-0.015 (0.052)	-0.007 (0.049)	0.014 (0.043)	-0.052 (0.056)	-0.012 (0.048)
<b>Supervisory role (ref: No)</b>					
Yes	0.073 (0.047)	0.087 (0.054)	0.108 ** (0.042)	0.122 ** (0.041)	0.075 * (0.037)
<b>Nationality (ref: Native)</b>					
Foreigner	-0.079 + (0.043)	-0.025 (0.035)	-0.017 (0.029)	0.001 (0.036)	0.007 (0.033)
<b>Public sector company (ref: No)</b>					
Yes	0.057 (0.036)	0.045 (0.039)	0.080 + (0.044)	0.081 * (0.040)	0.073 + (0.041)
<b>Company size (ref: 1 to 10)</b>					
11 to 50	0.063 + (0.038)	0.103 ** (0.034)	0.099 ** (0.033)	0.039 (0.038)	0.048 (0.033)
51 to 250	0.013 (0.047)	0.074 * (0.035)	0.058 (0.040)	0.082 + (0.044)	0.074 * (0.038)
251 and more	0.057 + (0.034)	0.139 *** (0.035)	0.106 ** (0.035)	0.077 + (0.041)	0.059 (0.038)
<b>Part-time employment (ref: No)</b>					
Yes	0.046 (0.078)	0.024 (0.069)	0.051 (0.068)	0.212 * (0.098)	0.220 * (0.094)
<b>Fixed wage (ref: No)</b>					
Yes	-0.046 (0.041)	-0.115 ** (0.035)	-0.069 * (0.030)	-0.078 * (0.036)	-0.086 ** (0.031)
<b>First job (ref: No)</b>					
Yes	-0.069 (0.152)	-0.034 (0.134)	0.151 (0.119)	0.256 (0.223)	0.125 (0.206)

(continued)

<b>Work on Saturdays (ref: Always)</b>					
Sometimes	0.090 (0.064)	0.050 (0.044)	0.068 + (0.041)	-0.045 (0.062)	-0.013 (0.053)
Never	0.159 * (0.064)	0.075 (0.046)	0.080 + (0.046)	0.009 (0.058)	0.041 (0.054)
<b>Work on Sundays (ref: Always)</b>					
Sometimes	0.187 * (0.092)	0.162 * (0.072)	0.084 (0.063)	0.113 (0.073)	-0.069 (0.093)
Never	0.237 * (0.092)	0.194 ** (0.069)	0.100 (0.063)	0.119 + (0.069)	-0.084 (0.098)
<b>Work at night (ref: No)</b>					
Yes	0.112 * (0.046)	0.026 (0.039)	0.083 * (0.038)	0.106 * (0.050)	0.121 ** (0.045)
<b>Activity sector (ref: Construction)</b>					
Agriculture, farming, silviculture, fishing	-0.118 + (0.064)	-0.241 *** (0.059)	-0.235 *** (0.061)	-0.182 ** (0.066)	-0.218 *** (0.053)
Manufacturing	-0.126 ** (0.045)	-0.105 * (0.044)	-0.060 + (0.034)	-0.056 (0.046)	-0.044 (0.040)
Wholesale and retail trade	-0.051 (0.061)	-0.095 + (0.052)	-0.103 * (0.046)	-0.119 (0.073)	-0.024 (0.061)
Transportation and storage	-0.118 (0.079)	-0.063 (0.075)	-0.079 (0.055)	0.003 (0.090)	-0.031 (0.082)
Accommodation and food services + Households as employers	-0.021 (0.069)	-0.042 (0.067)	0.027 (0.051)	0.014 (0.074)	-0.045 (0.072)
Information, communication, financial and insurance	-0.164 + (0.098)	-0.098 (0.078)	-0.092 (0.060)	-0.081 (0.077)	0.162 (0.113)
Real Estate, professional, scientific and technical, admin...	-0.130 * (0.060)	-0.150 ** (0.048)	-0.098 + (0.056)	-0.112 + (0.067)	-0.023 (0.056)
Public administration and defence	-0.111 * (0.054)	-0.122 * (0.050)	-0.144 * (0.060)	-0.093 (0.068)	0.100 (0.081)
Education	-0.145 * (0.071)	-0.053 (0.063)	-0.055 (0.074)	0.045 (0.081)	0.178 * (0.080)
Human health and social work	-0.073 (0.066)	-0.059 (0.066)	-0.016 (0.059)	-0.004 (0.063)	0.017 (0.055)
Arts, entertainment	-0.109 (0.102)	-0.082 (0.097)	0.011 (0.088)	0.029 (0.112)	0.277 (0.236)
<b>Part-time employment * Gender</b>	0.178 + (0.104)	0.249 ** (0.086)	0.255 ** (0.084)	0.130 (0.111)	0.144 (0.106)
<b>Age * First job</b>	-0.001 (0.004)	-0.001 (0.003)	-0.007 * (0.003)	-0.009 (0.006)	-0.004 (0.006)
<b>Collective agreement (ref: No)</b>					
Yes	0.085 ** (0.031)	0.058 * (0.029)	0.031 (0.025)	0.031 (0.028)	0.015 (0.026)
<b>Intercept</b>	0.966 *** (0.228)	1.230 *** (0.210)	1.291 *** (0.177)	1.681 *** (0.186)	1.861 *** (0.193)

Notes: + p < 0.10, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001. Standard errors are provided in brackets.

**Table 8.2.5: Full results of quantile regression models in Column 2 in Figure 5. Association between Collective agreement and temporary workers' wages in 2010.**

<b>Quantile:</b>	<b>0.1</b>	<b>0.25</b>	<b>0.5</b>	<b>0.75</b>	<b>0.9</b>
<b>Gender (ref: Man)</b>					
Woman	0.018 (0.038)	-0.025 (0.033)	-0.141 *** (0.029)	-0.130 *** (0.037)	-0.158 *** (0.042)
<b>Age</b>					
	0.026 * (0.011)	0.036 ** (0.012)	0.027 ** (0.010)	0.018 + (0.010)	0.028 ** (0.010)
<b>Age^2</b>					
	0.000 * (0.000)	0.000 ** (0.000)	0.000 * (0.000)	0.000 (0.000)	0.000 * (0.000)
<b>Education (ref: Basic secondary)</b>					
Elementary or less	0.035 (0.045)	-0.011 (0.047)	0.012 (0.039)	-0.015 (0.039)	-0.011 (0.036)
Advanced secondary and VET	0.091 * (0.045)	0.080 + (0.042)	0.043 (0.034)	-0.018 (0.038)	0.039 (0.040)
University	0.216 *** (0.052)	0.176 *** (0.051)	0.144 ** (0.048)	0.134 ** (0.052)	0.236 ** (0.083)
<b>Occupation (ref: Service workers and shop and market sales workers)</b>					
Professionals and intellectuals + Legislators, senior officials and managers	0.205 ** (0.075)	0.296 *** (0.062)	0.285 *** (0.056)	0.214 ** (0.073)	0.219 * (0.097)
Technicians and associate professionals	0.137 * (0.063)	0.118 + (0.062)	0.026 (0.051)	-0.045 (0.061)	0.018 (0.068)
Clerks	0.038 (0.070)	0.052 (0.057)	-0.065 (0.058)	-0.110 + (0.063)	-0.102 + (0.062)
Skilled agricultural and fishery workers + Craft and related trades workers	0.076 (0.067)	0.118 + (0.067)	0.029 (0.052)	-0.011 (0.051)	0.051 (0.063)
Plant and machine operators and assemblers	-0.005 (0.099)	0.091 (0.084)	0.040 (0.059)	-0.036 (0.064)	0.007 (0.076)
Elementary occupations	0.060 (0.058)	0.025 (0.060)	-0.098 * (0.049)	-0.057 (0.052)	-0.008 (0.065)
<b>Supervisory role (ref: No)</b>					
Yes	0.086 (0.057)	0.046 (0.051)	0.083 * (0.036)	0.067 + (0.040)	0.140 * (0.060)
<b>Nationality (ref: Native)</b>					
Foreigner	-0.031 (0.045)	-0.012 (0.036)	-0.008 (0.036)	0.010 (0.041)	-0.003 (0.040)
<b>Public sector company (ref: No)</b>					
Yes	0.057 (0.043)	0.052 (0.039)	0.090 * (0.040)	0.024 (0.053)	0.062 (0.071)
<b>Company size (ref: 1 to 10)</b>					
11 to 50	0.012 (0.046)	-0.046 (0.038)	0.001 (0.033)	0.027 (0.040)	-0.018 (0.044)
51 to 250	-0.008 (0.048)	-0.004 (0.040)	0.024 (0.036)	0.031 (0.039)	0.010 (0.047)
251 and more	0.039 (0.051)	0.062 (0.041)	0.114 ** (0.038)	0.153 *** (0.042)	0.124 * (0.049)
<b>Part-time employment (ref: No)</b>					
Yes	-0.086 (0.084)	0.096 (0.067)	0.038 (0.070)	0.099 (0.063)	0.050 (0.056)
<b>Fixed wage (ref: No)</b>					
Yes	0.025 (0.034)	0.024 (0.042)	-0.018 (0.034)	-0.031 (0.035)	-0.072 + (0.041)
<b>First job (ref: No)</b>					
Yes	0.020 (0.136)	0.220 (0.139)	0.103 (0.166)	0.021 (0.122)	0.031 (0.132)

(continued)

<b>Work on Saturdays (ref: Always)</b>					
Sometimes	0.081 (0.066)	0.006 (0.056)	0.018 (0.052)	0.002 (0.059)	-0.108 + (0.062)
Never	0.100 (0.067)	-0.007 (0.063)	0.000 (0.054)	0.032 (0.064)	-0.090 (0.062)
<b>Work on Sundays (ref: Always)</b>					
Sometimes	-0.079 (0.080)	-0.014 (0.083)	0.009 (0.064)	0.034 (0.073)	0.150 + (0.083)
Never	-0.105 (0.089)	0.024 (0.090)	0.066 (0.060)	0.096 (0.067)	0.188 ** (0.068)
<b>Work at night (ref: No)</b>					
Yes	-0.027 (0.050)	-0.002 (0.050)	0.049 (0.036)	0.037 (0.043)	0.152 ** (0.050)
<b>Activity sector (ref: Construction)</b>					
Agriculture, farming, silviculture, fishing	-0.205 *** (0.059)	-0.222 *** (0.056)	-0.231 *** (0.061)	-0.170 ** (0.061)	-0.163 ** (0.058)
Manufacturing	-0.026 (0.051)	-0.065 (0.051)	-0.048 (0.045)	0.007 (0.043)	0.033 (0.047)
Wholesale and retail trade	-0.081 (0.067)	-0.118 + (0.061)	-0.127 ** (0.045)	-0.096 (0.060)	0.010 (0.053)
Transportation and storage	0.072 (0.085)	-0.041 (0.076)	0.029 (0.077)	0.139 * (0.069)	0.180 * (0.082)
Accommodation and food services + Households as employers	-0.029 (0.077)	0.008 (0.077)	0.009 (0.058)	-0.002 (0.058)	0.056 (0.078)
Information, communication, financial and insurance	-0.147 (0.103)	-0.093 (0.089)	-0.085 (0.071)	0.043 (0.115)	0.184 (0.122)
Real Estate, professional, scientific and technical, admin...	-0.239 *** (0.072)	-0.173 * (0.070)	-0.072 (0.055)	0.008 (0.060)	0.068 (0.061)
Public administration and defence	-0.067 (0.084)	0.102 (0.067)	0.079 (0.061)	0.160 * (0.072)	0.135 (0.095)
Education	0.006 (0.079)	0.030 (0.073)	0.034 (0.077)	0.185 * (0.093)	0.329 * (0.143)
Human health and social work	-0.073 (0.082)	-0.030 (0.072)	-0.063 (0.063)	0.119 (0.088)	0.101 (0.089)
Arts, entertainment	-0.192 * (0.096)	-0.081 (0.091)	-0.065 (0.084)	0.129 + (0.078)	0.001 (0.077)
<b>Part-time employment * Gender</b>					
	0.099 (0.096)	0.020 (0.088)	0.232 ** (0.088)	0.183 * (0.093)	0.316 ** (0.099)
<b>Age * First job</b>					
	-0.002 (0.004)	-0.005 (0.004)	-0.003 (0.005)	-0.001 (0.003)	-0.001 (0.003)
<b>Collective agreement (ref: No)</b>					
Yes	0.045 (0.034)	0.023 (0.028)	-0.004 (0.024)	-0.008 (0.029)	-0.036 (0.033)
<b>Intercept</b>					
	0.788 ** (0.239)	0.700 ** (0.265)	1.132 *** (0.222)	1.448 *** (0.222)	1.362 *** (0.211)

Notes: + p < 0.10, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001. Standard errors are provided in brackets.

**Table 9: Full results of multilevel models in Table 1. Associations of sectoral collective bargaining coverage with temporary workers' wages for the period 2006-2010**

	<u>Model 1.1</u> <u>QoWLS (2006-2007)</u>	<u>Model 1.2</u> <u>QoWLS (2009-2010)</u>
<b>Gender (ref: Man)</b>		<b>Gender (ref: Man)</b>
Woman	-0.082 * (0.038)	Woman -0.118 ** (0.040)
<b>Age</b>	0.198 (0.171)	<b>Age</b> 0.316 + (0.182)
<b>Age^2</b>	-0.126 (0.171)	<b>Age^2</b> -0.284 (0.182)
<b>Education (ref: Elementary or less)</b>		<b>Education (ref: Elementary or less)</b>
Basic secondary	-0.108 * (0.045)	Basic secondary -0.067 (0.046)
Advanced secondary and VET	-0.012 (0.041)	Advanced secondary and VET 0.015 (0.042)
University	0.350 *** (0.082)	University 0.262 ** (0.080)
<b>Occupation (ref: Professionals and intellectuals + Legislators, senior officials and managers)</b>		<b>Occupation (ref: Professionals and intellectuals + Legislators, senior officials and managers)</b>
Technicians and associate professionals	0.244 ** (0.084)	Technicians and associate professionals 0.067 (0.092)
Clerks	-0.184 + (0.098)	Clerks -0.157 (0.119)
Service workers and shop and market sales workers	-0.134 * (0.068)	Service workers and shop and market sales workers 0.042 (0.071)
Skilled agricultural and fishery workers + Craft...	0.003 (0.058)	Skilled agricultural and fishery workers + Craft... -0.055 (0.054)
Plant and machine operators and assemblers	0.078 (0.091)	Plant and machine operators and assemblers -0.313 ** (0.099)
Elementary occupations	-0.194 *** (0.056)	Elementary occupations -0.185 *** (0.056)
<b>Supervisory role (ref: No)</b>		<b>Supervisory role (ref: No)</b>
Yes	0.126 (0.083)	Yes 0.203 * (0.086)
<b>Nationality (ref: Native)</b>		<b>Nationality (ref: Native)</b>
Foreigner	-0.125 * (0.057)	Foreigner -0.016 (0.052)
<b>Public sector company (ref: No)</b>		<b>Public sector company (ref: No)</b>
Yes	0.071 (0.062)	Yes 0.003 (0.066)
<b>Company size (ref: 1 to 10)</b>		<b>Company size (ref: 1 to 10)</b>
11 to 50	-0.061 (0.046)	11 to 50 -0.080 + (0.045)
51 to 250	0.062 (0.061)	51 to 250 -0.051 (0.061)
251 and more	0.120 ** (0.046)	251 and more 0.170 ** (0.054)
<b>Union membership (ref: No)</b>		<b>Union membership (ref: No)</b>
Yes	0.113 (0.075)	Yes 0.223 ** (0.074)
<b>Fixed wage (ref: No)</b>		<b>Fixed wage (ref: No)</b>
Yes	-0.009 (0.015)	Yes -0.005 (0.015)
<b>First job (ref: No)</b>		<b>First job (ref: No)</b>
Yes	-0.071 (0.059)	Yes -0.155 * (0.068)
<b>Work at weekends (ref: Never)</b>		<b>Work on Saturdays (ref: Always)</b>
Sometimes	-0.009 (0.045)	Sometimes -0.021 (0.042)
Always	0.085 (0.061)	Never 0.092 * (0.037)
		<b>Work on Sundays (ref: Always)</b>
		Sometimes 0.001 (0.073)
		Never 0.020 (0.024)
<b>Work at night (ref: No)</b>		<b>Work at night (ref: No)</b>
Yes	0.036 (0.071)	Yes 0.053 (0.073)
<b>Part-time employment (ref: No)</b>		<b>Part-time employment (ref: No)</b>
Yes	0.755 *** (0.122)	Yes 0.504 *** (0.065)

	(continued)		(continued)
<b>Year (ref: 2007)</b>		<b>Year (ref: 2007)</b>	
2006	0.290 *** (0.031)	2006	-0.026 (0.028)
<b>Rate of temporary employment</b>	-0.023 (0.039)	<b>Rate of temporary employment</b>	0.008 (0.047)
<b>Collective bargaining coverage</b>	0.112 * (0.047)	<b>Collective bargaining coverage</b>	0.062 (0.054)
<b>Constant</b>	-0.023 (0.044)	<b>Constant</b>	-0.026 (0.038)
<b>n (individuals)</b>	981	<b>n (individuals)</b>	1012
<b>N (sectors)</b>	49	<b>N (sectors)</b>	71
<b>Log-Likelihood</b>	-1173.904	<b>Log-Likelihood</b>	-1242.950
<b>ICC</b>	0.035	<b>ICC</b>	0.026
<b>Random coefficients:</b>	Part-time employment Work at weekends: Always	<b>Random coefficients:</b>	Work on Sundays: Sometimes

**Notes:** + p < 0.10, \*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001. All coefficients are z-standardised. Standard errors are provided in brackets.

**Table 10.1: Full results of multilevel models in Table 2. Association of cross-level interaction (sectoral union density X temporary contract) with wages for SES dataset in 2006 and 2010**

	<u>Model 2.1</u> <u>SES (2006)</u>		<u>Model 2.3</u> <u>SES (2010)</u>
<b>Age (ref: less than 19)</b>			
20-29	-0.199 *** (0.002)	20-29	-0.241 *** (0.003)
30-39	-0.053 *** (0.002)	30-39	-0.085 *** (0.002)
40-49	0.100 *** (0.002)	40-49	0.078 *** (0.002)
50-59	0.190 *** (0.003)	50-59	0.194 *** (0.003)
More than 59	0.287 *** (0.007)	More than 59	0.323 *** (0.006)
<b>Gender (ref: Man)</b>			
Woman	-0.171 *** (0.002)	Woman	-0.141 *** (0.002)
<b>Education (ref: Basic secondary or less)</b>			
Advanced secondary and VET	0.008 *** (0.002)	Advanced secondary and VET	-0.017 *** (0.002)
University	0.151 *** (0.003)	University	0.174 *** (0.003)
<b>Occupation (ref: Legislators, senior officials and managers)</b>			
Professionals and intellectuals	0.534 *** (0.005)	Professionals and intellectuals	0.419 *** (0.005)
Technicians and associate professionals	0.160 *** (0.003)	Technicians and associate professionals	0.100 *** (0.003)
Clerks	-0.130 *** (0.004)	Clerks	-0.194 *** (0.004)
Service workers and shop and market sales workers	-0.172 *** (0.005)	Service workers and shop and market sales workers + Skilled...	-0.235 *** (0.005)
Skilled agricultural and fishery workers	-0.205 *** (0.028)	Craft and related trades workers	-0.109 *** (0.005)
Craft and related trades workers	-0.070 *** (0.004)	Plant and machine operators and assemblers	-0.165 *** (0.005)
Plant and machine operators and assemblers	-0.111 *** (0.004)	Elementary occupations	-0.345 *** (0.005)
Elementary occupations	-0.289 *** (0.004)		
<b>Supervisory role (ref: Yes)</b>			
No	-0.074 *** (0.001)	<b>Supervisory role (ref: No)</b>	
		Yes	0.308 *** (0.003)
<b>Part-time employment (ref: No)</b>			
Yes	0.052 *** (0.004)	Yes	0.050 *** (0.004)
<b>Nationality (ref: Native)</b>			
Foreigner	-0.022 *** (0.005)	Foreigner	-0.006 (0.005)
<b>Public sector company (ref: Yes)</b>			
No	-0.047 *** (0.002)	No	-0.089 *** (0.003)
<b>Main market (ref: Local or regional)</b>			
National	0.063 *** (0.005)	National	0.052 *** (0.004)
European Union	0.232 *** (0.014)	European Union	0.214 *** (0.016)
Worldwide	0.332 *** (0.014)	Worldwide	0.279 *** (0.013)

	(continued)		(continued)
<b>Temporary employment (ref: No)</b>		<b>Temporary employment (ref: No)</b>	
Yes	-0.128 *** (0.006)	Yes	-0.092 *** (0.009)
<b>Union density</b>	0.065 *** (0.018)	<b>Union density</b>	0.063 *** (0.017)
<b>Rate of temporary employment</b>	-0.058 ** (0.018)	<b>Rate of temporary employment</b>	-0.072 *** (0.017)
<b>Temporary employment * Union density</b>	0.007 (0.007)	<b>Temporary employment * Union density</b>	0.015 (0.009)
<b>Temporary employment * Rate of temporary employment</b>	0.036 *** (0.007)	<b>Temporary employment * Rate of temporary employment</b>	0.016 + (0.009)
<b>Constant</b>	-0.101 *** (0.018)	<b>Constant</b>	-0.080 *** (0.017)
<b>n (individuals)</b>	217,096	<b>N:</b>	186,192
<b>Level-3 N (sectors)</b>	127	<b>Level-3 N (sectors)</b>	152
<b>Level-2 N (companies)</b>	25,334	<b>Level-2 N (companies)</b>	23,184
<b>Log-Likelihood</b>	-191578.6	<b>Log-Likelihood</b>	-159522.1
<b>ICC (sector)</b>	0.071	<b>ICC (sector)</b>	0.0779
<b>ICC (company)</b>	0.502	<b>ICC (company)</b>	0.5042
<b>Random coefficients:</b>	Temporary employment	<b>Random coefficients:</b>	Temporary employment

**Notes:** + p < 0.10, \*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001. All coefficients are z-standardised. Standard errors are provided in brackets.



**Table 10.2: Full results of multilevel models in Table 2. Association of cross-level interaction (sectoral union density X temporary contract) with wages for QoWLS dataset in the period 2006-2010.**

	<u>Model 2.2</u> QoWLS (2006-2007)		<u>Model 2.4</u> QoWLS (2009-2010)
<b>Gender (ref: Man)</b>			
Woman	-0.138 *** (0.010)	Woman	-0.155 *** (0.009)
<b>Age</b>			
	0.247 *** (0.052)		0.375 *** (0.052)
<b>Age^2</b>			
	-0.138 ** (0.052)		-0.252 *** (0.052)
<b>Education (ref: Elementary or less)</b>			
Basic secondary	-0.083 *** (0.016)	Basic secondary	-0.157 *** (0.015)
Advanced secondary and VET	-0.021 + (0.011)	Advanced secondary and VET	-0.024 * (0.010)
University	0.242 *** (0.018)	University	0.284 *** (0.016)
<b>Occupation (ref: Legislators, senior officials and managers)</b>			
Professionals and intellectuals	0.412 *** (0.024)	Professionals and intellectuals	0.458 *** (0.026)
Technicians and associate professionals	0.109 *** (0.019)	Technicians and associate professionals	0.019 (0.017)
Clerks	-0.072 ** (0.024)	Clerks	-0.117 *** (0.024)
Service workers and shop and market sales workers	-0.179 *** (0.021)	Service workers and shop and market sales workers	-0.148 *** (0.019)
Skilled agricultural and fishery workers	-0.183 * (0.072)	Skilled agricultural and fishery workers	-0.307 *** (0.056)
Craft and related trades workers	-0.090 *** (0.020)	Craft and related trades workers	-0.056 ** (0.020)
Plant and machine operators and assemblers	-0.097 *** (0.025)	Plant and machine operators and assemblers	-0.102 *** (0.024)
Elementary occupations	-0.284 *** (0.022)	Elementary occupations	-0.316 *** (0.023)
<b>Supervisory role (ref: No)</b>			
Yes	0.187 *** (0.016)	Yes	0.246 *** (0.015)
<b>Nationality (ref: Native)</b>			
Foreigner	-0.132 *** (0.025)	Foreigner	-0.107 *** (0.021)
<b>Public sector company (ref: No)</b>			
Yes	0.072 *** (0.017)	Yes	0.092 *** (0.022)
<b>Company size (ref: 1 to 10)</b>			
11 to 50	-0.084 *** (0.014)	11 to 50	-0.103 *** (0.013)
51 to 250	0.028 + (0.017)	51 to 250	-0.007 (0.015)
251 and more	0.110 *** (0.010)	251 and more	0.137 *** (0.010)
<b>Union membership (ref: No)</b>			
Yes	0.066 *** (0.015)	Yes	0.058 *** (0.014)
<b>Fixed wage (ref: No)</b>			
Yes	-0.011 ** (0.004)	Yes	-0.010 *** (0.003)

	(continued)		(continued)
<b>First job (ref: No)</b>		<b>First job (ref: No)</b>	
Yes	0.025 + (0.013)	Yes	0.050 *** (0.014)
<b>Work at weekends (ref: Never)</b>		<b>Work on Saturdays (ref: Always)</b>	
Sometimes	-0.024 + (0.013)	Sometimes	-0.020 + (0.012)
Always	-0.032 * (0.013)	Never	0.052 *** (0.009)
		<b>Work on Sundays (ref: Always)</b>	
		Sometimes	0.003 (0.017)
		Never	0.005 (0.007)
<b>Work at night (ref: No)</b>		<b>Work at night (ref: No)</b>	
Yes	0.024 (0.019)	Yes	0.086 *** (0.019)
<b>Part-time employment (ref: No)</b>		<b>Part-time employment (ref: No)</b>	
Yes	0.415 *** (0.044)	Yes	0.335 *** (0.034)
<b>Year (ref: 2007)</b>		<b>Year (ref: 2009)</b>	
2006	0.321 *** (0.009)	2010	-0.018 * (0.007)
<b>Temporary contract (ref: No)</b>		<b>Temporary contract (ref: No)</b>	
Yes	-0.130 *** (0.016)	Yes	-0.175 *** (0.018)
<b>Temporary contract * Union density</b>	-0.003 (0.018)	<b>Temporary contract * Union density</b>	-0.034 + (0.020)
<b>Temporary contract * Rate of emporary employment</b>	0.019 (0.016)	<b>Temporary contract * Rate of emporary employment</b>	-0.010 (0.018)
<b>Rate of emporary employment</b>	-0.014 (0.017)	<b>Rate of emporary employment</b>	-0.036 * (0.017)
<b>Union density</b>	0.085 *** (0.017)	<b>Union density</b>	0.032 + (0.017)
<b>Constant</b>	-0.023 (0.015)	<b>Constant</b>	-0.034 * (0.016)
<b>n (individuals)</b>	10996	<b>n (individuals)</b>	11315
<b>N (sectors)</b>	147	<b>N (sectors)</b>	164
<b>Log-Likelihood</b>	-12564.189	<b>Log-Likelihood</b>	-12500.369
<b>ICC</b>	0.033	<b>ICC</b>	0.045
<b>Random coefficients:</b>	Temporary contract Part-time employment	<b>Random coefficients:</b>	Temporary contract Part-time employment Public sector company Age Part-time employment Occupation:Professionals and intellectuals

**Notes:** + p < 0.10, \*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001. All coefficients are z-standardised. Standard errors are provided in brackets.

**Table 11.1: Full results of multilevel models in Table 3. Association of sectoral union density with temporary workers' wages, for the SES dataset, for years 2006 and 2010**

	<u>Model 3.1</u> <u>SES (2006)</u>		<u>Model 3.3</u> <u>SES (2010)</u>
<b>Age (ref: less than 19)</b>			
20-29	-0.088 *** (0.004)	20-29	-0.145 *** (0.005)
30-39	0.023 *** (0.004)	30-39	0.007 + (0.004)
40-49	0.052 *** (0.005)	40-49	0.041 *** (0.006)
50-59	0.070 *** (0.009)	50-59	0.058 *** (0.009)
More than 59	0.408 *** (0.018)	More than 59	0.376 *** (0.016)
<b>Gender (ref: Man)</b>			
Woman	-0.124 *** (0.004)	Woman	-0.100 *** (0.004)
<b>Education (ref: Basic secondary or less)</b>			
Advanced secondary and VET	0.000 (0.006)	Advanced secondary and VET	-0.016 ** (0.006)
University	0.133 *** (0.008)	University	0.180 *** (0.009)
<b>Occupation (ref: Legislators, senior officials and managers)</b>			
Professionals and intellectuals	0.634 *** (0.012)	Professionals and intellectuals	0.567 *** (0.011)
Technicians and associate professionals	0.109 *** (0.010)	Technicians and associate professionals	0.149 *** (0.009)
Clerks	-0.160 *** (0.009)	Clerks	-0.225 *** (0.010)
Service workers and shop and market sales workers	-0.203 *** (0.010)	Service workers and shop and market sales workers + Skilled...	-0.264 *** (0.010)
Skilled agricultural and fishery workers	-0.133 ** (0.050)	Craft and related trades workers	-0.053 *** (0.010)
Craft and related trades workers	0.022 ** (0.007)	Plant and machine operators and assemblers	-0.063 *** (0.013)
Plant and machine operators and assemblers	-0.027 ** (0.010)	Elementary occupations	-0.307 *** (0.009)
Elementary occupations	-0.244 *** (0.007)		
<b>Supervisory role (ref: Yes)</b>			
No	-0.021 *** (0.001)	Yes	0.226 *** (0.011)
<b>Part-time employment (ref: No)</b>			
Yes	0.178 *** (0.019)	Yes	0.196 *** (0.021)
<b>Nationality (ref: Native)</b>			
Foreigner	-0.038 *** (0.008)	Foreigner	-0.001 (0.009)
<b>Public sector company (ref: Yes)</b>			
No	-0.076 *** (0.003)	No	-0.120 *** (0.005)
<b>Main market (ref: Local or regional)</b>			
National	0.067 *** (0.007)	National	0.035 *** (0.007)
European Union	0.220 *** (0.022)	European Union	0.170 *** (0.027)
Worldwide	0.347 *** (0.021)	Worldwide	0.244 *** (0.021)
<b>Union density</b>	<b>0.071 ***</b> <b>(0.019)</b>	<b>Union density</b>	<b>0.069 ***</b> <b>(0.017)</b>

	<b>(continued)</b>		<b>(continued)</b>
<b>Rate of temporary employment</b>	-0.015 (0.019)	<b>Rate of temporary employment</b>	-0.017 (0.017)
<b>Constant</b>	-0.066 *** (0.019)	<b>Constant</b>	-0.006 (0.019)
<b>n (individuals)</b>	57,932	<b>N:</b>	44,265
<b>Level-3 N (sectors)</b>	127	<b>Level-3 N (sectors)</b>	152
<b>Level-2 N (companies)</b>	15,182	<b>Level-2 N (companies)</b>	11,970
<b>Log-Likelihood</b>	-57623.74	<b>Log-Likelihood</b>	-43072.61
<b>ICC (sector)</b>	0.072	<b>ICC (sector)</b>	0.079
<b>ICC (company)</b>	0.497	<b>ICC (company)</b>	0.511
<b>Random coefficients:</b>	Part-time employment	<b>Random coefficients:</b>	Part-time employment

**Notes:** + p < 0.10, \*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001. All coefficients are z-standardised. Standard errors are provided in brackets.

**Table 11.2: Full results of multilevel models in Table 3. Association of sectoral union density with temporary workers' wages, for the QoWLS dataset, for the period 2006-2010**

	<u>Model 3.2</u> <u>QoWLS (2006-2007)</u>	<u>Model 3.4</u> <u>QoWLS (2009-2010)</u>
<b>Gender (ref: Man)</b>		
Woman	-0.118 *** (0.023)	-0.073 ** (0.023)
<b>Age</b>		
	0.164 (0.108)	0.375 ** (0.117)
<b>Age^2</b>		
	-0.094 (0.108)	-0.310 ** (0.117)
<b>Education (ref: Elementary or less)</b>		
Basic secondary	-0.084 ** (0.031)	-0.104 *** (0.032)
Advanced secondary and VET	0.006 (0.027)	-0.008 (0.027)
University	0.253 *** (0.045)	0.241 *** (0.047)
<b>Occupation (ref: Professionals and intellectuals + Legislators, senior officials and managers)</b>		
Technicians and associate professionals	0.201 *** (0.060)	0.071 (0.054)
Clerks	-0.120 * (0.056)	-0.225 *** (0.063)
Service workers and shop and market sales workers	-0.141 ** (0.045)	-0.141 ** (0.047)
Skilled agricultural and fishery workers + Craft...	-0.003 (0.037)	-0.056 (0.037)
Plant and machine operators and assemblers	0.067 (0.055)	-0.069 (0.060)
Elementary occupations	-0.234 *** (0.037)	-0.259 *** (0.040)
<b>Supervisory role (ref: No)</b>		
Yes	0.122 * (0.051)	0.230 *** (0.052)
<b>Nationality (ref: Native)</b>		
Foreigner	-0.126 *** (0.037)	-0.039 (0.036)
<b>Public sector company (ref: No)</b>		
Yes	0.105 ** (0.038)	0.125 *** (0.038)
<b>Company size (ref: 1 to 10)</b>		
11 to 50	-0.076 ** (0.028)	-0.087 ** (0.030)
51 to 250	0.066 + (0.036)	-0.036 (0.037)
251 and more	0.133 *** (0.026)	0.100 *** (0.027)
<b>Union membership (ref: No)</b>		
Yes	0.083 + (0.043)	0.123 ** (0.044)
<b>Fixed wage (ref: No)</b>		
Yes	-0.015 (0.010)	-0.019 (0.013)
<b>First job (ref: No)</b>		
Yes	0.027 (0.047)	-0.156 *** (0.045)

	(continued)		(continued)
<b>Work at weekends (ref: Never)</b>		<b>Work on Saturdays (ref: Always)</b>	
Sometimes	-0.017 (0.028)	Sometimes	-0.013 (0.027)
Always	-0.012 (0.029)	Never	0.036 (0.024)
		<b>Work on Sundays (ref: Always)</b>	
		Sometimes	-0.023 (0.039)
		Never	0.040 * (0.019)
<b>Work at night (ref: No)</b>		<b>Work at night (ref: No)</b>	
Yes	-0.026 (0.043)	Yes	0.124 ** (0.045)
<b>Part-time employment (ref: No)</b>		<b>Part-time employment (ref: No)</b>	
Yes	0.536 *** (0.070)	Yes	0.397 *** (0.064)
<b>Year (ref: 2007)</b>		<b>Year (ref: 2009)</b>	
2006	0.259 *** (0.018)	2010	-0.026 (0.017)
<b>Rate of temporary employment</b>	0.035 (0.025)	<b>Rate of temporary employment</b>	-0.059 * (0.026)
<b>Union density</b>	0.091 ** (0.030)	<b>Union density</b>	0.057 + (0.030)
<b>Constant</b>	-0.049 * (0.025)	<b>Constant</b>	0.002 (0.026)
<b>n (individuals)</b>	2501	<b>n (individuals)</b>	2277
<b>N (sectors)</b>	136	<b>N (sectors)</b>	157
<b>Log-Likelihood</b>	-3012.808	<b>Log-Likelihood</b>	-2721.408
<b>ICC</b>	0.037	<b>ICC</b>	0.040
<b>Random coefficients:</b>	First job Part-time employment Occupation: Technicians and associate professionals	<b>Random coefficients:</b>	Fixed wage Work on Sundays: Never Part-time employment

**Notes:** +p < 0.10, \*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001. All coefficients are z-standardised. Standard errors are provided in brackets.

**Table 11.3: Full results of multilevel models in Table 3. Association of sectoral union density with non-unionized temporary workers' wages for the period 2006-2010**

	<u>Model 4.1</u> <u>QoWLS (2006-2007)</u>		<u>Model 4.2</u> <u>QoWLS (2009-2010)</u>
<b>Gender (ref: Man)</b>			
Woman	-0.115 *** (0.025)	Woman	-0.0582 * (0.025)
<b>Age</b>			
	0.209 + (0.116)		0.3549 ** (0.124)
<b>Age^2</b>			
	-0.127 (0.116)		-0.2883 * (0.124)
<b>Education (ref: Elementary or less)</b>			
Basic secondary	-0.070 * (0.033)	Basic secondary	-0.0937 ** (0.033)
Advanced secondary and VET	0.031 (0.029)	Advanced secondary and VET	0.002 (0.030)
University	0.204 *** (0.050)	University	0.2162 *** (0.053)
<b>Occupation (ref: Professionals and intellectuals + Legislators, senior officials and managers)</b>			
Technicians and associate professionals	0.232 *** (0.058)	Technicians and associate professionals	0.0986 + (0.059)
Clerks	-0.077 (0.061)	Clerks	-0.1803 ** (0.069)
Service workers and shop and market sales workers	-0.163 *** (0.048)	Service workers and shop and market sales workers	-0.1225 * (0.051)
Skilled agricultural and fishery workers + Craft...	-0.008 (0.039)	Skilled agricultural and fishery workers + Craft...	-0.0801 + (0.045)
Plant and machine operators and assemblers	0.056 (0.060)	Plant and machine operators and assemblers	-0.074 (0.064)
Elementary occupations	-0.251 *** (0.040)	Elementary occupations	-0.2574 *** (0.042)
<b>Supervisory role (ref: No)</b>			
Yes	0.094 + (0.056)	Yes	0.2764 *** (0.057)
<b>Nationality (ref: Native)</b>			
Foreigner	-0.118 ** (0.039)	Foreigner	-0.034 (0.037)
<b>Public sector company (ref: No)</b>			
Yes	0.108 * (0.043)	Yes	0.1134 ** (0.043)
<b>Company size (ref: 1 to 10)</b>			
11 to 50	-0.093 ** (0.030)	11 to 50	-0.0655 * (0.031)
51 to 250	0.084 * (0.039)	51 to 250	-0.042 (0.040)
251 and more	0.146 *** (0.030)	251 and more	0.0909 ** (0.031)
<b>Fixed wage (ref: No)</b>			
Yes	-0.018 + (0.010)	Yes	-0.019 (0.013)
<b>First job (ref: No)</b>			
Yes	0.015 (0.040)	Yes	-0.1833 *** (0.047)
<b>Work at weekends (ref: Never)</b>			
Sometimes	-0.021 (0.030)	Sometimes	-0.007 (0.029)
Always	-0.033 (0.032)	Never	0.034 (0.026)

	(continued)		(continued)
		<b>Work on Sundays (ref: Always)</b>	
		Sometimes	-0.027 (0.043)
		Never	0.0438 * (0.020)
<b>Work at night (ref: No)</b>		<b>Work at night (ref: No)</b>	
Yes	-0.025 (0.049)	Yes	0.1167 * (0.049)
<b>Part-time employment (ref: No)</b>		<b>Part-time employment (ref: No)</b>	
Yes	0.525 *** (0.076)	Yes	0.4551 *** (0.068)
<b>Year (ref: 2007)</b>		<b>Year (ref: 2009)</b>	
2006	0.238 *** (0.019)	2010	-0.0372 * (0.018)
<b>Rate of temporary employment</b>	0.032 (0.027)	<b>Rate of temporary employment</b>	-0.0515 + (0.027)
<b>Union density</b>	0.075 * (0.033)	<b>Union density</b>	0.059 + (0.032)
<b>Constant</b>	-0.047 + (0.028)	<b>Constant</b>	-0.004 (0.027)
<b>n (individuals)</b>	2170	<b>n (individuals)</b>	1968
<b>N (sectors)</b>	135	<b>N (sectors)</b>	156
<b>Log-Likelihood</b>	-2642.591	<b>Log-Likelihood</b>	-2359.246
<b>ICC</b>	0.04391	<b>ICC</b>	0.035
<b>Random coefficients:</b>	Part-time employment	<b>Random coefficients:</b>	Fixed wage Work on Sundays:Never Part-time employment Occupation: Skilled agricultural and fishery workers + Craft and related trades workers

**Notes:** + p < 0.10, \*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001. All coefficients are z-standardised. Standard errors are provided in brackets.





## CHAPTER 4

### **Does employability help to cope with job insecurity? An analysis of workers' well-being with Swiss panel data**

#### **4.1 Introduction**

Experiencing the risk of job loss has long-lasting, pernicious consequences on individuals' well-being. This has been widely documented for physical and mental health, life satisfaction, job satisfaction and overall quality of life (Cheng and Chan, 2008; Kim and von dem Knesebeck, 2015; Helbling and Kanji, 2018; Jiang and Lavaysse, 2018). In Europe, job insecurity has progressively become a common feature of contemporary labour markets and careers. From the mid-1990s to the mid-2000s, the temporary employment rate in Europe increased and remained stagnant thereafter, but the risk of having at least one temporary job at a given moment in time has risen (Latner, 2022). The Great Recession and COVID-19 crisis have demonstrated that permanent workers also experience recurrent and significant labour market uncertainties and the risk of losing their jobs. In fact, although job insecurity is frequently associated with temporary workers, who face the (almost) certain end of their job contracts, the negative effects of job insecurity appear to be more detrimental for permanent than for temporary employees (Mauno et al., 2005; De Cuyper and de Witte, 2007; Kirves et al., 2011).

Due to the growth in job insecurity, international institutions and policymakers have attempted to reconcile companies' need for flexibility and workers' need for job security, which led to the development of the flexicurity strategy (European Commission, 2007; Muffels and Wilthagen, 2013). The fundamental proposition of the flexicurity model is to allow companies to dismiss workers easily (*flexibility*), but to counteract workers' greater exposure to the risk of job loss (*security*). The model proposes two core elements to mitigate the negative impacts of workers' greater exposure to job insecurity, namely, generous unemployment benefits during periods of joblessness and active labour market programmes (i.e. training courses and assisted employment search) to improve workers' employability and shorten unemployment spells. The implementation of this model across several European countries, albeit with some variations, has shown that it generally fulfils the purpose of supporting the

unemployed: generous unemployment benefits are crucial to support workers during periods of joblessness (Nordenmark et al., 2003; Shahidi et al., 2019), and active labour market policies seem to reduce unemployment spells and have positive impacts on the well-being of those who lost their job (Card et al., 2010; Wulfgramm, 2011; Sage, 2015; Puig-Barrachina et al., 2020). Although improved employability seems effective to reduce the impacts of unemployment, it is unclear whether high employability is also effective to offset the negative impacts of job insecurity on well-being among those who are still employed but might lose their job soon.

The goal of this article is to examine if the negative effects of job insecurity on well-being can be alleviated when workers perceive that their employability (also known as *labour market security*) is high, and whether these effects differ by gender, as some studies have suggested (Green, 2011; Otterbach and Sousa-Poza, 2016). Hence, we investigate if the negative impacts of job insecurity on well-being are lower when workers perceive they can find another job easily, and whether these mitigating effects are distinct for women and men. For this purpose, we analyse three facets of well-being that are negatively impacted by job insecurity: life satisfaction, mental health, and job satisfaction (Green, 2011; Cheng and Chan, 2008). This study contributes to the existing literature in three main aspects. First, we analyse panel data, which allows us to eliminate the effect of time-constant confounders. Although other authors have already used panel data to analyse the moderating effects of employability on the negative effects of job insecurity on life satisfaction and mental health (see Green, 2011 and Otterbach and Sousa-Poza, 2015), this is the first study to also test these effects for job satisfaction. Second, we provide a comprehensive assessment of job insecurity by analysing two subjective indicators and one objective indicator of this variable: fear of job loss, risk of job loss in the last year, and having a temporary contract. Hence, in addition to exploring if employability can mitigate the negative effects of fear of job loss on well-being as previous studies have done, our study also evaluates if employability can reduce the negative impacts of having a temporary job and having experienced the risk of job loss in the last year. Third, by obtaining different estimates for women and men we respond to calls for a gender perspective in this kind of studies (Valero et al., 2021). This approach also helps to clarify previous findings suggesting that the moderating effects of employability differ by gender (i.e. Green, 2011; Otterbach and Sousa-Poza, 2015). Our analyses rely on data from Switzerland;

a country that despite never having formally developed a flexicurity strategy, closely reflects the flexicurity model by combining generous unemployment benefits with strong active labour market policies (Hevenstone, 2011; Fossati, 2018; Shahidi et al., 2016). The Swiss labour market also presents a low structural rate of unemployment (in the last decade it peaked at 4.8%) that remained almost unchanged in the aftermath of the financial crisis<sup>1</sup> (the period analysed in this study), thus allowing us to limit the influence of macro-economic changes in our analyses.

The question that this article explores is especially relevant from a public policy perspective because it provides additional insight about the consequences of expanding the flexicurity model for workers' well-being in terms of their job satisfaction, life satisfaction, and mental health.

## 4.2 Literature review

### *The negative impacts of job insecurity on well-being*

Job insecurity has been consistently associated with different facets of poorer well-being. More specifically, studies have found an association between job insecurity and lower life satisfaction (Green, 2011; Otterbach and Sousa-Poza, 2016; Helbling and Kanji, 2018), lower job satisfaction (Cheng and Chan, 2008), and poorer mental health (Ferrie et al. 2001; Rugulies et al., 2006; Green, 2011; Otterbach and Sousa-Poza, 2016). Experiencing job insecurity also seems to have long-lasting, scarring effects (Ferrie et al. 2001; Knabe and Rätzl, 2011; Helbling and Kanji, 2018; Eberl et al., 2023). Even if these negative impacts of job insecurity on well-being are found regardless of which facet of job insecurity is analysed,<sup>2</sup> Jiang and Lavaysse's (2018) meta-analysis showed that the association between well-being and affective job insecurity (i.e. worrying about losing one's job) is stronger than the association between well-being and cognitive job insecurity (i.e. the estimated probability of job loss). This means that *worrying about job loss* is more strongly related to lower well-

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<sup>1</sup> This allows us to obtain more accurate estimates, given that economic downturns might exacerbate the negative impacts of job insecurity (Lam et al., 2014). Although Switzerland was technically in a recession during the second quarter of 2008 and during 2009, the GDP growth was positive again in 2010 and onwards, when our data was gathered.

<sup>2</sup> As shown in Chapter 2, Anderson and Pontusson (2007) distinguish between 'affective job insecurity' (i.e. worrying about losing one's job) and 'cognitive job insecurity' (i.e. the assessment of the risk of job loss). While these are the most widely used distinctions in the literature, other authors also differentiate between quantitative and qualitative job insecurity, but none of the studies mentioned in this chapter examine these facets.

being than the subjectively assessed *risk of job loss*. These findings are reasonable assuming that some individuals might worry more than others simply because they would suffer more from losing their job. This would be the case, for example, of main breadwinners, low-skilled workers, individuals with strong work centrality (Jiang and Lavaysse, 2018), immigrants whose residence permits depend on their employment situation, or those who lack the resources to adequately cope with a situation of joblessness.

While the subjective assessments of job insecurity show consistent negative associations with well-being, the relationship is not as clear for the case of temporary employment. According to Wilkin's (2013) meta-analysis, the association between temporary employment and job satisfaction differs across multiple studies. These heterogeneous results have been attributed to cross-national variations (De Cuyper et al., 2019; Canzio et al., 2022) and whether the temporary contract is fixed-term, seasonal, or casual (Bardasi and Francesconi; 2004). The associations between life satisfaction and temporary employment have also been found to differ by country (De Cuyper et al., 2019). However, in a study using British panel data these differences were not observed to vary by type of temporary contract and found no association between temporary contracts and adverse effects on mental health (Bardasi and Francesconi, 2004). Other analyses using British panel data have reported even better mental health among fixed-term workers than permanent employees, whereas the opposite occurs for casual workers, seasonal workers, and temporary agency workers (Dawson et al., 2017). These findings contradict similar analyses for Australia showing that casual and fixed-term workers present the same mental health as permanent employees (LaMontagne et al., 2014; Hahn et al., 2021). In contrast, analyses using Italian panel data have shown that temporary employment has negative impacts on (general) health when it is prolonged over time (Pirani and Salvini, 2015). In a similar context using Spanish cross-sectional data, an association between temporary employment and mental health was also found (Bartoll et al., 2019).

It should be noted that the negative effects of job insecurity on well-being are not only direct but also occur through multiple mediating factors. These negative effects of job insecurity spillover to workers' family members, negatively affecting their spouses and children and ultimately the workers' relationships with their family members (see Mauno et al., 2017 for a review). Some of these negative impacts on the well-being of

family members might be the result of job insecurity that impedes workers to access mortgages, which also causes delays in decisions on parenthood and the moment of leaving the parental home (Lersch and Dewilde, 2015; Clark and Lepinteur, 2022). In consequence, even after the threat of job loss has disappeared, workers and their family members could still face the negative impacts of job insecurity on certain crucial life events, as well as the deteriorating impacts that these altered life events have on family relationships. Job insecurity could have similar long-lasting spillover effects on organizational outcomes and work behaviour (Roskies and Louis-Guerin, 1990). This may deteriorate workers' relationships with other colleagues as well as managers and produce conflicts in the workplace that could eventually harm workers' well-being (Borg and Elizur, 1992; Frone, 2000; Lee et al., 2018). Again, work conflicts that might have been initially triggered by job insecurity could still occur after the threat of job loss has disappeared.

### ***Gender differences***

The negative impacts of job insecurity and temporary contracts on well-being are usually found to differ for men and women, but without displaying a defined pattern. As Kim and von dem Knesebeck's (2015) systematic review found, the link between job insecurity and health differs by gender, but these differences are not consistent, whereas Cheng and Chan's (2008) meta-analyses on various outcomes indicated that the impacts for men and women are the same (although this study analysed mostly cross-sectional studies). As for the specific effects of temporary contracts, no formal meta-analyses have yet assessed if impacts on well-being differ by gender, although multiple studies using cross-sectional and panel data have shown divergent results. Analyses using German panel data have found that women with temporary jobs worry more about losing their jobs than men (Morgenroth et al., 2021). Studies using Italian panel data have shown that temporary employment only has negative impacts on women's mental health (Pirani and Salvini, 2015), while Bartoll et al.'s (2019) analyses with a cross-sectional Spanish sample observed a negative association between temporary employment and mental health only among men. Conversely, studies using Australian and British panel data have reported that temporary contracts are not related to lower life satisfaction in either women or men (Bardasi and Franesconi, 2004; LaMontagne et al., 2014; Hahn et al., 2021), while those using British panel data have observed that the negative impacts of casual and seasonal contracts on job

satisfaction are significant and similar for both genders (Bardasi and Franesconi, 2004).

Although these results do not allow us to obtain consistent conclusions, the existing theoretical arguments and other empirical findings could justify why these negative effects might only exist exclusively for men or for women. The negative effects of job insecurity among women might be due to the segregation of women into lower-paying jobs (i.e. women with insecure and temporary jobs earn less than men). This could also impair women's saving capacity and diminish their resources to cope with unemployment, which could in turn boost the negative impacts of job insecurity on women's well-being relative to men's (Stier and Yaish, 2014; Schmid, 2016). Similarly, because women's temporary jobs are of lower overall quality than men's, women might be more frequently exposed to low autonomy, occupational health issues, and health risks in general, which could also have greater long-term negative impacts on their well-being (Stier and Yaish, 2014, Schmid, 2016). The opposite case (i.e. job insecurity having negative consequences only for men) could be explained by the social stigma associated with men's joblessness due to gender norms (Charles and James, 2003; Mooi-Reci and Ganzeboom, 2015; Coron and Schmidt, 2022; Bazzoli and Probst, 2023). Since men are more likely to be the main breadwinners, they might display higher work centrality and have a greater need for good working conditions and job security (Nolan, 2009; Coron and Schmidt, 2022).

### ***The moderating effects of employability***

The positive effects of employability seem to extend beyond the pecuniary aspects since individuals experience greater well-being when they perceive they can easily find another job. In this regard, higher perceived employability is generally associated with lower psychological symptoms and better mental health (Berntson and Marklund, 2007; Kirves et al., 2011; Kinnunen et al., 2011; Kirves et al., 2017; Harari et al., 2023) as well as greater job and life satisfaction (De Cuyper et al., 2011; Giorgi et al., 2015; De Cuyper et al., 2019; Yeves et al., 2019). Nonetheless, no studies appear to have tested if employability impacts men and women differently.

This literature has commonly argued that the reason why employability may reduce the negative impacts of job insecurity is that workers would not suffer the negative impacts of job insecurity if they foresee that they will not become unemployed due to

job loss (or that the unemployment period will be reasonably short). Under this assumption, finding a new, comparable job could then spare workers the harmful effects of unemployment, such as those resulting from financial constraints and the loss of identity. However, transitioning to a new job can also have negative consequences for workers' well-being, even if they never experience unemployment periods between two jobs (Feldman and Brett; 1983). This is because many of the negative impacts triggered by the risk of job loss might be caused, instead, by the uncertainty due to the *risk of job change* rather than just by the *risk of becoming unemployed*. For example, a temporary worker whose contract is about to end might have already received several new job offers, but starting a new position involves facing uncertainties and requires some time for adaptation (Pollard, 2001; Bordia et al., 2004). That is, they must adapt to a new work environment and new work processes, change their daily habits and routines, and perhaps re-negotiate the distribution of unpaid work with their spouses or partners. For this reason, even if employability fully eliminates the impacts caused by the risk of becoming unemployed, there is no reason to assume it will eliminate the negative impacts caused by the *risk of job change*. Employability, therefore, might not completely protect workers from the overall negative effects of job insecurity. In addition, because individuals do not react in the same manner to job insecurity (Roskies et al., 1993; Näswall et al., 2005), employability might in fact mitigate the negative impacts of job insecurity on the worker, but not on the worker's family members. Job change could trigger family conflicts which may eventually affect workers' well-being too. Therefore, the question of whether employability can reduce the negative impacts of job insecurity on well-being should rather be about which of the multiple mechanisms whereby job insecurity impacts well-being could be reduced by employability. In what follows, we summarize the findings of previous studies that have assessed the mitigating effects of employability on job satisfaction, life satisfaction, and mental health, and whether these effects differed by gender. We also formulate the hypothesis that will guide the analysis.

As regards job satisfaction, only two studies using cross-sectional samples have explored if employability can reduce the negative consequences of job insecurity, but found different results. Svetek (2020) observed that employability does not mitigate the negative consequences of job insecurity on job satisfaction, whereas Yeves et al. (2019) found that these mitigating effects only occur for extrinsic job satisfaction but



not for intrinsic job satisfaction. Neither study performed separate analyses for men and women. Following the flexicurity assumption, we test the following hypothesis:

(H1) Employability mitigates the negative impacts of job insecurity on job satisfaction.

Employability seems to reduce the negative effects of job insecurity on life satisfaction according to the three studies that analysed these effects. Green (2011) and Otterbach and Sousa-Poza (2015) found this moderation to be significant after analysing panel data from Australia and Germany, respectively, and Silla et al. (2008) observed this association analysing a cross-sectional sample from Belgium. Only Otterbach and Sousa-Poza (2015) and Green (2011) performed separate analyses for men and women. The former observed that these effects occur much more predominantly among men<sup>3</sup>, while the latter found the effects to be significant for men only. Therefore, we test the following hypothesis:

(H2) Employability mitigates the negative impacts of job insecurity on life satisfaction.

For mental health, the moderating impacts of employability on job insecurity are not clear. Otterbach and Sousa-Poza (2015) and Green (2011) analysing panel data from Germany and Australia, respectively, found this moderation to be significant. Among studies using cross-sectional surveys, Svetek's (2020) associations are only marginally significant (2020), whereas they are not significant in Silla et al. (2008) or Kirves et al. (2011). As for different impacts by gender, again the only analyses come from Green's (2011) and Sousa-Poza's (2015) panel studies, where both identify these effects to be significant only for women. We hypothesize that:

(H3) Employability mitigates the negative impacts of job insecurity on mental health.

To study whether these moderating effects differ by gender, we adopt an exploratory

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<sup>3</sup> Green (2011) performed fixed-effects and random effects-models. According to the first random-effects model, employability seems to reduce the negative impacts of job insecurity for women's life satisfaction too. However, this significant association becomes non-significant when including personality as a control or when using fixed-effects models (which eliminate the effect of all time-constant confounders, like personality). Otterbach and Sousa-Poza (2015) performed these analyses across four age groups and observed moderating impacts in three of the age groups in the male sample and in one of the age groups in the female sample.

rather than a confirmatory approach. As we showed in the literature review, the theoretical perspectives and the empirical findings provide support for multiple (and even opposing) outcomes. Many of the mechanisms that generate gender differences in the moderating effects of employability might occur simultaneously and (partially) offset each other. To understand if these moderating effects of employability differ between women and men it is necessary to evaluate if employability can also compensate the gender-specific impacts of job insecurity on well-being. On the one hand, even if employability might reduce the direct negative impacts of job insecurity for both genders equally, the mitigating effects of employability on the spillover effects of job insecurity might still differ by gender. It has been shown that compared to men, women seem to react more strongly to the risk of job loss of their spouses or partners (Larson et al., 1994). Also, when men face job insecurity, they are more likely than women to reduce their time spent on child-related activities (Roeters et al., 2009). This would imply that the overall moderating effects of employability might be weaker for men because they might not reduce the negative impacts of job insecurity on the well-being of family members. Alternatively, the moderating effects of employability could also differ by gender if employability does not mitigate the negative effects of *risk of job change* in the same way for women and men. Because women tend to do most of the unpaid work and their paid jobs are more likely to be considered as complementary to men's, they could be more prone to facing family conflicts if accepting a new job requires re-negotiating the division of unpaid work with their male partners. These examples illustrate some of the multiple and simultaneous mechanisms by which employability might have gender-specific moderating impacts.

### **4.3 Data and Methods**

#### ***Data***

This study relies on the Professional Paths Survey conducted by the National Centre of Competence in Research (NCCR) LIVES at the University of Lausanne from 2012 to 2018.<sup>4</sup> This is one of the few panel datasets (along with the German SOEP and the Australian HILDA) that contains our independent and dependent variables of interest. Across seven waves it surveyed a random representative sample of residents aged

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<sup>4</sup> The datasets can be obtained at:  
<https://www.swissubase.ch/en/catalogue/studies/12734/17161/overview>

between 25 and 55 in the German and French-speaking parts of Switzerland. The 2012 wave included 2469 participants and the number decreased to 1075 in the 2018 wave. The analytical sample was restricted to employees (hence it did not include self-employed workers) who were observed at least in two waves during the observation period. This left a sample of 1646 individuals ( $\pm 42$  depending on the outcome), of which 795 ( $\pm 22$ ) were men and 852 ( $\pm 19$ ) were women. We provide detailed descriptive statistics of the analytical samples on tables 3.1.1-3.3.2 in the Supplementary Tables section at the end of this chapter.

### ***Measurements***

The variable (perceived) employability was assessed with the question 'If you lost your job, how easy would it be for you to find a comparable job?'. The possible responses were: *with great difficulty*, *mostly with difficulty*, *mostly easily*, and *very easily*. To facilitate the interpretation of results and due to the low number of cases for the last category, we dichotomize these values as 'Low employability' (*with great difficulty* and *mostly with difficulty*) and 'High employability' (pooling *mostly easily* and *very easily*).

Three variables were used to assess job security, two subjective ones and an objective one. The first variable reflects fear of job loss and is assessed with the question 'Except for an eventual end of contract, do you fear losing your job in the next 12 months?'. The three possible responses were: *Yes, a lot*, *Yes, somewhat*, *No, not so much*; and *No, not at all*. We dichotomized these categories into those who experienced job insecurity (*Yes, a lot* and *Yes, somewhat*) and those who did not (*No, not so much* and *No, not at all*). The second variable evaluates the risk of job loss in the last year and is assessed with the question 'In the past year, how often have you faced the possibility of losing your job or being made redundant?'. There were five possible responses: *never*, *one time*, *more than one time*, *constantly*, and *I have already been told I am to be dismissed*. We dichotomized these answers into those who did not experience job insecurity in the last year (*never*) and those who did at some point (*one time*, *more than one time*, and *constantly*). Finally, the last variable assesses whether the respondent has a permanent or a temporary contract.

Life satisfaction was assessed using the 5-item measure of Diener et al. (1985) with a 7-point Likert scale ranging from *strongly disagree* to *strongly agree*. Mental health was assessed using the GHQ-12 scale developed by Goldberg consisting of 12 items.

Finally, job satisfaction was originally assessed using a 5-item scale adapted from the Minnesota Satisfaction Questionnaire (Weiss et al., 1967). The scale measures satisfaction with the boss, satisfaction with job security, satisfaction with salary, satisfaction with working conditions, and satisfaction with relationships with colleagues on a 4-point Likert scale. To avoid overlapping issues we took the average of all the items except for satisfaction with job security. Hence, we assess the impacts on job satisfaction for multiple facets except for satisfaction with job security.

### ***Methods***

The use of panel data enables applying fixed-effects models, which allow us to track how changes in the independent variables affect the dependent variables in the same individuals. Hence, by analysing within-individual changes, fixed-effects models eliminate the effect of all the observed and unobserved time-constant confounders (such as personality, previous unemployment experiences, or social class of origin). As time-varying confounders, we first included age (as a categorical variable in 5-year intervals), which might affect well-being and perceived employability, as well as perceived job security and the possibility of obtaining a permanent position. Second, we included year dummies to account for year effects, such as changes in the economic situation. Although other studies have included confounders that account for the household situation (e.g. household income, marital status, or having children), we consider that these variables might also be colliders or open other back-door paths (Cinelli et al., 2022). Still, since this approach has been common in other studies (e.g. Green, 2011; Otterbach and Sousa-Poza, 2015), we repeated our analyses including these confounders and found that these alternative models obtained virtually the same results as our primary models (see tables A.1–A.3 in the Appendix). Other studies performing similar analyses have controlled for the regional unemployment rate, but we did not include this variable. The first reason is that the unemployment rate in Switzerland has remained low and stable during our observation window. The two Swiss regions with the highest unemployment rates (7%) are the canton of Ticino, which was not part of our sample, and the Lake Geneva region. The second reason is that even if local unemployment rates might have changed during the observation period, Switzerland is a small and interconnected country. Hence, workers are not as strongly reliant on local and regional (i.e. cantonal) labour market fluctuations as in the large countries where previous studies were carried out (Australia and Germany).

#### 4.4 Results

Before analysing how the interaction between job insecurity and employability are related to our three dependent variables, we first assess the *overall* association between job insecurity and well-being. We provide these models in tables B.1–B.3 in the Appendix.<sup>5</sup> These models indicate that *fear of job loss* and *risk of job loss in the last year* present significant and negative associations of similar magnitude for both women and men. The fear of job loss is related to a decrease of between 0.5 and 1 (within-individuals) standard deviations (*SD*) in well-being for men, and between 0.4 and 0.7 for women, depending on the outcome. Unsurprisingly, the coefficient of *risk of job loss in last year* is notably smaller, ranging from 0.2 to 0.4 (within-individuals) *SD* for men and 0.3 and 0.4 for women, depending on the outcome. The only variable that shows different associations for men and women is *temporary employment*. For men, *temporary employment* is negative and significantly associated with *job satisfaction* (0.4 *SD*) and *mental health* (0.2 *SD*), but its association with *life satisfaction* is not significant. For women, none of the associations of *temporary employment* with the dependent variables are significant.

In the next graphs we display the association of the interaction between each of our indicators for job insecurity (*fear of job loss*, *risk of job loss in last year*, and *temporary employment*) and (perceived) employability with *job satisfaction* (Figure 1), *life satisfaction* (Figure 2) and *mental health* (Figure 3), for men and women separately (left column and right column, respectively). Because we are interested in understanding if employability can mitigate the negative consequences of job insecurity on well-being, we also display on the left side of each column the coefficient of the association of job insecurity with the different dependent variables for those who perceive their employability to be ‘low’ (i.e. the reference category of the moderator). Comparing this coefficient with the coefficient of the interaction allows us to observe if perceiving employability to be ‘high’ can fully or only partially compensate the negative effects of job insecurity on well-being.

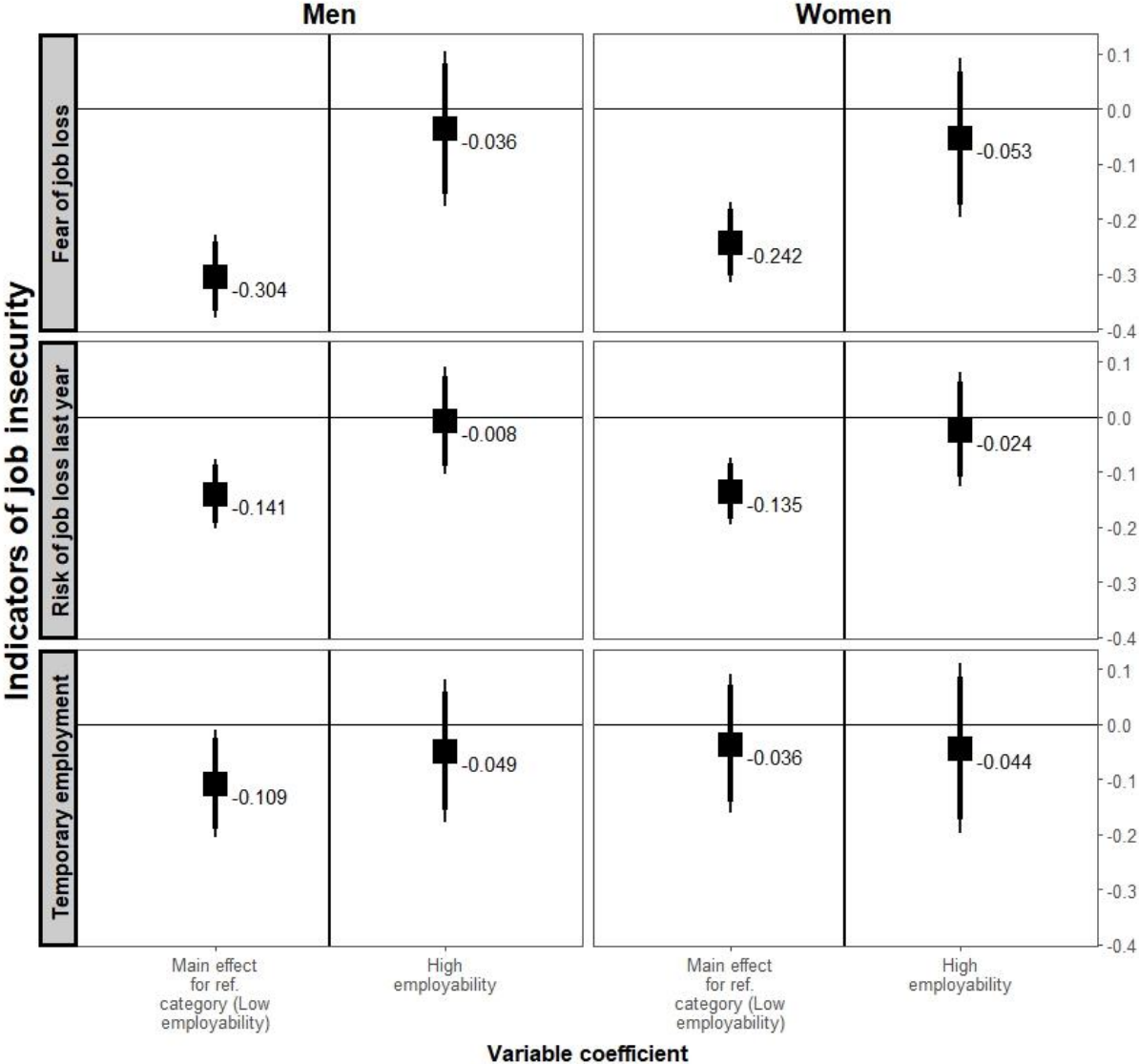
Figure 1 displays the results for job satisfaction. It shows that none of the interactions of employability with *fear of job loss* and *risk of job loss in last year* are significant,

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<sup>5</sup> The reason we perform separate analyses is that when an interaction between an independent variable and a moderator is introduced, models do not show the *overall* effect of the independent variable, but instead the effect of the independent variable for the reference group of the moderator.

suggesting that employability does not mitigate the negative impacts of subjective job insecurity on job satisfaction. Among men, the association between *temporary employment* and *job insecurity* was not moderated by employability either (whereas for women *temporary employment* was not related to lower job satisfaction). Hence, we reject the first hypothesis (H1).

Figure 1. Fixed-effects model results. Association of the interaction between employability and different measures of job insecurity with job satisfaction

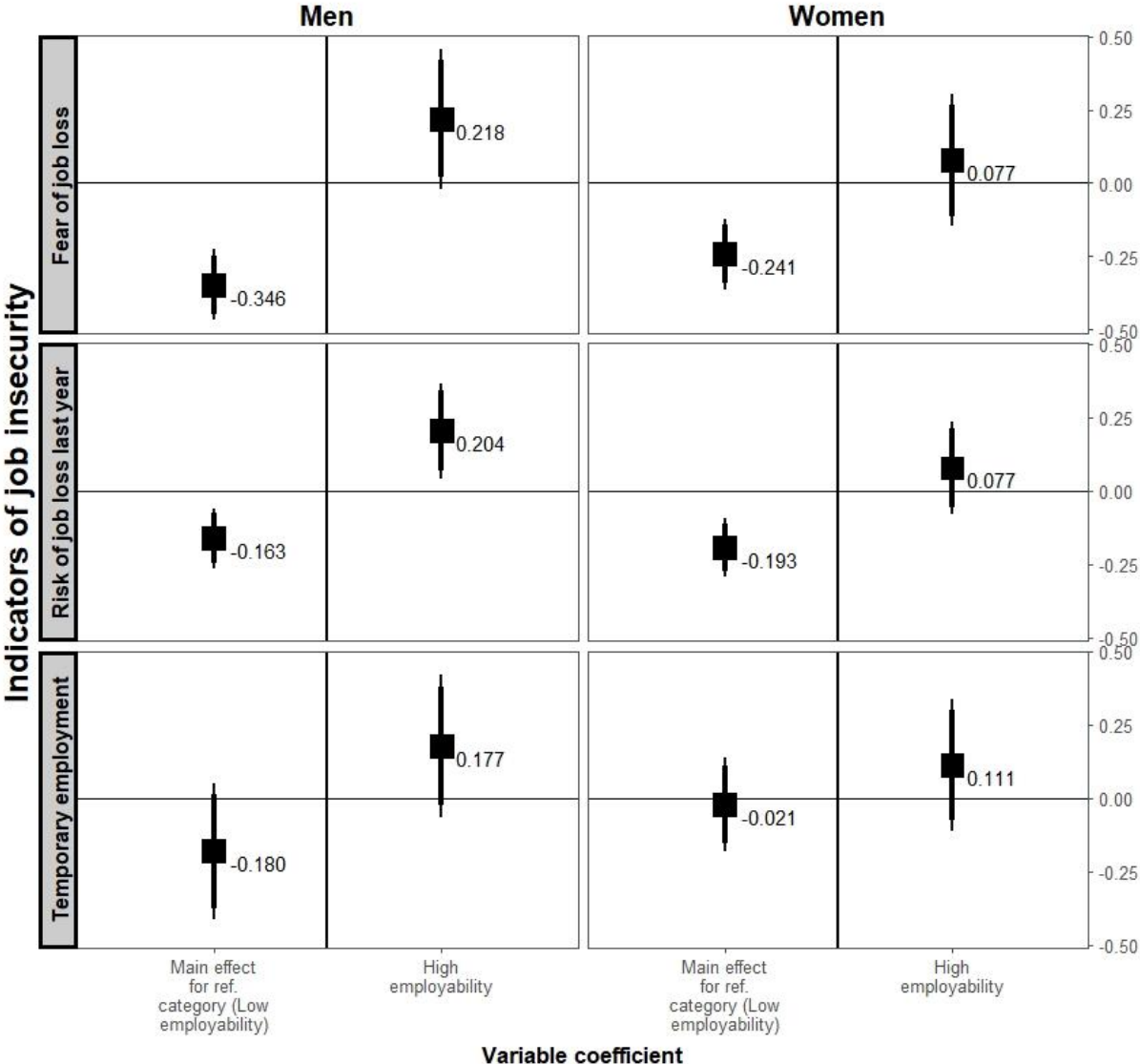


**Notes:** Thick lines indicate a 90% confidence interval and thin lines a 95% confidence interval. All models include control variables. Full results are available in Table 1.1 at the end of this chapter. Descriptive statistics of the sample can be found in Table 3.1.1 and Table 3.1.2

Figure 2 displays the results for life satisfaction. It suggests that employability sometimes mitigates the negative impacts of job insecurity on *life satisfaction*, but only among men. Namely, having ‘high’ employability compensates about two thirds of the

negative impacts of *fear of job loss* on *life satisfaction* ( $\beta = 0.218$ ) and fully offsets the negative impacts of *risk of job loss in last year* ( $\beta = 0.204$ ). The interaction between *employability* and *temporary employment* is not significant among men either, but *temporary employment* was not related to lower job satisfaction in the first place. Although the associations of *fear of job loss* and *risks of job loss in last year* with *life satisfaction* are also significant and negative among women, none of the interactions with employability are significant in this group. Because we observe these moderating effects to occur among men but not among women, the second hypothesis (H2) can be only partially accepted.

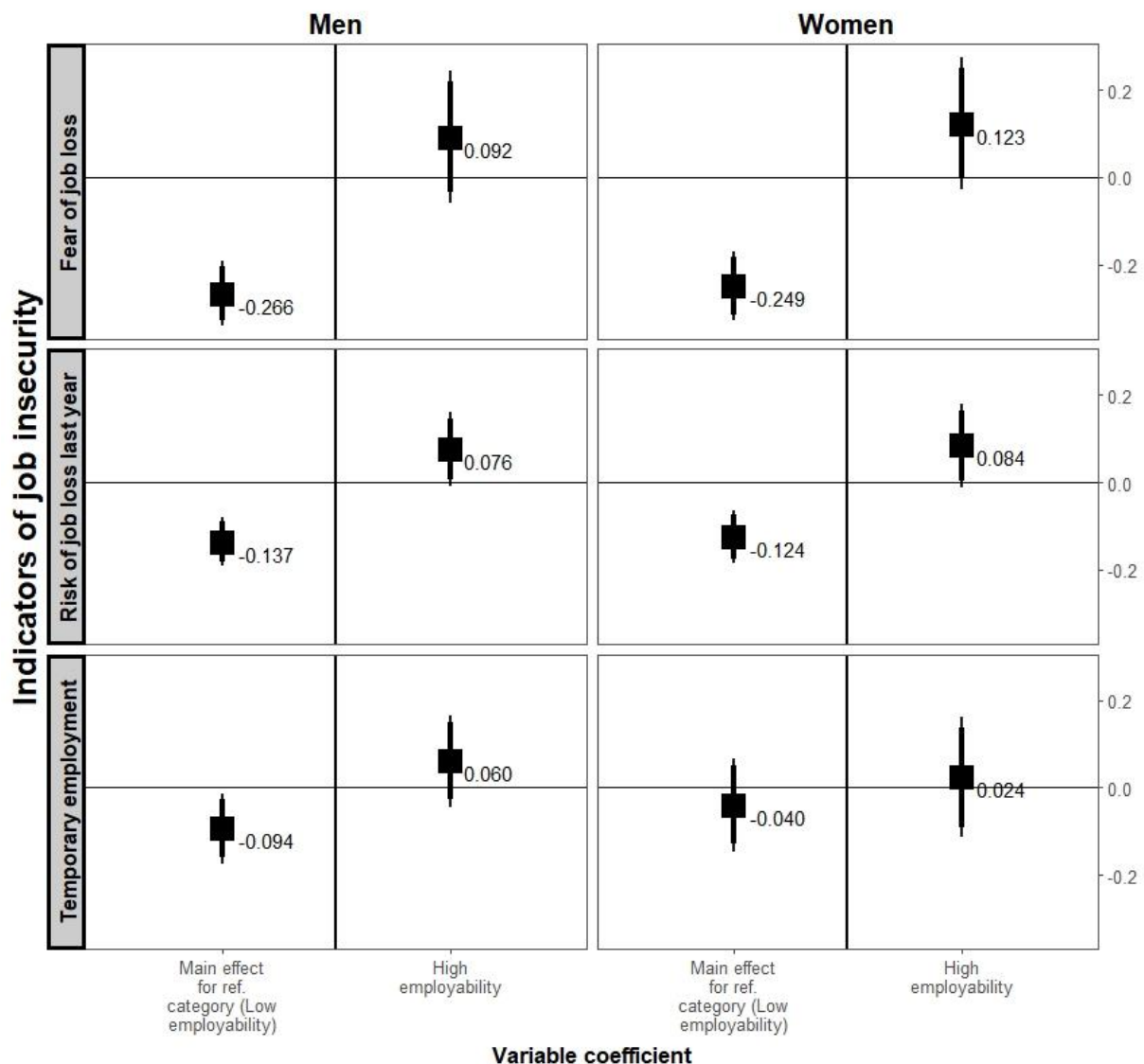
**Figure 2. Fixed-effects model results. Association of the interaction between employability and different measures of job insecurity with life satisfaction**



**Notes:** Thick lines indicate a 90% confidence interval and thin lines a 95% confidence interval. All models include control variables. Full results are available in Table 1.2 at the end of this chapter. Descriptive statistics of the sample can be found in Table 3.2.1 and Table 3.2.2

Figure 3 displays the results for mental health. It shows that the interactions of employability with *fear of job loss* and *temporary employment* are not significant for either women or men, thus indicating the absence of moderating effects. Instead, the interaction of employability with *risk of job loss over last year* is significant for both genders. For men, perceiving employability to be ‘high’ seems to compensate about half of the negative impacts of *risk of job loss over last year* ( $\beta = 0.076$ ), while for women ‘high’ employability appears to reduce two thirds ( $\beta = 0.084$ ) of these negative effects. Hence, because the moderating by employability was only observed for *fear of job loss over last year*, the third hypothesis (H3) can be only partially accepted.

**Figure 3. Fixed-effects model results. Association of the interaction between employability and different measures of job insecurity with mental health**



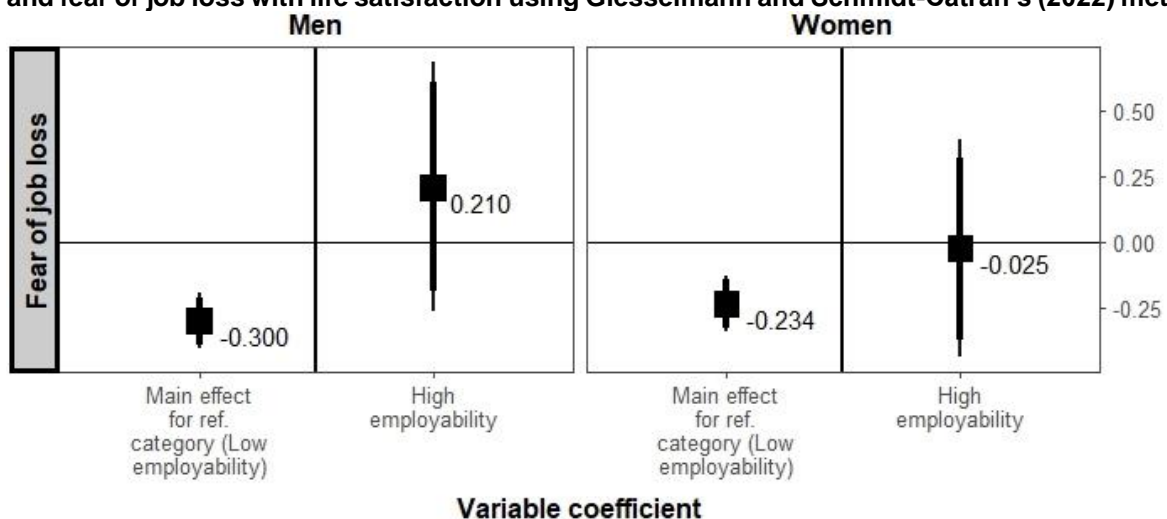
**Notes:** Thick lines indicate a 90% confidence interval and thin lines a 95% confidence interval. All models include control variables. Full results are available in Table 1.3 at the end of this chapter. Descriptive statistics of the sample can be found in Table 3.1.1 and Table 3.1.2



## Robustness tests

The use of interactions in fixed-effects models can sometimes yield biased estimates, according to Giesselmann and Schmidt-Catran (2022). The authors demonstrate that the classic approach to analyse interactions between two time-varying variables in fixed-effects models does not only estimate the variation within individuals, but also captures some of the between-individual variation. To eliminate this source of bias, the authors propose a solution that provides less efficient estimates in small samples (like ours). In addition, this method can only consider individuals that have been observed in more than two waves, which shrinks the sample size even more. For this reason, we repeated our analyses applying Giesselmann and Schmidt-Catran’s (2022) method but assuming that obtaining results which are similar to those of our main analyses could strengthen previous findings, while differing results could reduce – but not eliminate with certainty – the validity of our primary findings. For reasons of parsimony, we display the results of these analyses at the end of this chapter, in tables 2.1-2.3 and only show here the most relevant results in Figure 4 and Figure 5.

**Figure 4. Results of fixed-effects models. Association of the interaction between employability and fear of job loss with life satisfaction using Giesselmann and Schmidt-Catran’s (2022) method**

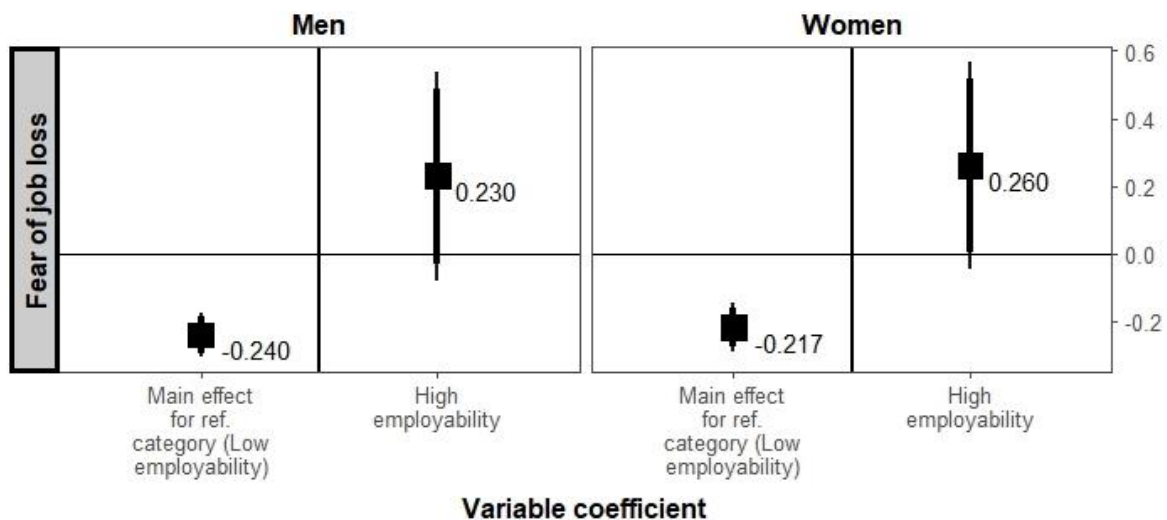


**Notes:** Thick lines indicate a 90% confidence interval and thin lines a 95% confidence interval. All models include control variables.

As shown in tables 2.1–2.3, these additional analyses present two main substantive differences with respect to our primary analyses. First, whereas our main models showed that employability seemed to reduce the negative effects of *fear of job loss* on life satisfaction among men, this association is no longer significant in the additional analyses (see Figure 4). Second, when applying Giesselmann and Schmidt-Catran’s (2022) method, we find that employability also appears to mitigate the negative impacts

of *fear of job loss* on women’s mental health (see Figure 5). The rest of significant interactions (the moderation by employability on the negative association between *risk of job loss over last year* and life satisfaction among men, and the moderation by employability on the negative association between risk of job loss over the last year and mental health for both genders) also remain significant in the new analyses. This suggests that these moderating effects might be less gendered than originally shown. Specifically, in our primary analyses, employability appears to have moderating effects in three occasions for men and in one occasion for women, but in the robustness tests these moderating effects are significant in two occasions for women and in two occasions for men.

**Figure 5. Results of fixed-effects models. Association of the interaction between employability and fear of job loss with mental health using Giesselmann and Schmidt-Catran’s (2022) method**



**Notes:** Thick lines indicate a 90% confidence interval and thin lines a 95% confidence interval. All models include control variables.

#### 4.5 Conclusion

The flexicurity strategy promoted by many European governments attempts to compensate workers’ greater exposure to labour market insecurity with generous unemployment benefits and improved employability (European Commission, 2007). The goal of this article was to explore if greater employability can also reduce the negative consequences of job insecurity on well-being. More specifically, we assessed the negative impacts of job insecurity on three facets of well-being: job satisfaction, life satisfaction, and mental health. We also adopted a comprehensive assessment of job insecurity by analysing two subjective indicators (fear of job loss and risk of job loss in the last year) and an objective one (having temporary employment). Because previous

studies have suggested that the moderating effects of employability differ by gender, we also performed separate analyses for men and women. We analysed panel data of from Switzerland using fixed-effects models, which allowed us to eliminate the effect of time-constant confounders.

Results showed that in most cases the interactions of the different indicators of job insecurity with employability were not significantly associated with well-being outcomes. In particular, we found that job insecurity was negatively associated with well-being in 14 different analyses, but employability seemed to moderate only four of these associations. Therefore, the negative impacts of job insecurity on well-being were rarely offset by an optimistic assessment about the possibilities of finding another comparable job. These findings align with previous research, stressing that job insecurity contributes to social divides in well-being. Interestingly, even in Switzerland, a country with low structural unemployment and generous unemployment benefits, job insecurity still exerts negative impacts on well-being, also among workers who perceive themselves as highly employable.

We also observed some differences for the three facets of well-being that we studied. As regards job satisfaction, our results were consistent with Svetek's (2020) findings using cross-sectional data, namely, employability did not seem to reduce the negative impacts of job insecurity on job satisfaction. For life satisfaction, perceiving employability to be 'high' – instead of 'low' – appeared to reduce the impacts of *risk of job loss in last year*, but only among men. Employability also appeared to eliminate the negative effects of *fear of job loss* on life satisfaction for the sample of men, but this interaction was not supported in the robustness tests. Regarding mental health, the results indicated that employability partially offsets the impacts of *risk of job loss in last year* for both men and women. The robustness tests also suggested that employability could also lower the impacts of *fear of job loss* on women's mental health. Overall, this might indicate that mental health is the well-being indicator that is most sensitive to the attenuating effects of employability.

If we differentiate our results by our three measures of job insecurity, we found little evidence that employability moderates the effects of *fear of job loss*, but it frequently offsets the negative effects of *risk of job loss in last year*. This suggests that employability might be more effective in reducing the *scarring* effects of job insecurity on well-being than the current *fear of job loss*, but our analyses do not allow us to

confirm this assumption. The negative impacts of having *temporary employment* were not moderated by employability. However, *temporary employment* was negatively associated only with men's job satisfaction and mental health.

A secondary goal was to investigate if the moderating effects of employability differ by gender, as previous studies have suggested. In the literature review we found reasonable theoretical arguments and some empirical findings that supported multiple (and even contradictory) outcomes. Our primary results and robustness tests suggested that employability can reduce the negative effects of job insecurity for women as often as for men, but this does not occur symmetrically. For mental health, our primary analyses suggested that employability can reduce the negative impacts of *risk of job loss in last year* for both genders. The robustness tests additionally suggested that employability moderates the effects of *fear of job loss* for women only, in line with Green's (2011) and Otterbach and Sousa-Poza's (2015) findings. For life satisfaction, the moderating effects of employability were found only for men. That this interaction is only significant for men is consistent with the two previous studies that performed similar analyses by gender and accounted for time-constant unobserved confounders (i.e. Green, 2011; Otterbach and Sousa-Poza's, 2015). The fact that this persistent pattern is observed in samples from three different countries suggests that there might be some gender-specific negative effects of job insecurity on life satisfaction which employability can mitigate for men but not (or less predominantly) for women.

We conclude that even if employability helps, it does not seem to shield workers from the negative impacts of job insecurity, regardless of whether job insecurity is assessed subjectively (i.e. fear of job loss and risk of job loss) or objectively (having a temporary contract). As we surmised in the literature review, this could occur because employability might not offset the uncertainty caused by the *risk of job change*, even if it may eliminate the negative effects of the *risk of unemployment*. Similarly, the spillover effects of job insecurity on organizational outcomes and the well-being of family members might not be compensated by the certainty that another job can be found. To understand the (in)efficacy of employability to moderate the negative impacts of job insecurity on well-being, future studies need to identify the mechanisms that explain why this moderation occurs or not. For this purpose, researchers should consider that the risk of job loss may have negative impacts beyond those solely caused by the *risk*

*of unemployment.* Similarly, identifying the gender-specific drivers of the direct and indirect effects of job insecurity on well-being can also help to understand why the moderating effects of employability present certain systematic gender differences.

Although we cannot claim causality, our results suggest that the flexicurity approach falls short in compensating for the non-pecuniary impacts of labour market flexibility among individuals who have not yet lost their jobs but are at risk of doing so soon. This finding holds significant relevance in policy discussions, as it challenges the common assumption that outsiders would inherently benefit from a flexible labour market with high employment opportunities. Our results indicate that outsiders would in most cases experience the negative impacts of insecure jobs (either objectively or subjectively defined), regardless of whether they perceive they can easily find another job. This means that a flexible labour market with readily available jobs would have very limited benefits for outsiders. Of course, this only concerns workers' well-being; in such labour market, outsiders might still obtain greater pecuniary benefits and better career prospects. Our results hold significance from a managerial and human resources standpoint too. The observation of negative impacts on job satisfaction, life satisfaction, and mental health among workers with high employability indicates that job insecurity can lead to declines in productivity. This could have adverse effects, not only on companies' revenues, but also on workers' long-term employment outcomes. In fact, if employees with insecure job contracts experience lower productivity, they may become less likely to obtain secure positions.

Finally, our study presents several limitations. Although the use of panel data allowed us to eliminate the effect of time-constant confounders, we cannot eliminate the effect of the time-varying confounders nor rule out reverse causality. Workers with poor mental health might be more likely to become temporary employees, which biases our estimates, and even more so if we consider that poor mental health might also be a determinant of low perceived employability (Dawson et al., 2015). Other studies might also obtain more precise estimates by using composite measures of employability, since our study only used a 1-item indicator.

#### **4.6 Supplementary Tables**

**Table 1.1: Full results of fixed-effects models in Figure 1. Association of the interaction between employability and different measures of job insecurity with job satisfaction**

	<u>Job insecurity measures</u>					
	Fear of job loss		Risk of job loss in last year		Temporary employment	
	Men	Women	Men	Women	Men	Women
	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)
<b>Job insecurity (ref: No)</b>						
Yes	-0.304*** (0.03832)	-0.242*** (0.03737)	-0.140*** (0.03211)	-0.135*** (0.03060)	-0.108* (0.04976)	-0.035 (0.06427)
<b>Employability (ref: Low)</b>						
High	-0.0121 (0.02195)	0.0203 (0.02211)	-0.0013 (0.02333)	0.0179 (0.02273)	0.0019 (0.02289)	0.0310 (0.02195)
<b>Job insecurity (Yes) * Employability (High)</b>	-0.0358 (0.07153)	-0.0528 (0.07340)	-0.0078 (0.04939)	-0.0241 (0.05258)	-0.0489 (0.06565)	-0.0436 (0.07899)
<b>Year (ref: 2012)</b>						
2013	-0.0525** (0.01982)	-0.0309 (0.02046)	-0.0508* (0.02082)	-0.0436* (0.02063)	-0.0480* (0.02024)	-0.0316 (0.02067)
2014	-0.0311 (0.02165)	-0.0680** (0.02407)	-0.0267 (0.02225)	-0.0828*** (0.02424)	-0.0240 (0.02217)	-0.0708** (0.02437)
2015	-0.0392 (0.02510)	-0.0805** (0.02614)	-0.0368 (0.02576)	-0.1027*** (0.02646)	-0.0454+ (0.02570)	-0.0853** (0.02622)
2016	-0.0351 (0.02797)	-0.0627* (0.02855)	-0.0370 (0.02860)	-0.0771** (0.02911)	-0.0455 (0.02858)	-0.0656* (0.02863)
2017	-0.0189 (0.03237)	-0.0665* (0.03250)	-0.0193 (0.03364)	-0.0768* (0.03298)	-0.0269 (0.03264)	-0.0690* (0.03276)
2018	-0.0491 (0.03538)	-0.0875* (0.03761)	-0.0475 (0.03586)	-0.0964* (0.03800)	-0.0580 (0.03561)	-0.0945* (0.03759)
<b>Age (ref: 25-29)</b>						
30-35	-0.0475 (0.05833)	0.0096 (0.06839)	-0.0502 (0.06251)	0.0179 (0.06253)	-0.0429 (0.05977)	0.0092 (0.07047)
36-40	-0.1287+ (0.07650)	0.0183 (0.08214)	-0.1307 (0.07953)	0.0326 (0.07857)	-0.1282+ (0.07683)	0.0135 (0.08454)
41-45	-0.1451 (0.08987)	-0.0005 (0.09919)	-0.1607+ (0.09264)	0.0248 (0.09667)	-0.1432 (0.09001)	-0.0064 (0.10190)
46-50	-0.1482 (0.10473)	0.0136 (0.11459)	-0.1837+ (0.10837)	0.0332 (0.11293)	-0.1583 (0.10528)	0.0074 (0.11707)
51-55	-0.1703 (0.12064)	0.0499 (0.12749)	-0.2147+ (0.12398)	0.0774 (0.12692)	-0.1730 (0.12112)	0.0454 (0.13015)
56-60	-0.1547 (0.13737)	0.0956 (0.14214)	-0.1927 (0.14063)	0.1300 (0.14207)	-0.1431 (0.13729)	0.0937 (0.14461)
61-66	-0.1935 (0.16453)	0.1743 (0.16409)	-0.2141 (0.16608)	0.2206 (0.16307)	-0.1507 (0.16288)	0.1855 (0.16543)
<b>Constant</b>	3.3274*** (0.08234)	3.1815*** (0.08763)	3.3389*** (0.08546)	3.1777*** (0.08485)	3.3013*** (0.08265)	3.1659*** (0.09016)
<b>Observations</b>	3929	4147	3755	3960	3933	4150
<b>Individuals</b>	816	871	779	836	817	871

**Note:** + p < 0.10, \*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001

**Table 1.2: Full results of fixed-effects models in Figure 2. Association of the interaction between employability and different measures of job insecurity with life satisfaction**

	<u>Job insecurity measures</u>					
	Fear of job loss		Risk of job loss in last year		Temporary employment	
	Men	Women	Men	Women	Men	Women
	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)
<b>Job insecurity (ref: No)</b>						
Yes	-0.346*** (0.06085)	-0.241*** (0.06138)	-0.163** (0.05190)	-0.193*** (0.05003)	-0.180 (0.11767)	-0.020 (0.08090)
<b>Employability (ref: Low)</b>						
High	0.0534 (0.03276)	0.0838* (0.03714)	0.0459 (0.03490)	0.0733+ (0.03910)	0.0674+ (0.03496)	0.0933* (0.03835)
<b>Job insecurity (Yes) * Employability (High)</b>	0.2183+ (0.12075)	0.0770 (0.11433)	0.2039* (0.08269)	0.0772 (0.08078)	0.1774 (0.12344)	0.1115 (0.11415)
<b>Year (ref: 2012)</b>						
2013	-0.0616+ (0.03397)	-0.0662+ (0.03395)	-0.0555 (0.03436)	-0.0679* (0.03410)	-0.0550 (0.03417)	-0.0650+ (0.03401)
2014	0.0309 (0.03808)	-0.0549 (0.04072)	0.0399 (0.03816)	-0.0587 (0.04106)	0.0370 (0.03813)	-0.0584 (0.04071)
2015	0.0314 (0.04296)	-0.0440 (0.04766)	0.0264 (0.04348)	-0.0412 (0.04825)	0.0266 (0.04333)	-0.0471 (0.04808)
2016	-0.0247 (0.04559)	-0.0882+ (0.04750)	-0.0319 (0.04519)	-0.0977* (0.04816)	-0.0379 (0.04524)	-0.0930+ (0.04784)
2017	-0.0101 (0.05608)	-0.0519 (0.05603)	-0.0150 (0.05591)	-0.0679 (0.05657)	-0.0197 (0.05578)	-0.0566 (0.05624)
2018	-0.0185 (0.05814)	-0.0421 (0.06007)	-0.0115 (0.05922)	-0.0520 (0.06029)	-0.0339 (0.05875)	-0.0502 (0.06048)
<b>Age (ref: 25-29)</b>						
30-35	0.2193+ (0.12966)	0.0413 (0.11924)	0.2355+ (0.13007)	0.0423 (0.11751)	0.2313+ (0.13069)	0.0492 (0.11916)
36-40	0.1778 (0.16149)	0.1259 (0.14103)	0.1928 (0.16113)	0.1458 (0.13958)	0.1930 (0.16158)	0.1325 (0.14131)
41-45	0.2311 (0.17506)	-0.0755 (0.17262)	0.2307 (0.17480)	-0.0515 (0.17155)	0.2521 (0.17508)	-0.0683 (0.17319)
46-50	0.2272 (0.19160)	-0.1736 (0.19638)	0.2209 (0.19115)	-0.1529 (0.19521)	0.2455 (0.19153)	-0.1675 (0.19661)
51-55	0.1848 (0.20799)	-0.0071 (0.21579)	0.1802 (0.20782)	0.0299 (0.21432)	0.2163 (0.20768)	0.0019 (0.21575)
56-60	0.2388 (0.22723)	0.0314 (0.24263)	0.2480 (0.22686)	0.0838 (0.24112)	0.2827 (0.22618)	0.0464 (0.24234)
61-66	0.5241* (0.26521)	0.0061 (0.28238)	0.5220* (0.26555)	0.0435 (0.28267)	0.5992* (0.26506)	0.0369 (0.28275)
<b>Constant</b>	5.0816*** (0.15859)	5.3623*** (0.15521)	5.0726*** (0.15835)	5.3615*** (0.15418)	5.0336*** (0.15913)	5.3340*** (0.15471)
<b>Observations</b>	3727	3962	3705	3923	3729	3964
<b>Individuals</b>	776	840	773	834	777	840

**Note:** + p < 0.10, \*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001

**Table 1.3: Full results of fixed-effects models in Figure 3. Association of the interaction between employability and different measures of job insecurity with mental health**

	<u>Job insecurity measures</u>					
	Fear of job loss		Risk of job loss in last year		Temporary employment	
	Men	Women	Men	Women	Men	Women
	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)
<b>Job insecurity (ref: No)</b>						
Yes	-0.266*** (0.03738)	-0.248*** (0.04008)	-0.136*** (0.02841)	-0.124*** (0.03073)	-0.093* (0.04082)	-0.039 (0.05424)
<b>Employability (ref: Low)</b>						
High	0.0238 (0.01648)	0.0489* (0.02000)	0.0249 (0.01834)	0.0517* (0.02059)	0.0367* (0.01811)	0.0655** (0.02046)
<b>Job insecurity (Yes) * Employability (High)</b>	0.0919 (0.07715)	0.1230 (0.07690)	0.0762+ (0.04287)	0.0844+ (0.04866)	0.0599 (0.05323)	0.0240 (0.06941)
<b>Year (ref: 2012)</b>						
2013	-0.0144 (0.01718)	-0.0184 (0.02109)	-0.0132 (0.01735)	-0.0200 (0.02105)	-0.0118 (0.01718)	-0.0190 (0.02097)
2014	-0.0089 (0.01890)	0.0125 (0.02305)	-0.0036 (0.01919)	0.0094 (0.02328)	-0.0042 (0.01914)	0.0111 (0.02319)
2015	-0.0261 (0.01998)	-0.0793** (0.02537)	-0.0312 (0.02063)	-0.0765** (0.02576)	-0.0305 (0.0208)	-0.0817** (0.02582)
2016	-0.0023 (0.02244)	-0.0161 (0.02772)	-0.0088 (0.02249)	-0.0186 (0.02838)	-0.0121 (0.02279)	-0.0192 (0.02808)
2017	-0.0348 (0.02651)	-0.0661* (0.03276)	-0.0394 (0.02623)	-0.0713* (0.03314)	-0.0415 (0.02666)	-0.0684* (0.03308)
2018	-0.0140 (0.02780)	-0.0248 (0.03491)	-0.0140 (0.02824)	-0.0287 (0.03538)	-0.0239 (0.0284)	-0.0307 (0.03519)
<b>Age (ref: 25-29)</b>						
30-35	0.0682 (0.05537)	-0.0447 (0.04371)	0.0749 (0.05567)	-0.0444 (0.04447)	0.0764 (0.05662)	-0.0437 (0.04441)
36-40	-0.0376 (0.06707)	-0.0435 (0.06354)	-0.0343 (0.06697)	-0.0413 (0.06440)	-0.0335 (0.06773)	-0.0479 (0.06410)
41-45	-0.0371 (0.07478)	-0.0697 (0.08528)	-0.0394 (0.07444)	-0.0670 (0.08684)	-0.0307 (0.07513)	-0.0750 (0.08640)
46-50	-0.0729 (0.08425)	-0.0778 (0.10137)	-0.0839 (0.08398)	-0.0795 (0.10272)	-0.0714 (0.08483)	-0.0859 (0.10226)
51-55	-0.0775 (0.09492)	0.0050 (0.11292)	-0.0847 (0.09453)	0.0085 (0.11430)	-0.0681 (0.09541)	-0.0013 (0.11406)
56-60	-0.0249 (0.10740)	-0.0052 (0.12823)	-0.0265 (0.10717)	0.0009 (0.12962)	-0.0058 (0.10804)	-0.0057 (0.12924)
61-66	0.002 (0.12678)	0.0182 (0.1521)	0.0025 (0.12613)	0.0323 (0.15507)	0.0427 (0.12649)	0.0350 (0.15391)
<b>Constant</b>	3.2006*** (0.06884)	3.1300*** (0.07447)	3.1995*** (0.06923)	3.1275*** (0.07560)	3.1710*** (0.06908)	3.1131*** (0.07538)
<b>Observations</b>	3724	3957	3702	3918	3726	3959
<b>Individuals</b>	775	839	772	833	776	839

**Note:** + p < 0.10, \*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001



**Table 2.1: Results of fixed-effects models. Robustness tests of models in Figure 1. Association of the interaction between employability and different measures of job insecurity with job satisfaction, using Giesselmann and Schmidt-Catran's (2022) method**

	<u>Job insecurity measures</u>					
	Fear of job loss		Risk of job loss in last year		Temporary employment	
	Men	Women	Men	Women	Men	Women
	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)
<b>Job insecurity (ref: No)</b>						
Yes	-0.327*** (0.03763)	-0.253*** (0.03436)	-0.124** (0.03817)	-0.071 (0.04833)	-0.149*** (0.02937)	-0.148*** (0.02856)
<b>Employability (ref: Low)</b>						
High	-0.0158 (0.02234)	0.0057 (0.02245)	-0.0024 (0.02286)	0.0185 (0.02284)	0.0004 (0.02302)	0.0040 (0.02284)
<b>Job insecurity (Yes) * Employability (High)</b>						
	-0.1121 (0.10686)	0.1427 (0.13105)	-0.1016 (0.12366)	-0.0130 (0.22050)	-0.0113 (0.08342)	0.0557 (0.10499)
<b>Year (ref: 2012)</b>						
2013	-0.0683** (0.02137)	-0.0363+ (0.02134)	-0.0632** (0.02179)	-0.0351 (0.02157)	-0.0657** (0.02229)	-0.0420+ (0.02165)
2014	-0.0354 (0.02248)	-0.0738** (0.02500)	-0.0279 (0.02313)	-0.0761** (0.02544)	-0.0349 (0.02320)	-0.0810** (0.02531)
2015	-0.0459+ (0.02554)	-0.0898*** (0.02682)	-0.0510+ (0.02630)	-0.0952*** (0.02692)	-0.0436+ (0.02630)	-0.1032*** (0.02722)
2016	-0.0391 (0.02861)	-0.0749* (0.02917)	-0.0492+ (0.02927)	-0.0780** (0.02928)	-0.0422 (0.02928)	-0.0796** (0.02981)
2017	-0.0249 (0.03301)	-0.0839* (0.03312)	-0.0305 (0.03328)	-0.0860* (0.03337)	-0.0262 (0.03436)	-0.0826* (0.03358)
2018	-0.0572 (0.03603)	-0.1038** (0.03846)	-0.0638+ (0.03620)	-0.1110** (0.03842)	-0.0543 (0.03662)	-0.1028** (0.03870)
<b>Age (ref: 25-29)</b>						
30-35	-0.0369 (0.06063)	0.0087 (0.07319)	-0.0406 (0.06266)	0.0059 (0.07517)	-0.0456 (0.06406)	-0.0025 (0.06639)
36-40	-0.1211 (0.07899)	0.0475 (0.08679)	-0.1357+ (0.07993)	0.0413 (0.08898)	-0.1412+ (0.08157)	0.0396 (0.08185)
41-45	-0.1381 (0.09238)	0.0392 (0.10385)	-0.1519 (0.09297)	0.0309 (0.10645)	-0.1708+ (0.09452)	0.0335 (0.10018)
46-50	-0.1336 (0.10752)	0.0771 (0.11936)	-0.1608 (0.10849)	0.0700 (0.12186)	-0.1949+ (0.11068)	0.0610 (0.11654)
51-55	-0.1549 (0.12353)	0.1170 (0.13244)	-0.1782 (0.12451)	0.1118 (0.13507)	-0.2249+ (0.12643)	0.1077 (0.13070)
56-60	-0.1411 (0.14050)	0.1638 (0.14759)	-0.1552 (0.14083)	0.1632 (0.15001)	-0.2067 (0.14352)	0.1679 (0.14641)
61-66	-0.1899 (0.16405)	0.2519 (0.16950)	-0.1771 (0.16271)	0.2686 (0.17093)	-0.2689 (0.16473)	0.2682 (0.16729)
<b>Constant</b>	0.0004*** (0.00001)	-0.0004*** (0.00004)	0.0001*** (0.00001)	-0.0002*** (0.00004)	-0.0001 (0.00005)	0.0006*** (0.00006)
<b>Observations</b>	3605	3856	3607	3859	3440	3683
<b>Individuals</b>	654	725	654	725	621	697

**Note:** + p < 0.10, \*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001

**Table 2.2: Results of fixed-effects models. Robustness tests of models in Figure 1. Association of the interaction between employability and different measures of job insecurity with mental health, using Giesselmann and Schmidt-Catran's (2022) method**

	<u>Job insecurity measures</u>					
	Fear of job loss		Risk of job loss in last year		Temporary employment	
	Men	Women	Men	Women	Men	Women
	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)
<b>Job insecurity (ref: No)</b>						
Yes	-0.299*** (0.05420)	-0.234*** (0.05485)	-0.105* (0.04600)	-0.165*** (0.04814)	-0.106 (0.09203)	0.032 (0.06766)
<b>Employability (ref: Low)</b>						
High	0.0686* (0.03389)	0.0705+ (0.03823)	0.0732* (0.03441)	0.0657+ (0.03840)	0.0823* (0.03459)	0.0835* (0.03896)
<b>Job insecurity (Yes) * Employability (High)</b>	0.2097 (0.24165)	-0.0249 (0.20965)	0.2629+ (0.15310)	0.0994 (0.16045)	-0.0472 (0.23632)	0.1511 (0.29823)
<b>Year (ref: 2012)</b>						
2013	-0.0479 (0.03598)	-0.0523 (0.03495)	-0.0441 (0.03643)	-0.0544 (0.03503)	-0.0428 (0.03627)	-0.0478 (0.03494)
2014	0.0375 (0.04017)	-0.0429 (0.04204)	0.0463 (0.04031)	-0.0457 (0.04234)	0.0434 (0.04030)	-0.0439 (0.04199)
2015	0.0343 (0.04473)	-0.0401 (0.04862)	0.0327 (0.04524)	-0.0385 (0.04915)	0.0304 (0.04492)	-0.0403 (0.04899)
2016	-0.0191 (0.04687)	-0.0841+ (0.04814)	-0.0239 (0.04648)	-0.0930+ (0.04873)	-0.0298 (0.04664)	-0.0861+ (0.04860)
2017	0.0031 (0.05742)	-0.0495 (0.05665)	0.0004 (0.05711)	-0.0695 (0.05709)	-0.0030 (0.05713)	-0.0509 (0.05686)
2018	-0.0123 (0.05956)	-0.0345 (0.06081)	0.0001 (0.06073)	-0.0481 (0.06107)	-0.0228 (0.06023)	-0.0399 (0.06105)
<b>Age (ref: 25-29)</b>						
30-35	0.2417+ (0.13438)	0.0166 (0.12481)	0.2503+ (0.13547)	0.0203 (0.12225)	0.2503+ (0.13534)	0.0267 (0.12520)
36-40	0.1830 (0.16729)	0.1237 (0.14667)	0.1852 (0.16787)	0.1408 (0.14414)	0.1852 (0.16725)	0.1298 (0.14710)
41-45	0.2303 (0.18090)	-0.0739 (0.17848)	0.2149 (0.18144)	-0.0506 (0.17641)	0.2323 (0.18074)	-0.0673 (0.17876)
46-50	0.2350 (0.19803)	-0.1594 (0.20284)	0.2053 (0.19845)	-0.1306 (0.20064)	0.2300 (0.19778)	-0.1509 (0.20270)
51-55	0.1666 (0.21445)	-0.0042 (0.22219)	0.1318 (0.21519)	0.0362 (0.21949)	0.1689 (0.21372)	0.0105 (0.22170)
56-60	0.2410 (0.23471)	0.0456 (0.24881)	0.2092 (0.23533)	0.1040 (0.24613)	0.2532 (0.23338)	0.0662 (0.24813)
61-66	0.4995+ (0.27156)	0.0411 (0.28803)	0.4531+ (0.27305)	0.0878 (0.28721)	0.5409* (0.27084)	0.0756 (0.28807)
<b>Constant</b>	0.0001 (0.00016)	0.0008*** (0.00017)	0.0007*** (0.00014)	0.0018*** (0.00019)	0.0004* (0.00016)	0.0011*** (0.00017)
<b>Observations</b>	3407	3671	3387	3639	3407	3673
<b>Individuals</b>	616	694	614	691	616	694

**Note:** + p < 0.10, \*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001

**Table 2.3: Results of fixed-effects models. Robustness tests of models in Figure 3. Association of the interaction between employability and different measures of job insecurity with mental health, using Giesselmann and Schmidt-Catran's (2022) method**

	<u>Job insecurity measures</u>					
	Fear of job loss		Risk of job loss in last year		Temporary employment	
	Men	Women	Men	Women	Men	Women
	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)
<b>Job insecurity (ref: No)</b>						
Yes	-0.240*** (0.03331)	-0.217*** (0.03614)	-0.113*** (0.02496)	-0.085** (0.02636)	-0.075* (0.0353)	-0.018 (0.04237)
<b>Employability (ref: Low)</b>						
High	0.0350* (0.01742)	0.0600** (0.02084)	0.0377* (0.01788)	0.0645** (0.02131)	0.0446* (0.01801)	0.0686** (0.02133)
<b>Job insecurity (Yes) * Employability (High)</b>	0.2298 (0.15691)	0.2599+ (0.15648)	0.1393+ (0.08439)	0.2738* (0.12482)	0.1203 (0.11816)	-0.1143 (0.22258)
<b>Year (ref: 2012)</b>						
2013	-0.0160 (0.01830)	-0.0096 (0.02246)	-0.0146 (0.01854)	-0.0059 (0.02242)	-0.0139 (0.0183)	-0.0083 (0.02233)
2014	-0.0083 (0.01996)	0.0167 (0.02399)	-0.0037 (0.02027)	0.0157 (0.0242)	-0.0053 (0.0202)	0.0154 (0.02419)
2015	-0.0232 (0.02068)	-0.0737** (0.02622)	-0.0281 (0.02144)	-0.0704** (0.02662)	-0.0272 (0.02155)	-0.0762** (0.02671)
2016	-0.0011 (0.02310)	-0.0151 (0.02850)	-0.0087 (0.02318)	-0.0162 (0.02914)	-0.0117 (0.02336)	-0.0160 (0.02874)
2017	-0.0312 (0.02711)	-0.0699* (0.03364)	-0.0371 (0.0267)	-0.0741* (0.03407)	-0.0383 (0.0271)	-0.0694* (0.03399)
2018	-0.0149 (0.02849)	-0.0304 (0.03577)	-0.0158 (0.0289)	-0.0311 (0.03624)	-0.0266 (0.02897)	-0.0348 (0.03605)
<b>Age (ref: 25-29)</b>						
30-35	0.0673 (0.05787)	-0.0273 (0.04445)	0.0715 (0.05836)	-0.0259 (0.04471)	0.077 (0.0593)	-0.0267 (0.04552)
36-40	-0.0402 (0.06979)	-0.0148 (0.06514)	-0.0366 (0.07003)	-0.0084 (0.06574)	-0.0326 (0.0707)	-0.0185 (0.06599)
41-45	-0.0382 (0.07763)	-0.0341 (0.08728)	-0.0412 (0.07756)	-0.0268 (0.08907)	-0.0307 (0.0781)	-0.0407 (0.08876)
46-50	-0.0740 (0.08727)	-0.0223 (0.10386)	-0.0864 (0.08742)	-0.0171 (0.10542)	-0.0713 (0.08795)	-0.0300 (0.10514)
51-55	-0.0882 (0.09799)	0.0666 (0.11587)	-0.0982 (0.09789)	0.0781 (0.11761)	-0.078 (0.0983)	0.0599 (0.11755)
56-60	-0.0233 (0.11121)	0.0683 (0.13187)	-0.0302 (0.1112)	0.0837 (0.13349)	-0.0046 (0.11193)	0.0668 (0.13334)
61-66	-0.0269 (0.12642)	0.0976 (0.15623)	-0.0314 (0.12611)	0.1234 (0.15952)	0.0154 (0.12646)	0.1124 (0.15841)
<b>Constant</b>	-0.0003** (0.00009)	0.0006*** (0.00008)	0.0002** (0.00007)	0.0002* (0.00008)	0.0000 (0.00008)	0.0003*** (0.00008)
<b>Observations</b>	3404	3662	3384	3627	3404	3664
<b>Individuals</b>	615	691	613	687	615	6941

**Note:** + p < 0.10, \*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001

**Table 3.1.1: Descriptive statistics of men's sample models in Figure 1 and Table 1.1 by job insecurity measure**

**Fear of job loss**

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
<b>Job satisfaction</b>	3.17 (0.44)	3.11 (0.47)	3.14 (0.47)	3.11 (0.48)	3.12 (0.48)	3.13 (0.48)	3.10 (0.50)
<b>Fear of job loss</b>							
Yes	8.69	8.55	7.22	12.44	11.72	10.38	10.66
No	91.31	91.45	92.78	87.56	88.28	89.62	89.34
<b>Employability</b>							
Low	50.77	58.7	60.51	62.18	62.76	66.31	66.44
High	49.23	41.3	39.49	37.82	37.24	33.69	33.56
<b>Age</b>							
25-29	9.88	6.81	3.37	1.7	-	-	-
30-35	15.5	13.91	13.48	12.27	11.91	8.47	7.03
36-40	17.72	16.52	15.89	15.67	13.99	11.86	9.98
41-45	19.25	18.84	18.46	18.06	17.96	18.43	18.59
46-50	19.42	18.84	20.39	20.44	21.17	22.03	20.63
51-55	14.99	17.97	18.3	18.91	18.71	21.4	21.54
56-60	3.24	7.1	10.11	12.95	16.07	14.41	16.55
61-66	-	-	-	-	0.19	3.39	5.67
<b>N</b>	587	690	623	587	529	472	441

**Risk of job loss in last year**

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
<b>Job satisfaction</b>	3.17 (0.45)	3.11 (0.47)	3.14 (0.47)	3.12 (0.48)	3.12 (0.47)	3.13 (0.49)	3.09 (0.50)
<b>Risk of job loss in last year</b>							
No	85.04	85.91	85.4	84.81	85.04	84.48	82.39
Yes	14.96	14.09	14.6	15.19	14.96	15.52	17.61
<b>Employability</b>							
Low	50.78	59.11	60.61	62.03	61.81	66.3	66.9
High	49.22	40.89	39.39	37.97	38.19	33.7	33.1
<b>Age</b>							
25-29	9.57	6.58	3.57	1.81	-	-	-
30-35	15.83	13.63	13.24	12.12	12.01	8.2	6.81
36-40	18.09	17.15	15.62	16.09	13.78	11.97	9.39
41-45	18.96	18.38	18.51	17.54	18.5	19.07	19.25
46-50	19.3	19.45	20.71	20.8	21.06	21.29	20.42
51-55	14.96	17.92	18.34	18.99	18.9	22.17	22.07
56-60	3.3	6.89	10.02	12.66	15.75	14.19	16.67
61-66	-	-	-	-	-	3.1	5.4
<b>N</b>	575	653	589	553	508	451	426

## **Temporary employment**

	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>	<b>Year 7</b>
<b>Job satisfaction</b>	3.17	3.11	3.14	3.11	3.12	3.13	3.10
	(0.44)	(0.47)	(0.47)	(0.48)	(0.48)	(0.48)	(0.50)
<b>Temporary employment</b>							
No	93.88	92.63	94.23	93.02	94.33	94.7	95.69
Yes	6.12	7.37	5.77	6.98	5.67	5.3	4.31
<b>Employability</b>							
Low	50.68	58.82	60.58	62.18	62.76	66.31	66.44
High	49.32	41.18	39.42	37.82	37.24	33.69	33.56
<b>Age</b>							
25-29	9.86	6.79	3.37	1.7	-	-	-
30-35	15.65	13.87	13.46	12.27	11.91	8.47	7.03
36-40	17.69	16.62	15.87	15.67	13.99	11.86	9.98
41-45	19.22	18.79	18.43	18.06	17.96	18.43	18.59
46-50	19.39	18.93	20.35	20.44	21.17	22.03	20.63
51-55	14.97	17.92	18.43	18.91	18.71	21.4	21.54
56-60	3.23	7.08	10.1	12.95	16.07	14.41	16.55
61-66	-	-	-	-	0.19	3.39	5.67
<b>N</b>	588	692	624	587	529	472	441

**Table 3.1.2: Descriptive statistics of women's sample models in Figure 1 and Table 1.1 by job insecurity measure**

**Fear of job loss**

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
<b>Job satisfaction</b>	3.17 (0.47)	3.17 (0.50)	3.14 (0.50)	3.11 (0.51)	3.14 (0.50)	3.14 (0.51)	3.12 (0.52)
<b>Fear of job loss</b>							
Yes	6.46	7.6	8.36	9.98	8.6	9.11	10.28
No	93.54	92.4	91.64	90.02	91.4	90.89	89.72
<b>Employability</b>	53.07	57.87	60.33	65.79	66.49	67.81	65.1
Low	46.93	42.13	39.67	34.21	33.51	32.19	34.9
<b>Age</b>							
25-29	10.24	7.32	3.65	2.29	-	-	-
30-35	18.74	16.57	16.87	14.4	13.08	11.13	8.99
36-40	13.7	13.81	14.13	15.55	15.23	13.77	12.63
41-45	17.48	16.99	14.29	15.22	14.7	14.78	14.78
46-50	20	21.27	22.04	19.8	18.64	17	19.06
51-55	17.48	17.96	19.3	18.99	21.51	21.66	20.99
56-60	2.36	6.08	9.73	13.75	16.85	19.03	17.56
61-66	-	-	-	-	-	2.63	6
	635	724	658	611	558	494	467

**Risk of job loss in last year**

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
<b>Job satisfaction</b>	3.18 (0.47)	3.17 (0.49)	3.13 (0.50)	3.11 (0.51)	3.15 (0.49)	3.16 (0.50)	3.14 (0.52)
<b>Risk of job loss in last year</b>							
No	85.51	86.06	86.45	86.01	86.12	86.5	84.01
Yes	14.49	13.94	13.55	13.99	13.88	13.5	15.99
<b>Employability</b>							
Low	53.14	57.76	61.13	65.28	66.54	67.72	65.54
High	46.86	42.24	38.87	34.72	33.46	32.28	34.46
<b>Age</b>							
25-29	10.31	7.33	3.71	2.42	-	-	-
30-35	18.84	16.52	16.45	13.99	12.55	11.18	9.23
36-40	13.37	13.65	14.35	15.37	15.59	14.35	12.39
41-45	17.39	17.24	14.52	15.54	14.64	14.98	14.64
46-50	19.97	21.26	21.94	20.21	19.01	17.09	18.69
51-55	17.71	17.67	18.87	18.65	21.29	21.1	21.4
56-60	2.42	6.32	10.16	13.82	16.92	18.78	17.34
61-66	-	-	-	-	-	2.53	6.31
<b>N</b>	621	696	620	579	526	474	444

### **Temporary employment**

	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>	<b>Year 7</b>
<b>Job satisfaction</b>	3.17 (0.47)	3.17 (0.50)	3.14 (0.50)	3.11 (0.51)	3.14 (0.50)	3.14 (0.51)	3.12 (0.52)
<b>Temporary employment</b>							
No	91.82	93.94	91.79	94.11	95.34	95.14	95.29
Yes	8.18	6.06	8.21	5.89	4.66	4.86	4.71
<b>Employability</b>							
Low	52.99	57.85	60.33	65.79	66.49	67.81	65.1
High	47.01	42.15	39.67	34.21	33.51	32.19	34.9
<b>Age</b>							
25-29	10.22	7.3	3.65	2.29	-	-	-
30-35	18.71	16.53	16.87	14.4	13.08	11.13	8.99
36-40	13.68	13.77	14.13	15.55	15.23	13.77	12.63
41-45	17.45	16.94	14.29	15.22	14.7	14.78	14.78
46-50	19.97	21.35	22.04	19.8	18.64	17	19.06
51-55	17.61	18.04	19.3	18.99	21.51	21.66	20.99
56-60	2.36	6.06	9.73	13.75	16.85	19.03	17.56
61-66	-	-	-	-	-	2.63	6
<b>N</b>	636	726	658	611	558	494	467

**Table 3.2.1: Descriptive statistics of men's sample models in Figure 2 and Table 1.2 by job insecurity measure**

**Fear of job loss**

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
<b>Life satisfaction</b>	5.30 (0.99)	5.24 (1.10)	5.28 (1.05)	5.28 (1.11)	5.25 (1.09)	5.30 (1.12)	5.27 (1.12)
<b>Fear of job loss</b>							
Yes	8.76	8.06	7.63	11.81	11.07	9.42	10.88
No	91.24	91.94	92.37	88.19	88.93	90.58	89.12
<b>Employability</b>							
Low	50.96	59.38	61.18	62.61	62.78	66.82	66.9
High	49.04	40.62	38.82	37.39	37.22	33.18	33.1
<b>Age</b>							
25-29	9.81	6.2	3.64	1.79	-	-	-
30-35	15.24	13.49	13.17	11.99	12.07	8.07	6.94
36-40	18.21	17.05	15.42	16.1	13.88	12.11	9.72
41-45	18.74	18.29	18.02	17.53	18.71	19.51	18.98
46-50	19.09	19.22	19.76	20.57	21.33	20.63	19.91
51-55	15.59	18.29	18.37	18.96	18.11	21.75	21.99
56-60	3.33	7.44	11.61	13.06	15.9	14.8	16.9
61-66	-	-	-	-	-	3.14	5.56
<b>N</b>	571	645	577	559	497	446	432

**Risk of job loss in last year**

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
<b>Life satisfaction</b>	5.31 (0.99)	5.24 (1.10)	5.29 (1.04)	5.28 (1.11)	5.25 (1.09)	5.30 (1.12)	5.29 (1.11)
<b>Risk of job loss in last year</b>							
No	84.89	86.18	85.39	84.81	85.05	84.42	82.39
Yes	15.11	13.82	14.61	15.19	14.95	15.58	17.61
<b>Employability</b>							
Low	50.79	59.63	61.04	62.39	62.63	66.82	66.9
High	49.21	40.37	38.96	37.61	37.37	33.18	33.1
<b>Age</b>							
25-29	9.84	6.21	3.65	1.81	-	-	-
30-35	15.47	13.51	13.22	12.12	12.12	8.13	6.81
36-40	18.28	17.24	15.3	16.09	13.74	12.19	9.39
41-45	18.63	18.17	18.09	17.36	18.59	19.41	19.25
46-50	19.16	19.25	19.83	20.61	21.41	20.54	20.19
51-55	15.29	18.32	18.43	19.17	18.18	21.9	22.07
56-60	3.34	7.3	11.48	12.84	15.96	14.67	16.67
61-66	-	-	-	-	-	3.16	5.63
<b>N</b>	569	644	575	553	495	443	426



**Temporary employment**

	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>	<b>Year 7</b>
<b>Life satisfaction</b>	5.30	5.24	5.28	5.28	5.25	5.30	5.27
	(0.99)	(1.10)	(1.05)	(1.11)	(1.09)	(1.12)	(1.12)
<b>Temporary employment</b>							
No	94.06	92.88	94.8	92.84	94.37	95.52	95.6
Yes	5.94	7.12	5.2	7.16	5.63	4.48	4.4
<b>Employability</b>							
Low	50.87	59.44	61.18	62.61	62.78	66.82	66.9
High	49.13	40.56	38.82	37.39	37.22	33.18	33.1
<b>Age</b>							
25-29	9.79	6.19	3.64	1.79	-	-	-
30-35	15.38	13.47	13.17	11.99	12.07	8.07	6.94
36-40	18.18	17.18	15.42	16.1	13.88	12.11	9.72
41-45	18.71	18.27	18.02	17.53	18.71	19.51	18.98
46-50	19.06	19.2	19.76	20.57	21.33	20.63	19.91
51-55	15.56	18.27	18.37	18.96	18.11	21.75	21.99
56-60	3.32	7.43	11.61	13.06	15.9	14.8	16.9
61-66	-	-	-	-	-	3.14	5.56
<b>N</b>	572	646	577	559	497	446	432

**Table 3.2.2: Descriptive statistics of women's sample models in Figure 2 and Table 1.2 by job insecurity measure**

**Fear of job loss**

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
<b>Life satisfaction</b>	5.33 (1.08)	5.29 (1.15)	5.31 (1.16)	5.30 (1.24)	5.29 (1.15)	5.31 (1.21)	5.32 (1.16)
<b>Temporary employment</b>							
No	6.29	7.31	7.48	8.81	8.25	8.63	9.93
Yes	93.71	92.69	92.52	91.19	91.75	91.37	90.07
<b>Employability</b>							
Low	53.39	57.31	60.98	65.42	66.6	68	66.37
High	46.61	42.69	39.02	34.58	33.4	32	33.63
<b>Age</b>							
25-29	10.32	7.31	3.58	2.37	-	-	-
30-35	18.55	16.48	16.59	13.73	13.05	11.16	9.03
36-40	13.71	13.61	13.98	15.76	15.36	14.11	12.42
41-45	17.42	17.91	13.98	15.59	14.78	15.16	14.67
46-50	20.32	20.63	22.11	20	19.19	17.05	18.28
51-55	17.58	17.77	19.51	18.64	21.69	20.84	21.9
56-60	2.1	6.3	10.24	13.9	15.93	18.95	17.38
61-66	-	-	-	-	-	2.74	6.32
<b>N</b>	620	698	615	590	521	475	443

**Risk of job loss in last year**

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
<b>Life satisfaction</b>	5.34 (1.08)	5.29 (1.15)	5.31 (1.16)	5.33 (1.22)	5.31 (1.14)	5.31 (1.21)	5.33 (1.16)
<b>Risk of job loss in last year</b>							
No	85.92	86.53	87.05	86.16	85.94	86.17	84.21
Yes	14.08	13.47	12.95	13.84	14.06	13.83	15.79
<b>Employability</b>							
Low	53.4	57.31	60.82	65.05	66.41	67.87	66.13
High	46.6	42.69	39.18	34.95	33.59	32.13	33.87
<b>Age</b>							
25-29	10.36	7.31	3.61	2.42	-	-	-
30-35	18.61	16.48	16.23	13.67	12.7	11.06	9.15
36-40	13.59	13.47	14.1	15.57	15.63	14.26	12.13
41-45	17.48	17.91	14.1	15.57	14.84	15.11	14.42
46-50	20.23	20.77	22.3	20.24	18.95	17.23	18.54
51-55	17.64	17.77	19.51	18.69	21.68	20.85	21.74
56-60	2.1	6.3	10.16	13.84	16.21	18.94	17.62
61-66	-	-	-	-	-	2.55	6.41
<b>N</b>	618	698	610	578	512	470	437

### **Temporary employment**

	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>	<b>Year 7</b>
<b>Life satisfaction</b>	5.33 (1.08)	5.29 (1.15)	5.31 (1.16)	5.30 (1.24)	5.29 (1.15)	5.31 (1.21)	5.32 (1.16)
<b>Temporary employment</b>							
No	91.79	94.13	92.85	94.24	95.01	95.16	95.03
Yes	8.21	5.87	7.15	5.76	4.99	4.84	4.97
<b>Employability</b>							
Low	53.3	57.22	60.98	65.42	66.6	68	66.37
High	46.7	42.78	39.02	34.58	33.4	32	33.63
<b>Age</b>							
25-29	10.31	7.3	3.58	2.37	-	-	-
30-35	18.52	16.45	16.59	13.73	13.05	11.16	9.03
36-40	13.69	13.59	13.98	15.76	15.36	14.11	12.42
41-45	17.39	17.88	13.98	15.59	14.78	15.16	14.67
46-50	20.29	20.74	22.11	20	19.19	17.05	18.28
51-55	17.71	17.74	19.51	18.64	21.69	20.84	21.9
56-60	2.09	6.29	10.24	13.9	15.93	18.95	17.38
61-66	-	-	-	-	-	2.74	6.32
<b>N</b>	621	699	615	590	521	475	443

**Table 3.3.1: Descriptive statistics of men's sample models in Figure 3 and Table 1.3 by job insecurity measure**

**Fear of job loss**

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
<b>Mental health</b>	3.15 (0.39)	3.14 (0.37)	3.15 (0.38)	3.11 (0.40)	3.14 (0.38)	3.12 (0.42)	3.13 (0.41)
<b>Fear of job loss</b>							
Yes	8.57	8.2	7.67	11.87	11.07	9.38	10.9
No	91.43	91.8	92.33	88.13	88.93	90.63	89.1
<b>Employability</b>							
Low	50.87	59.29	60.98	62.59	62.78	66.52	66.82
High	49.13	40.71	39.02	37.41	37.22	33.48	33.18
<b>Age</b>							
25-29	9.62	6.19	3.66	1.8	-	-	-
30-35	15.56	13.47	13.41	11.87	12.07	8.04	6.96
36-40	18.18	17.03	15.51	16.19	13.88	12.05	9.74
41-45	18.88	18.42	17.77	17.63	18.71	19.42	19.03
46-50	19.06	19.2	19.69	20.32	21.33	20.98	19.95
51-55	15.38	18.27	18.29	19.06	18.11	21.65	22.04
56-60	3.32	7.43	11.67	13.13	15.9	14.73	16.71
61-66	-	-	-	-	-	3.13	5.57
<b>N</b>	620	693	614	591	521	475	443

**Risk of job loss in last year**

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
<b>Mental health</b>	3.15 (0.39)	3.14 (0.37)	3.15 (0.37)	3.12 (0.40)	3.14 (0.38)	3.12 (0.42)	3.13 (0.40)
<b>Risk of job loss in last year</b>							
No	84.74	85.89	85.31	84.73	84.85	84.49	82.35
Yes	15.26	14.11	14.69	15.27	15.15	15.51	17.65
	100	100	100	100	100	100	100
<b>Employability</b>							
Low	50.7	59.53	60.84	62.36	62.63	66.52	66.82
High	49.3	40.47	39.16	37.64	37.37	33.48	33.18
<b>Age</b>							
25-29	9.65	6.2	3.67	1.82	-	-	-
30-35	15.79	13.49	13.46	12	12.12	8.09	6.82
36-40	18.25	17.21	15.38	16.18	13.74	12.13	9.41
41-45	18.77	18.29	17.83	17.45	18.59	19.33	19.29
46-50	19.12	19.22	19.76	20.36	21.41	20.9	20.24
51-55	15.09	18.29	18.36	19.27	18.18	21.8	22.12
56-60	3.33	7.29	11.54	12.91	15.96	14.61	16.47
61-66	-	-	-	-	-	3.15	5.65
<b>N</b>	570	645	572	550	495	445	425

## **Temporary employment**

	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>	<b>Year 7</b>
<b>Mental health</b>	3.15 (0.39)	3.14 (0.37)	3.15 (0.38)	3.11 (0.40)	3.14 (0.38)	3.12 (0.42)	3.13 (0.41)
<b>Employability</b>							
Low	93.89	92.74	94.95	92.81	94.37	95.54	95.59
High	6.11	7.26	5.05	7.19	5.63	4.46	4.41
	100	100	100	100	100	100	100
<b>Employability</b>							
Low	50.79	59.35	60.98	62.59	62.78	66.52	66.82
High	49.21	40.65	39.02	37.41	37.22	33.48	33.18
<b>Age</b>							
25-29	9.6	6.18	3.66	1.8	-	-	-
30-35	15.71	13.45	13.41	11.87	12.07	8.04	6.96
36-40	18.15	17.16	15.51	16.19	13.88	12.05	9.74
41-45	18.85	18.39	17.77	17.63	18.71	19.42	19.03
46-50	19.02	19.17	19.69	20.32	21.33	20.98	19.95
51-55	15.36	18.24	18.29	19.06	18.11	21.65	22.04
56-60	3.32	7.42	11.67	13.13	15.9	14.73	16.71
61-66	-	-	-	-	-	3.13	5.57
<b>N</b>	573	647	574	556	497	448	431

**Table 3.3.2: Descriptive statistics of women’s sample models in Figure 3 and Table 1.3 by job insecurity measure**

**Fear of job loss**

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
<b>Mental health</b>	3.08 (0.45)	3.08 (0.46)	3.11 (0.42)	3.01 (0.48)	3.08 (0.45)	3.03 (0.49)	3.07 (0.45)
<b>Fear of job loss</b>							
Yes	6.29	7.5	7.49	8.97	8.45	8.63	9.93
No	93.71	92.5	92.51	91.03	91.55	91.37	90.07
<b>Employability</b>							
Low	53.23	57.29	60.75	65.48	67.18	68	66.14
High	46.77	42.71	39.25	34.52	32.82	32	33.86
<b>Age</b>							
25-29	10.32	7.22	3.58	2.37	-	-	-
30-35	18.71	16.59	16.61	13.87	12.86	11.16	9.03
36-40	13.55	13.56	13.84	15.74	15.16	14.11	12.42
41-45	17.26	17.89	13.84	15.57	14.4	14.95	14.9
46-50	20.32	20.78	21.82	19.8	19.19	17.05	18.06
51-55	17.58	17.6	19.71	18.61	21.88	20.84	21.9
56-60	2.26	6.35	10.59	14.04	16.51	19.16	17.38
61-66	-	-	-	-	-	2.74	6.32
<b>N</b>	620	693	614	591	521	475	443

**Risk of job loss in last year**

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
<b>Mental health</b>	3.09 (0.45)	3.08 (0.46)	3.11 (0.42)	3.02 (0.47)	3.08 (0.44)	3.03 (0.50)	3.07 (0.45)
<b>Risk of job loss in last year</b>							
No	85.76	86.44	87.03	86.18	85.94	86.17	84.44
Yes	14.24	13.56	12.97	13.82	14.06	13.83	15.56
<b>Employability</b>							
Low	53.24	57.29	60.59	65.11	66.99	67.87	65.9
High	46.76	42.71	39.41	34.89	33.01	32.13	34.1
<b>Age</b>							
25-29	10.36	7.22	3.61	2.42	-	-	-
30-35	18.77	16.59	16.26	13.82	12.5	11.06	9.15
36-40	13.43	13.42	13.96	15.54	15.43	14.26	12.13
41-45	17.31	17.89	13.96	15.54	14.45	14.89	14.65
46-50	20.23	20.92	22	20.03	18.95	17.23	18.31
51-55	17.64	17.6	19.7	18.65	21.88	20.85	21.74
56-60	2.27	6.35	10.51	13.99	16.8	19.15	17.62
61-66	-	-	-	-	-	2.55	6.41
<b>N</b>	618	693	609	579	512	470	437

### **Temporary employment**

	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>	<b>Year 7</b>
<b>Mental health</b>	3.08	3.08	3.11	3.01	3.08	3.03	3.07
	(0.45)	(0.46)	(0.42)	(0.48)	(0.45)	(0.49)	(0.45)
<b>Temporary employment</b>							
No	91.79	93.95	92.67	94.25	95.01	95.16	95.03
Yes	8.21	6.05	7.33	5.75	4.99	4.84	4.97
<b>Employability</b>							
Low	53.14	57.2	60.75	65.48	67.18	68	66.14
High	46.86	42.8	39.25	34.52	32.82	32	33.86
<b>Age</b>							
25-29	10.31	7.2	3.58	2.37	-	-	-
30-35	18.68	16.57	16.61	13.87	12.86	11.16	9.03
36-40	13.53	13.54	13.84	15.74	15.16	14.11	12.42
41-45	17.23	17.87	13.84	15.57	14.4	14.95	14.9
46-50	20.29	20.89	21.82	19.8	19.19	17.05	18.06
51-55	17.71	17.58	19.71	18.61	21.88	20.84	21.9
56-60	2.25	6.34	10.59	14.04	16.51	19.16	17.38
61-66	-	-	-	-	-	2.74	6.32
<b>N</b>	621	694	614	591	521	475	443

## CONCLUSION

### **Summary of findings**

Workers with temporary job contracts (fixed-term jobs, on call employment, temporary agency work) have little to no job security, but also tend to face lower overall job quality than permanent employees. For this reason, international institutions and influential researchers have proposed different policy reforms to reduce (or even eliminate) the use of temporary job contracts. The most influential one, defended by the OECD, the IMF, the European Commission and some influential economists, proposed to reduce costs and restrictions for dismissing permanent workers. Although many European governments have followed these policy recommendations, the reforms do not appear to have delivered what they promised given that temporary employment rates in Europe have remained stagnant since the mid-2000s. With more than 50 million workers employed on temporary job contracts in Europe, temporary arrangements have become structural features in European labour markets.

Whereas multiple studies have proved that temporary workers tend to have lower quality jobs than permanent employees, it would be erroneous to assume that the 50 million European workers with temporary job contracts would simply be better off in permanent positions. Temporary job contracts, at least under certain conditions, in specific contexts and for certain individuals, tend to provide similar or even higher job quality than permanent jobs. Conceiving temporary employment as inherently *precarious* and *undesired* is a mistake as it neglects the needs of the sociodemographic groups who tend to benefit from them most. By ignoring the differences between those who benefit and those who suffer from having temporary job contracts, we also underestimate the effects of temporary job contracts for the truly vulnerable groups.

With this consideration in mind, I started this manuscript stressing the position defended by the ILO: that the goal is not to make all work standard, but rather to make all work decent. Consequently, the aim of this thesis was to explore the individual and institutional factors influencing both subjective and objective job quality in temporary employment across Europe. I did so across four studies where I drew on prominent theories and existing empirical findings to explore how specific institutional and



individual factors might affect temporary workers' job satisfaction, wages and well-being. The end goal of these (almost) four years of work was to produce knowledge that might help to develop research that will enhance our understanding of the individual and institutional determinants of job quality in temporary jobs. At best, some of these results could be the seed for the development of public policies focused on improving the quality of temporary jobs and ensuring decent work.

In the first chapter we relied on findings from the field of work psychology to explore the link between the reason why workers have a temporary job and their job satisfaction. We also argued that longer contract durations would be associated with higher job satisfaction among those temporary workers who had a temporary job because they could not find a permanent one. Instead, the duration of temporary contracts should not be associated with the job satisfaction of those who preferred to have a temporary job instead of a permanent one. To conduct the analyses, we used survey data from 27 European countries, which also allowed us to examine if these associations varied across different institutional contexts. Results showed that those who have a temporary job because they could not find a permanent one (i.e. involuntary temporary workers) tend to present lower job satisfaction than permanent employees. Instead, those who prefer a temporary position over a permanent one (i.e. voluntary temporary workers) tend to be as satisfied as permanent workers. We observed the same results for apprentices and trainees (i.e. instrumental temporary workers), who in some cases are even more satisfied than permanent workers. As predicted, no relationship was found between the duration of the temporary contract and the job satisfaction of voluntary or instrumental temporary workers. Among involuntary temporary workers, a longer contract was frequently associated with higher job satisfaction, which could be attributed to lower job insecurity. The cross-national comparisons showed a significant variation in the job satisfaction differences between permanent and involuntary temporary workers: while this gap was non-existent or small in the Scandinavian countries, it was moderate in Western and Southern European countries and large in the post-Socialist and Anglo-Saxon ones.

The second chapter built on the findings from the first one. Our main motivation was to identify the determinants of the cross-national variation in the job satisfaction gap between permanent and involuntary temporary workers, and to explore how institutional factors affect the job satisfaction of involuntary temporary workers. Among

the multiple institutional determinants, we decided to contribute to a long-standing debate in the literature by analysing labour unions and the employment protection legislation. According to the labour market dualization theory, unions and the dismissal costs and regulations for permanent contracts have positive effects for the insiders (i.e. permanent workers), but negative consequences for the outsiders (i.e. temporary workers). Even though the arguments proposed by the dualization literature were not strongly supported by the empirical findings, the social comparison theory and relative deprivation frameworks also suggested that these two institutions could boost inequalities in job satisfaction between permanent and involuntary temporary workers. Namely, it could be expected that better standards for the reference group (i.e. permanent workers) would have negative impacts on temporary workers. To test these assumptions, we used survey data from multiple European countries and applied multilevel models to analyse the effects of these two labour market institutions. Results showed that the employment protection legislation was neither associated with involuntary temporary workers' job satisfaction nor with differences in job satisfaction between these workers and permanent employees. The analysis of labour unions showed that in countries with stronger unions, involuntary temporary workers are more satisfied and the job satisfaction gap between them and permanent workers is smaller. Additionally, job satisfaction differences between permanent and involuntary temporary workers seemed to be smaller in countries where unions are more inclusive towards temporary workers, but these results were not robust. Overall, these results showed no support for the dualization theory and relative deprivation assumptions.

In the third chapter we attempted to provide a more insightful analysis of the role of unions on temporary workers' job quality. The findings in the previous chapter suggested that unions might have positive effects on temporary workers' well-being and foster equality between them and permanent workers. What remained unclear was whether unions could also improve the material working conditions of temporary workers and reduce inequalities between permanent and temporary workers in material aspects. This question was at the core of a prolific debate defended between two large bodies of literature. The labour market dualization theory claims that unions benefit permanent workers, frequently at the expense of temporary ones. Conversely, industrial relations scholars argue that unions tend to promote equality and solidarity. To assess this question, we analysed Spain, a country considered one of the most

prominent examples of labour market dualization due to the supposed corporatist behaviour of unions. Additionally, we explored whether the effects of unions were shaped by the economic climate. It would have been reasonable to expect that unions would be more likely to adopt encompassing and inclusive attitudes during periods of economic growth but follow more dualizing and corporatist strategies during periods of recession. Our analyses relied on two cross-sectional databases from 2006 to 2010. Results showed that union density, works councils and collective agreements were in few cases associated with greater permanent-temporary wage differences. Instead, these institutions were normally associated with higher wages for temporary workers. Union density and collective agreement coverage were in fact associated with higher wages among temporary workers who were not union members or not covered by collective agreements, respectively. These results were very similar during periods of economic growth and recession, thus suggesting that unions' effects on temporary workers' wages do not depend on the economic cycle. Our conclusion was that, in some cases, unions might widen wage inequalities between permanent and temporary workers, as the dualization theory proposes, but they do not seem to benefit permanent workers at the expense of temporary ones. Instead, evidence was more supportive of the positive effects of unions on temporary workers' wages.

Finally, the fourth chapter contributed to answering a research question that became relevant in the second chapter: Can employability mitigate the negative impacts of job insecurity on well-being? In simpler words, are workers affected less negatively by job insecurity when they perceive that they can easily find another job? Assessing this question was especially relevant for two reasons. First, because it contributes to understanding the psychological mechanisms that explain why job insecurity has negative effects on well-being. Second, because it allows us to assess the validity of the flexicurity paradigm in non-pecuniary terms. Although previous studies have already addressed this question, we contributed to the academic debate in three main aspects. First, we provided a new case study, Switzerland, which had not been analysed before despite having a model that is similar to the flexicurity model. Second, we used panel data, which allowed us to eliminate the effect of time-constant confounders. Third, we provided a comprehensive assessment of well-being and job insecurity by relying on multiple measurements. Results suggested that employability cannot mitigate the negative impacts of job insecurity on job satisfaction, and it rarely

mitigates these impacts on life satisfaction and mental health. More importantly, although only men were negatively affected by having temporary job contracts, these negative impacts were never offset by high perceived employability. These results presented some differences between genders, despite women and men appearing to suffer similar negative impacts of job insecurity. Overall, these findings suggested that the flexicurity strategy is insufficient to reduce the negative impacts of job insecurity on well-being.

Broadly, four main conclusions might be obtained from this thesis. First, the temporary workforce is deeply heterogeneous, especially regarding the reason why workers have a temporary job, which is associated with workers' well-being. Second, the hiring and firing regulations for permanent and temporary workers seem to have no relationship with temporary workers' job satisfaction. Third, unions seem to be beneficial for temporary workers' well-being and wages, even if they might widen inequalities between them and permanent workers in some cases. Lastly, perceiving that the chances of finding a job are high might help workers cope with job insecurity, but it does not isolate them from the negative impacts on well-being.

## **Limitations**

Due to constraints in terms of data availability and methods, none of the four studies could differentiate effects from associations. The first, second and third study relied on cross-sectional data, which does not allow ruling out reversed causality or omitted variable bias. The fourth one used panel data, which allowed eliminating the effects of time-constant confounders but could not account for reversed causality or the effect of time-varying confounders. One of the most relevant groups of omitted confounders are those concerning companies. This is especially relevant because firms that provide lower job quality are more likely to hire workers on temporary contracts (De La Rica, 2004; Cirillo and Ricci, 2022). These methodological limitations led me to ignore that many labour market inequalities emerge at *the workplace* (Tomaskovic-Devey, Avent-Holt, 2019). Although at the end of each chapter I specifically addressed their respective limitations, there are other additional constraints that should also be considered.

The first one concerns the second chapter, where we used the EPL index elaborated by the OECD to measure the strictness of dismissal regulations for permanent workers

and hiring regulations for temporary employees. This index presents several shortcomings. First, the weights the index attributes to each component of the dismissal and firing regulations are controversial. The index assumes that the different EPL components 'add up', but it could be reasonable to assume that they interact. For example, high firing costs might have no effect if firing regulations are too loose. By contrast, strict firing regulations in addition to high severance pay could have a multiplicative effect. Second, the index assumes that all workers are affected by the same hiring and dismissal rules, but in some countries these regulations can also be determined by collective agreements (such as in Finland, Norway or Spain). Third, the dismissal costs for temporary workers have been ignored until recently. A recent new version of the EPL indicator released in 2021 for temporary contracts showed that temporary workers are also entitled to severance pay at the end of their contracts in Spain, Portugal, France and Slovenia. This means that conceiving the EPL-gap as the difference between the firing restrictions for permanent workers with respect to the hiring restrictions for temporary employees cannot accurately capture the cost differential of both employment contracts. Although the advantages of using the EPL index is that it allows for cross-national comparisons, future studies could obtain more precise results by analysing concrete reforms in specific countries. For example, Hijzen et al. (2017) took advantage of a reform in Italy that introduced changes in the firing regulations that differed by the size of the company to apply a regression-discontinuity design.

According to the conclusions we reached in the first study, the analyses of the fourth chapter are also subject to a limitation. Whereas the results of the first chapter led us to advise researchers to consider the reason why workers have a temporary contract to analyse well-being outcomes, our analyses in the third and fourth chapter did not make this distinction. This decision was driven by distinct considerations. In the third chapter, our outcome of interest was wages. While we had acknowledged that involuntary temporary workers may experience lower job satisfaction due to their comparatively inferior material working conditions, the primary objective of this chapter was to examine the influence of unions on temporary workers' wages. However, there was no a priori assumption that unions' effect on wages would be different for voluntary and involuntary temporary workers. Conversely, in the fourth chapter, which analysed job insecurity and well-being, it was reasonable to consider the distinction between

voluntary and involuntary temporary workers as crucial for analysing effects on well-being. Regrettably, due to limitations in the available dataset, it was not possible to differentiate workers based on the reasons underlying their temporary job contracts. Unfortunately, most surveys still tend to consider temporary workers as a homogeneous category and rarely include these variables (some exceptions are the EU-Labour Force Survey and the Korean Income and Labour Panel Study, KLIPS). We expect that the incorporation of new variables in panel surveys will allow to carry out better analyses.

A third point of critique concerns my implicit understanding of what Europe is. Although I claim to analyse temporary employment in Europe, I refer mostly to Western European countries. Eastern European countries are also mentioned but receive much less attention, while the Balkans (except for Greece and Bulgaria), Turkey or Ukraine are not even cited. Unfortunately, this is a common practice in research. It is not unusual to observe that processes that occur in the United States, the UK or France are considered by researchers as relevant representations of global narratives. Instead, the analyses concerning the non-Western countries are deemed as less representative and less relevant. There are at least two reasons why believe I also reproduced these biases. The first one is probably my own condition as a citizen of Western Europe. The second one is the frequent lack of adequate research on non-Western European countries. Especially in terms of employment research, where institutional frameworks are crucial, analysing countries with a high prevalence of informal employment is challenging and can lead to substantial bias.

Finally, although my goal was not to analyse specific sociodemographic groups, my analyses could have improved if I had conducted different analyses by gender, age or migrant status to capture differences between salient social groups who are exposed to specific vulnerabilities or disadvantages. In addition to data constraints (the samples were frequently too small to conduct these analyses), there were limitations in terms of space, which required me to aim for conciseness.

### **Policy implications**

It is a common practice in social science research articles to provide policy recommendations with the goal of addressing certain social issues of relevance based on the results that were obtained. Nonetheless, as we saw in the introduction, by

documenting reforms that proposed reducing the dismissal regulations for permanent workers, this is a risky activity, even when evidence on the highest standards of quality was obtained. Once again, these high-quality standards were not achieved with this thesis and none of the four studies allowed distinguishing actual effects from associations. Even when effects can be adequately identified, findings may lack external validity as they are framed within a specific time and space. For these reasons, I prefer to provide some general guidelines that might orientate the development of policies, all of which should be carefully studied before being implemented.

The findings of the first chapter suggested that the reason why workers have a temporary contract is a key determinant to understanding the impacts of temporary employment on workers' well-being. Hence, temporary employment is not problematic (and is sometimes even beneficial) for workers' well-being provided it is a voluntary or instrumental choice. This implies that public policies aimed at matching labour market demand with workers' desires and aspirations might maximize global utility and welfare. Hence, providing workers with the employment relationships they desire will improve their job satisfaction and, in consequence, their health and productivity. Greater job satisfaction and health among workers can probably reduce public expenditure in healthcare and unemployment benefits, while it should also increase companies' productivity, improve business outcomes, and reduce turnovers. Indeed, the findings further indicate that temporary workers might not experience the adverse effects of involuntary job contracts if their contracts extend beyond a specific duration, such as one year or more. Because some countries have regulations in place that restrict the maximum length of temporary contracts to a certain number of months, it becomes pertinent to consider the potential benefits of expanding the allowable duration of these contracts. In doing so, policymakers may provide temporary workers with greater stability and mitigate the negative impacts on their well-being associated with involuntary job arrangements.

The results of the second chapter highlighted the irrelevance of dismissal and hiring regulations to understand inequalities between permanent and temporary workers. As some scholars are increasingly suggesting, it seems that these regulations can do little to reduce the job-quality gap between permanent and temporary workers. Moreover, the fact that we did not find a negative association between greater protection for permanent workers and involuntary temporary workers' job satisfaction, also

suggested that policies which benefit permanent workers do not have negative effects for temporary workers' well-being, as the relative deprivation model suggested. The implications of these findings are that strengthening the insiders' protection does not harm the outsiders' well-being. Instead, labour unions might be effective to improve temporary workers' job quality. Therefore, strengthening unions' power and promoting collective bargaining seem to be effective strategies to improve temporary workers' well-being, but also their wages, as shown in the third chapter. This study also highlighted that even in a framework of strong dualization such as Spain, greater union strength can be an effective way to protect temporary workers' wages, both during periods of economic downturn and growth.

The findings of the last chapter suggested that the flexicurity strategy falls short at protecting workers' well-being when they face the risk of losing their job. If the aim is to isolate workers from the negative consequences of labour market flexibility, we must then develop policies that are more effective at helping workers cope with the risk of job loss. If unemployment benefits and high chances of finding a new similar job are not enough to counteract the negative impacts of job insecurity, it might be necessary to additionally provide psychological support to workers facing the threat of job loss. Inevitably, such a policy would have significant costs. Many readers might consider these high costs as a clear impediment for implementing these measures. On the other hand, what this policy proposal highlights is that the benefits and costs of labour market flexibility need to be symmetrically distributed between social actors. As we have seen, in most countries workers bear most of the negative impacts of flexibility and employers obtain most of its benefits.<sup>1</sup> Implementing a tax on temporary contracts could be a simple approach to reduce some of these asymmetries. Taxing employers for using temporary contracts would allow financing public policies aimed, for example, at helping workers to better cope with job insecurity. This tax on temporary contracts already exists in some countries, such as Spain, where employers pay higher social contributions for workers who are employed on temporary contracts. These additional charges are used to finance unemployment benefits, which temporary workers are much more likely to rely on during job transitions. Therefore, a tax on temporary contracts might help to finance services and policies that mitigate the negative impacts

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<sup>1</sup> Switzerland, Austria and Iceland, where only a small share of temporary workers is involuntarily employed in these contracts, can be considered exceptions.



of these contracts on workers' well-being, thus providing a more symmetrical distribution of the risks and benefits of temporary contracts between social actors.

Finally, as we saw at the beginning of this thesis, many of the disadvantages that temporary workers experience seem to stem from their lack of security and hence their lack of bargaining power. Replacing seasonal temporary contracts with *permanent discontinuous* or *intermittent* job contracts might enhance seasonal temporary workers' job security and bargaining power too. In essence, *permanent discontinuous* contracts allow employers to hire seasonal workers on a permanent but *intermittent* basis. These contracts pre-define the periods of activity and inactivity across the year. While active, workers have the assurance that they will perform paid work, but when inactive, they might receive unemployment benefits, training and employment search assistance. Lifeguards or ski instructors, for example, carry out activities that are seasonal but recurrent, although they tend to be hired on temporary contracts. With *permanent discontinuous* contracts these workers have the security that they will recurrently work during a pre-established period of the year. Also, because their contracts are *permanent*, they enjoy greater employment protection and bargaining power. They might also be more likely to receive training as employers have incentives to invest in them. Because reducing turnovers improves the accumulation of firm-specific skills, companies might also experience productivity gains by employing workers on these contracts.

### **Contributions and avenues for future research**

In addition to providing specific empirical findings, this thesis also offered some conceptual and theoretical contributions in the field of temporary employment and work sociology. Some of these contributions, as well as the methodological and theoretical questions that they triggered, might constitute a starting point for future research.

The implications of the first chapter reveal a crucial distinction: the harmful effects of temporary job contracts are primarily associated with involuntary choices. Namely, these findings indicate that only temporary employment that individuals have been compelled to take, particularly when the contracts are of short duration, have adverse effects on well-being. It is estimated that out of the 50 million employees with temporary job contracts, approximately 26 million had to accept a temporary job because they had no other choice. Interestingly, in countries such as Luxembourg, Estonia, Iceland,

and Austria, temporary jobs can be considered harmful for less than 10% of the temporary workforce. These findings not only provide new avenues for future research but also serve as a starting point for those seeking to investigate the heterogeneity of the temporary workforce. Gaining a comprehensive understanding of this heterogeneity is essential for formulating effective policies that can address the specific needs and challenges faced by temporary workers. Future studies can make significant contributions by evaluating if the same results that we observed for job satisfaction are also observed for other facets of well-being.

Another question that we raised about the involuntary temporary workforce is whether these workers experience poorer job satisfaction because their desires for job security are not being fulfilled, or because they tend to have lower quality jobs than voluntary temporary workers. Results also indicated that involuntary temporary workers with short job contracts tend to be less satisfied than involuntary temporary workers with long temporary contracts. Again: are involuntary temporary workers with short contracts less satisfied due to their lower job security and stability or because short temporary jobs are more likely to be lower-quality jobs? This would be a reasonable assumption if employees with short temporary contracts might have fewer training opportunities due to their short engagement at work. They might also experience poorer relations in the workplace if their colleagues are not willing to invest time in short-lasting relationships. In addition to analysing panel survey data, many of these questions can probably be better assessed using qualitative and mixed methods. As we suggested in the first chapter, it seems key to clarify the distinction between *voluntary* and *involuntary* temporary workers. This can be achieved by considering that job insecurity is one of the multiple job quality facets that workers take into account when deciding whether to accept a position or not.

The findings from the third chapter shed light on the intricate relationship between labour market institutions and inequalities among different social groups. To provide a more comprehensive understanding of the impact of labour market institutions on job quality, we adopted a less common approach and opted to analyse not only the relative effect, but also the absolute effect of these of labour market institutions. These analyses suggested that certain labour market institutions can simultaneously exacerbate disparities between privileged and disadvantaged groups, while still being beneficial for the latter. This is something that is frequently overlooked in the

sociological literature and formed the basis for a departure from conventional analyses within the field. Perhaps because as sociologists we are traditionally concerned about inequalities, or perhaps because some commonly used methods require having a baseline category that we can compare with, we generally tend to analyse temporary workers' outcomes with respect to permanent employees. While it is important to examine relative effects, this only provides a partial explanation of the complex dynamics at play. Relying solely on relative effects can lead to the formulation of policies and interventions that are ineffective or even harmful. As researchers, we must make sure that our research goals are not only devoted to eliminating inequalities, but also to leverage up those in a disadvantageous situation. Therefore, many of the analyses consisting in observing the effects of institutions on job quality outcomes could be improved if they also analysed their absolute effects on temporary workers rather than only the relative ones.

The fourth chapter provided similar analyses to those of previous studies in the field by analysing whether employability can reduce the negative impacts of job insecurity on well-being. Its main contribution, however, occurred in theoretical terms. Drawing upon insights from existing psychological literature, we highlighted that there are at least two distinct mechanisms through which job insecurity detrimentally impacts well-being: the *risk of unemployment* and the *risk of job change*. We proposed that a *job change* is a stressful event whose negative impacts cannot be offset by high employability. Unfortunately, the limitations of our data did not allow us to empirically test these assumptions further. Future studies have the potential to delve into these mechanisms by shedding light on the complex interplay between job insecurity, employability and well-being. Such investigations would enhance the theoretical framework and contribute to the development of targeted interventions and policies aimed at mitigating the negative consequences of job insecurity on workers' overall well-being.

The findings of the second chapter were in line with the existing literature in suggesting that the EPL might have no influence on workers' well-being at work. Among the multiple reasons why this might happen, there are two relevant mechanisms that should be further explored. The first one is that the EPL might not have a significant effect on temporary workers' probability of obtaining a permanent position or in becoming unemployed, as some recent analyses have suggested (Heimberger, 2021).

The second one could be that the EPL might not affect workers' well-being simply because they might not be aware of firings and hiring regulations, as shown by Hipp's qualitative analysis (2020). Further research could build on these findings to investigate to what extent workers are aware of hiring and firing regulations and if there are significant cross-country differences in this regard. Another crucial step to identifying the effects of dismissal and hiring regulations is to understand whether those who make the hiring and firing decisions are equally (un)informed about these rules. Therefore, are organizational decisions guided by a rational cost-benefit analysis or, for example, by custom and tradition? Qualitative interviews of managers have shown that they employ workers on fixed-term and temporary agency contracts for a variety of reasons that frequently have very little to do with the own short-term characteristics of the job that they are hired to perform (Svalund et al., 2018). Other findings (i.e. Engelland and Riphahn, 2005) indicate that managers obtain greater productivity from workers who are employed on temporary contracts, which might incentivize them to (over)use these contracts. However, the assumption that involuntary temporary employment has positive impacts on productivity contradicts the management literature, which proposes that high job satisfaction and organizational commitment is essential for keeping workers' productivity high. Managers and employers' effects on labour market inequalities have also been recently analysed by labour economists thanks to the availability of new employer-employee administrative data. He and le Maire (2022), for example, showed that managers explain about 34% of the between-company wage inequality, whereas Acemoglu et al. (2022) identified that managers' education can have negative impacts on workers' wages. Namely, they identified that managers with an MBA compared to other highly educated managers without managerial training have a negative effect on workers' wages of 3% in Denmark and 6% in the United States. Perhaps it is even more surprising that these negative effects on wages are not paralleled by similar increases in productivity or company revenues. Assuming these effects are triggered not only by managers' education, but also by their ideology, values and attitudes towards their employees, we can probably assume that they also extend to multiple facets of job quality in addition to wages.

Whereas prominent economists in the last decade devoted a significant part of their work to analysing how companies contribute to wage inequalities, Tomaskovic-Devey

and Avent-Holt (2019) defend from a sociological view the analysis of *the workplace* as a key source of labour market inequalities. Recent studies relying on administrative data have shown, for example, how co-workers affect employees' probability of escaping low-wage jobs (Baranowska-Rataj et al., 2023) or how firms' gender composition explains the gender wage gap (Brick et al., 2023). While the existing sociological literature has been mainly concerned with supply-side factors (workers) and institutional factors (countries) as key determinants of labour market inequalities, these findings illustrate new paths for future research by analysing *the workplace* too. In addition to new sources of administrative data, qualitative sociological research can be crucial to disentangle complex sociological processes and orientate the development of meaningful quantitative analyses.

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## **APPENDIX CHAPTER 1**

*Job satisfaction across Europe: An analysis of the heterogeneous temporary workforce in 27 countries*

## 1. Robustness tests

**Table A1: Robustness tests. Average marginal effects from multinomial logistic regression models. Difference in job satisfaction between permanent (ref.) and different kinds of temporary workers for the overall sample. Replications of models in Figure 1 and Table 5.**

	Coef. (SE)
<b>ref: Permanent</b>	
Not satisfied at all + Satisfied to a small extent	0.0461*** (0.00206)
<b>Involuntary temporary</b>	
Satisfied to some extent	-0.000569 (0.00315)
Satisfied to a large extent	-0.0455*** (0.00309)
<b>Instrumental temporary</b>	
Not satisfied at all + Satisfied to a small extent	-0.00496 (0.00296)
Satisfied to some extent	-0.0598*** (0.00519)
Satisfied to a large extent	0.0648*** (0.00526)
<b>Voluntary temporary</b>	
Not satisfied at all + Satisfied to a small extent	-0.00331 (0.00332)
Satisfied to some extent	-0.00258 (0.00636)
Satisfied to a large extent	0.00590 (0.00629)
<b>Observations</b>	378112

**Note:** p < 0.10, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001.

**Table A2: Robustness tests. Average marginal effects from multinomial logistic regression models. Difference in job satisfaction between permanent (ref.) and different kinds of temporary workers for the overall sample. Replications of models in Figure 2 and Table 6.**

	Finland	Luxemb	Cyprus	Norway	Sweden	Malta	Denmark	Estonia	France
	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)
<b>ref: Permanent</b>									
Not satisfied at all +	-0.0368 (0.0076)	-0.0203 (0.0135)	0.0173 (0.0092)	0.0004 (0.0064)	0.0145 (0.0229)	0.0177 (0.0117)	0.0231 (!) (0.0486)	0.0106 (0.0177)	
Satisfied to a small extent									
<b>Involuntary temporary</b>									
Satisfied to some extent	-0.0302 (0.0173)	0.0417 (0.0269)	-0.0425 (0.0225)	0.0199 (0.0153)	0.0107 (0.0376)	-0.00231 (0.0200)	0.0142 (!) (0.0928)	0.0270 (0.0261)	
Satisfied to a large extent	0.0566*** (0.0168)	0.0183 (0.0433)	-0.0214 (0.0265)	-0.0204 (0.0159)	-0.0252 (0.0411)	-0.0154 (0.0211)	-0.0373 (!) (0.0936)	-0.0376 (0.0247)	
<b>Instrumental temporary</b>									
Not satisfied at all +	-0.0283 (0.0242)	-0.120*** (!) (0.0299)	0.0411 (0.0624)	0.0065 (0.0117)	-0.0248 (0.0198)	-0.0191 (0.0102)	0.0554 (0.0315)	-0.0388 (0.0231)	
Satisfied to a small extent									
Satisfied to some extent	-0.172** (0.0532)	0.0130 (!) (0.0714)	-0.122 (0.0899)	-0.0687** (0.0224)	0.0221 (0.0469)	-0.0643** (0.0224)	-0.0243 (0.0519)	-0.0471 (0.0429)	
Satisfied to a large extent	0.201*** (0.0532)	0.107 (!) (0.0705)	0.0807 (0.0949)	0.0622** (0.0241)	0.00269 (0.0490)	0.0834*** (0.0235)	-0.0312 (0.0534)	0.0860* (0.0423)	
<b>Voluntary temporary</b>									
Not satisfied at all +	-0.0066 (0.0160)	na	0.0013 (0.0123)	-0.0148* (0.0067)	-0.0163 (0.0300)	-0.0101 (0.0121)	na	-0.0178 (0.0241)	
Satisfied to a small extent									
Satisfied to some extent	-0.0432 (0.0298)	na	-0.0029 (0.0347)	-0.0243 (0.0185)	-0.0709 (0.0488)	-0.0092 (0.0246)	na	0.0275 (0.0397)	
Satisfied to a large extent	0.0499 (0.0285)	na	0.0016 (0.0350)	0.0391* (0.0192)	0.0871 (0.0549)	0.0194 (0.0257)	na	-0.0097 (0.0380)	
<b>Observations</b>	9553	2944	11314	16657	4379	11020	5615	5134	

**Note:** \* p < 0.05. \*\* p < 0.01. \*\*\* p < 0.001. (!) Indicates that the coefficient is unreliable because of few observations, according to Eurostat guidelines. na Refers to coefficients that are not shown because of the low number of observations.



(continued)

	Austria	Netherlands	Italy	Czechia	Greece	Portugal	Belgium	Spain	Poland
	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)
<b>Permanent</b>									
Not satisfied at all + Satisfied to a small extent	0.0697 (0.0360)	0.0145** (0.0054)	0.0132** (0.0039)	0.0353** (0.0089)	0.0302* (0.0106)	0.0278** (0.0089)	0.0313** (0.0093)	0.0297** (0.0048)	0.0574** (0.0071)
<b>Involuntary temporary</b>									
Satisfied to some extent	-0.0396 (0.0534)	0.0060 (0.0113)	0.0282** (0.0088)	-0.0252 (0.0160)	-0.0151 (0.0156)	-0.00347 (0.0132)	-0.0042 (0.0163)	0.0114 (0.0081)	0.0119 (0.0112)
Satisfied to a large extent	-0.0301 (0.0556)	-0.0205 (0.0107)	0.0414** (0.0088)	-0.0102 (0.0159)	-0.0150 (0.0159)	-0.0243* (0.0123)	-0.0271 (0.0162)	0.0411** (0.0081)	0.0693** (0.0107)
<b>Instrumental temporary</b>									
Not satisfied at all + Satisfied to a small extent	-0.0189* (0.0090)	-0.0079 (0.0044)	0.00501 (0.0070)	na	-0.0193 (0.0194)	-0.0158 (0.0172)	-0.0361 (0.0212)	0.0168 (0.0149)	0.0284** (0.0103)
Satisfied to some extent	0.0662*** (0.0200)	-0.0629*** (0.0120)	-0.0188 (0.0149)	na	0.0076 (0.0328)	-0.0052 (0.0296)	-0.0535 (0.0580)	0.0634** (0.0246)	0.0535** (0.0173)
Satisfied to a large extent	0.0851*** (0.0206)	0.0709*** (0.0118)	0.0138 (0.0152)	na	0.0116 (0.0326)	0.0211 (0.0284)	0.0896 (0.0585)	0.0466 (0.0250)	0.0251 (0.0169)
<b>Voluntary temporary</b>									
Not satisfied at all + Satisfied to a small extent	-0.0100 (0.0105)	0.0004 (0.0076)	-0.0127 (0.0118)	0.0052 (0.0159)	-0.0124 (0.0362)	-0.0269 (0.0206)	-0.0075 (0.0144)	-0.0145 (0.0148)	0.0126 (0.0093)
Satisfied to some extent	-0.0194 (0.0224)	0.0471** (0.0167)	-0.0441 (0.0379)	-0.0422 (0.0319)	0.0063 (0.0623)	0.0360 (0.0429)	0.0139 (0.0319)	0.0195 (0.0337)	0.0056 (0.0167)
Satisfied to a large extent	0.0294 (0.0228)	-0.0476** (0.0158)	0.0568 (0.0384)	0.0369 (0.0317)	0.0061 (0.0646)	-0.0091 (0.0414)	-0.0063 (0.0317)	-0.0049 (0.0339)	-0.0182 (0.0161)
<b>Observations</b>	14752	30871	35925	14530	11336	13186	15728	29157	18963

**Note:** \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001. (!) Indicates that the coefficient is unreliable because of few observations, according to Eurostat guidelines. na Refers to coefficients that are not shown because of the low number of observations.

(continued)

	Germany	UK	Switzerland	Ireland	Hungary	Bulgaria	Romania	Lithuania	Slovakia
	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)
<b>ref: Permanent</b>									
Not satisfied at all + Satisfied to a small extent	0.0892*** (0.0222)	0.0750*** (0.0200)	0.0347 (0.0311)	0.0990*** (0.0193)	0.117*** (0.0096)	0.150*** (0.0233)	0.118** (0.0393)	0.124** (0.0405)	0.124*** (0.0217)
<b>Involuntary temporary</b>									
Satisfied to some extent	-0.0458 (0.0285)	0.0222 (0.0249)	0.134* (0.0564)	0.0651* (0.0256)	-0.0353** (0.0133)	-0.0394 (0.0315)	0.111* (0.0545)	0.00161 (0.0585)	-0.0297 (0.0286)
Satisfied to a large extent	-0.0434 (0.0256)	-0.0973*** (0.0240)	-0.169** (0.0575)	-0.164*** (0.0252)	-0.0820*** (0.0131)	-0.111*** (0.0271)	-0.229*** (0.0429)	-0.126* (0.0616)	-0.0942*** (0.0248)
Not satisfied at all + Satisfied to a small extent	-0.0162 (0.0112)	-0.0150 (0.0261)	-0.0451*** (0.0076)	-0.0040 (0.0260)	0.00133 (0.0163)	0.0985** (0.0374)	na	0.0407 (!) (0.0431)	na
<b>Instrumental temporary</b>									
Satisfied to some extent	-0.0333 (0.0188)	-0.0665 (0.0377)	-0.104*** (0.0225)	-0.128** (0.0416)	-0.0770* (0.0309)	-0.0921 (0.0506)	na	0.0406 (!) (0.0739)	na
Satisfied to a large extent	0.0495** (0.0181)	0.0815* (0.0392)	0.149*** (0.0233)	0.132** (0.0450)	0.0756* (0.0310)	-0.0064 (0.0438)	na	-0.0813 (!) (0.0746)	na
Not satisfied at all + Satisfied to a small extent	0.0626 (0.0579)	-0.0100 (0.0179)	-0.0360 (0.0248)	-0.0218 (0.0168)	0.0379 (0.0230)	0.158** (0.0525)	na	na	-0.0764*** (0.0204)
<b>Voluntary temporary</b>									
Satisfied to some extent	-0.146* (0.0730)	0.0689* (0.0274)	-0.0818 (0.0645)	0.124** (0.0418)	-0.0311 (0.0389)	-0.188** (0.0610)	na	na	-0.0549 (0.0497)
Satisfied to a large extent	0.0835 (0.0705)	-0.0589* (0.0264)	0.118 (0.0673)	-0.102* (0.0417)	-0.0067 (0.0380)	0.0299 (0.0526)	na	na	0.131** (0.0490)
<b>Observations</b>	15221	28979	5770	11754	20102	10877	17325	5918	7339

**Note:** \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001. (!) Indicates that the coefficient is unreliable because of few observations, according to Eurostat guidelines. na Refers to coefficients that are not shown because of the low number of observations.

**Table A3: Average marginal effects from multinomial logistic regression models. Difference in job satisfaction between permanent (ref.) and different kinds of temporary workers with different contract durations for the overall sample. Replications of models in Figure 3 and Table 7.**

	Involuntary temporary vs. Permanent	Instrumental temporary vs. Permanent	Voluntary temporary vs. Permanent
	Coef. (SE)	Coef. (SE)	Coef. (SE)
<b>ref: Permanent</b>			
Not satisfied at all + Satisfied to a small extent	0.0689*** (0.00344)	0.0218*** (0.00576)	0.0218*** (0.00576)
<b>6 months or less</b>			
Satisfied to some extent	-0.00775 (0.00497)	-0.0336*** (0.00946)	-0.0336*** (0.00946)
Satisfied to a large extent	-0.0612*** (0.00489)	0.0118 (0.00942)	0.0118 (0.00942)
Not satisfied at all + Satisfied to a small extent	0.0466*** (0.00332)	0.0165* (0.00752)	0.0165* (0.00752)
<b>Between 7 and 12 months</b>			
Satisfied to some extent	-0.00113 (0.00504)	-0.0522*** (0.0126)	-0.0522*** (0.0126)
Satisfied to a large extent	-0.0455*** (0.00497)	0.0357** (0.0127)	0.0357** (0.0127)
Not satisfied at all + Satisfied to a small extent	0.0336*** (0.00431)	-0.0282*** (0.00409)	-0.0282*** (0.00409)
<b>More than one year</b>			
Satisfied to some extent	-0.00504 (0.00686)	-0.0717*** (0.00869)	-0.0717*** (0.00869)
Satisfied to a large extent	-0.0286*** (0.00674)	0.0999*** (0.00876)	0.0999*** (0.00876)
<b>Observations</b>	357222	339346	337257

**Note:** p < 0.10, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001.

**Table A4: Robustness tests. Average marginal effects from multinomial logistic regression models. Difference in job satisfaction between permanent (ref.) and involuntary temporary workers with different contract durations, by country. Replications of models in Figure 4 and Table 8.**

	Luxemb	Finland	Norway	Sweden	Denmark	France	Netherlands	Malta	Cyprus
	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)
<b>ref: Permanent</b>									
Not satisfied at all + Satisfied to a small extent	na	-0.0248* (0.0106)	0.0186 (0.0309)	0.00552 (0.0107)	0.0312 (0.0252)	0.0128 (0.0216)	0.0403* (0.0160)	0.0408 (!) (0.0478)	0.00000097 3 (0.0252)
6 months or less									
Satisfied to some extent	na	-0.0663** (0.0244)	-0.0293 (0.0718)	0.0109 (0.0246)	-0.0441 (0.0393)	0.0114 (0.0331)	-0.0331 (0.0285)	0.0362 (!) (0.0681)	0.111* (0.0474)
Satisfied to a large extent	na	0.0911*** (0.0240)	0.0106 (0.0730)	-0.0164 (0.0258)	0.0129 (0.0426)	-0.0242 (0.0319)	-0.00722 (0.0268)	-0.0771 (!) (0.0758)	-0.111* (0.0463)
Between 7 and 12 months									
Not satisfied at all + Satisfied to a small extent	-0.0554 (!) (0.0516)	-0.0362*** (0.0106)	-0.0110 (0.0175)	-0.0143 (0.0107)	-0.0110 (0.0180)	-0.0256 (0.0262)	0.0111 (0.0071)	0.0264 (!) (0.0408)	0.00900 (0.0206)
Satisfied to some extent	-0.0727 (!) (0.0855)	-0.0552* (0.0273)	-0.0767 (0.0557)	0.0319 (0.0319)	-0.0159 (0.0375)	0.0372 (0.0449)	-0.0121 (0.0155)	-0.0807 (!) (0.0483)	0.0847* (0.0339)
Satisfied to a large extent	0.128 (!) (0.0855)	0.0914*** (0.0269)	0.0877 (0.0564)	-0.0176 (0.0327)	0.0269 (0.0391)	-0.0116 (0.0433)	0.00100 (0.0149)	0.0542 (!) (0.0594)	-0.0937** (0.0323)
More than one year									
Not satisfied at all + Satisfied to a small extent	-0.0716* (0.0361)	-0.00907 (0.0180)	0.0515** (0.0189)	0.00116 (0.0100)	0.0306 (0.0179)	0.0318 (0.0428)	0.00363 (0.0138)	-0.00866 (!) (0.0347)	-0.0299 (0.0277)
Satisfied to some extent	0.0251 (0.0620)	-0.0340 (0.0358)	-0.0201 (0.0363)	-0.00836 (0.0229)	0.0142 (0.0271)	-0.0550 (0.0583)	-0.0560 (0.0334)	0.0769 (!) (0.0718)	-0.0258 (0.0485)
Satisfied to a large extent	0.0465 (0.0595)	0.0431 (0.0346)	-0.0314 (0.0370)	0.00719 (0.0240)	-0.0449 (0.0288)	0.0233 (0.0570)	0.0523 (0.0326)	-0.0682 (!) (0.0747)	0.0558 (0.0478)
<b>Observations</b>	2872	9129	10775	15551	10194	4768	27580	4246	3724

**Note:** p < 0.10, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001. (!) Indicates that the coefficient is unreliable because of few observations, according to Eurostat guidelines. na Refers to coefficients that are not shown because of the low number of observations.

(continued)

	<b>Ireland</b>	<b>Austria</b>	<b>Italy</b>	<b>Portugal</b>	<b>Czechia</b>	<b>Spain</b>	<b>Belgium</b>	<b>Germany</b>	<b>Greece</b>
	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)
<b>ref: Permanent</b>									
Not satisfied at all + Satisfied to a small extent	0.0670 (0.0455)	0.0569 (I) (0.0597)	0.0166** (0.0052)	0.0464*** (0.0131)	0.0466* (0.0212)	0.0521*** (0.0074)	0.0515*** (0.0137)	0.146** (0.0504)	0.086*** (0.0170)
Satisfied to some extent	-0.0233 (0.0637)	-0.0138 (I) (0.0984)	0.0276* (0.0115)	-0.0069 (0.0185)	0.0060 (0.0374)	0.0023 (0.0117)	0.0273 (0.0219)	-0.137* (0.0582)	0.0485* (0.0231)
Satisfied to a large extent	-0.0437 (0.0669)	-0.0431 (I) (0.1020)	-0.0441*** (0.0116)	-0.0395* (0.0170)	-0.0527 (0.0370)	-0.0544*** (0.0117)	-0.0788*** (0.0216)	-0.0095 (0.0555)	-0.1350*** (0.0230)
Not satisfied at all + Satisfied to a small extent	0.0658 (0.0498)	0.0755 (I) (0.0546)	0.0008 (0.0053)	0.0040 (0.0108)	0.0489*** (0.0142)	0.0028 (0.0091)	0.0075 (0.0136)	0.103** (0.0326)	0.0521** (0.0164)
Satisfied to some extent	0.155* (0.0705)	0.0026 (I) (0.0810)	0.00826 (0.0130)	0.00864 (0.0175)	-0.0387 (0.0241)	0.00301 (0.0170)	-0.0463 (0.0266)	-0.0295 (0.0403)	0.0649** (0.0227)
Satisfied to a large extent	-0.221*** (0.0661)	-0.0781 (I) (0.0831)	-0.0091 (0.0132)	-0.0126 (0.0166)	-0.0102 (0.0240)	-0.00587 (0.0171)	0.0387 (0.0269)	-0.0732* (0.0354)	-0.117*** (0.0213)
Not satisfied at all + Satisfied to a small extent	0.140** (0.0449)	na	-0.0009 (0.0134)	-0.0349 (0.0193)	0.0300* (0.0124)	0.0036 (0.0145)	0.0219 (0.0198)	0.0218 (0.0352)	0.0136 (0.0239)
Satisfied to some extent	0.0295 (0.0533)	na	0.0251 (0.0333)	-0.0365 (0.0376)	-0.0187 (0.0224)	-0.0275 (0.0270)	-0.0472 (0.0365)	-0.0271 (0.0525)	-0.0393 (0.0348)
Satisfied to a large extent	-0.169** (0.0528)	na	-0.0242 (0.0334)	0.0714 (0.0369)	-0.0113 (0.0221)	0.0238 (0.0274)	0.0253 (0.0372)	0.00538 (0.0490)	0.0256 (0.0357)
<b>Observations</b>	11263	13558	34183	12379	14231	25517	15371	14109	11059

**Note:** \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001. (I) Indicates that the coefficient is unreliable because of few observations, according to Eurostat guidelines. na Refers to coefficients that are not shown because of the low number of observations.

(continued)

	Poland	UK	Switzerland	Slovakia	Hungary	Bulgaria	Romania
	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)
<b>ref: Permanent</b>							
Not satisfied at all + Satisfied to a small extent	0.0917*** (0.0144)	0.135* (0.0534)	0.0104 (0.0407)	0.131*** (0.0277)	0.165*** (0.0156)	0.204*** (0.0320)	0.192** (!) (0.0732)
<b>6 months or less</b>							
Satisfied to some extent	-0.00394 (0.0220)	-0.0400 (0.0604)	0.256** (0.0827)	-0.0302 (0.0379)	-0.0351 (0.0207)	-0.00928 (0.0389)	0.132 (!) (0.0733)
Satisfied to a large extent	-0.0878*** (0.0213)	-0.0947 (0.0600)	-0.266** (0.0822)	-0.101** (0.0329)	-0.130*** (0.0203)	-0.194*** (0.0288)	-0.324*** (!) (0.0034)
Not satisfied at all + Satisfied to a small extent	0.0725*** (0.0109)	0.0247 (0.0475)	0.0471 (0.0520)	0.170*** (0.0324)	0.112*** (0.0111)	0.0716* (0.0365)	0.114 (0.0624)
<b>Between 7 and 12 months</b>							
Satisfied to some extent	0.00651 (0.0168)	0.0420 (0.0648)	0.0444 (0.0817)	-0.0669 (0.0409)	-0.0234 (0.0157)	-0.107 (0.0568)	0.129 (0.0778)
Satisfied to a large extent	-0.0790*** (0.0160)	-0.0667 (0.0630)	-0.0915 (0.0871)	-0.103** (0.0351)	-0.0885*** (0.0155)	0.0354 (0.0549)	-0.243*** (0.0534)
Not satisfied at all + Satisfied to a small extent	0.0544*** (0.0088)	0.0382 (0.0396)	na	0.103* (0.0499)	0.120*** (0.0336)	na	na
<b>More than one year</b>							
Satisfied to some extent	0.0266 (0.0142)	0.0128 (0.0512)	na	0.0229 (0.0727)	0.0860 (0.0464)	na	na
Satisfied to a large extent	-0.0810*** (0.0136)	-0.0510 (0.0504)	na	-0.126* (0.0617)	-0.206*** (0.0419)	na	na
<b>Observations</b>	16983	28276	5221	7199	19702	10644	17301

**Note:** p < 0.10, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001. (!) Indicates that the coefficient is unreliable because of few observations, according to Eurostat guidelines. na Refers to coefficients that are not shown because of the low number of observations.

**Table A5. Robustness tests. Average marginal effects from multinomial logistic regression models. Difference in job satisfaction between permanent (ref.) and instrumental temporary workers with different contract durations, by country. Replications of models in Figure 5 and Table 9.**

	Ireland	Finland	Sweden	Switzerland	Portugal	UK	Greece	Spain	Italy
	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)
<b>ref: Permanent</b>									
Not satisfied at all + Satisfied to a small extent	na	-0.0018 (0.0417)	-0.0109 (0.0109)	-0.0327 (0.0278)	-0.0036 (0.0263)	-0.0415 (0.0454)	-0.0218 (0.0282)	0.0345 (0.0247)	0.0054 (0.0097)
<b>6 months or less</b>									
Satisfied to some extent	na	-0.195** (0.0735)	-0.0683** (0.0259)	-0.0304 (0.0670)	-0.0429 (0.0441)	0.0289 (0.0784)	0.0515 (0.0515)	-0.0772* (0.0361)	0.0029 (0.0216)
Satisfied to a large extent	na	0.196** (0.0742)	0.0793** (0.0273)	0.0631 (0.0696)	0.0464 (0.0427)	0.0126 (0.0787)	-0.0297 (0.0522)	0.0427 (0.0375)	-0.0083 (0.0219)
<b>Between 7 and 12 months</b>									
Not satisfied at all + Satisfied to a small extent	0.0483 (0.0621)	na	0.074 (0.0427)	-0.0226 (0.0270)	-0.0119 (0.0270)	na	-0.0154 (0.0363)	0.0287 (0.0327)	0.0123 (0.0159)
Satisfied to some extent	-0.230*** (0.0617)	na	-0.0876 (0.0528)	-0.0650 (0.0552)	-0.0124 (0.0459)	na	0.0207 (0.0633)	-0.00315 (0.0496)	-0.0174 (0.0334)
Satisfied to a large extent	0.181* (0.0794)	na	0.0136 (0.0627)	0.0876 (0.0588)	0.0244 (0.0440)	na	-0.00532 (0.0628)	-0.0255 (0.0494)	0.00509 (0.0341)
<b>More than one year</b>									
Not satisfied at all + Satisfied to a small extent	-0.0083 (0.0536)	-0.0409 (0.0353)	na	-0.0497*** (0.0070)	na	-0.0608 (0.0371)	0.0441 (0.0423)	-0.0009 (0.0347)	-0.00702 (0.0105)
Satisfied to some extent	-0.1050 (0.0896)	-0.1180 (0.0941)	na	-0.118*** (0.0237)	na	-0.0559 (0.0625)	0.0473 (0.0587)	-0.0869 (0.0553)	-0.0410 (0.0241)
Satisfied to a large extent	0.1130 (0.0954)	0.1590 (0.0940)	na	0.168*** (0.0244)	na	0.1170 (0.0643)	-0.0913 (0.0551)	0.0878 (0.0566)	0.0480 (0.0246)
<b>Observations</b>	11143	8222	14959	5653	10691	28183	10089	22431	31582

**Note:** \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001. (!) Indicates that the coefficient is unreliable because of few observations, according to Eurostat guidelines. na Refers to coefficients that are not shown because of the low number of observations.

(continued)

	Germany	Denmark	France	Poland	Austria
	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)
<b>ref: Permanent</b>					
Not satisfied at all + Satisfied to a small extent	0.0398 (0.0315)	0.0275 (0.0340)	0.0129 (0.0590)	0.0486*** (0.0146)	0.0696* (0.0314)
Satisfied to some extent	-0.0754 (0.0442)	-0.0174 (0.0542)	0.0353 (0.0874)	-0.0637** (0.0238)	-0.00511 (0.0465)
Satisfied to a large extent	0.0356 (0.0423)	-0.0101 (0.0579)	-0.0482 (0.0818)	0.0151 (0.0236)	-0.0645 (0.0474)
Not satisfied at all + Satisfied to a small extent	0.0193 (0.0257)	-0.0425* (0.0169)	na	0.0284 (0.0179)	-0.0434* (0.0175)
Satisfied to some extent	-0.0214 (0.0388)	-0.0753 (0.0551)	na	-0.0282 (0.0308)	-0.125* (0.0505)
Satisfied to a large extent	0.0021 (0.0365)	0.118* (0.0564)	na	-0.0002 (0.0300)	0.169** (0.0517)
Not satisfied at all + Satisfied to a small extent	-0.0400*** (0.0115)	-0.0256* (0.0111)	-0.0198 (0.0359)	0.0213 (0.0181)	-0.0367*** (0.0084)
Satisfied to some extent	-0.0321 (0.0224)	-0.0798** (0.0259)	-0.0898 (0.0605)	-0.0304 (0.0323)	-0.0757** (0.0233)
Satisfied to a large extent	0.0721*** (0.0219)	0.105*** (0.0270)	0.1100 (0.0598)	0.0091 (0.0316)	0.112*** (0.0238)
<b>Observations</b>	14849	10029	4461	14948	14181

**Note:** \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001. (I) Indicates that the coefficient is unreliable because of few observations, according to Eurostat guidelines. na Refers to coefficients that are not shown because of the low number of observations.



**Table A6: Robustness tests. Average marginal effects from multinomial logistic regression models. Difference in job satisfaction between permanent (ref.) and voluntary temporary workers with different contract durations, by country. Replications of models in Figure 6 and Table 10.**

	Denmark	Sweden	Italy	Norway	Finland	Czechia	Austria	Slovakia	Spain
	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)
<b>ref: Permanent</b>									
Not satisfied at all + Satisfied to a small extent	-0.0294 (0.0170)	-0.0158 (0.0090)	-0.0177 (0.0154)	-0.0052 (0.0301)	-0.0090 (0.0199)	0.051 (0.0432)	-0.0006 (0.0171)	0.0541 (0.0517)	-0.0229 (0.0227)
<b>6 months or less</b>									
Satisfied to some extent	-0.0633 (0.0422)	-0.0533* (0.0252)	-0.0277 (0.0547)	-0.0311 (0.0859)	-0.0243 (0.0371)	-0.137* (0.0673)	-0.0369 (0.0358)	-0.167* (0.0726)	0.059 (0.0542)
Satisfied to a large extent	0.0926* (0.0438)	0.0691** (0.0263)	0.0454 (0.0553)	0.0363 (0.0868)	0.0333 (0.0354)	0.086 (0.0693)	0.0375 (0.0368)	0.113 (0.0700)	-0.036 (0.0540)
Not satisfied at all + Satisfied to a small extent	-0.016 (0.0247)	-0.0133 (0.0176)	-0.0116 (0.0191)	na	-0.0128 (0.0312)	-0.0083 (0.0197)	0.0032 (0.0184)	-0.0893** (0.0297)	0.0053 (0.0544)
<b>Between 7 and 12 months</b>									
Satisfied to some extent	-0.0300 (0.0512)	0.0315 (0.0512)	-0.0186 (0.0640)	na	-0.142* (0.0630)	-0.0368 (0.0455)	-0.0276 (0.0349)	0.0276 (0.0740)	-0.0651 (0.1020)
Satisfied to a large extent	0.0461 (0.0538)	-0.0183 (0.0525)	0.0302 (0.0637)	na	0.155* (0.0625)	0.0452 (0.0453)	0.0244 (0.0358)	0.0617 (0.0710)	0.0597 (0.1060)
Not satisfied at all + Satisfied to a small extent	0.0045 (0.0191)	-0.0066 (0.0128)	na	0.0114 (0.0328)	0.0316 (0.0458)	0.0037 (0.0254)	-0.0491*** (0.0135)	-0.0402 (0.0578)	na
<b>More than one year</b>									
Satisfied to some extent	0.0287 (0.0347)	-0.0006 (0.0331)	na	-0.0256 (0.0836)	-0.074 (0.0729)	0.011 (0.0491)	0.0108 (0.0454)	-0.0191 (0.1030)	na
Satisfied to a large extent	-0.0332 (0.0360)	0.0072 (0.0344)	na	0.0142 (0.0848)	0.0424 (0.0689)	-0.0147 (0.0477)	0.0383 (0.0455)	0.0593 (0.0973)	na
<b>Observations</b>	9963	15190	30515	10557	8448	13434	13969	6786	22178

(continued)

	France	Portugal	UK	Belgium	Poland	Netherlands	Hungary
	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)	Coef. (SE)
<b>ref: Permanent</b>							
Not satisfied at all + Satisfied to a small extent	-0.0172 (0.0278)	-0.0068 (0.0375)	-0.0162 (0.0377)	0.0110 (0.0219)	0.0085 (0.0170)	-0.0078 (0.0173)	0.0994* (0.0415)
<b>6 months or less</b>							
Satisfied to some extent	0.0559 (0.0472)	0.0955 (0.0595)	0.108 (0.0600)	0.0439 (0.0407)	0.0263 (0.0358)	0.0872* (0.0384)	-0.144* (0.0609)
Satisfied to a large extent	-0.0388 (0.0448)	-0.0887 (0.0523)	-0.0913 (0.0575)	-0.0550 (0.0400)	-0.0348 (0.0349)	-0.0794* (0.0362)	0.0450 (0.0643)
Not satisfied at all + Satisfied to a small extent	0.0061 (0.0639)	-0.0403 (0.0439)	0.0659 (0.0634)	-0.0287 (0.0260)	0.016 (0.0146)	0.0237 (0.0164)	0.0146 (0.0294)
<b>Between 7 and 12 months</b>							
Satisfied to some extent	0.0407 (0.0980)	0.0609 (0.0900)	0.0235 (0.0787)	0.1340 (0.0687)	0.0185 (0.0279)	-0.009 (0.0290)	0.0809 (0.0568)
Satisfied to a large extent	-0.0468 (0.0903)	-0.0206 (0.0868)	-0.0894 (0.0747)	-0.1050 (0.0672)	-0.0344 (0.0269)	-0.0147 (0.0271)	-0.0956 (0.0550)
Not satisfied at all + Satisfied to a small extent	-0.0627 (0.0448)	na	-0.0028 (0.0474)	-0.0108 (0.0308)	0.0209 (0.0128)	-0.016 (0.0218)	-0.0814*** (0.0020)
<b>More than one year</b>							
Satisfied to some extent	-0.138 (0.0879)	na	0.0092 (0.0677)	-0.174** (0.0613)	0.000872 (0.0226)	-0.0820 (0.0672)	0.0390 (0.0943)
Satisfied to a large extent	0.201* (0.0895)	na	-0.0064 (0.0668)	0.185** (0.0640)	-0.0218 (0.0218)	0.0980 (0.0665)	0.0424 (0.0943)
<b>Observations</b>	4477	10512	28223	14533	15048	26537	17757

**Note:** \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001. (!) Indicates that the coefficient is unreliable because of few observations, according to Eurostat guidelines. **na** Refers to coefficients that are not shown because of the low number of observations

**Table B1: Robustness tests. Linear regression estimates. Determinants of job satisfaction. Income and household composition included as control variables. Replications of models in Figure 2 and Table 6**

	Finland	Luxembourg	Cyprus	Malta	Denmark	Estonia	France	Austria
	B	B	B	B	B	B	B	B
	(Robust SE)	(Robust SE)	(Robust SE)	(Robust SE)	(Robust SE)	(Robust SE)	(Robust SE)	(Robust SE)
<b>Age (ref: 35 to 44)</b>								
15 to 24	3.138*** (0.941)	2.843 (2.428)	-1.995 (1.899)	2.722* (1.146)	1.547 (0.873)	2.129 (1.260)	1.480 (1.632)	2.169** (0.798)
25 to 34	0.437 (0.648)	-1.267 (1.439)	-0.600 (1.178)	2.146* (1.017)	0.672 (0.723)	1.869* (0.851)	-2.233* (1.122)	0.677 (0.603)
45 to 54	0.899 (0.617)	-2.378 (1.297)	-0.477 (1.088)	1.152 (1.009)	-0.231 (0.661)	-0.220 (0.795)	1.052 (0.975)	1.046 (0.551)
55 to 64	1.897** (0.735)	0.155 (1.807)	-2.775 (1.417)	2.663* (1.102)	0.597 (0.718)	0.555 (0.965)	3.200* (1.283)	2.277** (0.708)
<b>Gender (ref: Man)</b>								
Woman	0.672 (0.498)	0.830 (1.106)	3.729*** (0.909)	1.201 (0.705)	0.195 (0.460)	1.483* (0.660)	-1.022 (0.775)	2.338*** (0.462)
<b>Educational level</b>								
	-1.041*** (0.170)	-0.825* (0.344)	-1.019** (0.320)	-0.208 (0.260)	-0.518** (0.176)	-0.534** (0.206)	-0.308 (0.269)	-0.356* (0.159)
<b>Working time (ref: Full-time)</b>								
Part-time	2.065** (0.772)	4.850** (1.512)	-4.337* (1.712)	1.485 (0.981)	0.286 (0.722)	1.158 (1.329)	0.251 (1.009)	1.073 (0.618)
Marginal work	5.046*** (1.325)	13.17*** (!) (2.769)	-10.38* (5.145)	-1.329 (!) (2.691)	0.664 (0.861)	-3.682 (2.891)	-0.0805 (2.458)	3.037** (1.066)
<b>Nationality (ref: Local)</b>								
EU/EFTA	0.660 (1.964)	-2.451* (1.075)	0.960 (1.261)	-2.587 (!) (2.745)	-3.585* (1.629)	-3.727 (!) (3.383)	-0.205 (2.689)	-2.978*** (0.735)
Non-EU/EFTA	2.704 (2.531)	-4.298 (2.920)	15.44*** (1.592)	-	0.00573 (1.599)	-5.658*** (0.993)	0.309 (2.094)	-3.123*** (0.862)
<b>Work contract (ref: Permanent)</b>								
Involuntary temporary	3.793*** (0.736)	3.357 (2.419)	0.902 (1.364)	-1.173 (2.033)	-1.284 (1.032)	-0.273 (!) (4.243)	-2.130 (1.366)	-4.851 (3.145)
Instrumental temporary	8.768*** (2.391)	7.752* (!) (3.750)	6.574 (6.100)	1.176 (2.204)	4.181*** (1.064)	-5.207 (3.111)	5.032* (2.092)	4.094*** (0.986)
Voluntary temporary	2.788* (1.375)	na	na	4.016 (2.488)	1.089 (1.119)	na	0.394 (1.949)	1.273 (1.071)
<b>Supervisory role (ref: No / DK)</b>								

Yes	1.647** (0.589)	0.245 (1.100)	0.867 (1.110)	2.641*** (0.700)	1.957** (0.634)	0.607 (0.691)	1.137 (1.023)	2.368*** (0.460)
<b>Occupation (ref: Elementary occupations)</b>								
Managers	9.509*** (1.700)	-0.000427 (k) (0.00304)	4.575 (2.567)	-0.00316 (k) (0.00192)	5.272** (1.625)	14.39*** (1.514)	8.650*** (2.008)	7.884*** (1.170)
Professionals	4.856*** (1.180)	-	3.044 (2.106)	-	2.616* (1.019)	14.87*** (1.426)	7.300*** (1.658)	7.157*** (0.959)
Technicians and associate professionals	5.347*** (1.090)	-	0.145 (1.894)	-	3.558*** (0.901)	11.78*** (1.422)	8.054*** (1.406)	7.371*** (0.843)
Clerical support workers	3.749** (1.240)	-	-1.057 (1.725)	-	2.485* (1.024)	9.225*** (1.575)	4.757** (1.563)	5.440*** (0.923)
Service and sales workers	2.492* (1.039)	-	-3.762* (1.622)	-	0.705 (0.808)	8.452*** (1.366)	4.450** (1.487)	4.042*** (0.822)
Skilled agricultural, forestry and fisheries	6.698*** (2.368)	-	3.354 (4.648)	-	2.937 (2.798)	10.77*** (l) (2.642)	3.365 (2.800)	10.24*** (1.977)
Craft and related trades workers	2.922* (1.162)	-	-3.377 (1.829)	-	2.606* (1.068)	8.198*** (1.401)	2.544 (1.799)	4.816*** (0.883)
Plant and machine operators, and assemblers	2.417 (1.250)	-	-3.879 (2.382)	-	0.221 (1.250)	3.851** (1.404)	-0.628 (1.720)	2.577* (1.071)
<b>Tenure</b>	-0.00967*** (0.00222)	-0.0168** (0.00542)	0.0195*** (0.00458)	0.000132 (0.00285)	-0.0000319 (0.00227)	0.00364 (0.00315)	-0.0126*** (0.00345)	-0.00227 (0.00192)
<b>Income (deciles)</b>	0.816*** (0.120)	1.852*** (0.275)	1.943*** (0.240)	0.390* (0.165)	0.0113 (0.119)	1.434*** (0.137)	-	0.361** (0.116)
<b>Number of children in the household</b>	-	-	-0.461 (0.404)	0.245 (0.384)	-	0.0918 (0.270)	0.819* (0.364)	0.593** (0.224)
<b>Unemployed adults in the household (ref: no)</b>	-	-	-1.834 (1.331)	-0.882 (2.000)	-	-3.062* (1.453)	-0.578 (1.663)	-1.558 (1.080)
<b>Constant</b>	69.35*** (1.294)	65.72*** (3.289)	69.43*** (2.037)	85.29*** (2.041)	84.29*** (1.200)	67.09*** (1.609)	71.20*** (1.726)	73.56*** (1.115)
<b>Observations</b>	9026	2527	3574	4378	10529	5615	5134	14398
<b>Adjusted R-squared</b>	0.025	0.033	0.120	0.010	0.006	0.119	0.017	0.024

**Note:** \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001. (i) Indicates that the categories "Part-time" and "Marginal work" are included under the same category. (j) Indicates that the categories "EU/EFTA" and "Non-EU/EFTA" were included under the same category. (k) Indicates that Occupation was included as a continuous (instead of categorical) variable. (l) Indicates that the coefficient is unreliable because of few observations, according to Eurostat guidelines. na Refers to coefficients that are not shown because of the low number of observations.

(continued)

	Netherlands	Italy	Czechia	Greece	Portugal	Belgium	Spain	Poland
	B	B	B	B	B	B	B	B
	(Robust SE)	(Robust SE)	(Robust SE)	(Robust SE)	(Robust SE)	(Robust SE)	(Robust SE)	(Robust SE)
<b>Age (ref: 35 to 44)</b>								
15 to 24	1.625*** (0.443)	3.601*** (0.557)	0.660 (0.807)	-2.751* (1.105)	3.135** (1.063)	3.604*** (0.820)	3.451*** (0.715)	1.295 (0.822)
25 to 34	-0.212 (0.364)	1.225*** (0.356)	0.641 (0.537)	-2.125** (0.670)	2.957*** (0.674)	0.192 (0.521)	0.628 (0.432)	0.445 (0.478)
45 to 54	0.597 (0.321)	-0.158 (0.296)	-0.600 (0.484)	1.078 (0.563)	-0.579 (0.569)	-0.207 (0.497)	-0.330 (0.362)	-0.923 (0.496)
55 to 64	1.206** (0.381)	-1.790*** (0.386)	-0.903 (0.587)	0.939 (0.776)	-0.350 (0.766)	0.193 (0.641)	1.084* (0.474)	0.0847 (0.589)
<b>Gender (ref: Man)</b>								
Woman	0.517* (0.260)	2.088*** (0.264)	-1.593*** (0.375)	-0.919* (0.454)	1.342** (0.488)	0.296 (0.411)	1.219*** (0.310)	-1.702*** (0.370)
<b>Educational level</b>								
	-0.0391 (0.0757)	-0.725*** (0.0803)	0.382** (0.143)	0.632*** (0.167)	-1.681*** (0.173)	-0.489*** (0.133)	-0.729*** (0.104)	0.659*** (0.129)
<b>Working time (ref: Full-time)</b>								
Part-time	-1.235*** (0.316)	1.216*** (0.317)	1.316 (0.824)	-9.008*** (0.599)	-0.626 (1.018)	0.621 (0.539)	-0.154 (0.475)	1.205 (0.716)
Marginal work	-1.431** (0.478)	-5.068*** (0.974)	4.821* (1.959)	-24.29*** (2.006)	-5.192* (2.212)	1.111 (1.359)	-6.038*** (0.921)	-2.129 (2.082)
<b>Nationality (ref: Local)</b>								
EU/EFTA	-2.960** (0.907)	0.567 (0.547)	-1.660 (1.589)	-1.139 (1.712)	1.064 (2.406)	-0.463 (0.649)	1.070 (0.948)	2.650 (j) (2.814)
Non-EU/EFTA	-4.224*** (1.046)	-0.621 (0.428)	1.416 (2.087)	-2.227* (0.901)	1.486 (2.028)	-4.583*** (1.272)	-1.943* (0.865)	-
<b>Work contract (ref: Permanent)</b>								
Involuntary temporary	-1.313** (0.465)	-1.376*** (0.386)	-2.061** (0.746)	-2.260** (0.785)	-1.978** (0.685)	-2.023** (0.770)	-2.699*** (0.388)	-5.209*** (0.549)
Instrumental temporary	2.423*** (0.459)	1.077 (0.641)	na	1.217 (1.623)	2.047 (1.459)	4.815* (2.131)	2.049 (1.178)	-0.897 (0.906)
Voluntary temporary	-1.696** (0.629)	2.826 (1.639)	1.429 (1.330)	1.104 (2.865)	1.298 (2.239)	0.233 (1.376)	0.835 (1.561)	-0.768 (0.771)
<b>Supervisory role (ref: No / DK)</b>								

Yes	0.544 (0.282)	1.322*** (0.295)	2.349*** (0.500)	0.244 (0.676)	1.897*** (0.518)	2.270*** (0.471)	0.309 (0.375)	2.074*** (0.485)
<b>Occupation (ref: Elementary occupations)</b>								
Managers	4.111*** (0.685)	5.325*** (1.059)	14.91*** (1.197)	18.00*** (1.854)	2.721 (1.522)	3.533** (1.079)	7.348*** (1.012)	19.85*** (1.063)
Professionals	2.461*** (0.514)	6.694*** (0.558)	16.25*** (0.992)	20.54*** (1.017)	2.157 (1.182)	5.767*** (0.845)	8.000*** (0.676)	20.29*** (0.899)
Technicians and associate professionals	2.661*** (0.491)	3.106*** (0.484)	12.69*** (0.877)	16.57*** (1.026)	-0.0147 (0.970)	4.358*** (0.809)	3.887*** (0.621)	15.92*** (0.849)
Clerical support workers	1.501** (0.514)	2.640*** (0.475)	10.19*** (0.933)	11.89*** (0.900)	-1.845 (0.990)	4.186*** (0.782)	3.725*** (0.597)	11.27*** (0.939)
Service and sales workers	1.591*** (0.454)	2.725*** (0.431)	6.855*** (0.902)	6.373*** (0.827)	-1.348 (0.820)	2.962*** (0.760)	2.386*** (0.508)	7.688*** (0.830)
Skilled agricultural, forestry and fisheries	3.726*** (1.131)	3.302** (1.127)	6.618** (2.048)	-2.125 (2.578)	0.642 (1.909)	2.355 (2.629)	3.225* (1.299)	4.724 (3.219)
Craft and related trades workers	1.197* (0.562)	2.394*** (0.478)	4.295*** (0.900)	6.163*** (1.010)	-1.285 (0.938)	2.654** (0.833)	2.140*** (0.603)	8.518*** (0.838)
Plant and machine operators, and assemblers	1.699** (0.642)	0.586 (0.542)	1.373 (0.882)	5.535*** (1.063)	-1.011 (0.956)	2.871*** (0.857)	-0.686 (0.638)	6.599*** (0.876)
<b>Tenure</b>	-0.00710*** (0.00103)	-0.00315** (0.00116)	0.00395* (0.00177)	0.0383*** (0.00240)	-0.00708** (0.00228)	-0.00388* (0.00177)	-0.00271 (0.00146)	0.00708*** (0.00172)
<b>Income (deciles)</b>	0.0220 (0.0692)	1.056*** (0.0595)	-	-	0.928*** (0.119)	0.609*** (0.101)	0.843*** (0.0780)	-
<b>Number of children in the household</b>	0.211 (0.110)	0.264* (0.124)	0.292 (0.206)	0.775*** (0.235)	0.764** (0.262)	0.183 (0.173)	0.239 (0.156)	0.422* (0.191)
<b>Unemployed adults in the household (ref: no)</b>								
Yes	0.538 (0.613)	0.312 (0.403)	-2.185 (1.146)	-1.206* (0.586)	1.142 (0.840)	-1.259 (0.864)	-1.661*** (0.415)	0.569 (0.886)
<b>Constant</b>	73.36*** (0.669)	76.06*** (0.566)	70.29*** (1.000)	59.84*** (1.010)	73.05*** (1.034)	74.50*** (0.890)	74.53*** (0.688)	61.34*** (0.949)
<b>Observations</b>	30293	35925	14530	11336	11912	15728	29157	18963
<b>Adjusted R-squared</b>	0.008	0.034	0.088	0.203	0.018	0.017	0.036	0.122

**Note:** \* p < 0.05. \*\* p < 0.01. \*\*\* p < 0.001. (f) Indicates that the categories "Part-time" and "Marginal work" are included under the same category. (g) Indicates that the categories "EU/EFTA" and "Non-EU/EFTA" were included under the same category. (k) Indicates that Occupation was included as a continuous (instead of categorical) variable. (l) Indicates that the coefficient is unreliable because of few observations, according to Eurostat guidelines. na Refers to coefficients that are not shown because of the low number of observations.

(continued)

	Germany	UK	Switzerland	Ireland	Hungary	Bulgaria	Romania	Lithuania	Slovakia
	B	B	B	B	B	B	B	B	B
	(Robust SE)	(Robust SE)	(Robust SE)	(Robust SE)	(Robust SE)	(Robust SE)	(Robust SE)	(Robust SE)	(Robust SE)
<b>Age (ref: 35 to 44)</b>									
15 to 24	2.691** (0.868)	-0.532 (0.644)	0.633 (1.258)	-1.313 (0.921)	-0.833 (0.707)	1.809 (1.257)	-0.536 (0.809)	1.258 (1.375)	3.556** (1.350)
25 to 34	1.515* (0.627)	-1.159* (0.475)	0.1000 (0.949)	0.0947 (0.634)	-0.127 (0.487)	1.745* (0.686)	0.673 (0.441)	-0.0789 (0.900)	0.349 (0.873)
45 to 54	-0.304 (0.583)	1.594*** (0.470)	0.427 (0.844)	1.474* (0.610)	-0.470 (0.435)	1.376* (0.598)	0.297 (0.386)	-1.197 (0.792)	0.189 (0.795)
55 to 64	-0.0424 (0.678)	2.959*** (0.575)	-0.0142 (0.994)	3.053*** (0.794)	-0.132 (0.536)	1.593* (0.673)	-0.00307 (0.517)	-1.375 (0.915)	0.687 (0.940)
<b>Gender (ref: Man)</b>									
Woman	0.0714 (0.471)	1.900*** (0.360)	-0.758 (0.700)	1.241* (0.503)	-1.052** (0.361)	-0.113 (0.475)	-1.102*** (0.323)	-1.543* (0.627)	-3.064*** (0.615)
<b>Educational level</b>									
	-0.613*** (0.163)	0.409*** (0.108)	-0.389 (0.214)	0.217 (0.166)	0.467** (0.174)	0.265 (0.188)	0.518*** (0.144)	1.337*** (0.241)	0.796*** (0.214)
<b>Working time (ref: Full-time)</b>									
Part-time	2.073*** (0.606)	-1.943*** (0.451)	3.923*** (1.059)	-1.126 (0.586)	-2.077* (0.863)	-10.75*** (1.761)	0.285 (i) (1.579)	-2.876* (1.157)	-5.865*** (1.711)
Marginal work	5.254*** (0.849)	0.304 (0.843)	6.499*** (1.462)	0.367 (1.260)	-1.410 (3.206)	-	-	-9.165** (3.212)	-20.31*** (3.350)
<b>Nationality (ref: Local)</b>									
EU/EFTA	0.413 (0.956)	-1.967** (0.651)	-3.217*** (0.691)	-5.086*** (0.811)	7.488* (2.915)	-	-	-	-
Non-EU/EFTA	-1.275 (0.932)	-2.897** (0.893)	-4.156** (1.296)	-3.091* (1.324)	0.527 (6.229)	-	-	-	-
<b>Work contract (ref: Permanent)</b>									
Involuntary temporary	-5.179*** (1.500)	-8.020*** (1.575)	-6.500* (3.036)	-9.532*** (1.354)	-9.517*** (0.742)	-12.48*** (1.496)	-13.77*** (2.587)	-11.84** (3.848)	-14.69*** (1.586)
Instrumental temporary	3.382*** (0.901)	2.614 (2.299)	9.787*** (1.310)	5.063* (2.258)	2.470 (1.594)	-3.803 (2.537)	na	-4.276 (i) (4.131)	na
Voluntary temporary	0.266 (3.934)	-1.437 (1.508)	6.849* (2.921)	-1.632 (1.905)	-2.597 (2.056)	-8.132* (3.478)	na	na	12.50*** (2.635)
<b>Supervisory role (ref: No / DK)</b>									
Yes	1.507**	1.618***	0.250	0.103	2.595***	4.642***	1.586**	2.164*	2.629**

Occupation (ref: Elementary occupations)		(0.511)	(0.373)	(0.713)	(0.536)	(0.508)	(0.776)	(0.595)	(0.850)	(0.938)
Managers	8.397*** (1.322)	11.08*** (0.823)	3.380 (1.966)	10.81*** (1.267)	14.36*** (1.090)	14.98*** (1.512)	14.18*** (1.358)	12.51*** (1.515)	25.02*** (1.958)	
Professionals	7.537*** (1.027)	10.03*** (0.760)	3.309 (1.784)	11.54*** (1.094)	15.68*** (0.961)	15.66*** (1.178)	13.88*** (0.873)	12.32*** (1.305)	23.45*** (1.581)	
Technicians and associate professionals	5.731*** (0.893)	8.338*** (0.772)	3.242 (1.722)	8.918*** (1.085)	13.02*** (0.755)	11.67*** (1.106)	11.83*** (0.839)	12.45*** (1.376)	19.49*** (1.437)	
Clerical support workers	5.331*** (0.917)	5.595*** (0.790)	3.160 (1.858)	8.238*** (1.104)	10.30*** (0.818)	12.12*** (1.107)	8.403*** (0.886)	9.427*** (1.627)	16.59*** (1.483)	
Service and sales workers	3.845*** (0.891)	5.106*** (0.721)	-0.273 (1.762)	4.616*** (1.016)	9.569*** (0.706)	3.401*** (0.882)	5.496*** (0.712)	4.753*** (1.276)	11.65*** (1.395)	
Skilled agricultural, forestry and fisheries	7.284*** (2.166)	14.91*** (2.479)	-1.035 (3.221)	9.376*** (2.054)	7.366*** (1.177)	1.068 (1.956)	5.706*** (1.867)	3.188 (2.311)	12.55*** (3.634)	
Craft and related trades workers	3.135*** (0.941)	7.422*** (0.907)	2.375 (1.850)	9.343*** (1.166)	6.258*** (0.705)	4.186*** (0.908)	3.879*** (0.693)	4.462*** (1.300)	8.618*** (1.442)	
Plant and machine operators, and assemblers	1.840 (1.094)	3.975*** (1.001)	-0.174 (2.388)	4.552*** (1.310)	3.086*** (0.683)	4.300*** (0.903)	3.333*** (0.713)	4.227*** (1.303)	5.970*** (1.420)	
Tenure	-0.00472* (0.00184)	-0.0136*** (0.00180)	0.000991 (0.00348)	0.00178 (0.00229)	0.0151*** (0.00165)	0.00839*** (0.00253)	0.0151*** (0.00187)	0.0154*** (0.00345)	0.0113*** (0.00281)	
Income (deciles)	0.737*** (0.110)	-	0.936*** (0.213)	-	0.625*** (0.0770)	1.594*** (0.0938)	0.534*** (0.0567)	0.825*** (0.106)	-	
Number of children in the household	-0.0412 (0.227)	0.470** (0.176)	-	0.115 (0.199)	0.593*** (0.169)	0.766* (0.302)	0.625*** (0.187)	0.961** (0.337)	1.183*** (0.316)	
Unemployed adults in the household (ref: no)	-1.475 (1.406)	-0.482 (0.955)	-	-1.339 (1.151)	0.0699 (0.937)	-2.108 (1.102)	-1.390 (0.727)	0.714 (1.204)	-1.911 (1.063)	
Yes	65.24*** (1.165)	65.39*** (0.833)	79.24*** (2.156)	71.84*** (1.161)	63.27*** (0.846)	49.65*** (1.101)	61.05*** (0.838)	64.38*** (1.571)	54.76*** (1.580)	
Observations	14864	28925	5500	11754	20102	10181	17325	5622	7339	
Adjusted R-squared	0.018	0.026	0.028	0.043	0.146	0.205	0.100	0.152	0.190	

Note: \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001. (f) Indicates that the categories "Part-time" and "Marginal work" are included under the same category. (g) Indicates that the category "EU/EFTA" and "Non-EU/EFTA" were included under the same categories. (k) Indicates that Occupation was included as a continuous (instead of categorical) variable. (l) Indicates that the coefficient is unreliable because of few observations, according to Eurostat guidelines. na Refers to coefficients that are not shown because of the low number of observations.



## 2. Sample descriptive statistics

Table C1: Sample descriptive statistics: analytical sample vs. original sample.

	Analytical sample Mean / Percentage (SD)	Original sample Mean / Percentage (SD)
<b>Job satisfaction</b>	78.29 (23.05)	78.23 (23.05)
<b>Age</b>		
15 to 24	8.49	9.18
25 to 34	19.83	19.80
35 to 44	25.54	25.31
45 to 54	27.55	27.30
55 to 64	18.6	18.40
<b>Gender</b>		
Man	50.08	50.15
Woman	49.92	49.85
<b>Educational level</b>		
	3.97 (1.84)	3.97 (1.84)
<b>Working time</b>		
Full-time	81.26	80.10
Part-time	14.97	15.32
Marginal work	3.78	4.57
<b>Nationality</b>		
Native	93.44	93.22
EU/EFTA	3.7	3.87
Non-EU/EFTA	2.86	2.91
<b>Supervisory role</b>		
No	78.47	78.63
Yes	21.53	21.37
<b>Occupation</b>		
Managers	4.78	4.74
Professionals	20.58	20.57
Technicians and associate professionals	15.52	15.40

Clerical support workers	10.39	10.29
Service and sales workers	17.88	18.12
Skilled agricultural, forestry and fisheries	0.96	0.98
Craft and related trades workers	11.13	11.02
Plant and machine operators, and assemblers	8.8	8.67
Elementary	9.95	10.21
<b>Tenure (in months)</b>	122.21 (120.69)	120.61 (120.42)
<b>Country</b>		
Austria	3.9	3.76
Belgium	4.16	4.01
Bulgaria	2.88	2.75
Switzerland	1.53	1.55
Cyprus	1	0.95
Czechia	3.84	3.71
Germany	4.03	4.18
Denmark	2.91	2.90
Estonia	1.49	1.47
Spain	7.71	7.59
Finland	2.53	2.46
France	1.36	1.39
Greece	3	2.94
Hungary	5.32	5.15
Ireland	3.11	3.65
Italy	9.5	9.29
Lithuania	1.57	1.54
Luxembourg	0.78	0.95
Malta	1.16	1.13
Netherlands	8.16	8.90
Norway	2.99	3.11
Poland	5.02	5.02
Portugal	3.49	3.42
Romania	4.58	4.41
Sweden	4.41	4.31
Slovak Republic	1.94	1.86
United Kingdom	7.66	7.63
<b>N</b>	<b>378,112</b>	<b>395,565</b>

**Table D1: Descriptive statistics of the samples in Figure 2 and Table 6.**

	<b>Finland</b>	<b>Luxembourg</b>	<b>Cyprus</b>	<b>Norway</b>	<b>Sweden</b>	<b>Malta</b>	<b>Denmark</b>	<b>Estonia</b>	<b>France</b>
	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)
<b>Age</b>									
15 to 24	10.13	6.45	6.35	10.99	8.48	14.43	20.10	7.87	9.04
25 to 34	21.42	22.79	24.18	21.70	20.25	22.77	17.11	19.55	18.52
35 to 44	23.05	27.48	28.09	22.85	24.01	24.71	19.36	23.97	26.28
45 to 54	24.90	31.32	25.11	25.64	26.11	21.33	23.89	26.79	29.68
55 to 64	20.50	11.96	16.26	18.83	21.16	16.76	19.55	21.82	16.48
<b>Gender</b>									
Man	47.85	51.94	47.54	50.96	49.17	56.66	48.21	46.34	44.99
Woman	52.15	48.06	52.46	49.04	50.83	43.34	51.79	53.66	55.01
<b>Educational level</b>									
4-33	4.33 (1.77)	4.21 (2.11)	4.19 (1.87)	4.18 (1.77)	4.35 (1.75)	3.50 (1.74)	3.99 (1.87)	4.26 (1.80)	3.92 (1.72)
<b>Working time</b>									
Full-time	84.10	80.43	90.41	79.30	86.26	82.96	72.51	91.65	81.22
Part-time	11.65	16.71	8.26	14.76	10.53	15.25	13.10	6.95	16.38
Marginal work	4.25	2.85 (!)	1.33	5.94	3.21	1.78 (!)	14.38	1.41	2.40
<b>Nationality</b>									
Native	96.83	59.82	78.63	91.54	96.15	98.06	95.60	87.98	96.07
EU/EFTA	1.81	36.99	12.60	6.05	2.25	1.94	2.34	0.62 (!)	1.71
Non-EU/EFTA	1.36	3.19	8.77	2.41	1.60	-	2.06	11.40	2.22
<b>Work contract</b>									
Permanent	85.14	93.04	83.87	92.53	88.01	94.11	86.96	97.81	83.66
Involuntary temporary	10.58	4.55	15.09	4.52	6.12	2.85	5.54	0.46 (!)	9.21
Instrumental temporary	0.94	1.83 (!)	0.66	1.01	1.90	1.92	4.05	1.44	3.58
Voluntary temporary	3.34	na	na	1.94	3.97	1.12	3.45	na	3.54
<b>Supervisory role</b>									
No	81.28	67.22	80.65	64.13	67.19	63.78	84.84	74.19	81.55
Yes	18.72	32.78	19.35	35.87	32.81	36.22	15.16	25.81	18.45
<b>Occupation</b>									
Managers	2.92	404.52 (k) (236.01)	4.12	8.83	6.33	443.89 (k)	2.45	9.23	6.90
Professionals	25.51	-	17.41	27.81	30.26	(243.02)	27.79	19.57	16.61
Technicians and associate professionals	20.21	-	13.93	18.20	20.10	-	17.31	14.07	22.48
Clerical support workers	6.97	-	14.35	6.02	6.80	-	7.76	6.13	11.04
Service and sales workers	19.46	-	18.76	20.16	17.96	-	22.01	13.48	14.45
Skilled agricultural, forestry and fisheries	1.12	-	0.64	0.85	0.70	-	0.88	0.94 (!)	2.16

Craft and related trades workers	9.74	-	9.70	9.09	8.43	-	6.72	12.18	7.62
Plant and machine operators, and assemblers	7.46	-	4.41	5.86	5.66	-	4.11	14.80	7.73
Elementary	6.61	-	16.69	3.18	3.76	-	10.96	9.60	11.01
<b>Tenure (in months)</b>	117.02 (125.04)	127.69 (118.22)	112.47 (113.91)	108.45 (111.71)	114.60 (125.71)	117.88 (126.14)	85.19 (106.46)	97.83 (101.55)	138.72 (127.96)

**Note:** (j) Indicates that the categories "Part-time" and "Marginal work" are included under the same category. (j) Indicates that the categories "EU/EFTA" and "Non-EU/EFTA" were included under the same category. (k) Indicates that Occupation was included as a continuous (instead of categorical) variable. (l) Indicates that the coefficient is unreliable because of few observations, according to Eurostat guidelines. na Refers to frequencies that are not shown because of the low number of observations.

(continued)

	<b>Austria</b>	<b>Netherlands</b>	<b>Italy</b>	<b>Czechia</b>	<b>Greece</b>	<b>Portugal</b>	<b>Belgium</b>	<b>Spain</b>	<b>Poland</b>
	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)
<b>Age</b>									
15 to 24	12.22	13.57	4.84	6.52	5.05	6.55	6.53	5.14	6.86
25 to 34	21.41	18.24	15.63	19.46	20.34	16.62	23.47	17.55	24.78
35 to 44	22.74	18.50	26.95	27.51	31.02	29.80	26.15	29.89	27.47
45 to 54	29.56	26.68	32.10	27.21	30.97	28.94	27.49	29.46	22.47
55 to 64	14.06	23.02	20.48	19.30	12.62	18.09	16.35	17.96	18.42
<b>Gender</b>									
Man	50.58	50.75	52.14	50.58	52.83	46.92	49.51	50.57	47.26
Woman	49.42	49.25	47.86	49.42	47.17	53.08	50.49	49.43	52.74
<b>Educational level</b>									
	3.77 (1.56)	4.09 (1.91)	3.46 (1.81)	3.79 (1.62)	4.03 (1.82)	3.23 (2.22)	4.30 (1.99)	4.03 (2.03)	4.43 (1.90)
<b>Working time</b>									
Full-time	73.74	61.92	73.78	93.75	80.68	91.54	75.41	82.09	92.59
Part-time	21.17	27.81	23.71	5.42	17.86	6.40	22.25	14.34	6.46
Marginal work	5.09	10.27	2.51	0.83	1.46	2.06	2.34	3.57	0.95
<b>Nationality</b>									
Native	85.59	97.52	88.55	98.25	91.60	97.94	89.85	94.33	99.61
EU/EFTA	8.58	1.49	3.89	1.13	1.49	0.62	7.63	2.29	0.39 (i)
Non-EU/EFTA	5.84	0.99	7.56	0.63	6.91	1.43	2.52	3.38	-
<b>Work contract</b>									
Permanent	91.36	84.42	84.53	90.47	87.09	78.91	90.60	75.63	73.87
Involuntary temporary	0.54	6.66	11.52	7.47	10.47	17.56	7.13	22.12	15.69
Instrumental temporary	4.77	6.19	3.51	na	1.91	2.46	0.47	1.49	4.96
Voluntary temporary	3.33	2.73	0.44	1.98	0.53	1.08	1.80	0.76	5.48
<b>Supervisory role</b>									
No	75.64	77.96	80.18	82.77	88.36	73.36	78.94	82.97	81.80
Yes	24.36	22.04	19.82	17.23	11.64	26.64	21.06	17.03	18.20
<b>Occupation</b>									
Managers	4.58	5.56	1.29	3.89	1.38	3.03	6.17	2.49	5.92
Professionals	15.92	28.21	13.78	14.03	20.84	18.28	23.61	18.85	22.59
Technicians and associate professionals	20.04	17.80	17.26	18.18	9.62	13.04	15.09	11.54	14.94
Clerical support workers	10.71	10.91	15.25	10.87	15.16	9.16	13.10	12.01	7.89
Service and sales workers	19.27	17.38	17.99	14.52	23.54	19.24	13.11	20.45	14.35
Skilled agricultural, forestry and fisheries	0.75	0.95	0.88	0.80	0.74	2.05	0.50	1.13	0.36

Craft and related trades workers	13.67	7.19	11.80	14.91	9.02	11.91	9.39	10.47	14.81
Plant and machine operators, and assemblers	5.97	4.37	8.21	16.42	7.36	8.88	7.48	8.46	10.81
Elementary	9.10	7.63	13.54	6.38	12.35	14.41	11.55	14.60	8.33
<b>Tenure (in months)</b>	122.09 (124.77)	133.98 (133.25)	152.72 (130.71)	122.05 (114.99)	129.16 (115.01)	146.66 (131.70)	135.53 (126.88)	137.94 (130.70)	123.60 (122.94)

**Note:** (j) Indicates that the categories "Part-time" and "Marginal work" are included under the same category. (j) Indicates that the categories "EU/EFTA" and "Non-EU/EFTA" were included under the same category. (k) Indicates that Occupation was included as a continuous (instead of categorical) variable. (l) Indicates that the coefficient is unreliable because of few observations, according to Eurostat guidelines. na Refers to frequencies that are not shown because of the low number of observations.

## (continued)

	Germany	UK	Switzerland	Ireland	Hungary	Bulgaria	Romania	Lithuania	Slovakia
	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)
<b>Age</b>									
15 to 24	9.80	11.17	13.97	9.96	7.56	4.51	4.62	5.68	6.74
25 to 34	19.74	22.59	17.40	23.92	19.83	18.06	20.74	16.49	20.17
35 to 44	19.83	23.70	23.40	29.52	28.39	26.94	30.15	20.78	26.86
45 to 54	29.08	25.39	27.23	22.55	26.61	27.53	30.94	31.50	26.03
55 to 64	21.54	17.15	18.01	14.05	17.62	22.97	13.55	25.55	20.21
<b>Gender</b>									
Man	50.84	48.10	50.07	47.65	52.78	51.35	53.92	44.19	49.30
Woman	49.16	51.90	49.93	52.35	47.22	48.65	46.08	55.81	50.70
<b>Educational level</b>									
3.94 (1.66)	4.04 (1.75)	4.27 (2.00)	4.52 (1.68)	3.58 (1.48)	3.94 (1.84)	3.84 (1.67)	4.59 (1.61)	3.86 (1.70)	
<b>Working time</b>									
Full-time	73.04	74.08	74.45	73.63	94.50	97.43	98.89	91.31	92.68
Part-time	19.18	21.23	17.90	22.42	5.10	2.57 (i)	1.11 (i)	7.52	6.27
Marginal work	7.78	4.69	7.64	3.96	0.40	-	-	1.17	1.05
<b>Nationality</b>									
Native	91.80	90.16	65.49	87.57	99.67	-	-	99.56	-
EU/EFTA	3.94	6.68	27.56	9.72	0.20	-	-	0.44 (i)	-
Non-EU/EFTA	4.26	3.16	6.95	2.71	0.13	-	-	-	-
<b>Work contract</b>									
Permanent	90.60	96.83	89.13	94.20	87.53	94.75	99.43	98.07	90.75
Involuntary temporary	2.11	1.41	1.35	3.52	10.48	3.64	0.43	1.12	7.39
Instrumental temporary	6.98	0.56	8.84	0.89	1.18	0.95	na	0.68 (i)	na
Voluntary temporary	0.31	1.21	0.68	1.39	0.81	0.66	na	na	1.72
<b>Supervisory role</b>									
No	76.58	63.41	67.38	70.48	87.25	89.30	92.61	85.82	89.03
Yes	23.42	36.59	32.62	29.52	12.75	10.70	7.39	14.18	10.97
<b>Occupation</b>									
Managers	3.98	10.86	9.25	6.87	3.71	3.42	1.62	8.09	3.15
Professionals	16.73	24.74	24.32	23.47	10.99	15.66	19.41	23.47	11.99
Technicians and associate professionals	23.40	13.37	21.01	13.31	13.78	9.43	7.86	9.43	15.27
Clerical support workers	14.20	11.17	8.49	11.46	7.56	6.75	6.15	5.10	10.78
Service and sales workers	13.94	19.77	16.85	21.61	13.70	21.08	19.25	13.40	18.57
Skilled agricultural, forestry and fisheries	0.74	0.45	1.21	0.88	2.15	1.64	0.74	2.01	0.63

Craft and related trades workers	12.82	6.22	11.18	8.36	15.38	14.27	20.89	13.72	12.89
Plant and machine operators, and assemblers	6.46	4.79	3.60	5.44	18.35	15.42	16.04	13.84	16.72
Elementary	7.73	8.64	4.09	8.60	14.38	12.34	8.03	10.93	10.00
<b>Tenure (in months)</b>	136.01 (131.03)	99.66 (104.71)	99.48 (106.44)	110.80 (111.21)	103.51 (110.90)	107.51 (94.68)	107.03 (89.35)	87.84 (83.73)	121.51 (115.42)

**Note:** (j) Indicates that the categories "Part-time" and "Marginal work" are included under the same category. (k) Indicates that the categories "EU/EFTA" and "Non-EU/EFTA" were included under the same category. (l) Indicates that Occupation was included as a continuous (instead of categorical) variable. (f) Indicates that the coefficient is unreliable because of few observations, according to Eurostat guidelines. na Refers to frequencies that are not shown because of the low number of observations.



**Table D2: Descriptive statistics of the samples in Figure 4 and Table 8.**

	Luxembourg	Finland	Norway	Sweden	Denmark	France	Netherlands	Malta	Cyprus
	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)
<b>Age</b>									
15 to 24	5.33	8.07	9.21	5.93	16.77	5.66	10.64	13.68	5.88
25 to 34	22.77	21.32	21.23	19.79	16.75	18.52	17.28	22.89	24.09
35 to 44	28.03	23.68	23.48	25.01	20.39	27.52	19.09	24.94	28.30
45 to 54	31.82	25.73	26.52	27.34	25.40	31.15	28.19	21.50	25.32
55 to 64	12.05	21.20	19.56	21.93	20.69	17.16	24.81	16.98	16.41
<b>Gender</b>									
Man	52.02	47.80	51.03	49.23	48.05	44.06	50.56	56.92	47.53
Woman	47.98	52.20	48.97	50.77	51.95	55.94	49.44	43.08	52.47
<b>Educational level</b>									
	4.21 (2.10)	4.37 (1.77)	4.22 (1.77)	4.39 (1.75)	4.05 (1.87)	3.94 (1.74)	4.14 (1.91)	3.50 (1.74)	4.18 (1.87)
<b>Working time</b>									
Full-time	80.68	85.28	80.72	88.77	74.18	81.69	63.25	83.82	90.60
Part-time	16.82	11.21	14.13	9.45	12.70	16.25	27.31	14.70	8.16
Marginal work	2.51 (!)	3.52	5.14	1.78	13.12	2.06	9.44	1.48 (!)	1.24
<b>Nationality</b>									
Native	59.96	96.85	91.83	96.36	95.67	95.99	97.63	98.12	78.60
EU/EFTA	36.87	1.83	6.02	2.22	2.30	1.76	1.49	1.88 (!)	12.65
Non-EU/EFTA	3.17	1.33	2.14	1.42	2.03	2.24	0.88	-	8.75
<b>Work contract</b>									
Permanent	95.37	89.09	97.16	94.26	94.01	90.08	94.49	97.06	84.75
6 months or less	na	4.95	0.43	2.15	1.25	5.60	1.07	0.89 (!)	3.09
Between 7 and 12 months	1.22 (!)	3.82	0.67	1.26	1.47	2.75	3.65	1.11 (!)	7.01
More than one year	2.33	2.14	1.74	2.32	3.28	1.57	0.79	0.94 (!)	5.16
<b>Supervisory role</b>									
No	66.82	80.64	62.72	65.72	83.95	80.41	76.53	63.52	80.45
Yes	33.18	19.36	37.28	34.28	16.05	19.59	23.47	36.48	19.55
<b>Occupation</b>									
Managers	403.76 (k)	3.03	9.20	6.69	2.65	7.30	5.98	444.63 (k)	4.16
Professionals	(236.01)	26.02	28.32	31.18	28.46	16.97	29.31	(243.49)	17.13
Technicians and associate professionals	-	20.36	18.64	20.46	18.01	22.92	18.28	-	13.99
Clerical support workers	-	6.98	6.00	6.66	7.88	11.12	10.97	-	14.39
Service and sales workers	-	19.01	19.14	16.81	20.96	14.28	16.52	-	18.74
Skilled agricultural, forestry and fisheries	-	1.04	0.80	0.66	0.78	1.78	0.94	-	0.64

Craft and related trades workers	-	9.74	8.97	8.60	6.14	7.07	6.94	-	9.77
Plant and machine operators, and assemblers	-	7.53	5.85	5.64	4.31	7.59	4.20	-	4.43
Elementary	-	6.30	3.10	3.31	10.81	10.97	6.86	-	16.73

**Note:** (j) Indicates that the categories "Part-time" and "Marginal work" are included under the same category. (j) Indicates that the categories "EU/EFTA" and "Non-EU/EFTA" were included under the same category. (k) Indicates that Occupation was included as a continuous (instead of categorical) variable. (l) Indicates that the coefficient is unreliable because of few observations, according to Eurostat guidelines. na Refers to frequencies that are not shown because of the low number of observations.

## (continued)

	<b>Ireland</b>	<b>Austria</b>	<b>Italy</b>	<b>Portugal</b>	<b>Czechia</b>	<b>Spain</b>	<b>Belgium</b>	<b>Germany</b>	<b>Greece</b>
	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)
<b>Age</b>									
15 to 24	8.46	8.83	3.40	4.94	6.00	3.68	5.52	5.59	4.55
25 to 34	24.13	21.39	14.72	15.87	19.50	16.06	23.51	19.53	20.07
35 to 44	30.15	23.63	27.54	30.72	27.82	30.43	26.53	20.84	31.27
45 to 54	22.99	31.24	33.07	29.76	27.65	30.59	27.92	31.01	31.38
55 to 64	14.27	14.91	21.26	18.70	19.03	19.23	16.52	23.02	12.74
<b>Gender</b>									
Man	47.65	50.66	51.99	46.76	50.92	50.40	49.46	50.60	53.02
Woman	52.35	49.34	48.01	53.24	49.08	49.60	50.54	49.40	46.98
<b>Educational level</b>									
	4.54 (1.68)	3.79 (1.54)	3.46 (1.82)	3.23 (2.23)	3.78 (1.62)	4.09 (2.03)	4.31 (1.98)	4.01 (1.66)	4.04 (1.82)
<b>Working time</b>									
Full-time	75.21	73.30	74.20	92.73	95.10	83.33	76.01	72.02	80.88
Part-time	21.40	21.60	23.44	5.69	4.44	13.59	22.15	19.97	17.72
Marginal work	3.39	5.10	2.35	1.58	0.46	3.08	1.84	8.01	1.40
<b>Nationality</b>									
Native	87.46	85.83	88.59	98.08	98.25	94.78	90.03	92.01	91.74
EU/EFTA	9.88	8.40	3.86	0.58	1.11	2.19	7.56	3.92	1.46
Non-EU/EFTA	2.65	5.77	7.54	1.34	0.64	3.03	2.41	4.08	6.80
<b>Work contract</b>									
Permanent	98.30	99.41	88.84	84.05	92.38	86.42	92.71	97.74	89.27
6 months or less	0.49	0.18 (!)	6.01	7.08	1.22	8.69	3.71	0.52	4.65
Between 7 and 12 months	0.45	0.27 (!)	4.50	7.40	2.95	3.59	2.37	1.11	4.49
More than one year	0.75	na	0.65	1.46	3.45	1.31	1.21	0.64	1.59
<b>Supervisory role</b>									
No	69.53	74.38	79.56	72.44	82.55	81.26	78.60	75.17	88.23
Yes	30.47	25.62	20.44	27.56	17.45	18.74	21.40	24.83	11.77
<b>Occupation</b>									
Managers	7.14	4.86	1.33	3.16	3.87	2.78	6.27	4.25	1.38
Professionals	23.63	15.58	14.07	18.22	13.98	19.37	23.64	17.20	20.82
Technicians and associate professionals	13.65	20.32	17.61	13.44	18.29	12.04	15.24	23.11	9.75
Clerical support workers	11.62	11.00	15.45	9.27	10.91	12.57	13.21	14.37	15.28
Service and sales workers	20.79	18.75	17.42	19.18	14.30	20.41	12.74	13.55	23.38
Skilled agricultural, forestry and fisheries	0.84	0.68	0.85	1.97	0.79	1.14	0.50	0.71	0.70

Craft and related trades workers	8.51	13.18	11.60	11.81	15.08	9.76	9.37	12.40	9.00
Plant and machine operators, and assemblers	5.44	6.22	8.23	9.04	16.63	8.59	7.53	6.46	7.47
Elementary	8.38	9.41	13.44	13.91	6.15	13.35	11.49	7.96	12.22

**Note:** **(j)** Indicates that the categories "Part-time" and "Marginal work" are included under the same category. **(j)** Indicates that the categories "EU/EFTA" and "Non-EU/EFTA" were included under the same category. **(k)** Indicates that Occupation was included as a continuous (instead of categorical) variable. **(l)** Indicates that the coefficient is unreliable because of few observations, according to Eurostat guidelines. **na** Refers to frequencies that are not shown because of the low number of observations.

## (continued)

	Poland	UK	Switzerland	Slovakia	Hungary	Bulgaria	Romania
	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)
<b>Age</b>							
15 to 24	4.89	10.46	6.86	6.42	7.14	4.12	4.59
25 to 34	23.97	22.67	18.00	20.32	19.77	17.94	20.73
35 to 44	28.42	23.92	25.38	27.23	28.44	27.19	30.16
45 to 54	23.71	25.71	29.94	26.32	26.88	27.71	30.98
55 to 64	19.02	17.24	19.82	19.71	17.76	23.04	13.55
<b>Gender</b>							
Man	47.33	48.21	49.84	49.37	52.79	51.22	53.92
Woman	52.67	51.79	50.16	50.63	47.21	48.78	46.08
<b>Educational level</b>							
	4.47 (1.91)	4.04 (1.75)	4.43 (1.97)	3.87 (1.70)	3.58 (1.48)	3.97 (1.83)	3.84 (1.67)
<b>Working time</b>							
Full-time	94.12	74.84	72.74	93.74	94.74	97.75	98.90
Part-time	5.33	20.88	19.02	5.53	4.89	2.25 (i)	1.10 (i)
Marginal work	0.54	4.28	8.24	0.74	0.37	-	-
<b>Nationality</b>							
Native	99.71	90.29	64.68	-	99.68	-	-
EU/EFTA	0.29 (j)	6.62	28.52	-	0.19	-	-
Non-EU/EFTA	-	3.09	6.80	-	0.13	-	-
<b>Work contract</b>							
Permanent	82.48	99.23	98.51	92.51	89.31	96.82	99.57
6 months or less	3.39	0.23	0.73	3.93	3.58	2.14	0.17 (l)
Between 7 and 12 months	5.82	0.21	0.61	2.71	6.51	0.87	0.18
More than one year	8.30	0.33	na	0.85	0.60	na	na
<b>Supervisory role</b>							
No	80.93	62.72	64.18	88.86	87.15	89.26	92.61
Yes	19.07	37.28	35.82	11.14	12.85	10.74	7.39
<b>Occupation</b>							
Managers	6.32	11.08	10.07	3.18	3.72	3.39	1.62
Professionals	23.12	24.85	24.77	12.06	11.07	15.85	19.41
Technicians and associate professionals	15.24	13.45	21.53	15.42	13.87	9.52	7.84
Clerical support workers	7.68	11.14	8.43	10.81	7.58	6.76	6.16
Service and sales workers	13.58	19.56	16.20	18.39	13.64	21.04	19.25
Skilled agricultural, forestry and fisheries	0.37	0.45	0.98	0.61	2.17	1.43	0.75

Craft and related trades workers	14.76	6.28	9.86	12.86	15.45	14.44	20.89
Plant and machine operators, and assemblers	11.10	4.77	3.79	16.92	18.19	15.62	16.05
Elementary	7.83	8.42	4.37	9.75	14.32	11.94	8.02

**Note:** (j) Indicates that the categories "Part-time" and "Marginal work" are included under the same category. (j) Indicates that the categories "EU/EFTA" and "Non-EU/EFTA" were included under the same category. (k) Indicates that Occupation was included as a continuous (instead of categorical) variable. (l) Indicates that the coefficient is unreliable because of few observations, according to Eurostat guidelines. na Refers to frequencies that are not shown because of the low number of observations.

**Table D3: Descriptive statistics of the samples in Figure 5 and Table 9.**

	Ireland		Finland		Sweden		Switzerland		Portugal		UK		Greece		Spain		Italy		
	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	
<b>Age</b>																			
15 to 24	8.58	7.20	5.16	13.69	5.16	13.69	3.58	3.58	10.52	4.55	4.55	2.42	2.42	3.77	3.77	2.42	2.42	3.77	
25 to 34	24.10	20.10	19.34	17.30	19.34	17.30	13.93	13.93	22.68	19.67	19.67	14.32	14.32	14.21	14.21	14.32	14.32	14.21	
35 to 44	30.07	23.80	25.42	23.30	25.42	23.30	31.39	31.39	23.88	31.25	31.25	30.68	30.68	26.89	26.89	30.68	30.68	26.89	
45 to 54	23.05	26.76	27.89	27.49	27.89	27.49	31.01	31.01	25.70	31.64	31.64	31.97	31.97	33.29	33.29	31.97	31.97	33.29	
55 to 64	14.20	22.14	22.19	18.22	22.19	18.22	20.09	20.09	17.22	12.89	12.89	20.62	20.62	21.84	21.84	20.62	20.62	21.84	
<b>Gender</b>																			
Man	47.73	49.44	50.00	50.13	50.00	50.13	46.64	46.64	48.22	53.83	53.83	50.81	50.81	52.42	52.42	50.81	50.81	52.42	
Woman	52.27	50.56	50.00	49.87	50.00	49.87	53.36	53.36	51.78	46.17	46.17	49.19	49.19	47.58	47.58	49.19	49.19	47.58	
<b>Educational level</b>																			
4.54 (1.68)	4.35 (1.76)	4.40 (1.75)	4.28 (2.00)	3.24 (2.25)	4.03 (1.75)	4.11 (1.81)	4.15 (2.04)	3.48 (1.81)	4.03 (1.75)	4.11 (1.81)	4.11 (1.81)	4.15 (2.04)	4.15 (2.04)	3.48 (1.81)	3.48 (1.81)	4.15 (2.04)	4.15 (2.04)	3.48 (1.81)	
<b>Working time</b>																			
Full-time	75.84	86.20	89.91	74.54	89.91	74.54	94.13	94.13	74.94	81.31	81.31	85.57	85.57	75.79	75.79	85.57	85.57	75.79	
Part-time	20.80	10.59	8.76	17.87	8.76	17.87	4.54	4.54	20.80	17.52	17.52	12.14	12.14	22.35	22.35	12.14	12.14	22.35	
Marginal work	3.36	3.21	1.34	7.59	1.34	7.59	1.34	1.34	4.26	1.17	1.17	2.28	2.28	1.86	1.86	2.28	2.28	1.86	
<b>Nationality</b>																			
Native	87.36	96.87	96.77	65.88	96.77	65.88	98.44	98.44	90.30	92.73	92.73	95.31	95.31	89.19	89.19	95.31	95.31	89.19	
EU/EFTA	9.93	1.86	2.16	27.28	2.16	27.28	0.50	0.50	6.61	1.31	1.31	2.01	2.01	3.66	3.66	2.01	2.01	3.66	
Non-EU/EFTA	2.71	1.26	1.07	6.85	1.07	6.85	1.07	1.07	3.09	5.96	5.96	2.68	2.68	7.15	7.15	2.68	2.68	7.15	
<b>Work contract</b>																			
Permanent	99.36	98.92	97.99	90.98	97.99	90.98	97.32	97.32	99.56	97.85	97.85	98.31	98.31	96.16	96.16	98.31	98.31	96.16	
6 months or less	na	0.56	1.49	0.74	1.49	0.74	1.31	1.31	0.14	0.89	0.89	0.85	0.85	1.71	1.71	0.85	0.85	1.71	
Between 7 and 12 months	0.27	na	0.33	0.97	0.33	0.97	1.20	1.20	na	0.56	0.56	0.47	0.47	0.67	0.67	0.47	0.47	0.67	
More than one year	0.22	0.34	na	7.31	na	7.31	na	na	0.21	0.69	0.69	0.37	0.37	1.46	1.46	0.37	0.37	1.46	
<b>Supervisory role</b>																			
No	69.27	79.30	64.81	66.88	64.81	66.88	70.62	70.62	62.65	87.22	87.22	79.23	79.23	78.67	78.67	79.23	79.23	78.67	
Yes	30.73	20.70	35.19	33.12	35.19	33.12	29.38	29.38	37.35	12.78	12.78	20.77	20.77	21.33	21.33	20.77	20.77	21.33	
<b>Occupation</b>																			
Managers	7.17	3.30	6.91	9.32	6.91	9.32	3.52	3.52	11.11	1.52	1.52	3.09	3.09	1.37	1.37	3.09	3.09	1.37	
Professionals	23.74	25.81	31.25	24.25	31.25	24.25	19.03	19.03	24.86	22.01	22.01	20.01	20.01	13.92	13.92	20.01	20.01	13.92	
Technicians and associate professionals	13.75	20.42	20.98	21.25	20.98	21.25	14.24	14.24	13.48	10.21	10.21	12.72	12.72	18.48	18.48	12.72	12.72	18.48	
Clerical support workers	11.49	6.86	6.73	8.38	6.73	8.38	9.48	9.48	11.08	15.80	15.80	13.16	13.16	16.04	16.04	13.16	13.16	16.04	
Service and sales workers	20.79	18.37	15.85	16.86	15.85	16.86	18.32	18.32	19.56	23.00	23.00	19.54	19.54	17.05	17.05	19.54	19.54	17.05	
Skilled agricultural, forestry and fisheries	0.77	0.97	0.54	1.19	0.54	1.19	1.66	1.66	0.45	0.68	0.68	1.13	1.13	0.62	0.62	1.13	1.13	0.62	
Craft and related trades workers	8.57	10.37	8.94	11.22	8.94	11.22	12.12	12.12	6.30	9.07	9.07	9.79	9.79	12.16	12.16	9.79	9.79	12.16	
Plant and machine operators, and assemblers	5.47	7.89	5.76	3.56	5.76	3.56	8.99	8.99	4.76	7.40	7.40	8.40	8.40	8.19	8.19	8.40	8.40	8.19	
Elementary	8.26	6.01	3.05	3.98	3.05	3.98	12.66	12.66	8.40	10.31	10.31	12.17	12.17	12.17	12.17	12.17	12.17	12.17	

[This page has been intentionally left blank to facilitate the interpretation of the tables below]



(continued)

	Germany		Denmark		France		Poland		Austria	
	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	
<b>Age</b>										
15 to 24	9.60	16.69	6.50	4.20	12.02					
25 to 34	19.44	17.08	17.46	22.67	21.02					
35 to 44	19.79	20.31	27.08	29.01	22.81					
45 to 54	29.38	25.37	31.65	24.56	29.89					
55 to 64	21.79	20.55	17.31	19.57	14.27					
<b>Gender</b>										
Man	51.00	48.74	44.77	47.36	50.79					
Woman	49.00	51.26	55.23	52.64	49.21					
<b>Educational level</b>										
	3.94 (1.66)	4.05 (1.85)	3.95 (1.73)	4.57 (1.92)	3.75 (1.55)					
<b>Working time</b>										
Full-time	73.51	76.59	83.55	94.63	74.25					
Part-time	18.88	12.15	14.68	5.37 (i)	20.90					
Marginal work	7.61	11.26	1.77	-	4.85					
<b>Nationality</b>										
Native	92.00	95.71	96.53	99.75	85.95					
EU/EFTA	3.83	2.28	1.64	0.25 (j)	8.27					
Non-EU/EFTA	4.17	2.00	1.84	-	5.78					
<b>Work contract</b>										
Permanent	92.87	95.55	96.28	93.71	95.04					
6 months or less	0.88	0.71	0.76	3.00	0.78					
Between 7 and 12 months	1.14	0.63	na	1.73	0.54					
More than one year	5.11	3.11	2.29	1.55	3.64					
<b>Supervisory role</b>										
No	76.21	83.79	79.58	79.48	75.40					
Yes	23.79	16.21	20.42	20.52	24.60					
<b>Occupation</b>										
Managers	4.07	2.69	7.64	6.88	4.66					
Professionals	16.61	28.40	17.66	25.05	15.34					
Technicians and associate professionals	23.66	18.20	22.98	16.32	20.34					
Clerical support workers	14.27	7.86	11.30	7.95	10.85					
Service and sales workers	13.81	20.46	13.97	12.42	19.14					
Skilled agricultural, forestry and fisheries	0.74	0.94	1.75	0.31	0.71					

Craft and related trades workers	12.98	7.24	7.60	14.14	13.91
Plant and machine operators, and assemblers	6.42	4.34	7.13	10.53	6.02
Elementary	7.45	9.88	9.98	6.41	9.03

**Note:** (j) Indicates that the categories "Part-time" and "Marginal work" are included under the same category. (j) Indicates that the categories "EU/EFTA" and "Non-EU/EFTA" were included under the same category. (l) Indicates that the coefficient is unreliable because of few observations, according to Eurostat guidelines. **na** Refers to frequencies that are not shown because of the low number of observations.

**Table D4: Descriptive statistics of the samples in Figure 6 and Table 10.**

	Denmark		Sweden		Italy		Norway		Finland		Czechia		Austria		Slovakia		Spain		
	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	
<b>Age</b>																			
15 to 24	16.21	6.28	2.39	9.25	8.71	5.51	9.11	5.95	2.07										
25 to 34	16.55	19.04	13.35	20.67	20.06	18.73	21.63	19.88	13.73										
35 to 44	20.43	25.01	27.46	23.37	23.35	27.76	23.62	27.06	30.98										
45 to 54	25.72	27.45	34.21	26.82	26.14	27.97	30.87	26.38	32.34										
55 to 64	21.10	22.22	22.59	19.89	21.73	20.04	14.77	20.73	20.89										
<b>Gender</b>																			
Man	48.07	49.49	52.15	51.41	49.14	51.35	50.55	49.56	50.80										
Woman	51.93	50.51	47.85	48.59	50.86	48.65	49.45	50.44	49.20										
<b>Educational level</b>																			
4.06 (1.85)	4.39 (1.75)	3.48 (1.82)	4.20 (1.76)	4.34 (1.76)	3.80 (1.63)	3.80 (1.63)	3.80 (1.55)	3.93 (1.71)	4.13 (2.04)										
<b>Working time</b>																			
74.72	88.31	75.80	80.70	84.97	94.34	94.34	73.07	96.30	85.51										
12.97	9.35	22.27	14.02	11.09	4.92	4.92	21.68	3.24	12.12										
12.32	2.33	1.92	5.29	3.94	0.74	0.74	5.25	0.46	2.37										
<b>Nationality</b>																			
95.82	96.73	89.27	92.08	96.92	98.35	98.35	85.60	-	95.29										
2.28	2.15	3.65	5.92	1.83	1.06	1.06	8.61	-	2.05										
1.90	1.12	7.07	2.00	1.24	0.60	0.60	5.79	-	2.66										
<b>Work contract</b>																			
96.19	96.50	99.52	99.17	96.27	97.86	97.86	96.49	98.14	99.43										
1.07	1.79	0.25	0.30	2.39	0.35	0.35	1.30	0.78	0.40										
0.78	0.51	0.18	na	0.78	0.98	0.98	1.37	0.71	0.10										
1.96	1.19	na	0.32	0.56	0.81	0.81	0.84	0.37	na										
<b>Supervisory role</b>																			
83.63	65.16	78.16	62.32	79.71	81.92	81.92	74.44	88.28	79.09										
16.37	34.84	21.84	37.68	20.29	18.08	18.08	25.56	11.72	20.91										
<b>Occupation</b>																			
2.71	6.82	1.42	9.40	3.23	4.16	4.16	4.82	3.36	3.12										
28.67	31.03	14.09	27.88	25.52	14.37	14.37	16.05	12.81	19.70										
18.26	20.83	18.69	18.75	20.42	18.64	18.64	20.04	16.14	12.69										
7.81	6.70	16.18	5.98	6.85	10.83	10.83	10.89	11.14	13.13										
20.97	16.51	16.69	19.13	18.77	14.28	14.28	18.84	18.91	19.68										
0.79	0.61	0.62	0.81	1.07	0.80	0.80	0.74	0.63	1.12										

Craft and related trades workers	6.26	8.64	11.86	9.05	10.09	15.14	13.06	13.42	9.79
Plant and machine operators, and assemblers	4.37	5.59	8.20	5.91	7.72	16.10	6.19	17.06	8.45
Elementary	10.17	3.27	12.27	3.11	6.33	5.68	9.38	6.53	12.32

**Note: (j)** Indicates that the categories "EU/EFTA" and "Non-EU/EFTA" were included under the same category. **(l)** Indicates that the coefficient is unreliable because of few observations, according to Eurostat guidelines. **na** Refers to frequencies that are not shown because of the low number of observations.

## (continued)

	France	Portugal	UK	Belgium	Poland	Netherlands	Hungary
	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)	Mean / Percentage (SD)
<b>Age</b>							
15 to 24	5.16	2.92	10.53	5.25	3.64	11.02	6.85
25 to 34	17.78	13.47	22.63	22.47	22.32	16.41	19.72
35 to 44	27.27	31.75	23.86	26.49	28.84	19.06	28.86
45 to 54	31.96	31.43	25.72	28.56	24.61	28.35	26.90
55 to 64	17.82	20.42	17.26	17.23	20.59	25.16	17.67
<b>Gender</b>							
Man	44.56	46.65	48.14	49.67	47.13	50.88	53.21
Woman	55.44	53.35	51.86	50.33	52.87	49.12	46.79
<b>Educational level</b>							
3.96 (1.73)	3.23 (2.25)	4.04 (1.75)	4.33 (1.98)	4.58 (1.92)	4.13 (1.91)	3.70 (1.49)	
<b>Working time</b>							
Full-time	82.89	93.73	74.70	76.45	93.59	62.89	95.14
Part-time	14.92	4.78	20.92	21.62	5.68	27.10	4.55
Marginal work	2.19	1.49	4.38	1.93	0.74	10.00	0.31
<b>Nationality</b>							
Native	96.56	98.44	90.31	90.61	99.69	97.77	99.70
EU/EFTA	1.68	0.52	6.60	7.30	0.31 (j)	1.42	0.16
Non-EU/EFTA	1.76	1.04	3.09	2.08	-	0.81	0.14
<b>Work contract</b>							
Permanent	95.93	98.98	99.42	98.05	93.09	98.20	99.09
6 months or less	2.75	0.63	0.25	1.20	1.38	0.50	0.33
Between 7 and 12 months	0.60	0.28	0.14	0.36	2.26	1.10	0.42
More than one year	0.71	na	0.19	0.39	3.27	0.20	0.16
<b>Supervisory role</b>							
No	79.58	70.35	62.66	77.75	79.00	76.05	86.06
Yes	20.42	29.65	37.34	22.25	21.00	23.95	13.94
<b>Occupation</b>							
Managers	7.75	3.58	11.10	6.52	6.98	6.17	4.17
Professionals	17.67	18.72	24.82	23.52	25.47	29.33	12.20
Technicians and associate professionals	23.03	14.30	13.46	15.66	16.17	18.27	15.03
Clerical support workers	11.06	9.44	11.10	13.40	7.56	10.76	7.81
Service and sales workers	13.94	18.50	19.63	12.54	12.68	16.81	14.37
Skilled agricultural, forestry and fisheries	1.68	1.64	0.45	0.46	0.34	0.94	2.00

Craft and related trades workers	7.13	12.02	6.27	9.35	13.83	6.90	16.06
Plant and machine operators, and assemblers	7.53	9.04	4.75	7.43	10.39	3.96	19.65
Elementary	10.23	12.77	8.42	11.11	6.59	6.86	8.70

**Note: (j)** Indicates that the categories "EU/EFTA" and "Non-EU/EFTA" were included under the same category. **(l)** Indicates that the coefficient is unreliable because of few observations, according to Eurostat guidelines. **na** Refers to frequencies that are not shown because of the low number of observations.



## **APPENDIX CHAPTER 3**

*Unions and temporary workers' wages in Spain: testing solidarity in the good times and in the bad times*



# 1. Sample descriptive statistics of quantile regression models

Table A1: Descriptive statistics of samples of permanent and temporary workers in Column 1 of Figure 4 and tables 7.1.1-7.1.5

	<u>2006</u>		<u>2007</u>
	Mean / Percentage (Standard deviation)		Mean / Percentage (Standard deviation)
<b>Log (hourly wage)</b>	1.74 (0.31)	<b>Log (hourly wage)</b>	2.02 (0.42)
<b>Gender: Woman (vs. Man)</b>	41.57	<b>Gender: Woman (vs. Man)</b>	41.03
<b>Age</b>	42.13 (10.41)	<b>Age</b>	41.53 (10.57)
<b>Age^2</b>	1883.40 (883.26)	<b>Age^2</b>	1836.04 (895.46)
<b>Education</b>		<b>Education</b>	
Elementary or less	17.17	Elementary or less	17.60
Basic secondary	17.27	Basic secondary	17.49
Advanced secondary and VET	34.28	Advanced secondary and VET	34.68
University	31.27	University	30.23
<b>Occupation</b>		<b>Occupation</b>	
Legislators, senior officials and managers	3.14	Legislators, senior officials and managers	4.12
Professionals and intellectuals	21.50	Professionals and intellectuals	17.75
Technicians and associate professionals	16.56	Technicians and associate professionals	17.24
Clerks	11.04	Clerks	9.65
Service workers and shop and market sales workers	12.04	Service workers and shop and market sales workers	12.79
Skilled agricultural and fishery workers	0.61	Skilled agricultural and fishery workers	0.57
Craft and related trades workers	13.50	Craft and related trades workers	15.64
Plant and machine operators and assemblers	11.67	Plant and machine operators and assemblers	11.53
Elementary occupations	9.93	Elementary occupations	10.73
<b>Supervisory role: Yes (vs. No)</b>	25.67	<b>Supervisory role: Yes (vs. No)</b>	23.23
<b>Nationality: Foreigner (vs. Native)</b>	4.62	<b>Nationality: Foreigner (vs. Native)</b>	6.61
<b>Public sector: Yes (vs. No)</b>	31.85	<b>Public sector: Yes (vs. No)</b>	29.61
<b>Company size</b>		<b>Company size</b>	
11 to 50	24.80	11 to 50	28.09
51 to 250	19.41	51 to 250	20.35
251 and more	55.78	251 and more	51.56
<b>Part-time employment: Yes (vs. No)</b>	6.50	<b>Part-time employment: Yes (vs. No)</b>	7.49
<b>Fixed wage: Yes (vs. No)</b>	78.31	<b>Fixed wage: Yes (vs. No)</b>	80.78
<b>First job: Yes (vs. No)</b>	23.03	<b>First job: Yes (vs. No)</b>	26.88
<b>Work at weekends</b>		<b>Work on Saturdays</b>	
Always	13.02	Always	10.65
Sometimes	30.61	Sometimes	33.52
Never	56.37	Never	55.83
		<b>Work on Sundays</b>	
		Always	4.01
		Sometimes	22.82
		Never	73.17
<b>Working at night: Yes (vs. No)</b>	18.67	<b>Working at night: Yes (vs. No)</b>	14.56

(continued)

(continued)

**Activity sector**

Agriculture and fishing	1.35
Manufacturing	23.61
Construction	7.63
Commerce and repairs	8.98
Accommodation and food service + Domestic service	3.75
Transportation, storage, communication	7.21
Finance and insurance	4.52
Real Estate	7.37
Public administration	12.65
Education	10.01
Health and social work	9.96
Other social activities and personal services	2.96

**Temporary contract: Yes (vs.No)** 18.17

**Works council: Yes (vs. No)** 75.04

**N** 3786

**Activity sector**

Agriculture and fishing	1.26
Manufacturing	21.69
Construction	10.57
Commerce and repairs	11.35
Accommodation and food service + Domestic service	3.63
Transportation, storage, communication	6.05
Finance and insurance	3.63
Real Estate	8.98
Public administration	12.04
Education	8.00
Health and social work	9.98
Other social activities and personal services	2.83

**Temporary contract: Yes (vs.No)** 18.60

**Works council: Yes (vs. No)** 73.37

**N** 3887

(Table A1, continued)

	<u>2008</u>		<u>2009</u>
	Mean / Percentage (Standard deviation)		Mean / Percentage (Standard deviation)
<b>Log (hourly wage)</b>	2.09 (0.42)	<b>Log (hourly wage)</b>	2.09 (0.42)
<b>Gender: Woman (vs. Man)</b>	40.83	<b>Gender: Woman (vs. Man)</b>	41.58
<b>Age</b>	41.81 (10.39)	<b>Age</b>	41.92 (10.16)
<b>Age^2</b>	1855.60 (879.71)	<b>Age^2</b>	1860.14 (866.10)
<b>Education</b>		<b>Education</b>	
Elementary or less	14.56	Elementary or less	14.37
Basic secondary	17.59	Basic secondary	18.99
Advanced secondary and VET	35.26	Advanced secondary and VET	33.70
University	32.58	University	32.94
<b>Occupation</b>		<b>Occupation</b>	
Legislators, senior officials and managers	4.32	Legislators, senior officials and managers	4.01
Professionals and intellectuals	19.17	Professionals and intellectuals	19.51
Technicians and associate professionals	16.23	Technicians and associate professionals	17.58
Clerks	13.06	Clerks	8.64
Service workers and shop and market sales workers	13.01	Service workers and shop and market sales workers	13.95
Skilled agricultural and fishery workers	1.13	Skilled agricultural and fishery workers	1.20
Craft and related trades workers	13.55	Craft and related trades workers	13.97
Plant and machine operators and assemblers	11.04	Plant and machine operators and assemblers	11.37
Elementary occupations	8.48	Elementary occupations	9.77
<b>Supervisory role: Yes (vs. No)</b>	23.54	<b>Supervisory role: Yes (vs. No)</b>	24.49
<b>Nationality: Foreigner (vs. Native)</b>	6.91	<b>Nationality: Foreigner (vs. Native)</b>	8.90
<b>Public sector: Yes (vs. No)</b>	30.47	<b>Public sector: Yes (vs. No)</b>	32.82
<b>Company size</b>		<b>Company size</b>	
11 to 50	28.94	11 to 50	26.14
51 to 250	20.79	51 to 250	20.17
251 and more	50.27	251 and more	53.68
<b>Part-time employment: Yes (vs. No)</b>	7.16	<b>Part-time employment: Yes (vs. No)</b>	7.34
<b>Fixed wage: Yes (vs. No)</b>	86.87	<b>Fixed wage: Yes (vs. No)</b>	87.64
<b>First job: Yes (vs. No)</b>	22.41	<b>First job: Yes (vs. No)</b>	19.14
<b>Work on Saturdays</b>		<b>Work on Saturdays</b>	
Always	9.56	Always	10.59
Sometimes	35.00	Sometimes	38.74
Never	55.44	Never	50.66
<b>Work on Sundays</b>		<b>Work on Sundays</b>	
Always	4.44	Always	4.53
Sometimes	23.91	Sometimes	27.65
Never	71.65	Never	67.82
<b>Working at night: Yes (vs. No)</b>	16.21	<b>Working at night: Yes (vs. No)</b>	17.30

(continued)

<b>Activity sector</b>	
Agriculture and fishing	1.69
Manufacturing	21.42
Construction	8.76
Commerce and repairs	9.98
Accommodation and food service + Domestic service	3.85
Transportation, storage, communication	7.66
Finance and insurance	3.45
Real Estate	8.46
Public administration	12.43
Education	10.22
Health and social work	9.40
Other social activities and personal services	2.68
<b>Temporary contract: Yes (vs.No)</b>	<b>16.02</b>
<b>Works council: Yes (vs. No)</b>	<b>72.68</b>
<b>N</b>	<b>4257</b>

(continued)

<b>Activity sector</b>	
Agriculture, farming, silviculture, fishing	1.70
Manufacturing	20.95
Construction	7.93
Wholesale and retail trade	9.49
Transportation and storage	5.66
Accommodation and food services + Households as employers	4.29
Information, communication, financial and insurance	7.10
Real Estate, professional, scientific and technical, administrative and support service	8.07
Public administration and defence	12.84
Education	9.20
Human health and social work	10.50
Arts, entertainment	2.27
<b>Temporary contract: Yes (vs.No)</b>	<b>16.94</b>
<b>Works council: Yes (vs. No)</b>	<b>72.23</b>
<b>N</b>	<b>4238</b>

(Table A1, continued)

	<u>2010</u>
	Mean / Percentage (Standard deviation)
<b>Log (hourly wage)</b>	2.09 (0.43)
<b>Gender: Woman</b> (vs. Man)	42.68
<b>Age</b>	43.06 (10.08)
<b>Age^2</b>	1956.05 (874.04)
<b>Education</b>	
Elementary or less	11.94
Basic secondary	17.86
Advanced secondary and VET	36.81
University	33.39
<b>Occupation</b>	
Managers	4.17
Professionals and intellectuals	18.72
Technicians and associate professionals	19.45
Clerical support workers	9.06
Service and sales workers	14.72
Skilled agricultural, forestry and fish	1.49
Craft and related trades workers	13.03
Plant and machine operators and assembl	10.73
Elementary occupations	8.63
<b>Supervisory role: Yes</b> (vs. No)	24.13
<b>Nationality: Foreigner</b> (vs. Native)	6.93
<b>Public sector: Yes</b> (vs. No)	30.56
<b>Company size</b>	
11 to 50	26.36
51 to 250	21.50
251 and more	52.14
<b>Part-time employment: Yes</b> (vs. No)	7.03
<b>Fixed wage: Yes</b> (vs. No)	85.45
<b>First job: Yes</b> (vs. No)	21.81
<b>Work on Saturdays</b>	
Always	11.05
Sometimes	36.48
Never	52.47
<b>Work on Sundays</b>	
Always	4.53
Sometimes	26.49
Never	68.99
<b>Working at night: Yes</b> (vs. No)	16.09

(continued)

<b>Activity sector</b>	
Agriculture, farming, silviculture, fishing	1.85
Manufacturing	20.14
Construction	7.29
Wholesale and retail trade	10.07
Transportation and storage	5.24
Accommodation and food services + Households as employers	4.65
Information, communication, financial and insurance	6.98
Real Estate, professional, scientific and technical, administrative and support service	8.70
Public administration and defence	14.17
Education	9.49
Human health and social work	9.64
Arts, entertainment	1.80
<b>Temporary contract: Yes (vs.No)</b>	<b>16.16</b>
<b>Works council: Yes (vs. No)</b>	<b>71.54</b>
<b>N</b>	<b>3953</b>

**Table A2: Descriptive statistics of samples of temporary workers in Column 2 of Figure 4 and tables 7.2.1-7.2.5**

	<u>2006</u>		<u>2007</u>
	Mean / Percentage (Standard deviation)		Mean / Percentage (Standard deviation)
<b>Log (hourly wage)</b>	1.64 (0.29)	<b>Log (hourly wage)</b>	1.86 (0.36)
<b>Gender: Woman (vs. Man)</b>	45.35	<b>Gender: Woman (vs. Man)</b>	45.92
<b>Age</b>	35.96 (10.53)	<b>Age</b>	35.88 (10.25)
<b>Age^2</b>	1404.06 (819.37)	<b>Age^2</b>	1392.18 (802.64)
<b>Education</b>		<b>Education</b>	
Elementary or less	19.33	Elementary or less	19.92
Basic secondary	21.51	Basic secondary	21.44
Advanced secondary and VET	32.85	Advanced secondary and VET	33.47
University	26.31	University	25.17
<b>Occupation</b>		<b>Occupation</b>	
Professionals and intellectuals + Legislators, senior officials and managers	15.55	Professionals and intellectuals + Legislators, senior officials and managers	14.38
Technicians and associate professionals	10.90	Technicians and associate professionals	13.14
Clerks	11.05	Clerks	10.24
Service workers and shop and market sales workers	14.10	Service workers and shop and market sales workers	12.59
Skilled agricultural and fishery workers + Craft and related trades workers	19.48	Skilled agricultural and fishery workers + Craft and related trades workers	21.72
Plant and machine operators and assemblers	12.50	Plant and machine operators and assemblers	11.07
Elementary occupations	16.42	Elementary occupations	16.87
<b>Supervisory role: Yes (vs. No)</b>	12.50	<b>Supervisory role: Yes (vs. No)</b>	10.37
<b>Nationality: Foreigner (vs. Native)</b>	10.90	<b>Nationality: Foreigner (vs. Native)</b>	12.03
<b>Public sector: Yes (vs. No)</b>	27.76	<b>Public sector: Yes (vs. No)</b>	28.08
<b>Company size</b>		<b>Company size</b>	
11 to 50	31.25	11 to 50	32.64
51 to 250	21.22	51 to 250	22.54
251 and more	47.53	251 and more	44.81
<b>Part-time employment: Yes (vs. No)</b>	10.61	<b>Part-time employment: Yes (vs. No)</b>	11.07
<b>Fixed wage: Yes (vs. No)</b>	71.80	<b>Fixed wage: Yes (vs. No)</b>	76.76
<b>First job: Yes (vs. No)</b>	12.79	<b>First job: Yes (vs. No)</b>	16.18
<b>Work at weekends</b>		<b>Work on Sundays</b>	
Always	18.02	Always	13.28
Sometimes	31.83	Sometimes	34.72
Never	50.15	Never	52.01
		<b>Work on Saturdays</b>	
		Always	6.36
		Sometimes	24.76
		Never	68.88
<b>Work at night: Yes (vs. No)</b>	22.67	<b>Work at night: Yes (vs. No)</b>	15.08

	(continued)
<b>Works council: Yes (vs. No)</b>	65.55
<b>Activity sector</b>	
Agriculture and fishing	2.33
Manufacturing	21.51
Construction	16.13
Commerce and repairs	7.56
Accommodation and food service + Domestic service	6.54
Transportation, storage, communication	6.40
Real Estate + Finance and insurance	7.56
Public administration	8.28
Education	6.40
Health and social work	14.10
Other social activities and personal services	3.20
<b>N</b>	688

	(continued)
<b>Works council: Yes (vs. No)</b>	67.36
<b>Activity sector</b>	
Agriculture and fishing	1.80
Manufacturing	16.60
Construction	21.16
Commerce and repairs	8.16
Accommodation and food service + Domestic service	6.50
Transportation, storage, communication	5.81
Real Estate + Finance and insurance	9.27
Public administration	8.16
Education	8.02
Health and social work	11.20
Other social activities and personal services	3.32
<b>N</b>	723



(Table A2, continued)

	<u>2008</u>		<u>2009</u>
	Mean / Percentage (Standard deviation)		Mean / Percentage (Standard deviation)
<b>Log (hourly wage)</b>	1.90 (0.36)	<b>Log (hourly wage)</b>	1.90 (0.39)
<b>Gender: Woman (vs. Man)</b>	48.09	<b>Gender: Woman (vs. Man)</b>	49.86
<b>Age</b>	36.29 (10.25)	<b>Age</b>	37.01 (9.85)
<b>Age^2</b>	1421.97 (791.48)	<b>Age^2</b>	1466.98 (768.34)
<b>Education</b>		<b>Education</b>	
Elementary or less	16.42	Elementary or less	18.94
Basic secondary	23.31	Basic secondary	22.70
Advanced secondary and VET	35.19	Advanced secondary and VET	30.36
University	25.07	University	27.99
<b>Occupation</b>		<b>Occupation</b>	
Professionals and intellectuals + Legislators, senior officials and managers	15.54	Professionals and intellectuals + Legislators, senior officials and managers	18.52
Technicians and associate professionals	10.70	Technicians and associate professionals	11.84
Clerks	12.61	Clerks	9.89
Service workers and shop and market sales workers	15.84	Service workers and shop and market sales workers	12.81
Skilled agricultural and fishery workers + Craft and related trades workers	19.50	Skilled agricultural and fishery workers + Craft and related trades workers	20.89
Plant and machine operators and assemblers	13.49	Plant and machine operators and assemblers	6.96
Elementary occupations	12.32	Elementary occupations	19.08
<b>Supervisory role: Yes (vs. No)</b>	9.82	<b>Supervisory role: Yes (vs. No)</b>	11.14
<b>Nationality: Foreigner (vs. Native)</b>	13.49	<b>Nationality: Foreigner (vs. Native)</b>	16.30
<b>Public sector: Yes (vs. No)</b>	30.06	<b>Public sector: Yes (vs. No)</b>	32.59
<b>Company size</b>		<b>Company size</b>	
11 to 50	31.96	11 to 50	32.87
51 to 250	18.62	51 to 250	22.01
251 and more	49.41	251 and more	45.13
<b>Part-time employment: Yes (vs. No)</b>	10.70	<b>Part-time employment: Yes (vs. No)</b>	13.37
<b>Fixed wage: Yes (vs. No)</b>	79.62	<b>Fixed wage: Yes (vs. No)</b>	80.78
<b>First job: Yes (vs. No)</b>	15.25	<b>First job: Yes (vs. No)</b>	9.89
<b>Work on Sundays</b>		<b>Work on Sundays</b>	
Always	12.61	Always	12.67
Sometimes	39.15	Sometimes	39.28
Never	48.24	Never	48.05
<b>Work on Saturdays</b>		<b>Work on Saturdays</b>	
Always	7.04	Always	7.52
Sometimes	26.98	Sometimes	25.21
Never	65.98	Never	67.27
<b>Work at night: Yes (vs. No)</b>	19.79	<b>Work at night: Yes (vs. No)</b>	18.11

	(continued)
<b>Works council:</b> Yes (vs. No)	66.13
<b>Activity sector</b>	
Agriculture and fishing	5.13
Manufacturing	17.45
Construction	12.90
Commerce and repairs	6.45
Accommodation and food services + Domestic service	6.74
Transportation, storage, communication	7.04
Real Estate + Finance and insurance	10.85
Public administration	9.24
Education	8.65
Health and social work	12.32
Other social activities and personal services	3.23
<b>N</b>	<b>682</b>

	(continued)
<b>Works council:</b> Yes (vs. No)	64.90
<b>Activity sector</b>	
Agriculture, farming, silviculture, fishing	3.90
Manufacturing	14.76
Construction	14.62
Wholesale and retail trade	5.43
Transportation and storage	3.90
Accommodation and food services + Households as empl	6.13
Information, communication, financial and insurance	5.43
Real Estate, professional, scientific and technical, admini	8.77
Public administration and defence	11.28
Education	9.61
Human health and social work	12.81
Arts, entertainment	3.34
<b>N</b>	<b>718</b>

(Table A2, continued)

	<u>2010</u>
	Mean / Percentage (Standard deviation)
<b>Log (hourly wage)</b>	1.91 (0.40)
<b>Gender: Woman</b> (vs. Man)	43.51
<b>Age</b>	38.20 (9.85)
<b>Age^2</b>	1556.35 (787.04)
<b>Education</b>	
Elementary or less	15.34
Basic secondary	22.07
Advanced secondary and VET	35.37
University	27.23
<b>Occupation</b>	
Professionals and intellectuals + Legislators, senior officials and managers	18.62
Technicians and associate professionals	12.83
Clerks	9.70
Service workers and shop and market sales workers	14.40
Skilled agricultural and fishery workers + Craft and related trades workers	20.97
Plant and machine operators and assemblers	9.70
Elementary occupations	13.77
<b>Supervisory role: Yes</b> (vs. No)	13.15
<b>Nationality: Foreigner</b> (vs. Native)	12.52
<b>Public sector: Yes</b> (vs. No)	31.14
<b>Company size</b>	
11 to 50	28.64
51 to 250	23.47
251 and more	47.89
<b>Part-time employment: Yes</b> (vs. No)	12.21
<b>Fixed wage: Yes</b> (vs. No)	75.90
<b>First job: Yes</b> (vs. No)	11.42
<b>Work on Sundays</b>	
Always	12.05
Sometimes	44.60
Never	43.35
<b>Work on Saturdays</b>	
Always	6.10
Sometimes	32.08
Never	61.82
<b>Work at night: Yes</b> (vs. No)	18.31

(continued)

<b>Works council:</b> Yes (vs. No)	68.23
<b>Activity sector</b>	
Agriculture, farming, silviculture, fishing	5.63
Manufacturing	15.65
Construction	12.68
Wholesale and retail trade	6.73
Transportation and storage	4.85
Accommodation and food services + Households as empl	5.32
Information, communication, financial and insurance	4.07
Real Estate, professional, scientific and technical, admini	10.33
Public administration and defence	13.30
Education	6.89
Human health and social work	11.58
Arts, entertainment	2.97
<b>N</b>	639

**Table A3: Descriptive statistics of samples of permanent and temporary workers in Column 1 of Figure 5 and tables 8.1.1-8.1.5**

	<u>2006</u>		<u>2007</u>
	Mean / Percentage (Standard deviation)		Mean / Percentage (Standard deviation)
<b>Log (hourly wage)</b>	1.72 (0.31)	<b>Log (hourly wage)</b>	1.97 (0.42)
<b>Gender: Woman (vs. Man)</b>	40.77	<b>Gender: Woman (vs. Man)</b>	40.21
<b>Age</b>	42.01 (10.49)	<b>Age</b>	41.28 (10.63)
<b>Education</b>		<b>Education</b>	
Elementary or less	19.21	Elementary or less	19.64
Basic secondary	18.49	Basic secondary	19.31
Advanced secondary and VET	34.17	Advanced secondary and VET	34.29
University	28.13	University	26.76
<b>Occupation</b>		<b>Occupation</b>	
Legislators, senior officials and managers	3.00	Legislators, senior officials and managers	3.96
Professionals and intellectuals	18.94	Professionals and intellectuals	15.08
Technicians and associate professionals	16.08	Technicians and associate professionals	16.85
Clerks	10.34	Clerks	8.73
Service workers and shop and market sales worker:	13.78	Service workers and shop and market sales worker:	14.72
Skilled agricultural and fishery workers	0.90	Skilled agricultural and fishery workers	1.17
Craft and related trades workers	15.36	Craft and related trades workers	16.97
Plant and machine operators and assemblers	11.22	Plant and machine operators and assemblers	11.09
Elementary occupations	10.38	Elementary occupations	11.43
<b>Supervisory role: Yes (vs. No)</b>	23.92	<b>Supervisory role: Yes (vs. No)</b>	22.23
<b>Nationality: Foreigner (vs. Native)</b>	5.65	<b>Nationality: Foreigner (vs. Native)</b>	7.74
<b>Public sector: Yes (vs. No)</b>	27.64	<b>Public sector: Yes (vs. No)</b>	25.02
<b>Company size</b>		<b>Company size</b>	
Up to 10	20.25	Up to 10	19.62
11 to 50	19.28	11 to 50	22.37
51 to 250	15.61	51 to 250	16.65
251 and more	44.86	251 and more	41.36
<b>Part-time employment: Yes (vs. No)</b>	6.98	<b>Part-time employment: Yes (vs. No)</b>	8.24
<b>Fixed wage: Yes (vs. No)</b>	79.32	<b>Fixed wage: Yes (vs. No)</b>	81.77
<b>First job: Yes (vs. No)</b>	22.95	<b>First job: Yes (vs. No)</b>	25.92
<b>Work at weekends</b>		<b>Work on Sundays</b>	
Always	14.91	Always	4.66
Sometimes	29.28	Sometimes	21.15
Never	55.81	Never	74.19
		<b>Work on Saturdays</b>	
		Always	13.41
		Sometimes	31.59
		Never	55.00
<b>Work at night: Yes (vs. No)</b>	17.70	<b>Work at night: Yes (vs. No)</b>	13.41

(continued)

<b>Activity sector</b>	
Agriculture and fishing	2.05
Manufacturing	22.07
Construction	9.03
Commerce and repairs	10.72
Accommodation and food service	4.71
Transportation, storage, communication	6.94
Finance and insurance	4.08
Real Estate	8.09
Public administration	11.01
Education	8.45
Health and social work	8.65
Other social activities and personal services	3.13
Domestic service	1.08
<b>Temporary contract: Yes (vs.No)</b>	<b>18.72</b>
<b>Collective agreement: Yes (vs. No)</b>	<b>51.13</b>
<b>N</b>	<b>4440</b>

(continued)

<b>Activity sector</b>	
Agriculture and fishing	2.30
Manufacturing	20.43
Construction	11.66
Commerce and repairs	12.94
Accommodation and food service	4.55
Transportation, storage, communication	6.03
Finance and insurance	3.20
Real Estate	9.50
Public administration	10.06
Education	6.91
Health and social work	8.19
Other social activities and personal services	3.22
Domestic service	1.04
<b>Temporary contract: Yes (vs.No)</b>	<b>19.19</b>
<b>Collective agreement: Yes (vs. No)</b>	<b>44.51</b>
<b>N</b>	<b>4444</b>

(Table A3, continued)

	<u>2008</u>		<u>2009</u>
	Mean / Percentage (Standard deviation)		Mean / Percentage (Standard deviation)
<b>Log (hourly wage)</b>	2.05 (0.42)	<b>Log (hourly wage)</b>	2.05 (0.42)
<b>Gender: Woman (vs. Man)</b>	39.83	<b>Gender: Woman (vs. Man)</b>	40.72
<b>Age</b>	41.67 (10.55)	<b>Age</b>	41.45 (10.28)
<b>Education</b>		<b>Education</b>	
Elementary or less	16.84	Elementary or less	16.03
Basic secondary	18.70	Basic secondary	20.68
Advanced secondary and VET	34.28	Advanced secondary and VET	33.62
University	30.18	University	29.67
<b>Occupation</b>		<b>Occupation</b>	
Legislators, senior officials and managers	4.17	Legislators, senior officials and managers	3.56
Professionals and intellectuals	17.22	Professionals and intellectuals	16.96
Technicians and associate professionals	15.68	Technicians and associate professionals	16.94
Clerks	12.25	Clerks	8.14
Service workers and shop and market sales worker:	14.54	Service workers and shop and market sales workers	15.89
Skilled agricultural and fishery workers	1.56	Skilled agricultural and fishery workers	1.37
Craft and related trades workers	15.48	Craft and related trades workers	16.11
Plant and machine operators and assemblers	10.67	Plant and machine operators and assemblers	11.00
Elementary occupations	8.43	Elementary occupations	10.03
<b>Supervisory role: Yes (vs. No)</b>	22.85	<b>Supervisory role: Yes (vs. No)</b>	22.54
<b>Nationality: Foreigner (vs. Native)</b>	7.89	<b>Nationality: Foreigner (vs. Native)</b>	10.09
<b>Public sector: Yes (vs. No)</b>	26.49	<b>Public sector: Yes (vs. No)</b>	28.04
<b>Company size</b>		<b>Company size</b>	
Up to 10	19.46	Up to 10	18.99
11 to 50	23.23	11 to 50	21.03
51 to 250	16.76	51 to 250	16.43
251 and more	40.55	251 and more	43.56
<b>Part-time employment: Yes (vs. No)</b>	7.73	<b>Part-time employment: Yes (vs. No)</b>	8.20
<b>Fixed wage: Yes (vs. No)</b>	86.76	<b>Fixed wage: Yes (vs. No)</b>	88.12
<b>First job: Yes (vs. No)</b>	22.37	<b>First job: Yes (vs. No)</b>	18.89
<b>Work on Sundays</b>		<b>Work on Sundays</b>	
Always	4.85	Always	5.66
Sometimes	22.27	Sometimes	25.28
Never	72.87	Never	69.06
<b>Work on Saturdays</b>		<b>Work on Saturdays</b>	
Always	11.83	Always	13.51
Sometimes	33.20	Sometimes	36.27
Never	54.97	Never	50.23
<b>Work at night: Yes (vs. No)</b>	15.14	<b>Work at night: Yes (vs. No)</b>	15.85

(continued)

(continued)

<b>Activity sector</b>	
Agriculture and fishing	2.20
Manufacturing	20.28
Construction	10.67
Commerce and repairs	11.33
Accommodation and food service + Domestic service	5.13
Transportation, storage, communication	7.37
Finance and insurance	3.16
Real Estate	9.01
Public administration	10.47
Education	9.23
Health and social work	8.13
Other social activities and personal services	3.04

**Temporary contract: Yes (vs.No)** 16.92

**Collective agreement: Yes (vs. No)** 44.69

**N** 5006

<b>Activity sector</b>	
Agriculture, farming, silviculture, fishing	2.26
Manufacturing	19.78
Construction	9.51
Wholesale and retail trade	11.68
Transportation and storage	5.44
Accommodation and food services + Households as employers	5.66
Information, communication, financial and insurance	6.26
Real Estate, professional, scientific and technical, administrative and support serv	8.76
Public administration and defence	10.86
Education	7.92
Human health and social work	9.26
Arts, entertainment	2.60

**Temporary contract: Yes (vs.No)** 17.89

**Collective agreement: Yes (vs. No)** 48.84

**N** 5035



(Table A3, continued)

	<u>2010</u>
	Mean / Percentage (Standard deviation)
<b>Log (hourly wage)</b>	2.05 (0.44)
<b>Gender: Woman</b> (vs. Man)	41.94
<b>Age</b>	42.73 (10.24)
<b>Education</b>	
Elementary or less	13.09
Basic secondary	19.33
Advanced secondary and VET	37.44
University	30.14
<b>Occupation</b>	
Legislators, senior officials and managers	4.13
Professionals and intellectuals	16.32
Technicians and associate professionals	18.79
Clerks	8.16
Service workers and shop and market sales workers	17.03
Skilled agricultural and fishery workers	1.89
Craft and related trades workers	14.75
Plant and machine operators and assemblers	10.18
Elementary occupations	8.74
<b>Supervisory role: Yes</b> (vs. No)	22.97
<b>Nationality: Foreigner</b> (vs. Native)	8.33
<b>Public sector: Yes</b> (vs. No)	25.90
<b>Company size</b>	
Up to 10	20.47
11 to 50	20.56
51 to 250	17.27
251 and more	41.70
<b>Part-time employment: Yes</b> (vs. No)	7.97
<b>Fixed wage: Yes</b> (vs. No)	86.29
<b>First job: Yes</b> (vs. No)	22.65
<b>Work on Sundays</b>	
Always	5.40
Sometimes	24.22
Never	70.38
<b>Work on Saturdays</b>	
Always	13.52
Sometimes	35.01
Never	51.47
<b>Work at night: Yes</b> (vs. No)	14.98

(continued)

<b>Activity sector</b>	
Agriculture, farming, silviculture, fishing	2.45
Manufacturing	18.88
Construction	9.00
Wholesale and retail trade	12.38
Transportation and storage	5.30
Accommodation and food services + Households as employers	6.11
Information, communication, financial and insurance	6.20
Real Estate, professional, scientific and technical, administrative and support services	9.41
Public administration and defence	11.58
Education	8.25
Human health and social work	8.18
Arts, entertainment	2.26
<b>Temporary contract: Yes (vs.No)</b>	17.59
<b>Collective agreement: Yes (vs. No)</b>	49.43
<b>N</b>	4645

**Table A4: Descriptive statistics of samples of temporary workers in Column 2 of Figure 5 and tables 8.2.1-8.2.5**

	<u>2006</u>		<u>2007</u>
	Mean / Percentage (Standard deviation)		Mean / Percentage (Standard deviation)
<b>Log (hourly wage)</b>	1.62 (0.30)	<b>Log (hourly wage)</b>	1.82 (0.38)
<b>Gender: Woman (vs. Man)</b>	0.44	<b>Gender: Woman (vs. Man)</b>	0.45
<b>Age</b>	36.43 (10.54)	<b>Age</b>	35.98 (10.16)
<b>Education</b>		<b>Education</b>	
Elementary or less	21.78	Elementary or less	22.86
Basic secondary	22.74	Basic secondary	24.03
Advanced secondary and VET	31.77	Advanced secondary and VET	31.30
University	23.71	University	21.81
<b>Occupation</b>		<b>Occupation</b>	
Professionals and intellectuals + Managers	14.44	Professionals and intellectuals + Legislators, senior officials and managers	12.19
Technicians and associate professionals	9.87	Technicians and associate professionals	12.78
Clerks	9.15	Clerks	7.50
Service workers and shop and market sales workers	16.00	Service workers and shop and market sales workers	15.47
Skilled agricultural and fishery workers + Craft and related trades workers	22.98	Skilled agricultural and fishery workers + Craft and related trades workers	23.56
Plant and machine operators and assemblers	11.07	Plant and machine operators and assemblers	10.08
Elementary occupations	16.49	Elementary occupations	18.41
<b>Supervisory role: Yes (vs. No)</b>	11.43	<b>Supervisory role: Yes (vs. No)</b>	10.08
<b>Nationality: Foreigner (vs. Native)</b>	13.84	<b>Nationality: Foreigner (vs. Native)</b>	14.89
<b>Public sector: Yes (vs. No)</b>	24.43	<b>Public sector: Yes (vs. No)</b>	23.45
<b>Company size</b>		<b>Company size</b>	
Up to 10	24.79	Up to 10	23.21
11 to 50	22.62	11 to 50	24.38
51 to 250	15.88	51 to 250	17.82
251 and more	36.70	251 and more	34.58
<b>Part-time employment: Yes (vs. No)</b>	10.95	<b>Part-time employment: Yes (vs. No)</b>	12.19
<b>Fixed wage: Yes (vs. No)</b>	72.68	<b>Fixed wage: Yes (vs. No)</b>	77.26
<b>First job: Yes (vs. No)</b>	13.72	<b>First job: Yes (vs. No)</b>	16.76
<b>Work at weekends</b>		<b>Work on Saturdays</b>	
Always	21.54	Always	15.71
Sometimes	28.52	Sometimes	33.06
Never	49.94	Never	51.23
		<b>Work on Sundays</b>	
		Always	5.98
		Sometimes	22.39
		Never	71.63
<b>Work at night: Yes (vs. No)</b>	21.30	<b>Work at night: Yes (vs. No)</b>	13.36

**(continued)**

<b>Collective agreement:</b> Yes (vs. No)	42.24
<b>Activity sector</b>	
Agriculture and fishing	3.73
Manufacturing	18.89
Construction	19.13
Commerce and repairs	8.30
Accommodation and food service + Domestic service	8.78
Transportation, storage, communication	5.54
Real Estate + Finance and insurance	7.34
Public administration	7.46
Education	6.62
Health and social work	11.07
Other social activities and personal services	3.13

**N** 831

**(continued)**

<b>Collective agreement:</b> Yes (vs. No)	40.45
<b>Activity sector</b>	
Agriculture and fishing	3.63
Manufacturing	15.71
Construction	22.51
Commerce and repairs	9.61
Accommodation and food service + Domestic service	9.03
Transportation, storage, communication	4.34
Real Estate + Finance and insurance	9.14
Public administration	6.80
Education	6.92
Health and social work	8.44
Other social activities and personal services	3.87

**N** 853

(Table A4, continued)

	<u>2008</u>		<u>2009</u>
	Mean / Percentage (Standard deviation)		Mean / Percentage (Standard deviation)
<b>Log (hourly wage)</b>	1.87 (0.37)	<b>Log (hourly wage)</b>	1.89 (0.39)
<b>Gender: Woman (vs. Man)</b>	0.44	<b>Gender: Woman (vs. Man)</b>	0.44
<b>Age</b>	36.76 (10.57)	<b>Age</b>	36.69 (9.79)
<b>Education</b>		<b>Education</b>	
Elementary or less	22.08	Elementary or less	21.42
Basic secondary	22.67	Basic secondary	23.64
Advanced secondary and VET	31.88	Advanced secondary and VET	29.52
University	23.38	University	25.42
<b>Occupation</b>		<b>Occupation</b>	
Professionals and intellectuals + Legislators, senior officials and managers	13.93	Professionals and intellectuals + Legislators, senior officials and managers	15.54
Technicians and associate professionals	10.04	Technicians and associate professionals	10.77
Clerks	9.56	Clerks	7.88
Service workers and shop and market sales workers	17.47	Service workers and shop and market sales workers	15.21
Skilled agricultural and fishery workers + Craft and related trades workers	24.20	Skilled agricultural and fishery workers + Craft and related trades workers	24.31
Plant and machine operators and assemblers	11.92	Plant and machine operators and assemblers	7.99
Elementary occupations	12.87	Elementary occupations	18.31
<b>Supervisory role: Yes (vs. No)</b>	9.92	<b>Supervisory role: Yes (vs. No)</b>	10.88
<b>Nationality: Foreigner (vs. Native)</b>	15.94	<b>Nationality: Foreigner (vs. Native)</b>	18.76
<b>Public sector: Yes (vs. No)</b>	25.74	<b>Public sector: Yes (vs. No)</b>	27.30
<b>Company size</b>		<b>Company size</b>	
Up to 10	25.27	Up to 10	24.08
11 to 50	24.68	11 to 50	24.86
51 to 250	13.93	51 to 250	17.31
251 and more	36.13	251 and more	33.74
<b>Part-time employment: Yes (vs. No)</b>	11.22	<b>Part-time employment: Yes (vs. No)</b>	12.76
<b>Fixed wage: Yes (vs. No)</b>	80.76	<b>Fixed wage: Yes (vs. No)</b>	80.02
<b>First job: Yes (vs. No)</b>	16.06	<b>First job: Yes (vs. No)</b>	9.54
<b>Work on Saturdays</b>		<b>Work on Saturdays</b>	
Always	14.88	Always	15.65
Sometimes	35.89	Sometimes	35.63
Never	49.23	Never	48.72
<b>Work on Sundays</b>		<b>Work on Sundays</b>	
Always	7.79	Always	9.10
Sometimes	24.09	Sometimes	22.75
Never	68.12	Never	68.15
<b>Work at night: Yes (vs. No)</b>	18.18	<b>Work at night: Yes (vs. No)</b>	16.98

	(continued)		(continued)
<b>Collective agreement:</b> Yes (vs. No)	36.84	<b>Collective agreement:</b> Yes (vs. No)	40.18
<b>Activity sector</b>		<b>Activity sector</b>	
Agriculture and fishing	5.67	Agriculture, farming, silviculture, fishing	4.88
Manufacturing	15.11	Manufacturing	14.43
Construction	18.30	Construction	17.65
Commerce and repairs	8.03	Wholesale and retail trade	6.66
Accommodation and food services + Domestic service	8.85	Transportation and storage	3.66
Transportation, storage, communication	5.90	Accommodation and food services + Households as empl	8.32
Real Estate + Finance and insurance	9.09	Information, communication, financial and insurance	4.55
Public administration	7.08	Real Estate, professional, scientific and technical, admini	8.55
Education	8.26	Public administration and defence	9.32
Health and social work	9.92	Education	7.77
Other social activities and personal services	3.78	Human health and social work	10.99
		Arts, entertainment	3.22
<b>N</b>	<b>847</b>		<b>901</b>

(Table A4, continued)

	<b>2010</b>
	<b>Mean / Percentage (Standard deviation)</b>
<b>Log (hourly wage)</b>	1.87 (0.38)
<b>Gender: Woman</b> (vs. Man)	0.40
<b>Age</b>	38.77 (10.23)
<b>Education</b>	
Elementary or less	18.97
Basic secondary	24.97
Advanced secondary and VET	33.29
University	22.77
<b>Occupation</b>	
Professionals and intellectuals + Legislators, senior officials and managers	15.54
Technicians and associate professionals	11.02
Clerks	8.20
Service workers and shop and market sales workers	17.01
Skilled agricultural and fishery workers + Craft and related trades workers	23.13
Plant and machine operators and assemblers	9.30
Elementary occupations	15.79
<b>Supervisory role: Yes</b> (vs. No)	11.63
<b>Nationality: Foreigner</b> (vs. Native)	14.44
<b>Public sector: Yes</b> (vs. No)	25.70
<b>Company size</b>	
Up to 10	27.05
11 to 50	20.20
51 to 250	18.73
251 and more	34.03
<b>Part-time employment: Yes</b> (vs. No)	13.71
<b>Fixed wage: Yes</b> (vs. No)	77.11
<b>First job: Yes</b> (vs. No)	14.93
<b>Work on Saturdays</b>	
Always	14.44
Sometimes	41.98
Never	43.57
<b>Work on Sundays</b>	
Always	6.85
Sometimes	28.15
Never	64.99
<b>Work at night: Yes</b> (vs. No)	16.40

(continued)

<b>Collective agreement: Yes (vs. No)</b>	41.00
<b>Activity sector</b>	
Agriculture, farming, silviculture, fishing	6.00
Manufacturing	13.34
Construction	16.65
Wholesale and retail trade	9.06
Transportation and storage	5.02
Accommodation and food services + Households as empl	7.83
Information, communication, financial and insurance	3.55
Real Estate, professional, scientific and technical, admini	9.67
Public administration and defence	10.16
Education	6.12
Human health and social work	8.94
Arts, entertainment	3.67
<b>N</b>	817



## 2. Sample descriptive statistics of multilevel models

Table B1: Descriptive statistics of samples of temporary workers in Model 1.1 and Model 1.2 in Table 1 and Table 9

	<u>Sample of Model 1.1</u> <u>QoWLS (2006-2007)</u>		<u>Sample of Model 1.2</u> <u>QoWLS (2009-2010)</u>
	Mean / Percentage (Standard deviation)		Mean / Percentage (Standard deviation)
	2006/2007		2009/2010
<b>Log (hourly wage)</b>	1.66 (0.33)	<b>Log (hourly wage)</b>	1.81 (0.36)
<b>Gender: Woman (vs. Man)</b>	44.04	<b>Gender: Woman (vs. Man)</b>	38.14
<b>Age</b>	36.78 (10.67)	<b>Age</b>	37.83 (10.62)
<b>Education</b>		<b>Education</b>	
Elementary or less	26.40	Elementary or less	25.59
Basic secondary	26.50	Basic secondary	26.98
Advanced secondary and VET	30.89	Advanced secondary and VET	30.14
University	16.21	University	17.29
<b>Occupation</b>		<b>Occupation</b>	
Professionals and intellectuals + Legislators, senior officials and managers	10.19	Professionals and intellectuals + Legislators, senior officials and managers	10.97
Technicians and associate professionals	10.09	Technicians and associate professionals	8.89
Clerks	6.93	Clerks	5.24
Service workers and shop and market sales workers	17.94	Service workers and shop and market sales workers	17.89
Skilled agricultural and fishery workers + Craft and related trades workers	25.18	Skilled agricultural and fishery workers + Craft and related trades workers	27.37
Plant and machine operators and assemblers	8.97	Plant and machine operators and assemblers	8.30
Elementary occupations	20.69	Elementary occupations	21.34
<b>Union membership: Yes (vs. No)</b>	11.11	<b>Union membership: Yes (vs. No)</b>	12.15
<b>Supervisory role: Yes (vs. No)</b>	9.38	<b>Supervisory role: Yes (vs. No)</b>	9.29
<b>Nationality: Foreigner (vs. Native)</b>	18.55	<b>Nationality: Foreigner (vs. Native)</b>	22.23
<b>Public sector: Yes (vs. No)</b>	19.88	<b>Public sector: Yes (vs. No)</b>	20.16
<b>Company size</b>		<b>Company size</b>	
Up to 10	31.70	Up to 10	33.50
11 to 50	24.67	11 to 50	26.48
51 to 250	15.29	51 to 250	16.21
251 and more	28.34	251 and more	23.81
<b>Fixed wage: Yes (vs. No)</b>	76.86	<b>Fixed wage: Yes (vs. No)</b>	77.57
<b>First job: Yes (vs. No)</b>	16.41	<b>First job: Yes (vs. No)</b>	13.74
<b>Work at weekends</b>		<b>Work on Saturdays</b>	
Never	43.63	Never	44.47
Sometimes	25.89	Sometimes	37.35
Always	30.48	Always	18.18
		<b>Work on Sundays</b>	
		Never	68.38
		Sometimes	21.94
		Always	9.68
<b>Work at night: Yes (vs. No)</b>	13.86	<b>Work at night: Yes (vs. No)</b>	14.92

	(continued)		(continued)
<b>Part-time employment: Yes</b> (vs. No)	11.01	<b>Part-time employment: Yes</b> (vs. No)	15.02
<b>Year: 2007</b> (vs. 2006)	51.27	<b>Year: 2009</b> (vs. 2010)	52.77
<b>Rate of temporary employment</b>	25.27 (10.11)	<b>Rate of temporary employment</b>	23.81 (13.35)
<b>Collective bargaining coverage</b>	46.73 (14.28)	<b>Collective bargaining coverage</b>	47.32 (15.59)

**Notes:** Values for the macro-variables are provided at the cluster level

**Table B2.1: Descriptive statistics of samples of permanent and temporary workers in Model 2.1 and Model 2.3 in Table 2 and Table 10.1**

	<u>Sample of Model 2.1</u> <u>SES (2006)</u>		<u>Sample of Model 2.3</u> <u>SES (2010)</u>
	Mean / Percentage (Standard deviation)		Mean / Percentage (Standard deviation)
<b>Log (hourly wage)</b>	2.12 (0.49)	<b>Log (hourly wage)</b>	2.33 (0.50)
<b>Age</b>		<b>Age</b>	
Less than 19	1.01	Less than 19	0.30
20-29	22.29	20-29	16.37
30-39	32.55	30-39	34.12
40-49	25.39	40-49	27.44
50-59	15.30	50-59	17.43
More than 59	3.45	More than 59	4.34
<b>Gender: Woman (vs. Man)</b>	40.35	<b>Gender: Woman (vs. Man)</b>	42.88
<b>Education</b>		<b>Education</b>	
Basic secondary or less	49.73	Basic secondary or less	39.36
Advanced secondary and VET	27.39	Advanced secondary and VET	31.44
University	22.88	University	29.20
<b>Occupation</b>		<b>Occupation</b>	
Legislators, senior officials and managers	2.74	Legislators, senior officials and managers	3.64
Professionals and intellectuals	11.20	Professionals and intellectuals	17.10
Technicians and associate professionals	14.86	Technicians and associate professionals	18.54
Clerks	13.24	Clerks	13.73
Service workers and shop and market sales workers	11.45	Service workers and shop and market sales workers + Skilled agricultural and fishery workers	14.51
Skilled agricultural and fishery workers	0.29	Craft and related trades workers	12.46
Craft and related trades workers	16.62	Plant and machine operators and assemblers	9.35
Plant and machine operators and assemblers	15.30	Elementary occupations	10.66
Elementary occupations	14.31		
<b>Supervisory role: No (vs. Yes)</b>	81.33	<b>Supervisory role: No (vs. Yes)</b>	19.46
<b>Part-time employment: Yes (vs. No)</b>	15.05	<b>Part-time employment: Yes (vs. No)</b>	15.54
<b>Nationality: Foreigner (vs. Native)</b>	6.32	<b>Nationality: Foreigner (vs. Native)</b>	6.22
<b>Public sector: No (vs. Yes)</b>	91.63	<b>Public sector: No (vs. Yes)</b>	82.75
<b>Main market</b>		<b>Main market</b>	
Local or regional	44.3	Local or regional	40.71
National	40.17	National	43.63
European Union	7.02	European Union	5.35
Worldwide	8.51	Worldwide	10.32
<b>Temporary employment: No (vs. Yes)</b>	26.69	<b>Temporary employment: No (vs. Yes)</b>	23.78
<b>Union density</b>	21.51 (12.09)	<b>Union density</b>	21.53 (12.32)
<b>Rate of temporary employment</b>	24.51 (14.04)	<b>Rate of temporary employment</b>	20.29 (11.23)

**Notes:** Values for the macro-variables are provided at the cluster level

**Table B2.2: Descriptive statistics of samples of permanent and temporary workers in Model 2.2 and Model 2.4 in Table 2 and Table 10.2**

	<u>Sample of Model 2.2</u> <u>QoWLS (2006-2007)</u>		<u>Sample of Model 2.4</u> <u>QoWLS (2009-2010)</u>
	Mean / Percentage (Standard deviation)		Mean / Percentage (Standard deviation)
<b>Log (hourly wage)</b>	1.82 (0.39)	<b>Log (hourly wage)</b>	2.02 (0.41)
<b>Gender: Woman (vs. Man)</b>	41.69	<b>Gender: Woman (vs. Man)</b>	42.11
<b>Age</b>	41.05 (10.87)	<b>Age</b>	41.78 (10.41)
<b>Education</b>		<b>Education</b>	
Elementary or less	21.14	Elementary or less	16.07
Basic secondary	19.66	Basic secondary	20.95
Advanced secondary and VET	32.87	Advanced secondary and VET	34.61
University	26.33	University	28.37
<b>Occupation</b>		<b>Occupation</b>	
Legislators, senior officials and managers	2.97	Legislators, senior officials and managers	3.43
Professionals and intellectuals	16.29	Professionals and intellectuals	16.01
Technicians and associate professionals	15.24	Technicians and associate professionals	16.88
Clerical support workers	9.29	Clerical support workers	8.04
Service and sales workers	15.11	Service and sales workers	16.84
Skilled agricultural, forestry and fish	1.26	Skilled agricultural, forestry and fish	1.90
Craft and related trades workers	17.03	Craft and related trades workers	15.70
Plant and machine operators and assemblers	10.72	Plant and machine operators and assemblers	10.50
Elementary occupations	12.10	Elementary occupations	10.69
<b>Supervisory role: Yes (vs. No)</b>	21.09	<b>Supervisory role: Yes (vs. No)</b>	21.01
<b>Nationality: Foreigner (vs. Native)</b>	8.84	<b>Nationality: Foreigner (vs. Native)</b>	11.35
<b>Public sector: Yes (vs. No)</b>	25.52	<b>Public sector: Yes (vs. No)</b>	26.24
<b>Company size</b>		<b>Company size</b>	
Up to 10	21.62	Up to 10	20.42
11 to 50	21.88	11 to 50	21.92
51 to 250	15.70	51 to 250	16.76
251 and more	40.81	251 and more	40.90
<b>Union membership: Yes (vs. No)</b>	21.91	<b>Union membership: Yes (vs. No)</b>	21.74
<b>Fixed wage: Yes (vs. No)</b>	80.54	<b>Fixed wage: Yes (vs. No)</b>	86.88
<b>First job: Yes (vs. No)</b>	24.12	<b>First job: Yes (vs. No)</b>	21.01
<b>Work at weekends</b>		<b>Work on Saturdays</b>	
Never	41.85	Always	14.41
Sometimes	27.12	Sometimes	35.54
Always	31.03	Never	50.05
		<b>Work on Sundays</b>	
		Always	5.89
		Sometimes	24.43
		Never	69.68
<b>Work at night: Yes (vs. No)</b>	14.60	<b>Work at night: Yes (vs. No)</b>	14.96
<b>Part-time employment: Yes (vs. No)</b>	7.90	<b>Part-time employment: Yes (vs. No)</b>	8.29
<b>Year: 2007 (vs. 2006)</b>	51.28	<b>Year: 2010 (vs. 2009)</b>	50.31
<b>Temporary employment: Yes (vs. No)</b>	22.74	<b>Temporary employment: Yes (vs. No)</b>	20.12
<b>Rate of temporary employment</b>	27.93 (13.62)	<b>Rate of temporary employment</b>	23.21 (10.74)
<b>Union density</b>	19.86 (11.61)	<b>Union density</b>	20.43 (10.99)

**Notes:** Values for the macro-variables are provided at the cluster level

**Table B3.1: Descriptive statistics of samples of permanent and temporary workers in Model 3.1 and Model 3.3 in Table 3 and Table 11.1**

	<u>Sample of Model 3.1</u> <u>SES (2006)</u>		<u>Sample of Model 3.3</u> <u>SES (2006)</u>
	Mean / Percentage (Standard deviation)		Mean / Percentage (Standard deviation)
<b>Log (hourly wage)</b>	1.96 (0.44)	<b>Log (hourly wage)</b>	2.17 (0.45)
<b>Age</b>		<b>Age</b>	
Less than 19	2.49	Less than 19	0.87
20-29	35.87	20-29	27.96
30-39	31.36	30-39	34.29
40-49	18.92	40-49	20.42
50-59	7.66	50-59	9.33
More than 59	3.71	More than 59	7.13
<b>Gender: Woman (vs. Man)</b>	42.59	<b>Gender: Woman (vs. Man)</b>	45.83
<b>Education</b>		<b>Education</b>	
Basic secondary or less	55.98	Basic secondary or less	46.66
Advanced secondary and VET	23.04	Advanced secondary and VET	26.75
University	20.97	University	26.58
<b>Occupation</b>		<b>Occupation</b>	
Legislators, senior officials and managers	0.22	Legislators, senior officials and managers	0.50
Professionals and intellectuals	12.61	Professionals and intellectuals	19.37
Technicians and associate professionals	9.81	Technicians and associate professionals	11.95
Clerks	11.37	Clerks	12.77
Service workers and shop and market sales workers	11.30	Service workers and shop and market sales workers + Skilled agricultural and fishery workers	15.71
Skilled agricultural and fishery workers	0.36	Craft and related trades workers	14.89
Craft and related trades workers	19.91	Plant and machine operators and assemblers	8.47
Plant and machine operators and assemblers	12.98	Elementary occupations	16.33
Elementary occupations	21.44		
<b>Supervisory role: No (vs. Yes)</b>	92.06	<b>Supervisory role: No (vs. Yes)</b>	8.87
<b>Part-time employment: Yes (vs. No)</b>	23.47	<b>Part-time employment: Yes (vs. No)</b>	29.61
<b>Nationality: Foreigner (vs. Native)</b>	12.17	<b>Nationality: Foreigner (vs. Native)</b>	10.29
<b>Public sector: No (vs. Yes)</b>	87.39	<b>Public sector: No (vs. Yes)</b>	75.35
<b>Main market</b>		<b>Main market</b>	
Local or regional	53.87	Local or regional	49.32
National	35.54	National	39.70
European Union	4.73	European Union	4.05
Worldwide	5.86	Worldwide	6.94
<b>Union density</b>	21.51 (12.09)	<b>Union density</b>	21.53 (12.32)
<b>Rate of temporary employment</b>	24.51 (14.04)	<b>Rate of temporary employment</b>	20.29 (11.23)

**Notes:** Values for the macro-variables are provided at the cluster level

[This page has been intentionally left blank to facilitate the interpretation of the tables below]

**Table B3.2: Descriptive statistics of samples of permanent and temporary workers in Model 3.2 and Model 3.4 in Table 3 and Table 11.2**

	<u>Sample of Model 3.2</u> <u>QoWLS (2006-2007)</u>		<u>Sample of Model 3.4</u> <u>QoWLS (2009-2010)</u>
	Mean / Percentage (Standard deviation)		Mean / Percentage (Standard deviation)
<b>Log (hourly wage)</b>	1.70 (0.35)	<b>Log (hourly wage)</b>	1.85 (0.37)
<b>Gender: Woman (vs. Man)</b>	44.02	<b>Gender: Woman (vs. Man)</b>	42.20
<b>Age</b>	35.89 (10.62)	<b>Age</b>	37.34 (10.22)
<b>Education</b>		<b>Education</b>	
Elementary or less	25.47	Elementary or less	21.48
Basic secondary	23.59	Basic secondary	25.87
Advanced secondary and VET	29.79	Advanced secondary and VET	30.43
University	21.15	University	22.22
<b>Occupation</b>		<b>Occupation</b>	
Professionals and intellectuals + Legislators, senior officials and managers	11.68	Professionals and intellectuals + Legislators, senior officials and managers	14.54
Technicians and associate professionals	9.80	Technicians and associate professionals	10.32
Clerks	8.72	Clerks	7.33
Service workers and shop and market sales workers	15.95	Service workers and shop and market sales workers	16.25
Skilled agricultural and fishery workers + Craft and related trades workers	24.83	Skilled agricultural and fishery workers + Craft and related trades workers	24.15
Plant and machine operators and assemblers	9.56	Plant and machine operators and assemblers	8.78
Elementary occupations	19.47	Elementary occupations	18.62
<b>Supervisory role: Yes (vs. No)</b>	9.52	<b>Supervisory role: Yes (vs. No)</b>	10.06
<b>Nationality: Foreigner (vs. Native)</b>	17.75	<b>Nationality: Foreigner (vs. Native)</b>	19.85
<b>Public sector: Yes (vs. No)</b>	22.27	<b>Public sector: Yes (vs. No)</b>	25.30
<b>Company size</b>		<b>Company size</b>	
Up to 10	25.51	Up to 10	25.38
11 to 50	25.43	11 to 50	24.46
51 to 250	16.55	51 to 250	17.22
251 and more	32.51	251 and more	32.94
<b>Union membership: Yes (vs. No)</b>	13.23	<b>Union membership: Yes (vs. No)</b>	13.57
<b>Fixed wage: Yes (vs. No)</b>	74.97	<b>Fixed wage: Yes (vs. No)</b>	78.79
<b>First job: Yes (vs. No)</b>	15.51	<b>First job: Yes (vs. No)</b>	12.82
<b>Work at weekends</b>		<b>Work on Saturdays</b>	
Never	43.98	Always	16.34
Sometimes	27.11	Sometimes	38.16
Always	28.91	Never	45.50
		<b>Work on Sundays</b>	
		Always	8.30
		Sometimes	24.55
		Never	67.15
<b>Work at night: Yes (vs. No)</b>	14.91	<b>Work at night: Yes (vs. No)</b>	16.03
<b>Part-time employment: Yes (vs. No)</b>	11.64	<b>Part-time employment: Yes (vs. No)</b>	12.82
<b>Year: 2007 (vs. 2006)</b>	53.30	<b>Year: 2010 (vs. 2009)</b>	50.59
<b>Rate of temporary employment</b>	27.38 (13.03)	<b>Rate of temporary employment</b>	21.74 (12.43)

(continued)

**Union density**

20.37  
(12.51)

**Union density**

(continued)

20.39  
(12.67)

**Notes:** Values for the macro-variables are provided at the cluster level



**Table B3.3: Descriptive statistics of samples of temporary workers in Model 4.1 and Model 4.2 in Table 3 and Table 11.3**

	<u>Sample of Model 4.1</u> <u>QoWLS (2006-2007)</u>		<u>Sample of Model 4.2</u> <u>QoWLS (2009-2010)</u>
	Mean / Percentage (Standard deviation)		Mean / Percentage (Standard deviation)
<b>Log (hourly wage)</b>	1.69 (0.35)	<b>Log (hourly wage)</b>	1.83 (0.36)
<b>Gender: Woman (vs. Man)</b>	43.73	<b>Gender: Woman (vs. Man)</b>	40.60
<b>Age</b>	35.51 (10.66)	<b>Age</b>	37.04 10.35
<b>Education</b>		<b>Education</b>	
Elementary or less	26.13	Elementary or less	22.46
Basic secondary	24.61	Basic secondary	26.58
Advanced secondary and VET	29.26	Advanced secondary and VET	29.98
University	20.00	University	20.99
<b>Occupation</b>		<b>Occupation</b>	
Professionals and intellectuals + Legislators, senior officials and managers	10.05	Professionals and intellectuals + Legislators, senior officials and managers	13.41
Technicians and associate professionals	10.14	Technicians and associate professionals	10.26
Clerks	8.85	Clerks	7.16
Service workers and shop and market sales workers	16.13	Service workers and shop and market sales workers	16.72
Skilled agricultural and fishery workers + Craft and related trades workers	25.48	Skilled agricultural and fishery workers + Craft and related trades workers	24.80
Plant and machine operators and assemblers	9.35	Plant and machine operators and assemblers	8.54
Elementary occupations	20.00	Elementary occupations	19.11
<b>Supervisory role: Yes (vs. No)</b>	9.26	<b>Supervisory role: Yes (vs. No)</b>	9.76
<b>Nationality: Foreigner (vs. Native)</b>	19.17	<b>Nationality: Foreigner (vs. Native)</b>	21.65
<b>Public sector: Yes (vs. No)</b>	19.40	<b>Public sector: Yes (vs. No)</b>	22.31
<b>Company size</b>		<b>Company size</b>	
Up to 10	27.33	Up to 10	27.29
11 to 50	26.13	11 to 50	25.66
51 to 250	16.82	51 to 250	16.87
251 and more	29.72	251 and more	30.18
<b>Fixed wage: Yes (vs. No)</b>	75.67	<b>Fixed wage: Yes (vs. No)</b>	78.10
<b>First job: Yes (vs. No)</b>	16.31	<b>First job: Yes (vs. No)</b>	13.52
<b>Work at weekends</b>		<b>Work on Saturdays</b>	
Never	44.24	Always	17.28
Sometimes	26.68	Sometimes	37.40
Always	29.08	Never	45.33
		<b>Work on Sundays</b>	
		Always	8.84
		Sometimes	23.37
		Never	67.78
<b>Work at night: Yes (vs. No)</b>	13.04	<b>Work at night: Yes (vs. No)</b>	15.60
<b>Part-time employment: Yes (vs. No)</b>	11.98	<b>Part-time employment: Yes (vs. No)</b>	12.70
<b>Year: 2007 (vs. 2006)</b>	53.78	<b>Year: 2010 (vs. 2009)</b>	50.46
<b>Rate of temporary employment</b>	27.50 (13.00)	<b>Rate of temporary employment</b>	22.80 (11.80)
<b>Union density</b>	20.21 (12.42)	<b>Union density</b>	20.52 (12.49)

**Notes:** Values for the macro-variables are provided at the cluster level

### 3. Multilevel models: methods

#### 3.1. Multilevel models: selection of random coefficients in 2-level models

As explained in the methods section of the article, variables with cluster-varying coefficients were selected according to the procedure explained by Heisig et al. (2017), which was based on the procedure elaborated by Bates et al. (2015). This procedure is explained in detail on pages 820 and 821 in Heisig et al. (2017), as well as in the online supplement of their article. In summary, to select which variables will have cluster-varying coefficients, they recommend starting with a baseline model in which all the level-1 variables are introduced as random slopes. Then, following an iterative procedure, the number of random slopes must be progressively reduced. The 'elimination' of these random slopes is based on two aspects. First, changes in the BIC (lower BIC values are preferred). Second, the results of a principal components analysis (PCA), which indicates whether all the included random slopes are supported by the model. While this procedure might be optimal for models with few covariates, it becomes problematic when several covariates must be included as random slopes. In some cases, models take too long to converge, and convergence often cannot even be achieved. As the authors state, 'the outlined strategy for model selection may not yet be the ideal one' (Heisig et al., 2017: 824).

To avoid these issues, in this article the procedure was inverted: the baseline model consisted in a mixed model without random slopes (except for the variable *temporary contract* in the models containing a cross-level interaction with this variable) while other covariates were progressively added as random slopes based on BIC changes and a PCA analysis. The process is described in detail below using the procedure to obtain *model 4.2* (Table 3 in the manuscript) as an example and showing the code used in STATA for the sake of clarity:

- Step 1. The procedure starts with a model in which none of the covariates is included as a random slope. The development of model 4.2 started with a mixed model with *log of income* as the dependent variable, the two macro-level variables (*rate of temporary employment* and *union density*) and 29 level-1 covariates. (Note that weighted effect coding was used, which allowed introducing each category of a categorical variable as an independent variable).

## STATA code

```
.....  
mixed z_log_hourly_wage gender2 z_age z_age_sq education2 education3 education4  
occupation_b2 occupation_b3 occupation_b4 occupation_b5 occupation_b6 occupation_b7  
supervisor2 nationality2 public2 compsize2 compsize3 compsize4 samepay2 firstjob2  
Saturday_work2 Saturday_work3 Sunday_work2 Sunday_work3 nightwork2 partime2 year2  
z_temprate z_udensity || sector_nuts: , cov(un)  
.....
```

- Step 2. A *round* of models is executed. Each model includes a different level-1 covariate as a random coefficient, which results in as many models as covariates. In the example, this results in 29 different models, each of which includes one of the 29 level-1 covariates as a random slope. For example, the first model includes only *gender* (*gender2*) as a random coefficient, the second model includes only *age* (*z\_age*) as a random coefficient and so on.

## STATA code

Example including gender:

```
.....  
mixed z_log_hourly_wage gender2 z_age z_age_sq education2 education3 education4  
occupation_b2 occupation_b3 occupation_b4 occupation_b5 occupation_b6 occupation_b7  
supervisor2 nationality2 public2 compsize2 compsize3 compsize4 samepay2 firstjob2  
saturday_work2 saturday_work3 sunday_work2 sunday_work3 nightwork2 partime2 year2  
z_temprate z_udensity || sector_nuts: gender2, cov(ind)  
.....
```

Example including age:

```
.....  
mixed z_log_hourly_wage gender2 z_age z_age_sq education2 education3 education4  
occupation_b2 occupation_b3 occupation_b4 occupation_b5 occupation_b6 occupation_b7  
supervisor2 nationality2 public2 compsize2 compsize3 compsize4 samepay2 firstjob2  
saturday_work2 saturday_work3 sunday_work2 sunday_work3 nightwork2 partime2 year2  
z_temprate z_udensity || sector_nuts: z_age, cov(ind)  
.....
```

- Step 3. Once the models have been executed, the model with the lowest BIC is selected and a PCA is executed to determine if all the random slopes are supported by the model.<sup>4</sup> Among all the models that were executed, the model including the variable *sunday\_work3* (the name of the dummy variable *always* from the categorical variable *working on Sundays*) presents the lowest BIC: 5011.821. The PCA also suggests that all the random slopes are supported by the model (so far only one covariate has been added as a random slope).

### STATA code

.....

Selected model:

```

mixed z_log_hourly_wage gender2 z_age z_age_sq education2 education3 education4
occupation_b2 occupation_b3 occupation_b4 occupation_b5 occupation_b6 occupation_b7
supervisor2 nationality2 public2 compsize2 compsize3 compsize4 samepay2 firstjob2
saturday_work2 saturday_work3 sunday_work2 sunday_work3 nightwork2 partime2 year2
z_temprate z_udensity || sector_nuts: sunday_work3, cov(un)

```

.....

Depending on the PCA results, two different steps might follow:

Step 3a. If the PCA indicates that the new included random component is not supported by the model, the procedure stops. Then, the model without the last included covariate becomes the final model. If this had happened in the first step of the example, the final model would be a model without random components.

Step 3b. If the PCA indicates that the model supports all the random coefficients, then this model becomes the new 'baseline' model. More random slopes might be supported by the model, making it necessary to return to Step 2 (see below for this example). In the commented example, the new baseline model becomes a model that only includes *sunday\_work3* as a random coefficient.

---

<sup>4</sup> Note that to execute the PCA needed to determine if all the terms are supported by the model, it is necessary not to impose any structure on the covariance. In STATA this involves setting the covariance as unstructured: `covariance(unstructured)`

At this point, the procedure follows a recursive pattern which only ends once the PCA indicates that the last random slope that has been included is not supported by the model (Step 3a).

- Continuing after Step 3b: Now, it is necessary to go back to the second step, but this time the random coefficient added in the previous step(s) is (are) always included. Once again, a series of models is executed, each of which includes a different single level-1 covariate as a random slope. In the example, this means running now 28 different models. Each of them includes the dummy variable *sunday\_work3* and one of the remaining 28 covariates that have not been included yet as random slopes in the baseline model. Now, the first model includes only *gender* and *sunday\_work3* as random coefficients, the second model includes only *age* and *sunday\_work3* as random coefficients and so on.

### STATA code

.....  
Example including *age*:

```
mixed z_log_hourly_wage gender2 z_age z_age_sq education2 education3 education4
occupation_b2 occupation_b3 occupation_b4 occupation_b5 occupation_b6 occupation_b7
supervisor2 nationality2 public2 compsize2 compsize3 compsize4 samepay2 firstjob2
saturday_work2 saturday_work3 sunday_work2 sunday_work3 nightwork2 partime2 year2
z_temprate z_udensity || sector_nuts: z_age sunday_work3, cov(ind)
```

Example including *gender*:

```
mixed z_log_hourly_wage gender2 z_age z_age_sq education2 education3 education4
occupation_b2 occupation_b3 occupation_b4 occupation_b5 occupation_b6 occupation_b7
supervisor2 nationality2 public2 compsize2 compsize3 compsize4 samepay2 firstjob2
saturday_work2 saturday_work3 sunday_work2 sunday_work3 nightwork2 partime2 year2
z_temprate z_udensity || sector_nuts: gender2 sunday_work3, cov(ind)
```

.....

Once again, the model with the lowest BIC is selected and the PCA is executed to determine if the model supports all the random slopes. The model including the variable *partime2* (the variable *part-time employment*) presents the lowest BIC

(5003.839) and the PCA also indicates that the model supports all the random coefficients (only two terms have been added so far).

The process follows this recursive pattern, where different covariates are included as random coefficients, conforming new baseline models. After including different covariates as random slopes, the PCA analysis suggests that the model including the variables *sunday\_work3 partime2 occupation\_b5 samepay2 public2* as random slopes does not support all these random coefficients:

### STATA code

```
.....  
mixed z_log_hourly_wage gender2 z_age z_age_sq education2 education3 education4  
occupation_b2 occupation_b3 occupation_b4 occupation_b5 occupation_b6 occupation_b7  
supervisor2 nationality2 public2 compsize2 compsize3 compsize4 samepay2 firstjob2  
saturday_work2 saturday_work3 sunday_work2 sunday_work3 nightwork2 partime2 year2  
z_temprate z_udensity || sector_nuts: sunday_work3 partime2 occupation_b5 samepay2 public2,  
cov(un)  
.....
```

The final model then becomes the previous baseline model, that is, the model including all the previously added random slopes except for the last one (*public2*). Therefore, the final model becomes:

### STATA code

```
.....  
mixed z_log_hourly_wage gender2 z_age z_age_sq education2 education3 education4  
occupation_b2 occupation_b3 occupation_b4 occupation_b5 occupation_b6 occupation_b7  
supervisor2 nationality2 public2 compsize2 compsize3 compsize4 samepay2 firstjob2  
saturday_work2 saturday_work3 sunday_work2 sunday_work3 nightwork2 partime2 year2  
z_temprate z_udensity || sector_nuts: samepay2 sunday_work3 partime2 occupation_b5,  
cov(un)  
.....
```

### **3.2. Multilevel models: selection of random coefficients in 3-level models**

Unfortunately, random coefficients could not be included in the 3-level models (the models using SES data) following the procedure described by Heisig et al. (2017) as this process is specific for 2-level models. Therefore, no specific technical criterion was followed to introduce the random coefficients in the 3-level multilevel models. Moreover, including more than one random coefficient frequently caused issues of convergence. For these reasons, the multilevel models including a cross-level interaction (models 2.1 and 2.3) only included the level-1 variable involved in the cross-level interaction as a random coefficient (namely, *temporary contract*). The 3-level multilevel models that did not include cross-level interactions (models 3.1 and 3.3) included the variable *Part-time employment* as a random coefficient. The main reason for selecting this variable is that it is the only variable that had to be included in each of the 2-level mixed models according to the iterative procedure described in the section above. In any case, alternative models including different covariates as random components were also tested, but the results were essentially the same.

[This page has been intentionally left blank to facilitate the interpretation of the tables below]



## 4. Descriptive statistics. Industrial relations characteristics by activity sector in two periods

Table C1: Industrial relations characteristics by activity sector in 2006 and 2007

	Union density	Collective bargaining coverage	Share of workers with works councils	Temporary employment rate
Agriculture, forestry, hunting and related service activities	5.54	29.76	31.74	53.94
Forestry, logging, logging and related service activities	17.34	.	47.76	31.05
Fishing, aquaculture and related service activities	9.68	34.56	25.8	27.72
Extraction and agglomeration of anthracite, hard coal, lignite and peat	61	56.99	77.22	28.52
Extraction of crude petroleum and natural gas; service activities incidental to oil and gas extraction	.	.	.	.
Mining of uranium and thorium ores	.	.	.	.
Mining of metal ores	.	.	.	.
Mining of non-metalliferous and non-energy ores	13.1	52.11	74.33	21.99
Manufacture of food products and beverages	13.06	44.94	63.08	26.42
Tobacco industry	.	.	.	.
Textile industry	7.91	42.96	55.88	20.22
Manufacture of wearing apparel and fur products	20.6	36.07	51.21	29.06
Dressing, tanning and dressing of leather; manufacture of luggage, handbags	7.89	40.98	35.12	30.18
Manufacture of wood and cork products, except furniture; manufacture of articles of straw and plaiting materials; manufacture of basketware and wickerwork	7.58	31.35	52.87	14.57
Paper industry	20.88	65.97	80.96	4.37
Publishing, printing and reproduction of recorded media	11.06	44.12	62.5	25.98
Coking, petroleum refining and processing of nuclear fuels	50.73	46.51	100	7.2
Chemical industry	18.1	57.59	75.94	12.15
Manufacture of rubber and plastics products	21.77	71.65	76.84	23.79
Manufacture of other non-metallic mineral products	13.85	43.89	70.19	20.45
Metallurgy	28.53	48.8	68.04	24.27
Manufacture of fabricated metal products, except machinery and equipment	18.7	33.97	59.67	25.48
Manufacture of machinery and mechanical equipment	24.65	48.12	68.17	10.91
Manufacture of office machinery and computer equipment	.	.	.	.
Manufacture of electrical machinery and equipment	21.69	60.58	72.15	25.94
Manufacture of electronic equipment; manufacture of radio, television and communication apparatus and equipment	19.5	67.29	79.78	36.37
Manufacture of medical, surgical, precision, optical and horological instruments and equipment	17.08	58.17	77.77	12.05
Manufacture of motor vehicles, trailers and semi-trailers	37.96	60.04	89.9	25.01
Manufacture of other transport equipment	35	74.13	74.23	21.67
Manufacture of furniture; other manufacturing industries	12.37	40.14	49.96	17.31
Recycling	35.03	59.04	75.89	13.37
Production and distribution of electricity, gas, steam and hot water	29.26	56.31	71.35	14
Water collection, purification and distribution	22.42	60.42	66.66	16.71
Construction	8.29	36.57	39.77	52.97
Sale, maintenance and repair of motor vehicles, motorbikes and mopeds; retail sale of fuel for motor vehicles	13.51	36.03	43.42	16.25
Wholesale trade and commission trade, except of motor vehicles and motorbikes	7.19	27.31	45.36	23.1
Retail trade, except trade in motor vehicles, motorbikes and mopeds; repair of personal and household goods	14.95	39.01	54.4	27.8
Hospitality	12.97	37.4	42.56	39.71
Land transport; transport by pipelines	26.92	49.79	55.68	22.33
Maritime, coastal and inland waterway transport	10.96	.	.	41.81
Air and space transport	31.05	64	89.33	28.56
Ancillary transport activities; travel agency activities	16.74	51.97	68.25	22.56
Post and telecommunications	28.85	57.48	71.61	21.08
Financial intermediation, except insurance and pension funding	36.92	73.54	88.25	9.44
Insurance and pension funding, except compulsory social security	9.25	42.31	63.23	13.68
Activities auxiliary to financial intermediation	16.19	30.17	36.88	0
Real estate activities	9.95	27.76	27.77	22.58
Renting of machinery and equipment without operator and of personal and household goods	42.47	27.58	78.86	44.4
Computer activities	6.41	52.9	63.58	21.38
Research and development	6.07	52.63	85.71	37.73
Other business activities	13.16	44.93	49.96	23.39
Public administration, defence and compulsory social security	33.74	61.34	81.91	18.48
Education	28.67	53.63	60.66	25.34
Health and veterinary activities, social services	31.31	59.24	77.3	28.81

			(continued)	
Public sanitation activities	27.64	49.28	75.53	27.8
Associative activities	32.11	26.99	67.08	33.88
Recreational, cultural and sporting activities	12.19	47.79	58.88	38.65
Miscellaneous personal service activities	6.42	23.37	22.42	24.32
Households employing domestic servants	2.29	4.52	7.55	40.8
Extraterritorial organisations	.	.	.	.

**Note:** Activity sectors are different for the two periods due to changes in the Spanish National Classification of Economic Activities (CNAE). Missing values are represented with "."

Table C2: Industrial relations characteristics by activity sector in 2009 and 2010

	Union density	Collective bargaining coverage	Share of workers with works councils	Temporary employment rate
Agriculture, hunting and related service activities	5.23	23.11	32.66	55.72
Forestry and logging	4.69	45.53	69.53	65.63
Fishing and aquaculture	18.83	20.49	7.5	18.35
Mining of anthracite, hard coal and lignite	.	.	.	.
Extraction of crude petroleum and natural gas	.	.	.	.
Mining of metal ores	.	.	.	.
Other mining and quarrying	22.32	68.87	78.67	20.03
Support activities for mining and quarrying	.	.	.	.
Manufacture of food products	13.86	44.75	57.19	21.33
Manufacture of beverages	37.46	47.2	65.4	20.44
Tobacco industry	.	.	.	.
Textile industry	11.46	41.37	47.94	12.09
Manufacture of clothing	13.39	8.02	26.6	22.36
Leather and footwear industry	6.82	24.19	24.19	49.62
Manufacture of wood and cork products, except furniture; basketry and wickerwork	32.71	55.25	60.14	16.36
Paper industry	26.74	62.97	79.7	18.05
Printing and reproduction of recorded media	21.45	60.84	68.91	7.27
Manufacture of coke and refined petroleum products	45.48	90.87	90.7	0
Manufacture of chemicals and chemical products	23.98	63.82	85.88	7.74
Manufacture of pharmaceutical products	14.05	52.51	78.05	10.47
Manufacture of rubber and plastic products	27.79	49.29	44.43	13.79
Manufacture of other non-metallic mineral products	23.76	49.09	63.13	9.97
Metallurgy; manufacture of iron, steel and ferro-alloy products	26.03	47.96	67.87	16.33
Manufacture of fabricated metal products, except machinery and equipment	12.11	52.35	57.62	11.47
Manufacture of computer, electronic and optical products	18.27	49.65	53.13	9.13
Manufacture of electrical material and equipment	24.22	67.54	66.89	11.4
Manufacture of machinery and equipment n.e.c.	18.45	53.75	57.56	19.06
Manufacture of motor vehicles, trailers and semi-trailers	38.64	66.33	73.78	15.05
Manufacture of transport equipment	34.63	76.91	87.26	17.87
Manufacture of furniture	21.71	40.34	44	12.59
Other manufacturing	3.61	49.97	61.74	29.35
Repair and installation of machinery and equipment	15.14	43.45	56.62	34.96
Electricity, gas, steam and air conditioning supply	29.1	70.94	74.07	12.24
Water collection, treatment and distribution	42.3	60.28	61.31	12.75
Waste water collection and treatment	.	.	.	.
Waste collection, treatment and disposal; waste recovery	15.18	62.07	54.71	19.92
Decontamination activities and other waste management services	.	.	.	.
Building construction	9.47	34.77	38.83	41.46
Civil engineering	17.1	43.27	50.89	29.33
Specialised construction activities	12.84	38.42	38.28	28.03
Sale and repair of motor vehicles and motorbikes	10.71	40.01	44.13	16.41
Wholesale trade and commission trade, except of motor vehicles and motorbikes	7.64	31.58	40.22	14.84
Retail trade, except of motor vehicles and motorbikes	12.22	43.7	50.26	18.87
Land transport and transport via pipelines	28.47	47.55	58.21	18.77
Sea and inland water transport	.	.	.	.
Air transport	41.65	81.56	92.4	12.58
Warehousing and support activities for transport	27.06	49.92	66.28	16.13
Postal and courier activities	40.17	59.23	81.09	15.04
Accommodation services	14.37	43.4	52.47	28.52
Food and beverage service activities	9.45	27.3	26.49	31.27
Publishing	13.04	62.35	59.89	11.09
Motion picture, video and television programme activities, sound recording and music publishing activities	3.69	34.16	37.65	41.75
Radio and television programming and broadcasting activities	6.05	68.54	82.37	51.85
Telecommunications	22.86	62.1	79.14	20.26
Programming, consultancy and other computer-related activities	11.05	61.66	64.64	9.14
Information service activities	.	.	.	.
Financial services, except insurance and pension funding	37.96	75.64	90.3	9.27
Insurance, reinsurance and pension funding, except compulsory social security	9.87	51.57	71.93	11.11
Activities auxiliary to insurance and financial services	24.97	54.54	51.77	39.27
Real estate activities	1.8	38.26	29.72	12.53
Legal and accounting activities	2.45	46.96	21.56	10.05
Activities of head offices; business management consultancy activities	5.63	64.16	33.79	6.34

			(continued)	
Architectural and engineering activities; technical testing and analysis	11.31	44.22	41.09	11.18
Research and development	2.33	42.21	53.61	41.14
Advertising and market research	10	40.24	54.92	26.02
Other professional, scientific and technical activities	12.26	56.25	56.73	20.5
Veterinary activities	.	.	.	.
Rental activities	0	25.78	26.39	42.06
Employment related activities	3.68	33.19	38.14	22.14
Travel agency, tour operator, reservation service and related activities	10.24	34.8	61.91	28.56
Security and investigation activities	36.34	62.12	78.48	23.14
Building services and gardening activities	18.42	37.17	51.92	31.07
Office administrative and other supporting business activities	20.44	35.65	53.83	23.54
Public administration and defence; compulsory social security	31.37	54.3	77.02	22.28
Education	27.24	50.36	63.72	25.48
Health care activities	31.52	55.13	78.13	24.33
Residential care activities	16.68	59.92	66.16	27.01
Social work activities without accommodation	11.94	57.18	52.07	41.6
Creative, artistic and entertainment activities	5.73	16.41	34.97	41.6
Library, archives, museums and other cultural activities	12.76	56.15	77.97	48.44
Gambling and betting activities	47.3	42.33	72	16.49
Sporting, recreational and entertainment activities	11.56	42.43	53.13	46.18
Activities of membership organisations	20.94	45.99	51.71	31.47
Repair of computers and personal and household goods	7.03	79.73	62.38	38.84
Other personal service activities	2.14	17.45	12.7	24.67
Activities of households as employers of domestic servants	1.83	7.09	6.67	39.83
Activities of extraterritorial organisations and bodies	.	.	.	.



## **APPENDIX CHAPTER 4**

*Does employability help to cope with  
job insecurity? An analysis of  
workers' well-being with Swiss panel  
data*

# 1. Full results of fixed-effects models. Additional analyses including household variables as controls

**Table A.1: Results of fixed-effects models. Association of the interaction between employability and different measures of job insecurity with job satisfaction, including household variables as controls**

	<u>Job insecurity measures</u>					
	Fear of job loss		Risk of job loss in last year		Temporary employment	
	Men	Women	Men	Women	Men	Women
	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)
<b>Job insecurity (ref: No)</b>						
Yes	-0.321*** (0.04085)	-0.245*** (0.03913)	-0.138*** (0.03281)	-0.142*** (0.03124)	-0.093+ (0.05257)	-0.059 (0.06569)
<b>Employability (ref: Low)</b>						
High	-0.0051 (0.02250)	0.0166 (0.02308)	0.004 (0.02362)	0.0177 (0.02357)	0.0133 (0.02346)	0.0266 (0.02271)
<b>Job insecurity (Yes) * Employability (High)</b>						
	-0.0184 (0.07634)	-0.0273 (0.07772)	-0.0194 (0.05032)	-0.0215 (0.05299)	-0.0736 (0.06874)	0.0025 (0.08314)
<b>Year (ref: 2012)</b>						
2013	-0.0549** (0.02061)	-0.0455* (0.02081)	-0.0524* (0.021)	-0.0514* (0.02113)	-0.0502* (0.02101)	-0.0479* (0.02102)
2014	-0.0340 (0.02255)	- (0.02496)	-0.0262 (0.02286)	0.0916*** (0.02507)	-0.0275 (0.02294)	- (0.02522)
2015	-0.0348 (0.02597)	- (0.02711)	-0.0367 (0.02628)	0.1073*** (0.02725)	-0.0399 (0.02661)	- (0.02711)
2016	-0.0285 (0.02893)	-0.0728* (0.02948)	-0.0355 (0.02929)	-0.0822** (0.02994)	-0.0396 (0.02944)	-0.0782** (0.02954)
2017	-0.0140 (0.03310)	-0.0781* (0.03351)	-0.0185 (0.03384)	-0.0823* (0.0339)	-0.0211 (0.03334)	-0.0829* (0.03362)
2018	-0.0471 (0.03623)	-0.1099** (0.03863)	-0.0465 (0.03627)	-0.1163** (0.03866)	-0.0558 (0.03637)	-0.1198** (0.03857)
<b>Age (ref: 25-29)</b>						
30-35	-0.0255 (0.05979)	-0.0012 (0.06791)	-0.0165 (0.06102)	0.0057 (0.06447)	-0.0165 (0.06078)	0.0030 (0.06855)
36-40	-0.1214 (0.07902)	0.0153 (0.08345)	-0.1038 (0.07901)	0.0242 (0.08134)	-0.1138 (0.07898)	0.0153 (0.08484)
41-45	-0.1398 (0.09244)	0.0040 (0.10112)	-0.1343 (0.09234)	0.0153 (0.09964)	-0.1316 (0.09222)	0.0058 (0.10284)
46-50	-0.1525 (0.10760)	0.0209 (0.11816)	-0.1618 (0.10823)	0.0254 (0.11694)	-0.1521 (0.10796)	0.0200 (0.12003)
51-55	-0.1752 (0.12369)	0.0769 (0.13183)	-0.1925 (0.12428)	0.082 (0.13126)	-0.1674 (0.12419)	0.0783 (0.13390)
56-60	-0.1580 (0.14078)	0.1459 (0.14640)	-0.1699 (0.14111)	0.152 (0.14638)	-0.1371 (0.14079)	0.1526 (0.14831)
61-66	-0.1880 (0.16933)	0.2313 (0.16808)	-0.1915 (0.16639)	0.2493 (0.16682)	-0.1417 (0.16656)	0.2521 (0.16901)
<b>Having a partner (ref: No)</b>						
Yes	0.0004 (0.04095)	-0.0382 (0.04915)	-0.0193 (0.04088)	-0.0518 (0.04880)	-0.0051 (0.0411)	-0.0452 (0.04917)

<b>Having children (ref: No)</b>						
Yes	-0.1807 (0.11103)	0.0146 (0.05942)	-0.1738 (0.11210)	-0.0130 (0.05983)	-0.1878+ (0.11105)	-0.0068 (0.0608)
<b>Having a partner (Yes) * Having children (No)</b>	0.1743 (0.11192)	0.0527 (0.06319)	0.1714 (0.11254)	0.0779 (0.06319)	0.1898+ (0.11195)	0.0693 (0.06489)
<b>Household income</b>	0.0030 (0.00871)	0.0071 (0.00792)	0.0040 (0.00879)	0.0094 (0.00792)	0.0033 (0.00882)	0.0087 (0.00773)
<b>Constant</b>	3.3116*** (0.09644)	3.1430*** (0.09952)	3.3087*** (0.09725)	3.1472*** (0.09719)	3.2730*** (0.09815)	3.1259*** (0.10068)
<b>Observations</b>	3661	3850	3644	3813	3663	3851
<b>Individuals</b>	761	814	761	809	762	814

**Note:** +  $p < 0.10$ , \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$



**Table A.2: Results of fixed-effects models. Association of the interaction between employability and different measures of job insecurity with life satisfaction, including household variables as controls**

	<u>Job insecurity measures</u>					
	Fear of job loss		Risk of job loss in last year		Temporary employment	
	Men	Women	Men	Women	Men	Women
	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)
<b>Job insecurity (ref: No)</b>						
Yes	-0.356*** (0.06190)	-0.246*** (0.06076)	-0.155** (0.05261)	-0.196*** (0.05070)	-0.166 (0.11797)	0.006 (0.08028)
<b>Employability (ref: Low)</b>						
High	0.0486 (0.03250)	0.0718* (0.03613)	0.0381 (0.03470)	0.0627+ (0.03780)	0.0628+ (0.03480)	0.0848* (0.03733)
<b>Job insecurity (Yes) * Employability (High)</b>	0.2077+ (0.12303)	0.1016 (0.11784)	0.2191** (0.08377)	0.0891 (0.07868)	0.1653 (0.12445)	0.0633 (0.11334)
<b>Year (ref: 2012)</b>						
2013	-0.0676+ (0.03451)	-0.0558 (0.03444)	-0.0624+ (0.03500)	-0.0588+ (0.03448)	-0.0615+ (0.03476)	-0.0557 (0.03443)
2014	0.0253 (0.03865)	-0.0474 (0.04072)	0.0329 (0.03878)	-0.0501 (0.04106)	0.0308 (0.03870)	-0.0494 (0.04080)
2015	0.0261 (0.04350)	-0.0286 (0.04812)	0.0226 (0.04413)	-0.0235 (0.04866)	0.0207 (0.04390)	-0.0298 (0.04852)
2016	-0.0281 (0.04598)	-0.0790+ (0.04653)	-0.0349 (0.04555)	-0.0849+ (0.04702)	-0.0425 (0.04563)	-0.0817+ (0.04681)
2017	-0.0144 (0.05632)	-0.0463 (0.05535)	-0.0185 (0.05602)	-0.0603 (0.05582)	-0.0249 (0.05595)	-0.0484 (0.05558)
2018	-0.0248 (0.05880)	-0.0458 (0.06017)	-0.0160 (0.05981)	-0.0511 (0.06001)	-0.0406 (0.05943)	-0.0518 (0.06063)
<b>Age (ref: 25-29)</b>						
30-35	0.1660 (0.13368)	0.0065 (0.11676)	0.1786 (0.13431)	0.0060 (0.11545)	0.1801 (0.13445)	0.0131 (0.11694)
36-40	0.1057 (0.16862)	0.0742 (0.13988)	0.1153 (0.16840)	0.0889 (0.13830)	0.1245 (0.16815)	0.0776 (0.14012)
41-45	0.1528 (0.18208)	-0.1208 (0.16923)	0.1434 (0.18184)	-0.1086 (0.16792)	0.1770 (0.18167)	-0.1157 (0.16963)
46-50	0.1415 (0.19816)	-0.1880 (0.19321)	0.1243 (0.19779)	-0.1824 (0.19161)	0.1628 (0.19769)	-0.1858 (0.19311)
51-55	0.0933 (0.21455)	-0.0314 (0.21377)	0.0764 (0.21462)	-0.0120 (0.21178)	0.1277 (0.21392)	-0.0285 (0.21345)
56-60	0.1658 (0.23419)	0.0196 (0.24087)	0.1569 (0.23429)	0.0522 (0.23877)	0.2120 (0.23296)	0.0256 (0.24027)
61-66	0.4595+ (0.27123)	0.0078 (0.28158)	0.4398 (0.27170)	0.0236 (0.28121)	0.5379* (0.27068)	0.0288 (0.28162)
<b>Having a partner (ref: No)</b>						
Yes	0.2176* (0.08663)	0.3214** (0.10045)	0.2306** (0.08504)	0.3127** (0.09878)	0.2154* (0.08495)	0.3152** (0.09996)
<b>Having children (ref: No)</b>						
Yes	-0.0117 (0.17844)	-0.0433 (0.12153)	0.0168 (0.17928)	-0.0551 (0.12174)	-0.0086 (0.17826)	-0.0619 (0.12230)

<b>Having a partner (Yes) * Having children (No)</b>	0.0479 (0.18493)	0.0539 (0.12560)	0.0251 (0.18494)	0.0662 (0.12517)	0.0491 (0.18294)	0.0684 (0.12601)
<b>Household income</b>	0.0249+ (0.01468)	0.0357* (0.01474)	0.0254+ (0.01462)	0.0341* (0.01474)	0.0256+ (0.01454)	0.0368* (0.01481)
<b>Constant</b>	4.8458*** (0.17240)	4.9820*** (0.16115)	4.8264*** (0.17160)	5.0053*** (0.15983)	4.7896*** (0.17246)	4.9574*** (0.16189)
<b>Observations</b>	3673	3860	3655	3823	3675	3861
<b>Individuals</b>	766	818	765	813	767	818

**Note:** + p < 0.10, \*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001

**Table A.3: Results of fixed-effects models. Association of the interaction between employability and different measures of job insecurity with mental health, including household variables as controls**

	<u>Job insecurity measures</u>					
	Fear of job loss		Risk of job loss in last year		Temporary employment	
	Men	Women	Men	Women	Men	Women
	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)
<b>Job insecurity (ref: No)</b>						
Yes	-0.271*** (0.03766)	-0.248*** (0.04072)	-0.130*** (0.02850)	-0.124*** (0.03089)	-0.086* -0.04044	-0.033 (0.05477)
<b>Employability (ref: Low)</b>						
High	0.0257 (0.01655)	0.0458* (0.02057)	0.0263 (0.01851)	0.0468* (0.02120)	0.0388* (0.01825)	0.0622** (0.02097)
<b>Job insecurity (Yes) * Employability (High)</b>						
	0.0815 (0.07834)	0.1268 (0.07987)	0.0784+ (0.04274)	0.0939+ (0.04840)	0.0545 (0.05294)	0.0147 (0.07053)
<b>Year (ref: 2012)</b>						
2013	-0.0158 (0.01751)	-0.0220 (0.02137)	-0.0138 (0.01767)	-0.0235 (0.02134)	-0.013 (0.01752)	-0.0225 (0.02127)
2014	-0.0062 (0.01899)	0.0062 (0.02334)	-0.0009 -0.01936	0.0024 -0.02358	-0.0012 (0.01924)	0.0048 (0.02351)
2015	-0.0270 (0.02018)	- 0.0862*** (0.02578)	-0.0305 (0.02092)	-0.0825** (0.02619)	-0.0308 (0.02106)	- 0.0882*** (0.02623)
2016	0.0013 (0.02255)	-0.0241 (0.02817)	-0.0046 (0.02266)	-0.0264 (0.02885)	-0.0083 (0.02292)	-0.0271 (0.02854)
2017	-0.0315 (0.02657)	-0.0787* (0.03335)	-0.0350 (0.02628)	-0.0840* (0.03373)	-0.0375 (0.02666)	-0.0807* (0.03363)
2018	-0.0120 (0.02797)	-0.0380 (0.03555)	-0.0102 (0.02830)	-0.0421 (0.03603)	-0.0204 (0.02849)	-0.0439 (0.03585)
<b>Age (ref: 25-29)</b>						
30-35	0.0636 (0.05656)	-0.0407 (0.04342)	0.0662 (0.05698)	-0.0391 (0.04446)	0.0711 (0.05756)	-0.0386 (0.04418)
36-40	-0.0498 (0.06878)	-0.0294 (0.06491)	-0.0520 (0.06856)	-0.0245 (0.06576)	-0.0472 (0.06904)	-0.0322 (0.06544)
41-45	-0.0515 (0.07685)	-0.0463 (0.08676)	-0.0607 (0.07643)	-0.0405 (0.08817)	-0.0477 (0.07685)	-0.0482 (0.08776)
46-50	-0.0891 (0.08630)	-0.0468 (0.10326)	-0.1075 (0.08615)	-0.0459 (0.10435)	-0.0901 (0.08672)	-0.0522 (0.10393)
51-55	-0.0964 (0.09611)	0.0342 (0.11576)	-0.1120 (0.09620)	0.0390 (0.11690)	-0.0900 (0.09650)	0.0291 (0.11674)
56-60	-0.0421 (0.10842)	0.0308 (0.13095)	-0.0570 (0.10861)	0.0359 (0.13211)	-0.0276 (0.10902)	0.0291 (0.13186)
61-66	-0.017 (0.12766)	0.0615 (0.15482)	-0.0297 (0.12726)	0.0743 (0.15757)	0.0192 (0.12724)	0.0765 (0.15659)
<b>Having a partner (ref: No)</b>						
Yes	0.0403 (0.04006)	0.0890* (0.04248)	0.0571 (0.03735)	0.0841* (0.04240)	0.0444 (0.04000)	0.0848* (0.04301)
<b>Having children (ref: No)</b>						
Yes	0.0526 (0.11861)	-0.0435 (0.06223)	0.0787 (0.11936)	-0.0640 (0.06380)	0.0583 (0.12188)	-0.0636 (0.06324)

**Having a partner (Yes) \* Having children  
(No)**

-0.0504	0.0331	-0.0758	0.0464	-0.0525	0.0455
(0.11898)	(0.06405)	(0.11951)	(0.06529)	(0.12160)	(0.06526)

**Household income**

-0.0002	0.0105	0.0000	0.0106	0.0001	0.0115
(0.00671)	(0.00695)	(0.00680)	(0.00711)	(0.00682)	(0.00707)

**Observations**

3.1802***	3.0078***	3.1683***	3.0124***	3.1444***	2.9929***
(0.07621)	(0.08046)	(0.07740)	(0.08148)	(0.07715)	(0.08136)

**Observations**

3681	3859	3663	3822	3683	3860
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**Individuals**

768	818	767	813	769	818
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**Note:** + p < 0.10, \*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001

## 2. Full results of fixed-effects models without interaction

Table B.1: Fixed-effects models results. Association of job insecurity with job satisfaction

	<u>Job insecurity measures</u>					
	Fear of job loss		Risk of job loss in last year		Temporary employment	
	Men	Women	Men	Women	Men	Women
	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)
<b>Job insecurity (ref: No)</b>						
Yes	-0.311*** (0.03525)	-0.254*** (0.03332)	-0.143*** (0.02802)	-0.141*** (0.02794)	-0.128*** (0.03716)	-0.053 (0.04629)
<b>Employability (ref: Low)</b>						
High	-0.0149 (0.02165)	0.0166 (0.02164)	-0.0026 (0.02218)	0.0145 (0.02210)	-0.0022 (0.02211)	0.0282 (0.02206)
<b>Year (ref: 2012)</b>						
2013	-0.0526** (0.01983)	-0.0309 (0.02045)	-0.0508* (0.02082)	-0.0434* (0.02065)	-0.0479* (0.02024)	-0.0315 (0.02065)
2014	-0.0311 (0.02166)	-0.0680** (0.02404)	-0.0268 (0.02226)	-0.0827*** (0.02423)	-0.0241 (0.02219)	-0.0709** (0.02437)
2015	-0.0391 (0.02511)	-0.0803** (0.02614)	-0.0368 (0.02576)	0.1022*** (0.02647)	-0.0455+ (0.02571)	-0.0855** (0.02621)
2016	-0.0349 (0.02798)	-0.0626* (0.02854)	-0.0371 (0.02860)	-0.0767** (0.02911)	-0.0459 (0.02861)	-0.0658* (0.02866)
2017	-0.0189 (0.03238)	-0.0664* (0.03249)	-0.0194 (0.03364)	-0.0762* (0.03291)	-0.0276 (0.03265)	-0.0694* (0.03281)
2018	-0.0487 (0.03534)	-0.0876* (0.03763)	-0.0476 (0.03589)	-0.0961* (0.03795)	-0.0590+ (0.03557)	-0.0948* (0.03762)
<b>Age (ref: 25-29)</b>						
30-35	-0.0482 (0.05820)	0.0101 (0.06855)	-0.0501 (0.06247)	0.0167 (0.06275)	-0.0422 (0.05989)	0.0104 (0.07040)
36-40	-0.1298+ (0.07633)	0.0192 (0.08223)	-0.1308 (0.07948)	0.0313 (0.07862)	-0.1266 (0.07703)	0.0150 (0.08445)
41-45	-0.1466 (0.08966)	0.0004 (0.09927)	-0.1609+ (0.09253)	0.0234 (0.09663)	-0.1412 (0.09025)	-0.0048 (0.10193)
46-50	-0.1504 (0.10454)	0.0149 (0.11460)	-0.1837+ (0.10831)	0.0315 (0.11278)	-0.1558 (0.10547)	0.0089 (0.11714)
51-55	-0.1731 (0.12036)	0.0512 (0.12750)	-0.2149+ (0.12388)	0.0757 (0.12673)	-0.1700 (0.12133)	0.0461 (0.13015)
56-60	-0.1578 (0.13719)	0.0965 (0.14215)	-0.1927 (0.14056)	0.1278 (0.14180)	-0.1403 (0.13751)	0.0945 (0.14466)
61-66	-0.1972 (0.16431)	0.1733 (0.16405)	-0.2143 (0.16597)	0.2177 (0.16267)	-0.1481 (0.16292)	0.1862 (0.16542)
<b>Constant</b>	3.3305*** (0.08199)	3.1821*** (0.08779)	3.3395*** (0.08517)	3.1803*** (0.08468)	3.3011*** (0.08276)	3.1660*** (0.09012)
<b>Observations</b>	3929	4147	3755	3960	3933	4150
<b>Individuals</b>	816	871	779	836	817	871

Note: + p < 0.10, \*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001

**Table B.2: Fixed-effects models results. Association of job insecurity with life satisfaction**

	<u>Job insecurity measures</u>					
	Fear of job loss		Risk of job loss in last year		Temporary employment	
	Men	Women	Men	Women	Men	Women
	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)
<b>Job insecurity (ref: No)</b>						
Yes	-0.299*** (0.05384)	-0.224*** (0.05355)	-0.106* (0.04401)	-0.171*** (0.04624)	-0.105 (0.08866)	0.023 (0.06390)
<b>Employability (ref: Low)</b>						
High	0.0695* (0.03283)	0.0886* (0.03685)	0.0777* (0.03319)	0.0838* (0.03734)	0.0820* (0.03328)	0.1003** (0.03761)
<b>Year (ref: 2012)</b>						
2013	-0.0610+ (0.03400)	-0.0662+ (0.03395)	-0.0560 (0.03435)	-0.0682* (0.03411)	-0.0555 (0.03422)	-0.0651+ (0.03394)
2014	0.0313 (0.03807)	-0.0548 (0.04074)	0.0428 (0.03827)	-0.0587 (0.04107)	0.0381 (0.03810)	-0.0582 (0.04069)
2015	0.0310 (0.04294)	-0.0440 (0.04768)	0.0276 (0.04346)	-0.0428 (0.04826)	0.0268 (0.04330)	-0.0470 (0.04806)
2016	-0.0266 (0.04570)	-0.0884+ (0.04750)	-0.0308 (0.04530)	-0.0989* (0.04808)	-0.0367 (0.04529)	-0.0924+ (0.04779)
2017	-0.0103 (0.05598)	-0.0518 (0.05603)	-0.0130 (0.05583)	-0.0694 (0.05656)	-0.0178 (0.05577)	-0.0552 (0.05625)
2018	-0.0204 (0.05812)	-0.0419 (0.06013)	-0.0089 (0.05932)	-0.0529 (0.06043)	-0.0303 (0.05854)	-0.0492 (0.06044)
<b>Age (ref: 25-29)</b>						
30-35	0.2202+ (0.12996)	0.0400 (0.11891)	0.2327+ (0.13093)	0.0454 (0.11695)	0.2282+ (0.13069)	0.0472 (0.11940)
36-40	0.1790 (0.16176)	0.1240 (0.14079)	0.1919 (0.16219)	0.1491 (0.13916)	0.1874 (0.16181)	0.1300 (0.14134)
41-45	0.2349 (0.17538)	-0.0778 (0.17265)	0.2322 (0.17585)	-0.0477 (0.17099)	0.2450 (0.17510)	-0.0709 (0.17314)
46-50	0.2338 (0.19203)	-0.1766 (0.19642)	0.2171 (0.19231)	-0.1487 (0.19474)	0.2369 (0.19155)	-0.1694 (0.19656)
51-55	0.1945 (0.20829)	-0.0102 (0.21585)	0.1793 (0.20883)	0.0340 (0.21394)	0.2059 (0.20761)	0.0014 (0.21581)
56-60	0.2488 (0.22746)	0.0292 (0.24264)	0.2445 (0.22767)	0.0895 (0.24075)	0.2735 (0.22602)	0.0460 (0.24246)
61-66	0.5371* (0.26525)	0.0062 (0.28240)	0.5219+ (0.26655)	0.0512 (0.28221)	0.5905* (0.26412)	0.0364 (0.28288)
<b>Constant</b>	5.0696*** (0.15884)	5.3625*** (0.15506)	5.0599*** (0.15926)	5.3541*** (0.15338)	5.0340*** (0.15902)	5.3325*** (0.15487)
<b>Observations</b>	3727	3962	3705	3923	3729	3964
<b>Individuals</b>	776	840	773	834	777	840

**Note:** + p < 0.10, \*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001

**Table B.3: Fixed-effects models results. Association of job insecurity with mental health**

	<u>Job insecurity measures</u>					
	Fear of job loss		Risk of job loss in last year		Temporary employment	
	Men	Women	Men	Women	Men	Women
	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)
<b>Job insecurity (ref: No)</b>						
Yes	-0.246*** (0.03296)	-0.222*** (0.03479)	-0.115*** (0.02402)	-0.100*** (0.02586)	-0.068+ (0.03512)	-0.030 (0.04002)
<b>Employability (ref: Low)</b>						
High	0.0307+ (0.01701)	0.0564** (0.01992)	0.0370* (0.01746)	0.0633** (0.02052)	0.0418* (0.01730)	0.0670** (0.02066)
<b>Year (ref: 2012)</b>						
2013	-0.0141 (0.01713)	-0.0182 (0.02108)	-0.0132 (0.01736)	-0.0204 (0.02101)	-0.0119 (0.01719)	-0.0190 (0.02097)
2014	-0.0086 (0.01883)	0.0128 (0.02308)	-0.0023 (0.01922)	0.0094 (0.02326)	-0.0038 (0.01915)	0.0111 (0.02321)
2015	-0.0262 (0.01992)	-0.0794** (0.02537)	-0.0306 (0.02069)	-0.0782** (0.02574)	-0.0304 (0.02079)	-0.0817** (0.02583)
2016	-0.0030 (0.02249)	-0.0164 (0.02768)	-0.0083 (0.02253)	-0.0200 (0.02834)	-0.0117 (0.02278)	-0.0190 (0.02809)
2017	-0.0348 (0.02649)	-0.0658* (0.03273)	-0.0385 (0.02625)	-0.0729* (0.03311)	-0.0407 (0.02668)	-0.0681* (0.03308)
2018	-0.0147 (0.02785)	-0.0241 (0.03493)	-0.0129 (0.02834)	-0.0297 (0.03538)	-0.0226 (0.02834)	-0.0305 (0.03520)
<b>Age (ref: 25-29)</b>						
30-35	0.0685 (0.05552)	-0.0469 (0.04347)	0.0738 (0.05593)	-0.0410 (0.04387)	0.0754 (0.05642)	-0.0441 (0.04444)
36-40	-0.0372 (0.06719)	-0.0465 (0.06320)	-0.0346 (0.06725)	-0.0378 (0.06401)	-0.0354 (0.06744)	-0.0484 (0.06407)
41-45	-0.0357 (0.07491)	-0.0734 (0.08462)	-0.0389 (0.07469)	-0.0630 (0.08666)	-0.0333 (0.07482)	-0.0755 (0.08632)
46-50	-0.0704 (0.08439)	-0.0826 (0.10064)	-0.0854 (0.08434)	-0.0750 (0.10249)	-0.0744 (0.08462)	-0.0863 (0.10218)
51-55	-0.0737 (0.09510)	-0.0002 (0.11217)	-0.0851 (0.09494)	0.0128 (0.11407)	-0.0718 (0.09517)	-0.0014 (0.11404)
56-60	-0.0211 (0.10768)	-0.0092 (0.12757)	-0.0279 (0.10761)	0.0072 (0.12936)	-0.0091 (0.10784)	-0.0058 (0.12922)
61-66	0.0070 (0.12697)	0.0178 (0.15213)	0.0025 (0.12655)	0.0407 (0.15469)	0.0395 (0.12638)	0.0349 (0.15389)
<b>Constant</b>	3.1956*** (0.06909)	3.1304*** (0.07412)	3.1946*** (0.06934)	3.1195*** (0.07525)	3.1712*** (0.06900)	3.1127*** (0.07545)
<b>Observations</b>	3724	3957	3702	3918	3726	3959
<b>Individuals</b>	775	839	772	833	776	839

**Note:** + p < 0.10, \*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001